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BORANG PENILAIAN KEMAHIRAN KAUNSELING PEGAWAI FARMASI

GARIS PANDUAN KAUNSELING UBAT-UBATAN EDISI KEEMPAT 2025

2025

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Abacavir

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nucleoside reverse transcriptase inhibitor			
Indications and Dosage	1. Indication: Antiretroviral combination therapy for the treatment of HIV infection in adults, adolescents and children weighing at least 25 kg. a) Adult Dosage: 300mg BD or 600mg OD			
Method of Administration*	1. May be administered with or without food. Missed dose management : 1. To take medication consistently at the same time everyday. Any missed dose to be taken as soon as possible. 2. For twice daily dosing of abacavir, if the gap is more than 6 hours, to skip and continue with a regular dosing schedule. Do not double the dose on the next administration time. 3. For once daily dosing of abacavir, if the gap is more than 12 hours, to skip and continue with a regular dosing schedule. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Patients who become pregnant while taking abacavir may continue if viral suppression is effective and the regimen is well tolerated.			
	Breastfeeding			
	1. Abacavir is present in breast milk. 2. It is recommended that HIV infected women do not breast-feed their infants under any circumstances in order to avoid transmission of HIV.			
	Elderly			
	1. No pharmacokinetic data are currently available in patients over 65 years of age. Special care is advised in this age group due to age associated changes such as decrease in hepatic, renal and cardiac function, and concomitant disease or other drug therapy.			
	Paediatric			
	Children weighing 14 to < 20 kg: one-half of a scored abacavir tablet twice daily. Children weighing ≥ 20 kg to < 25 kg: one-half of a scored abacavir tablet taken in the morning and one whole tablet taken in the evening. For adolescents and children who weigh less than 25kg, commercial oral solution is available. Alternatively, the tablets			

	may be crushed. [1,2]			
	Fasting			
	To be discussed with infectious disease consultant			
	Hepatic impairment			
	1. Abacavir is primarily metabolised by the liver. In patients with mild hepatic impairment (Child-Pugh Class A) , 200mg twice daily is recommended. 2. Hepatic impairment with Child-Pugh Class B or C: **Contraindicated** 3. Abacavir oral solution should be used for dose reduction. In patients with moderate or severe hepatic impairment, the use of abacavir is not recommended unless judged necessary.			
	Renal impairment			
	1. No dosage adjustment necessary for any degree of kidney dysfunction.			
Side Effects and their Management*	1. Abacavir is associated with a risk for hypersensitivity reactions.Patients who test positive for HLA-B*5701 are at the highest risk of experiencing HSRs. HLA screening should be done before initiating ABC. 2. Symptoms usually appeared within the first six weeks of initiation of treatment with abacavir, although these reactions may occur at any time during therapy. These reactions usually include signs or symptoms from two or more of the following: fever, skin rash, constitutional symptoms (malaise, fatigue, aches), respiratory symptoms (eg, pharyngitis, dyspnea, cough), and GI symptoms (eg, abdominal pain, diarrhea, nausea, vomiting). 3. Abacavir/Lamivudine must be stopped without delay, even in the absence of the HLA-B*5701 allele, if an HSR is suspected. Delay in stopping treatment with abacavir/lamivudine after the onset of hypersensitivity may result in a life-threatening reaction. 4. Do not restart abacavir/lamivudine as it can result in a prompt return of symptoms within hours. This recurrence is usually more severe than on initial presentation, and may include life-threatening hypotension and death			
Storage*	Store in a dry place below 30 C. Store in the original container.			
Others	**Precautions** 1. Abacavir should not be used in patients known to carry the HLA-B*5701 allele or in patients with a prior hypersensitivity reaction to abacavir.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Kivexa. (n.d.). In UpToDate. Retrieved October 28, 2024, from https://www.uptodate.com/contents/abacavir-and-lamivudine-drug-information?search=kivexa&source=panel_search_result&selectedTitle=1%7E20&usage_type=panel&kp_tab=drug_general&display_rank=1
2. Panel on Antiretroviral Guidelines for Adults and Adolescents. (n.d.). Guidelines for the use of antiretroviral agents in adults and adolescents with HIV. Department of Health and Human Services. Retrieved January 20, 2025, from https://clinicalinfo.hiv.gov/en/guidelines/adult-and-adolescent-arv

Abacavir/Lamivudine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nucleoside reverse transcriptase inhibitor			
Indications and Dosage	1. Indications: Antiretroviral combination therapy for the treatment of HIV infection in adults, adolescents and children weighing at least 25 kg Dosage: 1 tablet once daily			
Method of Administration*	1. May be administered with or without food. **Missed dose management** 1. To take medication consistently at the same time everyday. Any missed dose to be taken as soon as possible. 2. However if the gap is more than 12 hours, to skip and continue with a regular dosing schedule. Do not double the dose on the next administration time. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Patients who become pregnant while taking abacavir/lamivudine may continue if viral suppression is effective and the regimen is well tolerated.			
	Breastfeeding			
	1. Abacavir and lamivudine are present in breast milk. 2. It is recommended that HIV infected women do not breast-feed their infants under any circumstances in order to avoid transmission of HIV.			
	Elderly			
	1. No pharmacokinetic data are currently available in patients over 65 years of age. Special care is advised in this age group due to age associated changes such as the decrease in renal function and alteration of haematological parameters.			
	Paediatric			
	1. Abacavir/Lamivudine should not be administered to children who weigh less than 25 kg because it is a fixed-dose tablet that cannot be dose reduced.			
	Fasting			
	1. To be discussed with infectious disease consultant			
	Hepatic impairment			

	1. In patients with moderate or severe hepatic impairment, the use of abacavir/lamivudine is not recommended unless judged necessary.			
	Renal impairment			
	1. It is not recommended for use in patients with a creatinine clearance < 30 ml/min. (use dose-adjusted individual components)			
Side Effects and their Management*	1. Abacavir is associated with a risk for hypersensitivity reactions.Patients who test positive for HLA-B*5701 are at the highest risk of experiencing HSRs. HLA screening should be done before initiating ABC. 2. Symptoms usually appeared within the first six weeks of initiation of treatment with abacavir, although these reactions may occur at any time during therapy. These reactions usually include signs or symptoms from two or more of the following: fever, skin rash, constitutional symptoms (malaise, fatigue, aches), respiratory symptoms (eg, pharyngitis, dyspnea, cough), and GI symptoms (eg, abdominal pain, diarrhea, nausea, vomiting). 3. Abacavir/Lamivudine must be stopped without delay, even in the absence of the HLA-B*5701 allele, if an HSR is suspected. Delay in stopping treatment with abacavir/lamivudine after the onset of hypersensitivity may result in a life-threatening reaction. 4. Do not restart abacavir/lamivudine as it can result in a prompt return of symptoms within hours. This recurrence is usually more severe than on initial presentation, and may include life-threatening hypotension and death.			
Storage*	1. Store in a dry place below 30 C. Store in the original container.			
Others	**Precautions** 1. Abacavir should not be used in patients known to carry the HLA-B*5701 allele or in patients with a prior hypersensitivity reaction to abacavir.			
Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered. **Remarks:** **Reviewed by: Name & Signature** **Date:**				

***Mandatory for validation / peer review**

References:

1. Kivexa. (n.d.). In UpToDate. Retrieved October 28, 2024, from https://www.uptodate.com/contents/abacavir-and-lamivudine-drug-information?search=kivexa&source=panel_search_result&selectedTitle=1%7E20&usage_type=panel&kp_tab=drug_general&display_rank=1
2. ViiV Healthcare. (2022). Kivexa product leaflet. Retrieved October 28, 2024, from https://quest3plus.bpfk.gov.my/front-end/attachment/724/pharma/211036/V_80853_20240412_150431_D3.pdf
3. Panel on Antiretroviral Guidelines for Adults and Adolescents. (n.d.). Guidelines for the use of antiretroviral agents in adults and adolescents with HIV. Department of Health and Human Services. Retrieved January 20, 2025, from https://clinicalinfo.hiv.gov/en/guidelines/adult-and-adolescent-arv

Acetylsalicyclic Acid (Aspirin)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiplatelet agent Non-steroidal anti-inflammatory drug (NSAID)			
Indications and Dosage	1. i) Prevention of myocardial infarct, stroke, vascular occlusion and deep vein thrombosis. ii) Transient ischaemic attacks a. Acetylsalicylic Acid 100 mg & Glycine 45 mg Tablet 2. Initial treatment of cardiovascular disorders such as angina pectoris and myocardial infarction and for the prevention of cardiovascular events in patients at risk. Other such uses include the treatment and prevention of cerebrovascular disorders such as stroke a. Acetylsalicylic Acid 300 mg Soluble Tablet b. Acetylsalicylic Acid 150mg Dispersible Tablet c. Acetylsalicylic Acid 75mg Dispersible Tablet *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Aspirin may be taken after food to reduce stomach discomfort. 2. Acetylsalicylic Acid 100 mg & Glycine 45 mg Tablet may be swallowed whole or place on the tongue to dissolve for rapid absorption 3. Dispersible tablet formulations can be dispersed in water immediately before use or swallowed whole. **Missed dose management:** Take aspirin as soon as you remember if you forget to take it. However, if it is almost time for your next dose, skip the dose you missed and take your next dose when you are meant to. Do not take a double dose to make up for the dose that you missed. Inform all treating doctors, dentists, and pharmacists that you are taking aspirin **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Do not use aspirin if you are pregnant or trying for a baby unless directed by your doctor. Aspirin can prolong labour and affect blood clotting in the mother or baby. 2. Aspirin should be avoided 1 week prior to and during labor and delivery because it can result in excessive blood loss at delivery. Prolonged gestation and prolonged labor due to prostaglandin inhibition have been reported.			

	Breastfeeding			
	1. Nursing mothers should avoid using aspirin because salicylate is excreted in breast milk. Use of high doses may lead to rashes, platelet abnormalities, and bleeding in nursing infants.			
	Elderly			
	Beers Criteria: a. Avoid initiating aspirin for primary prevention of cardiovascular disease. **Consider deprescribing aspirin in older adults already taking it for primary prevention**. Risk of major bleeding from aspirin increases markedly in older age. Studies suggest lack of net benefit and potential for net harm when initiated for primary prevention in older adults. There is less evidence about stopping aspirin among long-term users, although similar principles as for initiation may apply. ***Note: Aspirin is generally indicated for secondary prevention in older adults with established cardiovascular disease***. b. Avoid in patients with a history of gastric or duodenal ulcers unless other alternatives are not effective and patients can take gastroprotective agents (i.e., proton-pump inhibitor or misoprostol). May exacerbate existing ulcers or cause new/ additional ulcers			
	Paediatric			
	1. There is a possible association between aspirin and Reye's syndrome when given to children. Reye's syndrome typically occurs after a viral infection such as chickenpox or influenza.			
	Fasting			
	1. Not applicable **To refer to the latest advisory by religious authority**			
	Others			
	1. Do not use aspirin continuously for more than 10 days for pain or more than 3 days for fever without consulting a doctor.			
Side Effects and their Management*	1. Aspirin may cause allergic reactions involving severe urticaria, angioedema, or bronchospasm (asthma). 2. Aspirin may cause dizziness or light-headedness in some people. Make sure patients know how they react to aspirin before they drive a car, operate machinery, or do anything else that could be dangerous if they are dizzy or lightheaded. 3. These possible side-effects may go away during treatment as your body adjusts to the medicine. If they continue, are severe or bother you, tell your doctor or pharmacist. a. stomach pain or discomfort, indigestion or heartburn. b. nausea or vomiting.			

	4. Although the following side effects are less common, if they do occur, they need medical attention. Contact your doctor as soon as possible if you notice: a. unusual bleeding or bruising b. black stools c. vomiting blood d. chest tightness and difficulty in breathing, and may provoke asthma attack in susceptible individuals'			
Storage*	1. Store below 30°C. 2. Protect from light and moisture. 3. Keep out of the reach and sight of children 4. Keep aspirin in the original bottle or blister package to keep it dry (protect the tablets from moisture).			
Others	1. Discuss with your doctor or pharmacists if you: a. are allergic (hypersensitive) to aspirin, salicylates or NSAIDs or other ingredients in the product b. have the syndrome of asthma, rhinitis, and nasal polyps. c. are prone to indigestion or known to have a stomach or small intestine ulcer d. have severe kidney, heart or liver problem e. are receiving anticoagulant (medicine used to prevent blood clot) f. have haemophilia or other bleeding disorders g. have gout			
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***Mandatory for validation / peer review**

References:

1. Product information leaflet Cardiprin® 100mg. (2019) Reckitt Benckiser (RB) Health Malaysia Sdn Bhd. Retrieved from Quest 3+ Search on 1st January 2025
2. Product information leaflet Glyprin (2021) Duopharma Manufacturing (Bangi) Sdn. Bhd. . Retrieved from Quest 3+ Search on 1st January 2025
3. Product information leaflet Millispirin (2022) Unimed Sdn Bhd Retrieved from Quest 3+ Search on 1st January 2025
4. Formulari Ubat KKM Acetylsalicylic acid. Accessed on 1st January 2025
5. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.

Acyclovir, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiviral Agent, Topical			
Indications and Dosage	Indication: Herpes simplex infections of the skin, including initial and recurrent labial and genital herpes simplex infections Dosage: Apply 6 times daily (every ≈ 3 hours), omitted night sleep time, for 5-10 days **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Apply as early as possible following the onset of prodromal symptoms or when lesions appear 2. Wash your hands with soap and water prior to application and after application 3. Ensure application sites are clean and dry 4. A finger cot or rubber glove should be used while applying the cream to prevent autoinoculation of other body sites or transmission of infection to another person 5. Apply sufficient amount to cover all lesions, including the outer margin 6. Avoid unnecessary rubbing of the affected area 7. Do not apply to mucous membranes e.g. in the mouth, eyes or vagina as it may be irritant 8. To help clear up the herpes infection, continue using the medicine for the full course of treatment, even if the symptoms or lesions begin to clear up after a few days **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Compatible			
	Breastfeeding			
	Compatible. The decision to breastfeed during therapy should consider the risk of infant exposure, the benefits of breastfeeding to the infant, and the benefits of treatment to the mother. Patients with herpetic lesions near or on the breast should avoid breastfeeding to prevent direct viral transmission to the infant.			
	Elderly			
	Minimal systemic absorption occurs with topical acyclovir, making it generally safe for elderly patients.			
	Paediatric			
	1. The dosage is the same as in adults for adolescents 12 years of age and older. 2. Safety and effectiveness in pediatric patients less than			

	12 years of age have not been established.			
	Others:			
	Dosage adjustment is unlikely for renal and kidney impairment due to low systemic absorption.			
Side Effects and their Management*	May be irritating and cause contact sensitization. Do not apply to mucous membranes e.g. in the mouth, eyes or vagina.			
Storage*	Store under room temperature, below 30°C.			
Others	1. Women with herpes genitalis may have an increased risk of cervical cancer, an annual Pap test may be recommended. 2. Kindly seek medical attention if no improvement after a few days of treatment. 3. Use of acyclovir has not been shown to prevent transmission of herpes simplex virus to sexual partners.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References :

1. Briggs, G.G. (2015), Drugs in pregnancy and lactation 10th Edition, Wolters Kluwer
2. Formulari Ubat KKM (n.d.). Ministry of Health Malaysia. Retrieved December 20, 2024, from https://pharmacy.moh.gov.my/ms/apps/fukkm
3. HOVID Bhd (2014). VIREST cream 5%, acyclovir [Product Insert]
4. UptoDate: Acyclovir (topical) (2024). UpToDate [Drug information]. Retrieved November 8, 2024, from https://www.uptodate.com

Adapalene

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Topical retinoid			
Indications and Dosage	*Treatment for acne vulgaris where comedones, papules and pustules predominate.* Apply a thin layer once daily, at bedtime. *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Wash face with a gentle, non-medicated cleanser and allow the face to dry thoroughly. 2. Dispense a small amount of the medication onto fingertips and spread a thin layer to the entire face and any other affected areas of the skin once daily at bedtime. 3. Avoid application to eyelids, lips and mucous membranes. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. To be avoided in pregnancy especially the first trimester. Use in pregnancy only if the potential benefits justifies the potential risk to the fetus.			
	Breastfeeding			
	1. Caution should be exercised to nursing women. Risk to the nursing infant is considered low, as only a negligible amount is absorbed after topical application. Do not apply at the nipple area and ensure the infant's skin does not come into direct contact with treated skin areas.			
	Elderly			
	1. Not applicable. Refer to the usual adult dose.			
	Paediatric			
	1. The safety and efficacy of topical Adapalene in paediatric patients below 12 years old have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			

	NA			
Side Effects and their Management*	Skin dryness, erythema, scaling, stinging/burning May use gentle moisturizers not containing alpha hydroxy or glycolic acids to relieve dry skin. Caution should be exercised when using products containing sulfur, resorcinol, salicylic acid, preparations that may dry/irritate the skin such as those with astringents, spices and with high concentration of alcohol.			
Storage*	Store at room temperature below 30°C			
Others	Should not be applied to cuts, abrasions, eczematous or sunburned skin. Avoid excessive exposure to sunlight and sunlamps. Wear sunscreen and protective clothing over treated areas when sun exposure cannot be avoided. Avoid extreme weather such as wind and cold.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Formulari Ubat Kementerian Kesihatan Malaysia Bil 2/2024.
2. Differin (adapalene) Gel Label. (2018). Topical preparations counseling guide for pharmacists (1st ed.). Retrieved November 11, 2024, from https://www.accessdata.fda.gov
3. T3 Ada Gel 0.1% Product Insert. (2019). Revision date: October 2019.
4. Tolaymat, L., Dearborn, H., & Zito, P. M. (2023, June 26). Adapalene. In StatPearls [Internet]. StatPearls Publishing. Available from https://www.ncbi.nlm.nih.gov/books/NBK482509/

Amiodarone

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiarrhythmic agent, Class III C01BD01			
Indications and Dosage	1. Arrhythmias Loading dose: 400mg every 8 to 24 hours for a total loading dose of 6 to 10g (total of intravenous and oral doses), then change to a maintenance dose. Maintenance dose: 100 to 200mg once daily			
Method of Administration*	1. May be taken with or without food. 2. Take with meals if high dose or to reduce GI discomfort. 3. Swallow whole with sufficient amount of water **Missed dose management**: Take a missed dose as soon as remembered. If it is close to the time for the next dose,skip and go back to normal time. Do not take 2 doses at the same time **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	May cause fetal harm (including neonatal bradycardia, QT prolongation, and periodic ventricular extrasystoles; neonatal hypothyroidism and hyperthyroxinemia) when administered to pregnant women. Amiodarone should only be used in pregnancy when other treatments are contraindicated.			
	Breastfeeding			
	Breast feeding could expose nursing infants to significant doses of the drug; risk of exposing infants to amiodarone must be weighed against potential benefit of arrhythmia suppression in mother. There are cases of hypothyroidism and bradycardia in breastfed infants			
	Elderly			
	MALPIP: May increase the risk of bradycardia, orthostatic hypotension, urinary retention, and falls. Examine drug-drug interactions. Tailor regimen according to the patient's physiology and medication profile. Routine blood test and ECG warranted. Beers Criteria: Avoid as first line therapy for atrial fibrillation unless the patient has heart failure or substantial left ventricular hypertrophy. Initial dose selection should be at the low end of dosage range, and titration should be slower to evaluate response. A maintenance dose of 100mg daily is commonly used, especially for elderly patients with low body mass.			

	Paediatric			
	Given its extensive side effect profile, amiodarone is typically used in refractory cases.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	1. Renal impairment: No dosage adjustment necessary 2. Hepatic impairment If hepatic enzymes exceed three times normal or double in a patient with an elevated baseline, consider decreasing the dose or discontinuing amiodarone			
Side Effects and their Management*	1. Endocrine disorders: Hypothyroidism or hyperthyroidism 2. Nervous system disorders: Extrapyramidal tremors, nightmare, dyssomia, sensory, motor and mixed peripheral neuropathy 3. Eye disorders: Cornea verticillate 4. Cardiac disorders: Bradycardia 5. Respiratory: Hypersensitivity pneumonitis (result of pulmonary toxicity of amiodarone) 6. Gastrointestinal disorders: Nausea, vomiting, taste disturbance at the beginning of treatment 7. Hepatobiliary disorders: Isolated elevation of serum transaminases at the beginning of therapy (1.5 to 3 fold the normal value). Value normalizes spontaneously or with dose reduction. 8. Skin and subcutaneous tissue disorders: Photosensitisation with increased tendency to sunburn, Eczema.			
Storage*	Do not store above 30^0C			
Others	**Precautions** Use with caution in patients with underlying thyroid disorder, hepatic impairment, cardiac disorder (bradycardia), skin disorders (eczema) **Special monitoring parameters** Thyroid levels, liver function test, heart rate **Significant drug-drug / drug-food interactions (if applicable)** 1. Avoid using with medications that induces torsade de pointes and prolongs QT interval (fluroquinolones) 2. Use with caution with medications that may induce hypokalemia (diuretics, systemic corticosteroids, intravenous amphotericin) 3. Raises plasma concentration of Warfarin and Phenytoin through inhibition of CYP2C9 4. Raises plasma levels of Flecainide thorough inhibition of CY2D6 **Significant drug-food interactions** 1. Grapefruit increases plasma concentration of amiodarone by inhibition of CYP3A4			

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Remarks:

Reviewed by: Name & Signature **Date:**

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Amitriptyline

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Tricyclic antidepressant (TCA)**			
Indications and Dosage	Depression: Adult: 25-150 mg/day in divided doses (max: 300mg/day) Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	May be taken with or without food **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	May be used if other agents are ineffective or contraindicated, considering the risks and benefits of use.			
	Breastfeeding			
	1. Very small amounts of amitriptyline can be detected in the plasma of infants. 2. Infants exposed to amitriptyline via breast milk for adverse effects (eg, over sedation, poor feeding)			
	Elderly			
	Beers Criteria: 1. **Avoid.**TCAs increase the risk of orthostatic hypotension (OH). Avoid TCAs in elderly whose syncope may be due to OH. 2. TCAs are highly anticholinergic and sedating, which may increase the risk of cognitive impairment, delirium, falls, fractures in older adults. 3. Use with caution, may exacerbate or cause SIADH or hyponatremia; monitor sodium levels closely when starting or changing dosages in older adults. 4. Avoid concomitant use of 3 or more CNS active agents in any combination due to increased risk of falls and fracture. STOPP/Start Criteria: 1. Avoid initiation of TCA as first-line treatment for major depression (higher risk of adverse drug reactions with TCA than with SSRIs or SNRIs). 2. Avoid TCA in patients with dementia, narrow angle glaucoma, cardiac conduction abnormalities, prostatism, chronic constipation, recent falls, prior history of urinary retention or orthostatic hypotension (risk of worsening these conditions).			
	Paediatric			
	1. Safety and efficacy of Amitriptyline in pediatrics patients below 12 years of age have not been			

	established.			
	Renal Impairment			
	1. Dose adjustments may be required in pre-existing or newly developed renal or hepatic impairment. Please contact your prescriber. 2. Monitor patient for urinary retention, confusion, sedation and postural hypotension			
	Hepatic Impairment			
	1. Liver impairment may lead to increased drug exposure and may cause increased propensity to cause side effects such as sedation and constipation. Inform your prescriber if you have increased or intolerable side effects.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **Kindly refer to the latest advisory by religious authority**			
Side Effects and their Management*	1. Anticholinergic: a. Blurred vision, constipation, urinary retention and dry mouth b. Constipation can be managed by physical activity, fluid and fibre intake or laxatives. 2. Gastrointestinal: a. Nausea & vomiting: consider taking doses with food b. Heartburn, anorexia, diarrhea, abdominal discomfort such as gastric or bloatedness c. Weight Gain: advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise. 3. Neurologic: a. Anxiety: Contact your prescriber if intolerable b. Headache, dizziness, fatigue, weakness, insomnia, agitation, nervousness, restlessness. May require dosage adjustment. Inform prescriber at next appointment c. Sedation: Avoid activity requiring mental alertness or coordination. Do not drink alcohol during treatment with this medicine as it might increase the sedative effect. Do not drive or work with tools or machinery if affected 4. Sexual dysfunction: impotence, change in libido a. Inform your prescriber at next appointment 5. Cardiac: a. Increase heart rate, prolong QT interval, slows cardiac conduction b. Postural hypotension: Rise slowly when getting up or from lying down. ● Most side effects are immediate but often go away with time. ● It may take a few weeks before the patient feels any improvement. Therefore, advise patients not to change the dose of the medicine or stop taking the medicine without consulting the doctor first. ● Instruct patient to immediately report worsening depression, suicidal ideation, especially at initiation of			

	therapy (children and adolescents are at higher risk for these effects during the first few months of therapy).			
Storage*	Store at temperatures below 30°C			
Others	**1. Significant Pharmacodynamic Interactions** a. Risk of life-threatening Serotonin syndrome when SSRIs co-prescribed with serotonergic drugs. (e.g. tramadol, ondansetron, sumatriptan, MAOI) **Signs and Symptoms** i. Mild: Insomnia, anxiety, nausea, diarrhea, hypertension, tachycardia, hyper-reflexia ii. Moderate:Agitation, myoclonus, tremor, mydriasis, flushing, diaphoresis, low fever (<38.5°C) iii. Severe: Severe hyperthermia, confusion,rigidity, respiratory failure, coma, death **Management:** Seek immediate medical attention if you experience any of the symptoms mentioned above. b. Increase risk of upper GI bleeding if SSRIs are used together with Aspirin and NSAID due to inhibition of platelet aggregation. Watch out for black or tarry stools, easily bleeding gums or spontaneous bruises c. Risk of hyponatremia especially if SSRIs are used with drugs such as diuretics. **2. Discontinuation Syndrome** a. TCA should not be stopped abruptly as this may cause discontinuation/ withdrawal symptoms. The symptoms are usually mild and selflimiting, but can occasionally be severe and prolonged. b. The patients must inform prescribers if they wish to change or stop medications			

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Amlodipine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Dihydropyridine Calcium Antagonist - Antihypertensive			
Indications and Dosage	Hypertension Initial 5mg OD, may titrate to maximum dose 10mg OD			
Method of Administration*	Amlodipine can be taken with or without food and at any time of the day, try to make sure it's around the same time every day. Swallow amlodipine tablets whole. In general, amlodipine tablets may be cut or crushed. **Missed dose management:** If a dose of amlodipine is not taken at the scheduled time, the dose should be taken as soon as possible on the same day. If the dose was missed for the whole day, skip the missed dose and take the usual dose the next day at the usual time. Never take 2 doses at once to make up for a forgotten one. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Limited data. No evidence of teratogenicity or other embryo/fetal toxicity was found in animal studies. 2. Amlodipine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus			
	Breastfeeding			
	1. No data available. It is recommended nursing be discontinued while on amlodipine			
	Elderly			
	MALPIP Increased risk of ankle oedema, to consider dosage adjustment, switching CCB or switching to other classes if necessary.			
	Paediatric			
	1. Limited data available for children <6 years old.			
	Fasting			
	1. Not applicable			
	Others			
	1. Amlodipine may be used in patients with renal impairment at normal doses. Amlodipine is not dialyzable. 2. Amlodipine half-life is prolonged in patients with			

	impaired liver function and dosage recommendations have not been established, thus amlodipine should be administered with caution in these patients			
Side Effects and their Management*	1. Most common side effects include: a. Flushing b. Fatigue c. Edema d. Dizziness,headache e. Abdominal pain,nausea f. Palpitation g. Somnolence 2. If pedal edema occurs, may consider to elevate feet using a stool or pillow, and avoid prolonged sitting or standing			
Storage*	Store below 30^0C			
Others	Monitor blood pressure and heart rate periodically, as advised.			

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References:

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Amorolfine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Topical Antifungal			
Indications and Dosage	Fungal nail infections (onychomycosis): Use 1 or 2 applications weekly. Treat fingernails for 6 months, toenails for 9-12 months (review at interval of 3 months). **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	i. Before the first application, file down the infected areas of the nail, including the nail surface, as much as possible using the nail file provided. **CAUTION:** Do not use nail files used for infected nails on healthy nails, otherwise you may spread the infection. ii. Use one of the swabs provided to clean the nail surface. Repeat steps 1 and 2 for each affected nail. iii. Dip the applicator into the bottle of nail lacquer. The lacquer must not be wiped off on the edge of the bottle before it is applied. iv. Apply the nail lacquer evenly over the entire surface of the nail. Repeat steps 3 and 4 for each affected nail. v. Let the treated nail(s) dry for approximately 3 minutes. Wait at least 10 minutes before applying cosmetic nail varnish. vi. The applicator provided is re-usable. However, it is important to clean it thoroughly after completing each treatment procedure, using the same swab you used for nail cleansing. Avoid touching newly treated nails with the swab. Close the nail lacquer bottle tightly. Dispose of the swab carefully as it is inflammable. **REMINDER:** a) Before using this again, first remove the old lacquer and any nail varnish from your nails using a swab, then file down the nails again if necessary. b) Re-apply the lacquer as described above. c) When dried, the nail lacquer is unaffected by soap and water, so you may wash your hands and feet as normal. When working with organic solvents (thinners or white spirit), wear impermeable (waterproof) gloves to protect the lacquer on your fingernails. d) It is important to continue the treatment without interruption until the nail is regenerated and the affected areas are cured. In general, this usually takes 6 months for finger nails and 9 to 12 months for toe nails. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	No clinical experience exists with pregnancy, its use should be avoided.			

	Breastfeeding			
	No clinical experience exists with nursing, its use should be avoided.			
	Elderly			
	None specifically to those products.			
	Paediatric			
	The safety and efficacy of Amorolfine Nail Lacquer in paediatric patients below age 18 have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	1. Burning sensation and contact dermatitis may occur 2. Nail disorders (eg. nail discolouration, brittle or broken nails) have been reported in rare cases. However, these reactions can also be linked to the onychomycosis itself.			
Storage*	1. Store in a cool dry place below 30 degrees Celsius. 2. Protect from light and heat. 3. Keep out of reach of children.			
Others	Nail files for affected nails must not be reused on healthy nails. Use of cosmetic lacquer or artificial nails should be avoided during the treatment. Avoid contact with the eyes, ears and mucous membranes. The lacquer should not be applied on the skin around the nail.			

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References:

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Anticholinesterases / N-methyl-D-aspartate (NMDA) Receptor Antagonist

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Anticholinesterases** Donepezil Rivastigmine **NMDA receptor antagonist** Memantine			
Indications and Dosage	1. Donepezil a. Dementia in Alzheimer's disease: Tablet & Orodispersible tablet: 5-10mg/day (as single daily dose) 2. Rivastigmine Oral & patch: a. Dementia in Alzheimer's disease & Dementia associated with Parkinson's disease: b. Oral: Initial dose 1.5 mg BD, increased every two weeks to 6-12mg/day (in 2 divided doses) c. Transdermal patch: Initial: 4.6mg/24 hours daily, then increased after 4 weeks to 9.6mg/24hours -13.3mg/24hours (applied once daily) 1. Memantine d. Moderate to severe Alzheimer's disease. Oral:Initial 5mg/day, then increased at weekly intervals to maximum of 20mg/day (in 1 or 2 divided doses) *Used to slow down the progression of the disease & manage symptoms but NOT cure or reverse the condition Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Donepezil:** 1. Tablet: May be taken with or without food 2. Orodispersible Tablet: a. Tablet should be taken orally immediately after removal b. Placed the tablet on the tongue and allowed it to disintegrate before swallowing with or without water **Rivastigmine:** 1. Capsule/ Oral Solution: May be taken with or without food 2. Transdermal Patch: Steps to apply patch a. Open the pouch only when you are ready to apply the patch b. Cut the pouch carefully along the dotted line. Not to cut the patch inside. Then, remove the patch from the pouch c. Bend the patch slightly to raise the edge of one half of the release liner covering the			

	patch. Then, peel off that side of the liner and avoid touching the sticky part of the patch d. Patch should be applied once a day to clean, dry, hairless skin with no cuts or sores. e. Put the sticky side of the patch on the skin (on the upper or lower back, upper arm or chest) in a place which not be rubbed by tight clothing f. Peel off the second side of the release liner and firmly press down on the patch g. The previous day's patch must be removed before applying a new one h. The patch should be replaced by a new one after 24 hours. Only ONE patch should be worn at a time i. The patch should not be applied to skin that is red, irritated or cut. It is recommended to change the application site daily (not using the same spot for at least 14 days) to avoid potential irritation j. If the patch falls off, a new patch should be applied to the same site for the rest of the 24 hours, and it should be replaced at the same time as usual the next day k. The patch can be used in everyday situations, including bathing and during hot weather l. The patch should not be exposed to any external heat sources (e.g. Excessive sunlight, saunas) for long periods of time m. The patch should not be cut into pieces Steps to remove patch e. Gently pull at one edge of the patch to remove it slowly from the skin. Fold the used patch in half (with the sticky sides together). In case the adhesive residue is left over on your skin, gently soak the area with warm water and mild soap or use baby oil to remove it. Alcohol or other dissolving liquids (nail polish remover or other solvents) should not be used f. Wash your hands with soap and water after removing the patch. In case of contact with eyes or if the eyes become red after handling the patch, rinse immediately with plenty of water and seek medical advice if symptoms do not resolve **Memantine:** 1. Tablet: May be taken with or without food. **Missed dose management:** 1. Take the missed dose as soon as you remember. If it's nearly time for your next dose, skip the missed one and take only the next dose. Do not take two doses at once. 2. Rivastigmine patch a. If you miss more than 3 doses of applying rivastigmine patch, contact the prescriber before putting on a new patch. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			

	Should not be used during pregnancy			
	Breastfeeding			
	Women taking these medications should not breast-feed.			
	Elderly			
	Beers Criteria: For anticholinesterase (Donepezil, Rivastigmine): 1) Avoid use in older adults with syncope as it may increase the risk of bradycardia. 2) ECG must be performed at baseline and post initiation of the drug. To suggest regular monitoring of BP/HR at home. STOPP/START Criteria: 1) Acetylcholinesterase inhibitors with a known history of persistent bradycardia (< 60 beats/min.), heart block or recurrent unexplained syncope (risk of cardiac conduction failure, syncope and injury). 2) Acetylcholinesterase inhibitors with concurrent treatment with drugs that induce persistent bradycardia (< 60 beats/min.) such as beta-blockers, digoxin, diltiazem, verapamil (risk of cardiac conduction failure, syncope and injury). 3) Memantine with known current or previous seizure disorder (increased risk of seizures).			
	Paediatric			
	1. The safety and efficacy of Rivastigmine in pediatric patients have not been established. 2. The safety and efficacy of Memantine and Donepezil in pediatric patients younger than 6 years of age have not been established. 3. The safety and efficacy of extended-release Memantine and Donepezil in pediatric patients have not been established.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **Kindly refer to the latest advisory by religious authority**			
	Renal Impairment			
	Anticholinesterase (Donepezil & Rivastigmine) 1. Dose adjustment not necessary; titrate to point of tolerability **NMDA receptor antagonist (Memantine)** 1. No dose adjustment required in mild or moderate impairment 2. If CrClr <30ml/min, dose should not exceed 10mg/day			
	Hepatic Impairment			
	Anticholinesterase (Donepezil & Rivastigmine) 1. Mild to moderate: Dose adjustment not necessary 2. Severe: Caution should be exercised. **NMDA receptor antagonist (Memantine)** 1. Does not require dose adjustment			
	Cardiac Impairment			

	Anticholinesterase (Donepezil & Rivastigmine) 1. Should be used with caution 2. Syncopal episodes have been reported **NMDA receptor antagonist (Memantine)** 1. Not likely to require dosage adjustment			
Side Effects and their Management*	**Anticholinesterase (Donepezil & Rivastigmine)** 1. Nausea, diarrhea, vomiting, appetite loss, increased gastric acid secretion, weight loss (take with meals to reduce GI effects), insomnia, headache, dizziness, fatigue, abnormal dreams 2. Rivastigmine patch: application site reactions with transdermal patch.(other s/e may differ from capsule formulation) **NMDA receptor antagonist (Memantine)** 1. Dizziness, headache (take before sleep to lower the side effects) 2. Constipation (ensure adequate hydration and increase fibre intake)			
Storage*	Store at a temperature below 30°C. Keep rivastigmine patch and orodispersible donepezil sealed until ready to use.			

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Antipsychotics, First Generation

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**First Generation Antipsychotics** Chlorpromazine Haloperidol Perphenazine Trifluoperazine Sulpiride			
Indications and Dosage	Indication: Treatment of psychotic disorders Dosage: 1. Chlorpromazine: 25 – 50 mg BD/TDS, up to 100 mg BD/TDS 2. Haloperidol tablet: 0.5 – 2 mg BD/TDS up to 5 mg TDS (doses >30 mg/day are not recommended) 3. Perphenazine: 4 mg TDS (max 24 mg/day) 4. Trifluoperazine: 5mg BD (max 40mg/day) 5. Sulpiride: 200 – 1000 mg/day (max 2.4g/day) Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. May be taken with or without food 2. Trifluoperazine: do not take within 2 hours of any antacids 3. Chlorpromazine: brown precipitate may occur when chlorpromazine is mixed with caffeine-containing liquids. **Do not stop taking your medication abruptly unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	Risk of treatment to the child must be weighed against the risk of no treatment to the mother and child. Inform your doctor if you are planning for pregnancy or become pregnant while taking antipsychotics.			
	Breastfeeding			
	1. Lactating mother are advised not to breastfeed while on treatment.For those who do not wish to continue lactating, formula milk supplementation should be offered to the infants			
	Elderly			

	Beers Criteria: 1) Use in caution for approved FDA indications such as schizophrenia, bipolar disorder, Parkinson disease psychosis. **Avoid use** as adjunctive treatment of major depressive disorder, or for short-term use as antiemetic. 2) Increased risk of stroke and greater rate of cognitive decline and mortality in persons with dementia. Additional evidence suggests association of increased risk between antipsychotic medication and mortality independent of dementia. **Avoid** antipsychotics for behavioral problems of dementia or delirium unless documented nonpharmacologic options (e.g., behavioral interventions) have failed and/or the patient is threatening substantial harm to self or others. In these circumstances, periodic deprescribing attempts should be considered to assess ongoing need and/or lowest effective dose. STOPP/Start Criteria: 1) Antipsychotics (i.e., other than clozapine or quetiapine) in those with parkinsonism or Dementia with Lewy Bodies (risk of severe extra-pyramidal symptoms). 2) Antipsychotics prescribed for behavioural and psychological symptoms of dementia (BPSD) an unchanged dose for > 3 months without medication review (increased risk of extrapyramidal side-effects and chronic worsening of cognition, increased risk of major cardiovascular morbidity and mortality). 3) Antipsychotics in patients with behavioural and psychological symptoms of dementia (BPSD) for longer than 12 weeks unless BPSD symptoms are severe and other nonpharmacological treatments have failed (increased risk of stroke, myocardial infarction). 4) Antipsychotics with moderate-marked antimuscarinic/anticholinergic effects (acepromazine, chlorpromazine, clozapine, flupenthixol, fluphenzine, levomepromazine, olanzapine, pipothiazine, promazine, thioridazine) with a history of lower urinary tract symptoms associated with benign prostatic hyperplasia or previous urinary retention (high risk of urinary retention). 5) Antipsychotics as hypnotics, unless sleep disorder is due to psychosis or BPSD effects of dementia (not recommended in summary of product characteristics; increased risk of confusion, hypotension, extra-pyramidal side effects, falls). 6) Antipsychotics with dysphagia (increased risk of aspiration pneumonia) 7) Antipsychotic drugs in patients with recurrent falls (may cause Parkinsonism).			
	Paediatrics			
	1) Chlorpromazine: The safety and efficacy in pediatric patients younger than 6 months of age have not been established 2) Haloperidol: The safety and efficacy in pediatric patients younger than 3 years of age have not been established 3) Perphenazine: The safety and efficacy in pediatric patients younger than 12 years of age have not been established			

	4) Trifluoperazine: The safety and efficacy in pediatric patients younger than 6 years of age have not been established 5) Sulpiride: Clinical experience in children under 14 years of age is insufficient to permit specific recommendations.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Renal Impairment			
	1. Watch for signs of kidney problems, like reduced urination, swelling in your hands or feet, feeling very tired, shortness of breath, or changes in your blood pressure. If you notice these symptoms, contact your prescriber immediately 2. No agent clearly preferred to another; however, in general a. avoid sulpiride and amisulpride b. avoid highly anticholinergic agents because they can contribute to urinary retention c. May consider haloperidol 2-6 mg a day			
	Hepatic Impairment			
	1. Watch out for signs of liver problems such as yellowing of your skin or eyes, dark urine, severe tiredness, nausea, or pain on the right side of your abdomen. If you notice any of these symptoms, contact your prescriber immediately 2. In general: Sulpiride: no dosage reduction required if renal function is normal Paliperidone: if depot required			
Side Effects and their Management*	Common adverse drugs reactions are as below: ● **Extrapyramidal side effects** Inform your prescriber if you have symptoms like tremor, rigidity, reduced arm swing, drooling of saliva, slurred speech, uprolling eyeball (oculogyric crisis) ● **Tachycardia (palpitation)** – Contact your prescriber if intolerable. ● **Weight gain and metabolic syndrome** – advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise. ● **Postural hypotension (dizziness)** – change of position should be done slowly and gradually and any sudden change of position should be avoided. ● **Anticholinergic effects such as constipation, dry mouth, blurred vision or urinary retention** Staying well-hydrated, taking a high-fiber diet and being physically active may help with constipation. Immediately contact prescriber if unable to pass flatus or if there is abdominal pain ● **Drowsiness and lethargy**: usually occur only during the initial stage of medication therapy. Avoid activity requiring mental alertness or coordination. Do not drink alcohol during treatment with this medicine as it might increase the sedative effect. Do not drive or			

	work with tools or machinery if affected. Inform prescriber at next appointment ● **Sexual dysfunction**: inform physicians/pharmacists if you experience problems with libido and arousal ● **Hyperprolactinemia**: female patients may experience menstrual disturbance or excessive production of breast milk despite not breastfeeding, whereas male patients may experience growth of breast tissue. Inform physicians/pharmacists if it occurs. ● **Sun-sensitivity**: advise patients to use sunscreen and avoid excessive exposure to sunlight			
Storage*	Store at a temperature below 30°C.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation/peer review**

References :

1. Babu, G. N., Desai, G., & Chandra, P. S. (2015). Antipsychotics in pregnancy and lactation. Indian journal of psychiatry, 57(Suppl 2), S303–S307. https://doi.org/10.4103/0019-5545.161497
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9. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. *Journal of the American Geriatrics Society*, *71*(7), 2052-2081.
10. O'Mahony, D., Cherubini, A., Guiteras, A. R., Denkinger, M., Beuscart, J. B., Onder, G., ... & Curtin, D. (2023). STOPP/START criteria for potentially inappropriate prescribing in older people: version 3. *European geriatric medicine*, *14*(4), 625-632.

Antipsychotics, Injectables

<table>
<tr><td colspan="2">Name :</td><td colspan="3">Unit :</td></tr>
<tr><td colspan="2">● Please tick (✔) Yes for correct instruction.
● Please tick (✔) No for incorrect instruction.</td><td>Yes</td><td>No</td><td>Remarks</td></tr>
<tr><td>Pharmacological Group</td><td>First Generation Antipsychotics
Flupentixol
Fluphenazine
Zuclopenthixol

Second Generation Antipsychotics
Aripiprazole
Paliperidone</td><td></td><td></td><td></td></tr>
<tr><td>Indications and Dosage</td><td>Indication:
Maintenance treatment of schizophrenia

Dosage:

<u>First Generation Antipsychotics</u>
<table>
<tr><th>Drug</th><th>Dose</th><th>Dosing Interval</th></tr>
<tr><td>Flupentixol Decanoate</td><td>50mg - 400mg</td><td>2-4 weeks</td></tr>
<tr><td>Fluphenazine Decanoate</td><td>12.5mg - 100mg</td><td>2-5 weeks</td></tr>
<tr><td>Zuclopenthixol Decanoate</td><td>200 - 600mg</td><td>1-4 weeks</td></tr>
</table>
<u>Second Generation Antipsychotics</u>
<table>
<tr><th>Drug</th><th>Dose</th><th>Dosing Interval</th></tr>
<tr><td>Aripiprazole LAI</td><td>300 - 400mg</td><td>Every month</td></tr>
<tr><td>Paliperidone Palmitate LAI 1-month</td><td>50-150mg</td><td>Every month</td></tr>
<tr><td>Paliperidone Palmitate LAI 3-month</td><td>175 – 525mg</td><td>Every 3 months</td></tr>
</table>
Or

To counsel based on specific medication’s indication and dosage as prescribed by the doctor</td><td></td><td></td><td></td></tr>
<tr><td>Method of Administration*</td><td>Test dose and Injection Site

<u>First Generation Antipsychotics</u>
<table>
<tr><th>Drug</th><th>Test Dose</th><th>Injection Site</th></tr>
<tr><td>Fluphenazine Decanoate</td><td>12.5mg*</td><td>Gluteal region</td></tr>
<tr><td>Flupenthixol</td><td>20mg*</td><td>Gluteal region</td></tr>
</table></td><td></td><td></td><td></td></tr>
</table>

	Decanoate				
	Zuclopenthixol Decanoate	100mg*	Gluteal region, Lateral thigh		

*balance of the doses should be given 7 days after the initial dose (may be between 4 - 7 days for certain products)

Second Generation Antipsychotics
Do not require a test dose but tolerability and response to oral preparation should be established before administering the injections.

Drug	**Test Dose**	**Injection Site**
Aripiprazole LAI	Tolerability to the oral preparation should be established first.	Deltoid or gluteal
Paliperidone Palmitate LAI 1-month		First and second initiation doses are administered in the deltoid muscle. Following monthly maintenance doses can be administered in either the deltoid or gluteal muscle.
Paliperidone Palmitate LAI 3-month	After 4 months treatment with Paliperidone Palmitate LAI 1-month. The last 2 doses of Paliperidone Palmitate LAI 1-month must be the same dosage strength before starting Paliperidone Palmitate LAI 3-month in order to establish a consistent maintenance dose.	

Missed dose management:

If a dose is missed, ask the patient to contact the healthcare provider right away to discuss what should be done next.

Do not stop taking your medication unless advised to do so by your prescriber.

Special Considerations	**Pregnancy**			
	Use of LAI during pregnancy should be avoided in order to limit the duration of any possible toxic effect to the foetus.			
	Breastfeeding			
	All antipsychotics that have been studied to date cross the placenta, are present in amniotic fluid and excreted in breast milk. Decisions about breastfeeding on exposure to antipsychotics in infants and associated benefits and harms should be discussed with all women. For those who do not wish to continue lactating, formula milk supplementation should be offered to the infants.			

	Elderly			
	All LAIs are not licensed for the treatment of dementia-related psychosis or behavioural disturbances. Parenteral haloperidol has been listed in Malaysian Society of Geriatric Medicines position statement as one of the options **in an emergency**, when oral medication is refused. Haloperidol carries the same risk as the other antipsychotic. Used in elderly have been associated with an increased risk of cardiovascular events and stroke in elderly with dementia. Use is associated with fall risk. To advise on fall precautions.			
	Paediatric			
	SAIs are only used in an acute state for a short term. All LAIs are not indicated for children and adolescents. If use is required, to monitor side effects.			
	Fasting			
	Not applicable			
Side Effects and their Management*	1. Side effects for LAIs are the same or less when compared with oral medications (e.g. EPS, anticholinergic effects), except injection site reactions such as pain, oedema, pruritus and sometimes a palpable mass. The physical discomfort of regular injections can also be reduced by alternating the injection site each time.			
Storage*	Not applicable. Not intended to be kept by patient			
Others	**1. Advantages and Disadvantages** These drugs are administered via deep intramuscular injection and are gradually released from the injection site, resulting in relatively stable plasma drug levels over extended periods, allowing the injections to be given every few weeks. Advantages of LAI: 1. Given once a week to once a month, compared to oral medication, which must be taken every day. 2. Reduced likelihood of forgetting to take the medication, which consequently decreases the risk of becoming ill Disadvantages of LAI 1. Some people feel uncomfortable about having injections, such as anxiety about needles. 2. Some people experience pain from the injection which can last for a few days but this is usually mild. **2. Dosing window** Advise patients not to miss doses. If necessary, patients may receive injection: 1. Aripiprazole: No sooner than 26 days after the previous injection. The injection should be administered as soon as possible within 7 days of the monthly time point. 2. Paliperidone Palmitate LAI 1-month:			

	The second initiation dose can be administered up to 4 days before or after the 1-week time point. Monthly maintenance dose can be administered up to 7 days before or after the monthly time point. 3. Paliperidone Palmitate LAI 3-month: Up to 2 weeks before or after the 3-month time point.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Lundbeck Canada. (2020) Product Information Leaflet: PrCLOPIXOL® DEPOT (200 mg/mL Zuclopenthixol Intramuscular Injection). Retrieved from Quest 3+ Search on January 21, 2025
2. Janssen Pharmaceuticals, Inc. (2024).Product Information Leaflet: INVEGA SUSTENNA® (paliperidone palmitate) extended-release injectable suspension. Retrieved from Quest 3+ Search on January 21, 2025
3. Otsuka Pharmaceutical Co.(2020). Product Information Leaflet: ABILIFY MAINTENA® (aripiprazole) for extended-release injectable suspension, for intramuscular use. Retrieved from Quest 3+ Search on January 21, 2025
4. Janssen Pharmaceuticals, Inc.(2024).Product Information Leaflet: INVEGA TRINZA® (paliperidone palmitate)extended-release injectable suspension. Retrieved from Quest 3+ Search on January 21, 2025
5. Ahmad S.N.A. et. al. CPG Management of Schizophrenia (Second Edition, 2021). Accessed on January 21, 2025. Available from: CPG Management of Schizophrenia (Second Edition) v20221219.pdf
6. National Institute for Health and Care Excellence. (2021). Psychosis and schizophrenia in adults. Treatment and management.
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9. Taylor, D., Barnes, T. R. E., & Young, A. H. (2021). The Maudsley prescribing guidelines in psychiatry (14th ed.). Wiley-Blackwell.
10. Malaysian Society of Geriatric Medicine Position Statement on Delirium. (2017).

Antipsychotics, Second Generation

<table>
<tr><td colspan="2">Name :</td><td colspan="3">Unit :</td></tr>
<tr><td colspan="2">• Please tick (✔) Yes for correct instruction.
• Please tick (✔) No for incorrect instruction.</td><td>Yes</td><td>No</td><td>Remarks</td></tr>
<tr><td>Pharmacological Group</td><td>Second Generation Antipsychotics
Amisulpride
Aripiprazole
Asenapine
Olanzapine
Paliperidone
Quetiapine
Risperidone</td><td></td><td></td><td></td></tr>
<tr><td>Indications and Dosage</td><td>Indication: Treatment of psychotic disorder.
Dosage:
1. Amisulpride: 300-600 mg /day in 2 divided doses (max 1200 mg/day)
2. Aripiprazole: 10-15mg /day as single daily dose (max 30 mg/day)
3. Asenapine: 5-10mg /day in 2 divided doses (max 20 mg/day)
4. Clozapine: max 900 mg/day (refer to clozapine section)
5. Olanzapine: 5-20mg / day as single daily dose (max 20 mg/day)
6. Paliperidone: 3-6 mg /day as single daily dose (max 12 mg/day)
7. Quetiapine: 300-600 mg /day (IR in divided does; XR as single daily dose) (max 800 mg/day)
8. Risperidone: 2mg- 8mg /day in single or divided doses (max 16 mg/day)

Or

To counsel based on specific medication’s indication and dosage as prescribed by the doctor</td><td></td><td></td><td></td></tr>
<tr><td>Method of Administration*</td><td>
<table>
<tr><th>Drugs/ Formulation</th><th>Special Counselling</th></tr>
<tr><td>Amisulpride Tablet</td><td>1. It must be swallowed whole tablets with the aid of liquids before meals.</td></tr>
<tr><td>Aripiprazole Tablet</td><td>1. To be taken in the morning before or after
as sedation is unusual, and to prevent sleeping difficulty as it can cause akathisia and activation.</td></tr>
<tr><td>Asenapine Sublingual Tablet</td><td>1. Place the whole tablet under the tongue and allow it to dissolve completely; do not split, crush, chew, or swallow the tablet.
2. Do not eat or drink for 10 minutes after administration as it can reduce the absorption of drugs.
3. Do not remove the tablet from the original package until ready to administer.</td></tr>
</table>
</td><td></td><td></td><td></td></tr>
</table>

	<table><tr><td>Clozapine Tablet</td><td>Refer Clozapine section</td></tr><tr><td>Olanzapine Tablet / Orodispersible Tablet</td><td>1. It must be swallowed whole with the aid of liquids before or after a meal. 2. Orosdispersible tablet should be placed in the mouth, where it will rapidly disperse in saliva, so it can be easily swallowed with or without liquid. Alternatively, it may be dispersed in a full glass of water or other suitable beverage (orange juice, apple juice, milk or coffee) immediately before administration. Do not remove the tablet from the original package until ready to administer.</td></tr><tr><td>Paliperidone Extended Release Tablet</td><td>1. To be taken in the morning before or after a meal. It must be swallowed whole with the aid of liquids, and must not be chewed, divided or crushed. 2. The medication is contained within a nonabsorbable shell designed to release the drug at a controlled rate. The tablet shell is eliminated from the body and the patient should not be concerned if it appears in the stool.</td></tr><tr><td>Quetiapine Immediate Release Tablet</td><td>1. It must be swallowed whole with the aid of liquids before a meal or with a light meal (≤300 calories).</td></tr><tr><td>Quetiapine Extended Release Tablet</td><td>1. It must be swallowed whole and not split, chewed or crushed before a meal or with a light meal (≤300 calories). 2. Preferably administered once daily, in the evening 3. Taking high fat or calorie meals with this medication should be avoided.</td></tr><tr><td>Risperidone Tablet/Syrup</td><td>1. It must be swallowed whole with the aid of liquids before or after meal. 2. It can be mixed with water or orange juice and consumed immediately. 3. Syrup is Incompatible with most types of cola and tea including black tea.</td></tr></table> **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. All APs that have been studied to date cross the placenta, are present in amniotic fluid and excreted in breast milk. Hence APs withdrawal can occur in newborns when they are used in the third trimester. The symptoms are crying, agitation, increased suckling, abnormal increase in tone, tremors, sleepiness, difficulty in feeding and breathing which alleviate within hours or days and do not require			

specific treatment. However the benefit of treatment for mothers and newborns superseded the harm of discontinuing APs and generally favours continuation of APs.

Breastfeeding

In general, a relative infant dose (RID) below 10% of the average maternal level of an antidepressant is considered safe.

Drug	Lactation Risk	RID (%)
Amisulpride	NA	4.7%-10.7%
Aripiprazole	NA	0.9-8.3%
Asenapine	NA	No published data
Olanzapine	L2	1.0-1.6%
Paliperidone	NA	No specific data. Refer risperidone
Quetiapine	L4	0.09-0.1%
Risperidone	L3	2.8-9.1%

American College of Obstetricians and Gynecologist lactation risk categories: L1=Safest, L2=Safer, L3=Moderately Safe, Possibly Hazardous, L5=Contraindicated.

Low RID value (Olanzapine, Quetiapine) and moderate RID values (Risperidone/Paliperidone, Aripiprazole) are more widely studied compared to other second-generation antipsychotics and they are considered relatively safe.

Breastfeeding is not recommended while on treatment with Clozapine. For those who do not wish to continue lactating, formula milk supplementation should be offered to the infants

Elderly

Beers Criteria:

1) All antipsychotics (including second generation) have increased risk of death in elderly patients with dementia-related psychosis. Start with a low dose and increase slowly.
2) **Avoid use** as adjunctive treatment of major depressive disorder, or for short-term use as antiemetic.
3) Use in caution for approved FDA indications such as schizophrenia, bipolar disorder, Parkinson disease psychosis.
4) **Avoid** in PD patients (except Clozapine and Quetiapine). Antipsychotics may precipitate the worsening of Parkinson disease.
5) Use is associated with fall risk. To advise on fall precautions. Strong anticholinergic properties which may be detrimental in older adults (e.g., ataxia, impaired psychomotor function, syncope, or additional falls).

STOPP/Start Criteria:

1) Antipsychotics (i.e., other than clozapine or quetiapine) in those with parkinsonism or Dementia with Lewy

	Bodies (risk of severe extra-pyramidal symptoms). 2) Antipsychotics prescribed for behavioural and psychological symptoms of dementia (BPSD) an unchanged dose for > 3 months without medication review (increased risk of extrapyramidal side-effects and chronic worsening of cognition, increased risk of major cardiovascular morbidity and mortality). 3) Antipsychotics in patients with behavioural and psychological symptoms of dementia (BPSD) for longer than 12 weeks unless BPSD symptoms are severe and other nonpharmacological treatments have failed (increased risk of stroke, myocardial infarction). 4) Antipsychotics with moderate-marked antimuscarinic/anticholinergic effects (acepromazine, chlorpromazine, clozapine, flupenthixol, fluphenzine, levomepromazine, olanzapine, pipothiazine, promazine, thioridazine) with a history of lower urinary tract symptoms associated with benign prostatic hyperplasia or previous urinary retention (high risk of urinary retention). 5) Antipsychotics as hypnotics, unless sleep disorder is due to psychosis or BPSD effects of dementia (not recommended in summary of product characteristics; increased risk of confusion, hypotension, extra-pyramidal side effects, falls). 6) Antipsychotics with dysphagia (increased risk of aspiration pneumonia) 7) Antipsychotic drugs in patients with recurrent falls (may cause Parkinsonism).			
	Paediatric 1) The safety and efficacy of Aripiprazole (Oral / Depot) in pediatric patients younger than 6 years of age have not been established. 2) The safety and efficacy of Asenapine (Oral) in pediatric patients have not been established. 3) The safety and efficacy of Clozapine (Oral) in pediatric patients have not been established. 4) The safety and efficacy of Olanzapine (Oral) in pediatric patients younger than 13 years of age have not been established. 5) The safety and efficacy of Paliperidone (Oral / Depot) in pediatric patients have not been established. 6) The safety and efficacy of Quetiapine(Oral) in pediatric patients younger than 10 years of age have not been established. 7) The safety and efficacy of Risperidone (Oral) in pediatric patients younger than 5 years of age have not been established.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Renal Impairment			
	1. Watch for signs of kidney problems, like reduced urination, swelling in your hands or feet, feeling very tired, shortness of breath, or changes in your blood pressure. If you notice these symptoms, contact your prescriber immediately 2. No agent clearly preferred to another; however, in general			

<table>
<tr><td></td><td>a. avoid sulpiride and amisulpride
b. avoid highly anticholinergic agents because they can contribute to urinary retention
c. May consider olanzapine 5mg a day</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Hepatic Impairment</td><td></td><td></td><td></td></tr>
<tr><td></td><td>1. Watch out for signs of liver problems such as yellowing of your skin or eyes, dark urine, severe tiredness, nausea, or pain on the right side of your abdomen. If you notice any of these symptoms, contact your prescriber immediately
2. In general:
Sulpiride/Amisulpride: no dosage reduction required if renal function is normal
Paliperidone: if depot required</td><td></td><td></td><td></td></tr>
<tr><td>Side Effects and their Management*</td><td>Side Effects
<table>
<tr><th>Drugs</th><th>High Incidence</th><th>Moderate Incidence</th><th>Low incidence</th></tr>
<tr><td>Amisulpride</td><td>Prolactin elevation</td><td>QT prolongation, constipation</td><td>Weight gain, akathisia, parkinsonism, tardive dyskinesia</td></tr>
<tr><td>Aripiprazole</td><td>-</td><td>-</td><td>Constipation, akathisia, tardive dyskinesia, QT prolongation</td></tr>
<tr><td>Asenapine</td><td>-</td><td>-</td><td>Constipation, sedation, weight gain, akathisia, tardive dyskinesia, QT prolongation, prolactin elevation</td></tr>
<tr><td>Clozapine</td><td colspan="3">Refer clozapine section</td></tr>
<tr><td>Olanzapine</td><td>Weight gain</td><td>Constipation, sedation,</td><td>Tardive dyskinesia, anticholinergic, hypotension, QT prolongation, prolactin elevation</td></tr>
<tr><td>Paliperidone</td><td>Prolactin elevation</td><td>Constipation, weight gain, hypotension</td><td>Sedation, akathisia, parkinsonism, tardive dyskinesia, anticholinergic, QT prolongation</td></tr>
</table></td><td></td><td></td><td></td></tr>
</table>

Quetiapine	-	Constipation, sedation, weight gain, hypotension, QT prolongation,	Tardive dyskinesia, anticholinergic
Risperidone	Prolactin elevation	Constipation, weight gain, akathisia, hypotension,	Sedation, parkinsonism, tardive dyskinesia, anticholinergic, QT prolongation

Side Effects and Management Strategies

Side Effects	**Onset**	**Management Strategies**
Constipation	First four months of AP administration	1. Ensure adequate fiber, fluid and exercise 2. May require additional medication, consult your prescriber 3. Immediately Contact prescriber if unable to pass flatus or if there is abdominal pain
EPS: Dystonia	Within hours to days of AP administration or dose increase	1. May require a change in dose of medication. Inform prescriber at next visit 2. Contact immediately if if you are having repeated uncontrolled movements, pain or severe muscle stiffness
EPS: Pseudoparkinsonism	Day to weeks after AP administration or dose increase	1. May require a change in dose of medication. Inform prescriber at next visit if you are having symptoms of tremor, rigidity, bradykinesia
Akathisia	Within hours to weeks of AP	1. May require a change in dose

	administration or dose increase	of medication. Inform your prescriber if you feel like you can't sit still or constantly need to move, such as pacing, tapping your feet, or shifting in your seat.
Tardive dyskinesia	After months to years of AP administration	1. May require a change in dose of medication. Inform prescriber at next visit if you are having repetitive movements, often around the face, mouth, or tongue, like lip smacking, blinking, or chewing motions.
Sedation	Within hours to days of AP administration	1. Avoid activity requiring mental alertness or coordination. 2. Do not drink alcohol during treatment with this medicine as it might increase the sedative effect. Do not drive or work with tools or machinery if affected. 3. Inform prescriber at next appointment. You may require a change in dose or medication.
Weight Gain	Within three months of AP administration	1. Advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise
Hyperprolactinaemia	Within hours to months of AP administration	1. May require a change in dose or medication. Inform doctor / pharmacist if any signs of irregular or no menses and galactorrhoea (milky nipple

<table>
<tr><td></td><td>
<table>
<tr><td></td><td></td><td>discharge) in women</td></tr>
<tr><td>Orthostatic hypotension</td><td>Within hours to days of AP administration or dose increase</td><td>1. Advice to patients, eg. sitting on the edge of the bed for several minutes before attempting to stand in the morning and slowly rising from a seated position</td></tr>
<tr><td>ECG changes - QT prolongation</td><td>After 2-4 weeks of AP administration</td><td>1. May be asymptomatic. However, immediately visit the prescriber if you have chest pain or discomfort.
2. You may have more frequent monitoring of heart (ECT) and salt levels in your blood</td></tr>
</table>
</td><td></td><td></td><td></td></tr>
<tr><td>Storage*</td><td>Store at a temperature below 30°C.</td><td></td><td></td><td></td></tr>
<tr><td>Others</td><td>Monitoring Parameters
<table>
<tr><th>Parameter / Test</th><th>Suggested Frequency</th><th>Drugs with precautions</th><th>Drugs which do not require monitoring</th></tr>
<tr><td>Blood Pressure</td><td>Baseline, during dose titration and dose changes</td><td>Clozapine and Quetiapine</td><td>Amisulpride, Aripiprazole</td></tr>
<tr><td>Weight (include waist size and BMI)</td><td>Baseline, frequently for three months then yearly</td><td>Clozapine, Olanzapine</td><td>Aripiprazole</td></tr>
<tr><td>Full blood count</td><td>Baseline and yearly</td><td>Clozapine</td><td>None</td></tr>
<tr><td>Plasma glucose</td><td>Baseline, at 4-6 month, then yearly</td><td>Clozapine, Olanzapine</td><td>All patients should be monitored.</td></tr>
<tr><td>Urea and electrolytes including creatinine</td><td>Baseline, at 4-6 month, then yearly</td><td>Amisulpride</td><td>None</td></tr>
</table>
</td><td></td><td></td><td></td></tr>
</table>

Blood lipids	Baseline, three months, then yearly	Clozapine, Olanzapine	All patients should be monitored.
Liver Function Test (LFT)	Baseline and yearly to detect chronic AP induced changes (rare)	Clozapine	Amisulpride
Prolactin	Baseline, then at 6 months, then yearly	Amisulpride, Risperidone, Paliperidone	Asenapine, Aripiprazole, Clozapine, Quetiapine, Olanzapine (<20mg). Measure if symptoms arise.
Creatinine phosphokinase	Baseline, then if NMS is suspected	NMS is more likely with FGAs	None
ECG	Baseline	None	Risk of sudden cardiac death increased with most APs. All patients should be offered an ECG at least yearly.

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References :

1. Alomi YA. et al (2019). Antipsychotic medication therapy during the holy month of Ramadan: a literature review. Pharmacology, Toxicology and Biomedical Reports. Vol 5, Issue 2, May-Aug, 2019
2. Horowitz M.A et al (2021). A Method for Tapering Antipsychotic Treatment That May Minimize the Risk of Relapse. Schizophrenia Bulletin Vol. 47 no. 4 pp. 1116–1129, 2021

3. Formulari Ubat KKM. (2025, January 1). Accessed on January 21, 2025.
4. UpToDate, Inc. (2024). Methylphenidate: Drug information (Version 3.68.3) [Mobile application]. UpToDate, Inc.
5. Ahmad S.N.A. et. al. CPG Management of Schizophrenia (Second Edition, 2021). Accessed on January 21, 2025. Available from: CPG Management of Schizophrenia (Second Edition) v20221219.pdf
6. Stahl, S. M. (2017). Stahl's Essential Psychopharmacology Prescriber's Guide. In Australian Prescriber (6th ed., Issue 1). Cambridge University press. https://doi.org/10.18773/austprescr.2016.001
7. Krishnasamy A. et. al. Medication Counseling for Pharmacists. (First Edition 2021). Perak State Health Department, Pharmaceutical Services Division.
8. Taylor, D., Barnes, T. R. E., & Young, A. H. (2021). The Maudsley prescribing guidelines in psychiatry (14th ed.). Wiley-Blackwell.
9. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.
10. O'Mahony, D., Cherubini, A., Guiteras, A. R., Denkinger, M., Beuscart, J. B., Onder, G., ... & Curtin, D. (2023). STOPP/START criteria for potentially inappropriate prescribing in older people: version 3. European geriatric medicine, 14(4), 625-632.

Apixaban

Name :	**Unit :**		
● *Please tick (✔)* ***Yes*** *for correct instruction or sequence.*	**Yes**	**No**	**Remarks**

● *Please tick (✔) **No** for incorrect instruction or sequence.*				
Pharmacological Group	Factor Xa inhibitors			
Indications and Dosage	1. Prophylaxis of venous thromboembolic events following hip and knee replacement surgery Dosage: 2.5 mg twice daily, starting 12-24 hours after surgery. Duration of treatment: 10-14 days (knee replacement); 32-38 days (hip replacement) 2. Prophylaxis of stroke and systemic embolism in adult patients with non-valvular atrial fibrillation with one or more risk factors, such as prior stroke or TIA, age ≥75 years, hypertension, diabetes mellitus, symptomatic heart failure (NYHA Class ≥II) 3. Dosage: 5 mg twice daily. Dose reduction in patients with at least 2 of the following criteria: ≥80 years old, body weight ≤60 kg, serum creatinine ≥1.5 mg/dL (133 micromole/L): 2.5 mg twice daily 4. Deep vein thrombosis, Pulmonary embolism 5. Dosage: Treatment :10 mg bid for 7 days followed by 5 mg bid. Prophylaxis of recurrent cases: 2.5 mg bid following completion of ≥6 months of anticoagulant treatment			
Method of Administration*	1. May be taken with or without food. 2. May be crushed & suspended in water/D5W/apple juice or mixed with apple puree. Take the mixture immediately or within 4 hours. **Missed dose management:** Take the missed dose as soon as remembered. If it is close to the time for the next dose, skip and go back to normal time. Do not take 2 doses at the same time			
Special Considerations	**Pregnancy**			
	Preferable to avoid the use of apixaban during pregnancy			
	Breastfeeding			
	It is unknown whether apixaban or its metabolites are excreted in human milk. Available data in animals have shown excretion of apixaban in milk. A decision must be made whether to discontinue breast-feeding or to discontinue/abstain from apixaban therapy taking into account the benefit of breast-feeding for the child and the benefit of therapy for the woman.			
	Paediatric			
	Not recommended in children and adolescents under 18 years of age.			
	Elderly			
	MALPIP: Increased risk of gastrointestinal bleeding. Increased serum concentrations may occur with renal impairment and dose adjustment may be indicated. Assess renal profile before initiation.			
	Others			

	1. Hepatic Impairment: Severe (Child-Pugh class C): Not recommended. 2. Renal impairment: Patients undergoing dialysis: Not recommended.			
Side Effects and their Management*	1. Blood and lymphatic system disorders: Anaemia, thrombocytopenia. 2. Haemorrhagic risk. Apixaban should be discontinued if severe haemorrhage occurs.			
Storage*	Store between 15-30°C.			
Others	1. Monitoring Parameters: Monitor CBC, aPTT, prothrombin time, serum creatinine, and liver function prior to initiation, when clinically indicated, and at least annually thereafter. Observe closely for signs and symptoms of blood loss. 2. Interactions below lead to an increased bleeding risk- patients should be monitored closely for signs of bleeding and anaemia. a. Concomitant use of systemic azole antimycotics e.g. ketoconazole, itraconazole, voriconazole, posaconazole b. HIV protease inhibitors c. Other anticoagulants d. NSAIDs and platelet aggregation inhibitors(e.g. clopidogrel) 3. Interactions below lead to a decrease in anticoagulant concentration therefore treatment may be suboptimal a. Concomitant use strong CYP3A4 inducers e.g. phenytoin, carbamazepine, phenobarbital, St. John's Wort 4. Decreased plasma concentration with St. John's wort.			

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References:

1. MIMS Malaysia. (2024). Apixaban. In MIMS Online. Retrieved 26 November, 2024, from https://www.mims.com/malaysia/drug/info/apixaban?mtype=generic
2. MIMS Malaysia. (2024). Eliquis. In MIMS Online. Retrieved 26 November, 2024, from https://www.mims.com/malaysia/drug/info/eliquis
3. Formulari Ubat KKM (FUKKM) - Apixaban
4. Chang, C. T., Chan, H. K., Cheah, W. K., Tan, M. P., Ch'ng, A. S. H., Thiam, C. N., ... & Lee, S. W. H. (2023). Development of a Malaysian potentially inappropriate prescribing screening tool in older adults (MALPIP): a Delphi study. Journal of Pharmaceutical Policy and Practice, 16(1), 122.

Atazanavir

Name :	**Unit :**

• *Please tick (✔)* ***Yes*** *for correct instruction.* • *Please tick (✔)* ***No*** *for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Protease inhibitors (PIs)			
Indications and Dosage	Treatment of HIV-1 infected, antiretroviral treatment experienced adults, in combination with other antiretroviral medicinal products a. The recommended dose is 300 mg once daily taken with ritonavir 100 mg once daily and with food. Ritonavir is used as a booster of atazanavir pharmacokinetics. Atazanavir is not approved for use in neonates and infants aged <3 months. Atazanavir should not be administered to neonates because of risks associated with hyperbilirubinemia. Because Ritonavir oral solution is no longer commercially available, use of Atazanavir/Ritonavir is limited to children weighing ≥15 kg who can use the Ritonavir 100 mg powder packet or 100 mg tablet. a. 15 kg to <35 kg - ATV/r 200 mg/100 mg, both with food b. ≥35 kg - ATV/r 300 mg/100 mg, both with food			
Method of Administration*	Atazanavir should be taken with food, the capsule should be swallowed whole with a drink such as a glass of water or fruit juice. It is recommended that you take your medicine at about the same time each day. Taking it at the same time each day will have the best effect. It will also help you remember when to take it. Missed dose management: If you forget to take it, and if it is almost time for your next dose, skip the dose you missed and take the next dose when you are meant to take it. Otherwise, take it as soon as you remember, and then go back to take your medicine as you would normally. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Unboosted Atazanavir is not recommended during pregnancy. Ritonavir-boosted Atazanavir (ATV/r) is an alternative protease inhibitor for pregnant patients with HIV who are antiretroviral-naive (initial therapy), who have had ART therapy in the past but are restarting, or who require a new ART regimen (due to poor tolerance or poor virologic response of current regimen). Patients who become pregnant while taking Atazanavir boosted with Ritonavir may continue if viral suppression is effective and the regimen is well tolerated.			
	Breastfeeding			
	1. It is not known whether Atazanavir passes into breast milk. Therefore, to avoid possible side effects in the nursing infant, mothers should stop breastfeeding if they are taking Atazanavir. 2. It is recommended that HIV infected women do not breastfeed their infants under any circumstances to			

	avoid transmission to the infant.			
	Elderly			
	A dose adjustment for age is not recommended.			
	Paediatric			
	Do not use it in children below three months of age due to potential for kernicterus.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Renal impairment			
	No dosage adjustment is needed. However, Atazanavir with Ritonavir is not recommended in treatment-experienced patients undergoing hemodialysis.			
	Hepatic impairment			
	No dose adjustment in patients with mild impairment (Child-Pugh Class A). Otherwise; Moderate (Child-Pugh Class B): 300mg once daily (unboosted) for ARV-naive patients only. Severe (Child-Pugh Class C): Not recommended			
Side Effects and their Management*	1. Rashes: usually mild to moderate skin eruptions that occur within 3 weeks of starting Atazanavir. Patients should be advised of signs and symptoms and monitored closely for skin reactions. Atazanavir should be discontinued if severe rashes develop. 2. Hyperbilirubinemia: Most patients experience asymptomatic increases in indirect bilirubin, which is reversible upon discontinuation; do not reduce; if concomitant transaminase increase occurs, evaluate for alternative etiologies. 3. Fat redistribution: Central obesity, buffalo hump, peripheral wasting, facial wasting, breast enlargement, and “cushingoid appearance”. Clinical examination should include evaluation for physical signs of fat redistribution. 4. Metabolic disorders: Dyslipidemia, new onset diabetes mellitus, hyperglycemia, and exacerbation of existing diabetes mellitus. Standard guidelines for management of dyslipidemia and diabetes mellitus.			
Storage*	1. Store below 25°C.			
Others	Beware of Atazanavir/ritonavir-drug interactions. Kindly refer to Liverpool HIV Interactions website for further information. 1. Atazanavir/Ritonavir is an inhibitor of the P450 isoform CYP3A. Co-administration of Atazanavir/Ritonavir and drugs primarily metabolised by CYP3A may result in increased plasma concentrations of the other drugs (e.g. HMG CoA reductase, dihydropyridine calcium channel blockers, immunosuppressant etc). 2. Overdoses with Atazanavir/Ritonavir have been reported in association with jaundice due to indirect (unconjugated) hyperbilirubinemia or PR interval prolongations. Treatment of overdose should consist of general supportive measures including monitoring of			

	vital signs and ECG, and observations of the clinical status of patients.			

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References:

1. Ministry of Health Malaysia (2022). Malaysian Consensus Guidelines on Antiretroviral Therapy.
2. Atazar-300 Product leaflet (2020).
3. Atazanavir Mylan Consumer Medicine Information, 2019.
4. Wolter Kluwer (2024). UpToDate - Atazanavir/Ritonavir. UpToDate,Inc.
5. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection.

Azelaic Acid, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Anti microbial Inhibits the growth of susceptible organisms (Propionibacterium acnes) on the skin surface and inhibits follicular keratinisation. This restricts the development of comedone.			
Indications and Dosage	1. Treatment of **Acne Vulgaris** Apply **twice daily (for sensitive skin, once daily during the 1st week)**. Treatment should not exceed 6 months. (12 months based on product insert)			
Method of Administration*	1. Wash face with a gentle, non-medicated cleanser and allow the face to dry thoroughly. 2. Put a thin layer to the affected skin and rub in gently, twice daily (morning and evening). 3. Avoid application to eyelids, lips and mucous membranes. 4. *A daily dose of approximately 2.5cm/1 inch of cream is sufficient for the entire facial area. Excessive amounts must be avoided.* **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Use is not recommended during pregnancy unless the benefit outweighs the risk.			
	Breastfeeding			
	Use is not recommended during breastfeeding unless the benefit outweighs the risk.			
	Elderly			
	No elderly-specific problems have been documented to date. Refer to the usual adult dosage guide.			
	Paediatric			
	The safety and efficacy of topical Azelaic acid in paediatric patients below 12 years old have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
Side Effects and their Management*	1. Local skin irritation (erythema, scaling, burning, itching) 2. Photosensitivity If excessive skin irritation occurs, consider the following until the			

	irritation ceases: i) reduce the frequency of application to once daily or ii) reduce the amount of cream, or iii) temporarily withhold the treatment for a few days. Use a **gentle moisturizer** to reduce dryness.			
Storage*	1. Keep the container tightly closed. 2. Store at room temperature. 3. Protect from light, heat and moisture. 4. Keep medicine out of reach of children.			
Others	1. Prolonged and repeated administration may lead to hypersensitivity. Excessive use should be avoided. 2. If severe irritation or allergic reactions occur, discontinue use and consult a healthcare provider. 3. Avoid contact with eyes, mouth and other mucous surfaces. 4. Avoid occlusive dressings/wrappings. 5. For external use only. 6. Dispose of any remaining product in the tube after completing your course of treatment or once the product has expired.			

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References:

1. Product leaflet Skinoren
2. Formulari Ubat Kementerian Kesihatan Malaysia Bil 2/2024.

Benzodiazepines

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Benzodiazepines** Diazepam Lorazepam Bromazepam Alprazolam Clonazepam Midazolam			
Indications and Dosage	1. Diazepam: Anxiety disorder: Oral: 2 mg 3 times daily, increased in severe anxiety to 15 - 30 mg daily in divided doses 2. Lorazepam: Severe anxiety: 1-10mg daily in divided doses Insomnia: 1-2mg on night 3. Bromazepam: Anxiety disorder: 6-18mg daily initially in divided doses. (max dose: 60mg) 4. Alprazolam: Anxiety disorder: 0.25mg-0.5mg 3 times daily. (max: 3mg/day) 5. Clonazepam: Anxiety: 0.5 mg/day to 4 mg/day in 2 to 4 divided doses (max of 8 mg/day) 6. Midazolam: Insomnia: Oral: 7.5mg - 15mg/day Benzodiazepines are usually used as an adjunct therapy in psychiatric disorders such as mood disorder (e.g. anxiety disorder & major depressive disorder), schizophrenia and sleep disorders. Benzodiazepines are usually used as short term therapy of no more than 2 to 4 weeks together with first line medications. Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Tablets should be swallowed whole or crushed. 2. Benzodiazepines provide symptomatic relief but do not treat the underlying psychological problem, duration of the therapy is usually short term or take it only when necessary. 3. Tolerance and dependence may occur after prolonged use.Use ONLY as instructed, DO NOT take more than prescribed. Inform your prescriber if your usage increases. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	1. Possible increased risk of birth defects with			

	benzodiazepines taken during pregnancy. Not recommended during pregnancy especially during the 1st trimester. 2. The drug should be tapered if discontinued. Infants whose mothers received a benzodiazepine late in pregnancy may experience withdrawal symptoms. Neonatal flaccidity has been reported in infants whose mothers took a benzodiazepine during pregnancy. Seizures, even mild ones, may cause harm to the embryo/foetus.			
	Breastfeeding			
	Not recommended			
	Elderly			
	Beers Criteria: 1. Avoid use of benzodiazepines; expose users to risks of abuse, misuse, and addiction. Concomitant use with opioids may result in profound sedation, respiratory depression, coma, and death. Older adults have increased sensitivity to benzodiazepines and decreased metabolism of long-acting agents; the continued use of benzodiazepines may lead to clinically significant physical dependence. 2. In general, all benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle crashes in older adults. May be appropriate for seizure disorders, rapid eye movement sleep behavior disorder, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, and periprocedural anesthesia. STOPP/Start Criteria: 1) Use as short a term as possible (not exceeding 4 weeks). 2) Use for agitated behaviour or psychotic symptoms of dementia (no evidence of efficacy). 3) Use for insomnia for ≥ 2 weeks (high risk of dependency, increased risk of falls, fractures and road traffic accidents).			
	Paediatric			
	1. Safety and efficacy of Benzodiazepines remain unapproved for pediatric use outside of epilepsy and seizures. Use with caution.			
	Fasting			
	1. Administer during *Sahur* or after *Iftar.* **Kindly refer to the latest advisory by religious authority**			
	Renal Impairment			
	1. No agent clearly preferred to another; however, excessive sedation is more likely to occur in patients with renal impairment. Advise patients to monitor for signs & symptoms of toxicity.			
	Hepatic Impairment			

<table>
<tr><td></td><td>1. Prolonged duration of effect particularly for drugs with active metabolites (diazepam, midazolam, clonazepam). Lorazepam does not have active metabolites and are preferred. Use low doses with caution, as sedative drugs used in severe disease can precipitate hepatic encephalopathy</td><td></td><td></td><td></td></tr>
<tr><td>Side Effects and their Management*</td><td>
<table>
<tr><th>Side effects</th><th>Management</th></tr>
<tr><td colspan="2">Common</td></tr>
<tr><td>Being very unsteady on your feet.</td><td>Inform your prescriber at next visit</td></tr>
<tr><td>Feeling light headed, faint or as if head is spinning.</td><td>Stand up slower. Try to sit or lie down when symptoms occur.. Do not drive.</td></tr>
<tr><td>Feeling sleepy or sluggish. Possible to lead to falls. “Hangover” the next morning.</td><td>Do not drive or operate heavy machinery. Ask your prescriber if adjustments in medication, dose or timing is required</td></tr>
<tr><td colspan="2">Rare</td></tr>
<tr><td>You may feel like fainting when standing up. A low blood pressure.</td><td>Rise slowly when getting up or from lying down. Do not drive if you feel dizzy.</td></tr>
<tr><td>Loss of memory or difficulty in remembering.</td><td>Inform your prescriber at next visit</td></tr>
<tr><td>Headaches</td><td>May take analgesics. Inform your prescriber if too frequent.</td></tr>
<tr><td colspan="2">Rare - significant concern</td></tr>
<tr><td>You may be too talkative, excited or unfriendly.</td><td>Immediately contact your prescriber. Change in mediation will likely be required</td></tr>
<tr><td>Confusion, disorientated</td><td>Inform your prescriber at next visit</td></tr>
<tr><td>Rashes, skin redness, trouble breathing</td><td>Stop taking and immediately see your prescriber</td></tr>
</table>
</td><td></td><td></td><td></td></tr>
<tr><td>Storage*</td><td>Store at a temperature below 30°C.</td><td></td><td></td><td></td></tr>
<tr><td>Others</td><td>1. Do not combine with alcohol or other CNS depressants because it can intensify side effects.
2. Educate patients with sleep problems on sleep hygiene.
3. You may experience these effects upon stopping the medication: Common symptoms: anxiety, insomnia, restlessness,muscle tension, irritability. Immediately contact your prescriber if intolerable.</td><td></td><td></td><td></td></tr>
</table>

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References :

1. UpToDate, Inc. (2025). Clonazepam, Lorazepam, Alprazolam, Diazepam: Drug information (Version 3.68.3) [Mobile application]. UpToDate, Inc.
2. CHEPLAPHARM Arzneimittel GmbH (2020). Product Information Leaflet: Dormicum. Retrieved from Quest 3+ Search on January 21, 2025
3. Pharmaceutical Services Programme, Ministry of Health Malaysia. (2025). Formulari Ubat KKM (FUKKM). Retrieved from https://pharmacy.moh.gov.my/ms/apps/fukkm
4. Stahl, S. M. (2017). Stahl's Essential Psychopharmacology Prescriber's Guide. In Australian Prescriber (6th ed., Issue 1). Cambridge University Press. https://doi.org/10.18773/austprescr.2016.001
5. Krishnasamy A. et. al. Medication Counseling for Pharmacists. (First Edition 2021). Perak State Health Department, Pharmaceutical Services Division.
6. Taylor, D., Barnes, T. E., & Young, A. H. (2021). The Maudsley prescribing guidelines in psychiatry (14th ed.). Wiley-Blackwell.
7. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.
8. O'Mahony, D., Cherubini, A., Guiteras, A. R., Denkinger, M., Beuscart, J. B., Onder, G., ... & Curtin, D. (2023). STOPP/START criteria for potentially inappropriate prescribing in older people: version 3. European geriatric medicine, 14(4), 625-632.

Benzoyl Peroxide, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antibacterial and anti-inflammatory agent			
Indications and Dosage	*Treatment for acne vulgaris.* To be applied on acne spots once or twice daily. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	Wash the affected area with a mild skin cleanser and water and pat skin dry. Apply a thin film of medication to the affected area once daily. Start at night for a week, if there is no skin irritation/redness/peeling, can apply twice daily if needed. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Use in pregnancy only if clearly needed.			
	Breastfeeding			
	Caution should be exercised to nursing women. Should not be used on the chest in a breastfeeding woman to avoid accidental transfer to the infant.			
	Elderly			
	Not applicable.			
	Paediatric			
	The safety and efficacy of topical Benzoyl peroxide in paediatric patients below 12 years old have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	Not applicable.			
Side Effects and their Management*	Skin dryness, skin redness, peeling of the skin, burning sensation of the skin, itching of the skin. Avoid products that may dry or irritate skin such as products containing alcohol, harsh skin cleaners and medicated soap.			
Storage*	Store at room temperature below 25°C			

Others	Avoid areas of skin around eyes, lips, mouth, angles of nose, mucous membrane and sensitive area of the neck. Should not be applied to damaged/broken skin. If excessive stinging or burning occurs, remove with mild soap and water, resume use the next day. Avoid excessive exposure to sunlight or other sources of ultraviolet light. Wear sunscreen when sun protection is needed. May bleach or discolour fabrics such as clothing, towel, bed linen)			

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References:

1. Kementerian Kesihatan Malaysia. (2024). Formulari Ubat Kementerian Kesihatan Malaysia Bil 2/2024. Kementerian Kesihatan Malaysia. Retrieved from: https://pharmacy.moh.gov.my/sites/default/files/document-upload/fukkm-bil-2-2024_0.pdf
2. Medsafe.Benzac AC consumer medicine information. Medsafe. Retrieved November 11, 2024, from https://www.medsafe.govt.nz
3. Pharmaceutical Services Programme, Ministry of Health Malaysia. (2018). Topical preparations counseling guide for pharmacists (1st ed.)

Beta-Blockers

<table>
<tr><td colspan="2">Name :</td><td colspan="3">Unit :</td></tr>
<tr><td colspan="2">• Please tick (✔) Yes for correct instruction.
• Please tick (✔) No for incorrect instruction.</td><td>Yes</td><td>No</td><td>Remarks</td></tr>
<tr><td>Pharmacological Group</td><td>Beta-blockers</td><td></td><td></td><td></td></tr>
<tr><td>Indications and Dosage</td><td>Hypertension
<table>
<tr><th>Drug</th><th>Initial Dose</th><th>Maximum Dose</th></tr>
<tr><td>Atenolol</td><td>50mg OD</td><td>100mg OD</td></tr>
<tr><td>Bisoprolol</td><td>5mg OD</td><td>20mg/day</td></tr>
<tr><td>Labetalol</td><td>100mg BD</td><td>2400mg/day</td></tr>
<tr><td>Metoprolol</td><td>50mg BD</td><td>200mg BD</td></tr>
<tr><td>Propranolol</td><td>40mg BD</td><td>320mg BD</td></tr>
</table>
Heart Failure
<table>
<tr><th>Drug</th><th>Initial Dose</th><th>Target Dose</th></tr>
<tr><td>Bisoprolol</td><td>1.25mg OD</td><td>10mg OD</td></tr>
<tr><td>Carvedilol</td><td>3.125mg BD</td><td>25mg BD</td></tr>
</table>
Arrythmias
<table>
<tr><th>Drug</th><th>Initial Dose</th><th>Maximum Dose</th></tr>
<tr><td>Sotalol</td><td>80mg BD</td><td>480 - 640mg in divided doses</td></tr>
</table>
To counsel based on specific medication’s indication and dosage as prescribed by the doctor</td><td></td><td></td><td></td></tr>
<tr><td>Method of Administration*</td><td>1. Can take without regards to meal:
a. Atenolol
b. Bisoprolol

2. Recommended to administer on empty stomach:
a. Propranolol

3. Recommended to administer with food:
a. Carvedilol: to minimise orthostatic hypotension
b. Metoprolol

Missed dose management:
1. Single daily dosing regime: missed dose taken up to until 12 h after the scheduled dosing

2. Twice daily dosing regime: missed dose taken up until</td><td></td><td></td><td></td></tr>
</table>

	6 h after the scheduled intake **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Exposure to beta-blockers during pregnancy may increase the risk for adverse events in neonates. 2. If maternal use of a beta-blocker is needed, monitor fetal growth during pregnancy; monitor the newborn for 48 hours after delivery for bradycardia, hypoglycemia, and respiratory depression.			
	Breastfeeding			
	1. Present in breast milk: atenolol, propranolol, metoprolol. 2. Not known (if present in breast milk): bisoprolol, carvedilol. 3. The manufacturer recommends that caution be exercised when administering beta-blockers to patients who are breastfeeding. 4. Bradycardia has been observed in some breastfeeding infants and neonates may also be at risk for hypoglycemia. Adverse events may be more likely in premature infants or infants with impaired renal function.			
	Elderly			
	Refer to adult dosing. Consider lower initial doses and titrate to response.			
	Paediatric			
	Dose should be individualized based on patient response.			
	Fasting			
	Not applicable			
	Renal Impairment			
	1. No dosage adjustment necessary: a. Metoprolol, carvedilol, propranolol. 2. Renal dose required: Atenolol, Bisoprolol.			
	Liver Impairment			
	1. There are no specific dosage adjustments provided in the manufacturer's labelling. 2. Consider initiating with reduced doses and gradual dosage titration.			
Side Effects and their Management*	1. Worsening symptoms or signs (e.g. increasing dyspnoea, fatigue, oedema, weight gain): ○ If increasing congestion, increase a dose of diuretic or halve a dose of beta-blocker (if increasing diuretic dose does not work). ○ If serious deterioration, halve the dose of beta-blocker or stop this treatment (rarely			

	necessary); seek specialist advice. 2. Low heart rate: ○ If <50 b.p.m. and worsening symptoms, halve the dose of beta-blocker, or, if severe deterioration, stop beta-blocker (rarely necessary). ○ Review need for other heart rate-slowing drugs (e.g. digoxin, ivabradine, amiodarone, diltiazem, or verapamil). ○ Arrange ECG to exclude heart block. 3. Asymptomatic low blood pressure: ○ Does not usually require any change in therapy. 4. Symptomatic hypotension: ○ If dizziness, light-headedness, or confusion and a low blood pressure, reconsider the need for nitrates, calcium-channel blockers and other vasodilators and reduce/stop, if possible. ○ If there are no signs or symptoms of congestion, consider reducing diuretic dose.			
Storage*	Store it at room temperature and away from excess heat and moisture.			
Others	Monitoring parameters: Heart rate, blood pressure, serum glucose (in diabetic patients), ECG.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation/peer review**

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Benzyl Benzoate, Emulsion (EBB)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Scabicide			
Indications and Dosage	1. For the treatment of scabies a. 12.5%: 2 years old to 12 years old b. 25%: More than 12 years old **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Individuals to be treated should have a shower or bath with soap, and dry their body thoroughly prior to treatment. 2. The emulsion should be shaken well before use. 3. Apply from neck to soles, paying particular attention to all skin folds such as between fingers and toes, underarms and groin. Avoid head, face and private areas. 4. Allow the emulsion to dry (usually takes about 10min) and then put on clean clothes. Do not wash your hands. 5. Leave the emulsion on the body. Do not bath, shower or change clothes before the second application. 6. Apply on the skin surface continuously for 24 hours for 2-3 days. 7. Rinse off after 24 hours and then reapply, with a bath taken in between each application. 8. A third application may be required in some cases i.e. HIV/ immunocompromised patients. 9. Wash off thoroughly after the recommended time period. 10. Alternatively, may do 3 applications within a 12 hour interval. **Missed dose management**: If a dose is missed, use it as soon as possible. If it is almost time for the next dose, use only that dose. Do not use double or extra doses. **Do not stop your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Use of EBB is contraindicated in pregnancy.			
	Breastfeeding			
	Use of EBB is contraindicated in breast feeding women.			
	Elderly			
	The xerosis of the skin makes the skin more susceptible to the drying effects of benzyl benzoate and irritation may be worse in this group of patients. Alternative treatment in the elderly should			

	be used.			
	Paediatric			
	Use of EBB is contraindicated in infants of <2 years old.			
	Fasting			
	N/A			
	Others			
	1. Should NOT be used on the face due to its irritant effect on the skin, and should NOT be used on broken, irritated or inflamed skin.			
Side Effects and their Management*	1. Burning sensation, rashes, skin irritation. 2. Irritation of the skin, eyes and mucous membranes. 3. If incorrectly used for long periods of time it will induce both irritant and allergic dermatitis reactions.			
Storage*	1. Store at room temperature below 25C. 2. Discard any unused medicine after the expired date.			
Others	1. Patients with scabies and their close physical contacts, even without symptoms, should receive treatment at the same time. 2. Avoid contact with eyes or mucous membranes or the area around the mouth. 3. If the treatment is applied by someone without scabies, this person should wear medical gloves during application. 4. After completion of treatment, patients should use fresh, clean bedding and clothing. 5. Itching and rash may continue for up to 4 weeks after treatment, but this is usually a temporary reaction. 6. Wash all toys in very hot soapy water for 5-10min or seal in an airtight plastic bag for 2 weeks. This is especially important for stuffed toys used on the bed.			

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Bisphosphonates

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Bisphosphonate			
Indications and Dosage	**1. Alendronate sodium 70mg tablet** i) Treatment of osteoporosis in high-risk postmenopausal women: 70 mg once weekly. ii) Male Osteoporosis: 70 mg once weekly. **2. Alendronate sodium 70mg + Cholecalciferol 5600 IU tablet** i) Osteoporosis in postmenopausal women with a history of vertebral fracture and whom oestrogen replacement therapy is contraindicated: 1 tablet once weekly [70mg/5600 IU] ii) Male Osteoporosis Dosage: 1 tablet once weekly [70mg/5600 IU] **3. Ibandronic 150mg** i) Treatment of postmenopausal osteoporosis to reduce the risk of fracture: 150mg once monthly			
Method of Administration*	**1. Alendronate sodium 70mg tablet** **2. Alendronate sodium 70mg + Cholecalciferol 5600 IU tablet** **ADMINISTRATION** 1. Take 1 dose every week on the chosen day after getting up for the day and before taking first food, drink, or other medicine while sitting or standing up. 2. Swallow one tablet with a full glass of plain water (not mineral water, coffee, tea or juice). Do not chew or suck. 3. After taking, wait at least **30 minutes**: a. Before lying down. May sit, stand or walk, and do normal activities like reading. b. Before taking the first food or drink except for plain water. c. Before taking other medicines, including antacids, calcium, and other supplements and vitamins. **MISSED DOSE** 1. If you miss a dose, take only 1 dose in the morning after remembering. 2. Do not take 2 doses on the same day. 3. Continue the usual schedule of 1 dose once a week on the chosen day. **OVERDOSE** 1. If taken more than the prescribed dose, drink a full glass of milk and visit the doctor right away. 2. Do not try to vomit. 3. Do not lie down. **3. Ibrandronic Acid 150mg Tablet** 1. One tablet once a month. Choose the day of the month that best fits your schedule. Can choose either the same date (such as the 1st of each month) or the same day (such as the first Sunday of each month) to take the tablet. 2. Take the tablet at least 6 hours after having eaten or drank anything except water.			

	3. Swallow one tablet with a full glass of plain water (not mineral water, coffee, tea or juice). Do not chew or suck. 4. After taking, wait at least **60 minutes**: a. Before lying down. May sit, stand or walk, and do normal activities like reading. b. Before taking the first food or drink except for plain water. c. Before taking other medicines, including antacids, calcium, and other supplements and vitamins. **MISSED DOSE** 1. If forgotten to take the tablet on the morning of the chosen day, do not take a tablet later in the day. Instead, consult the calendar and find out when the next scheduled dose is: **2. If the next scheduled dose is only 1 to 7 days away** a. Should wait until the next scheduled dose is due and take it as normal; then, continue taking one tablet once a month on the scheduled days marked on the calendar. 3. **If the next scheduled dose is more than 7 days away**. a. Should take one tablet the next morning after the day the patient remembers; then, continue taking one tablet once a month on the scheduled days marked on the calendar. **4. Never take two doses within the same week.** **OVERDOSE** If taken more than the prescribed dose, drink a full glass of milk and visit the doctor right away. Do not try to vomit. Do not lie down **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	May cause fetal harm. Limited human data- animal data suggest risk.			
	Breastfeeding			
	Infant risk cannot be ruled out. No human data- probably compatible.			
	Elderly			
	1. Swallowing difficulties (dysphagia): Older adults with swallowing issues or esophageal abnormalities may not tolerate alendronate tablets well and may benefit from alternative formulations. 2. Osteonecrosis of the Jaw (ONJ) : with prolonged use, poor dental health, or invasive dental procedures. Dental assessments and preventive care are essential. 3. Atypical Femur Fractures (AFF): Long-term use may increase the risk of atypical femoral fractures 4. Hypocalcemia:Preexisting vitamin D deficiency or low calcium levels are more common in the elderly and must be corrected before starting alendronate. STOPP/START Criteria:			

	1. Avoid use of oral bisphosphonate in patient with current or recent history of upper gastrointestinal disease (eg esophagitis, gastritis, duodenitis, or peptic ulcer disease)			
	Paediatric			
	Not indicated for use in paediatric patients. The safety and efficacy of biphosphonate in paediatric patients below age 18 have not been established.			
	Fasting			
	Refer to the latest advisory by religious authority.			
	Others			
	1. **Contraindicated in patient with:** a. esophageal abnormalities b. hypocalcemia c. inability to stand or sit upright for 30 minutes (alendronate and alendronate/cholecalciferol) and for 60 minutes (ibandronate). 2. **Renal impairment**:use not recommended in patient with: a. CrCl < 35ml/min (alendronate and alendronate/cholecalciferol) b. CrCl < 30ml/min (ibandronate) 3. **Hepatic impairment**: No adjustments necessary 4. **Musculoskeletal pain (severe)**: Discontinue use 5. **Upper gastrointestinal adverse effects**: Discontinue use and evaluate 6. **Special populations**: Use cautiously in patient with: a. restricted sodium intake b. effervescent tablet contains sodium			
Side Effects and their Management*	1. May cause problems in the oesophagus including irritation, inflammation or ulcers which may sometimes bleed. ● This may occur especially if patients do not drink a full glass of water with the medication or if lying down in less than 30 minutes (alendronate and alendronate/cholecalciferol) and less than 60 minutes (ibandronate) or before the first food of the day. 2. Mouth sores (ulcers) may occur if the medication is chewed or dissolved in the mouth. 3. May get flu-like symptoms, typically at the start of treatment. 4. May get allergic reactions, such as hives or, in rare cases, swelling of the face, lips, tongue, or throat. 5. May cause jaw-bone problems in some people. Jaw-bone problems may include infection, and delayed healing after teeth are pulled. 6. Stop taking the medication and call the doctor right away if there are any of these signs of possible serious problems of the oesophagus: ● Chest pain ● New or worsening heartburn ● Trouble or pain when swallowing. 7. The most common side effect is stomach area (abdominal) pain. Less common side effects are nausea, vomiting, a full or bloated feeling in the stomach, constipation, diarrhoea, black or bloody stools (bowel movements), gas, eye pain, rash that			

	may be made worse by sunlight, hair loss, headache, dizziness, a changed sense of taste, joint swelling or swelling in the hands or legs, and bone, muscle, or joint pain.			
Storage*	1. Store your tablets in the original blister pack at or below 30°C. 2. Protect from moisture and light			
Others	1. Drug interaction with Parathyroid hormone 2. All food and beverages (including mineral water) calcium supplements, antacids,may decrease absorption of this drug.			

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Remarks:

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References:

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Buprenorphine, Transdermal Patch

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Opioid Analgesic			
Indications and Dosage	Treatment of non-malignant pain of moderate intensity when an opioid is necessary for obtaining adequate analgesia. Not suitable for the treatment of acute pain. For elderly patients or patients with comorbidities/ difficulties to swallow. Once weekly transdermal patch/for hospital use only. Patients aged 18 years and over. Initial dose: 5 mcg/hr. Renal impairment: No special dose adjustments necessary in patients with renal impairment. Hepatic impairment: Patients with hepatic insufficiency should be carefully monitored during the treatment with buprenorphine patch. Alternate therapy should be considered. Patch should be used with cautions in severe hepatic impairment patients. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Step 1: Preparing the skin** a. Make sure the skin is completely dry, clean and cool before putting the patch on. b. Sites of application are chest, back and upper arms **Step 2: Open the sachet** a. Each patch is sealed in its own sachet b. Tear or cut open the sachet at the notch, shown by the arrow **Step 3: Peel and press** a. Carefully peel one half of the shiny plastic backing away from the centre of the patch. Try not to touch the sticky side of the patch b. Press the sticky part of the patch onto the skin c. Remove the other part of the backing and press the whole patch onto the skin with the palm of your hand. d. Hold for at least 30 seconds. Make sure it sticks well, especially the edges e. The date and time of application and/or renewal should be written on the patch. **Step 4: Disposing of the patch** a. As soon as take a patch off, fold it firmly in half so that the sticky side sticks to itself b. Put it back in its original sachet and dispose of the sachet as instructed **Step 5: Wash** a. Always wash the hands after handling the patch using clean water only **Step 6: Change of patch** a. Change patch every 7 days at the same time b. If the patch falls off before the scheduled change date (7 days), discard it and apply a new patch to a different skin site.			

	c. Rotate the site after each patch removal and wait for at least 3-4 weeks before reapplying to the same site **Missed dose management:** 1. Apply a new patch as soon as you remember 2. Do not apply twice the number of patches to make up for the patch that you missed. 3. This will increase the chance of you getting unwanted side-effects **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. May need dose adjustment; depends on withdrawal signs and symptoms need to be monitored. 2. Use of an extended period of time may expose in the neonatal opioids withdrawal syndrome 3. Advice of the risk of neonatal opioids withdrawal syndrome and ensure that management by neonatology experts will be available at delivery			
	Breastfeeding			
	1. Infant risk cannot be ruled out.			
	Elderly			
	1. Increased sensitivity to weak opioids in elderly patients can result in excessive sedation, dizziness, confusion, and an elevated risk of delirium and lead to falls. 2. Use with caution in the elderly, debilitated or cachectic patients have an increased risk for respiratory depression. 3. Use in elderly patients carry risks of constipation that lead to delirium and increased risk of falls. 4. Avoid in patients with a history of fractures or falls, it may contribute to additional fall.			
	Paediatric			
	1. The safety and efficacy in pediatric patients have not been established.			
	Others			
	1. Addiction: abuse, misuse, or opioid addiction may occur. Use cautiously in patients with a history of substance abuse or mental illness. 2. Fever with increased core body temperature might increase adverse effects; adjust dose if necessary 3. Heat exposure: Avoid heat exposure to application site or surrounding areas (e.g: heating pads, electric blankets, heating lamps, sauna, hot water or direct sunlight) 4. Concomitant use with others: Benzodiazepines or Central Nervous System(CNS) depressants including alcohol may result in profound sedation, respiratory depression, coma, and death.			
Side Effects and their Management*	1. Opioid-induced constipation a. A common side effect b. Tolerance does not develop, hence laxatives			

	must be taken regularly c. Use combination of stimulant (e.g. bisacodyl) + softener (e.g. lactulose) d. Increase fluid and dietary fibre intake, maintain good physical activity, and try to establish a toilet routine 2. Opioid-induced sedation / impaired alertness a. May occur upon initiation of opioids b. Avoid driving and other activities that require mental alertness until it is clear how morphine/ Oxycodone affects the patient c. Tolerance develops after 5 - 10 days 3. Opioid-induced neurotoxicity (delirium, confusion) a. May occur, but usually transient b. May consider use of haloperidol for delirium 4. Opioid-induced nausea and vomiting a. May occur upon initiation of opioids b. Tolerance develops 5 - 10 days after starting c. May use antiemetics (e.g. metoclopramide, haloperidol or prochlorperazine) d. Be consistent when taking morphine with or without meals 5. Opioid-induced dry mouth a. Sip water often, let small ice chips melt in your mouth b. Minimise intake of caffeinated drinks, such as coffee, tea, and some sodas as well as use of tobacco and alcohol c. Chew sugarless gum or suck on sugarless hard candy to stimulate saliva flow 6. Dermatologic: a. Severe application site reactions may occur. Onset ranged from days to months after initiation.			
Storage*	1. Store your medication in a cool, dry place away from heat, moisture and direct sunlight 2. Disposal: FOLD used patches so that the adhesive side adheres to itself.			
Others	1. Do not shave the skin if it is hairy. Instead, clip the hair as close to the skin as possible 2. If Opioids-induce hyperalgesia and allodynia (OIH) reported,carefully decreasing dose of current opioids or rotation to a different opioids moiety 3. Serotonin Syndrome is rare but potentially life-threatening resulting from concomitant administration of serotonergic drugs like Selective Serotonin Reuptake Inhibitors (SSRIs) 4. When discontinuing patch, taper dose as part of comprehensive treatment plan; consider use of immediate-release opioids analgesics.			

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Remarks:

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Calcium Carbonate

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Calcium Calcium Carbonate			
Indications and Dosage	1. Hyperphosphatemia (phosphate binder) in chronic kidney disease patients a. Total dose of elemental calcium from calcium-based phosphate binder not to exceed 1,500 mg/day.Dosing is individualised based on serum phosphate level and according to product insert/protocol 2. Calcium supplementation a. 500 mg to 4g per day as calcium carbonate in 1-3 divided doses (500mg capsule contains 200mg elemental calcium).Dosing is individualised based on serum calcium level and according to product insert/protocol **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**1. Hyperphosphatemia** Tablet 1. To chew / crush and take **WITH** meals / snacks 2. Can be crushed and served through Ryle's tube Capsule 1. To swallow **WITH** meals / snacks OR to open the capsule and sprinkle the powder on the meal **2. Calcium Supplements** 1. To swallow the whole tablet / capsule with food. 2. Post parathyroidectomy, to swallow the whole tablet / capsule on empty stomach to minimise the phosphate binding effects. **Missed dose management:** In case of a missed dose, take it during the meal or immediately after the meal. Omit the dose if totally forgotten and remember to take as per instructed during the next meal. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Calcium crosses the placenta. 2. Calcium carbonate is generally considered safe for use during pregnancy.			
	Breastfeeding			
	1. Calcium is found in breast milk 2. Calcium carbonate is unlikely to be harmful to a nursing baby if used as directed.			
	Elderly			
	Monitor for hypercalcemia, especially in the elderly who are more prone to decreased renal function.			

	Paediatric			
	1. Can be used for children with CKD for phosphate binding / calcium supplements. 2. Monitor serum calcium level regularly.			
	Fasting			
	1. Adjust the timing of administration according to the fasting schedule during Ramadhan. To take during Sahur (before fasting) and Iftar (breaking fast). 2. If more than two doses have been prescribed, consult with the healthcare provider to adjust your phosphate binder administration.			
	Others			
	No dosage adjustment was provided in the manufacturer's labelling.			
Side Effects and their Management*	1. Generally, well tolerated. 2. Gastrointestinal: Abdominal pain, anorexia, constipation, flatulence, nausea, vomiting 3. Endocrine/metabolic: Hypercalcemia			
Storage*	1. Store at room temperature. 2. Store in a dry place and protect from moisture. 3. Keep out of reach of children.			
Others	1. Monitor serum calcium / phosphate regularly. 2. Significant drug-drug interactions: a. Calcium carbonate reduces the absorption of iron supplements, bisphosphonates, thyroid hormones, fluoroquinolones – space out 1 hour or 2 hours from calcium supplements b. Concurrent use of calcium carbonate with a proton pump inhibitor may reduce the effectiveness of calcium carbonate. c. Calcium carbonate increases the absorption of Vitamin D Analogs. 3. Contraindications Hypersensitivity, hypercalcemia			

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***Mandatory for validation/peer review**

References:

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3. Prenticce A. (2000). Calcium in pregnancy and lactation. Annu Rev Nutr. 20:249-272. Retrieved from doi:10.1146/annurev.nutr.20.1.249
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Carbamazepine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiepileptic drugs/ Anticonvulsants drugs			
Indications and Dosage	1. Epilepsy a. 100-200 mg 1-3 times daily increased gradually to the usual dose of 0.8-1.2 g daily in divided doses. 2. Trigeminal neuralgia a. Initial dose 200- 400 mg should be slowly raised daily until freedom from pain is achieved. Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Should be taken with food. 2. Try to take it at the same time each day. 3. Avoid grapefruit juice. Missed dose management: 1. If you forget to take a dose, take it as soon as you remember. Do not take two doses at once. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Associated with increased risk of major congenital malformations. Use only when benefits outweigh risks.			
	Breastfeeding			
	1. Excreted in human milk with concentration ranging from 1% – 10% of maternal serum levels.			
	Elderly			
	1. Initiate at lower dose and increase slowly. Initial dose of 100mg twice daily is recommended. 2. Precaution with falls as associated with ataxia, dizziness, hypotension, 3. May exacerbate or cause SIADH or hyponatremia; monitor sodium levels closely when starting or changing dosages in older adults.			
	Paediatric			
	1. HLA-B*15:02 allele screening in patients with risk of genetic variant prior to initiation.			
	Fasting			

	To refer to the latest advisory by religious authority			
	Others			
	Hepatic Impairment: Special precaution			
Side Effects and their Management*	1. Sedation, Nausea, dizziness, tremor, Hypotension or hypertension. 2. This drug may cause drowsiness or blurred vision, do not drive or operate machinery. 3. Women of childbearing potential must use highly effective birth control methods without interruption during therapy.			
Storage*	Store between 15 – 30º c. Protect from light and moisture.			
Others	1. Special precaution: Mixed seizure disorder, preexisting cardiac damage or underlying ECG abnormalities. 2. Drug interactions: a. Increased plasma level with erythromycin and olanzapine. b. Decreased plasma level with phenobarbital and valproic acid. c. May potentiate the CNS depressants effect of alcohol. d. Plasma concentration may be decreased with St John's wort.			

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References:

1. Ministry of Health Malaysia. (2024). Formulari Ubat Kementerian Kesihatan Malaysia.
2. Novartis Corporation (Malaysia) Sdn. Bhd.(2024) Product information leaflet: Pradaxa. Retrieved from Quest 3+ Product Search on January 1, 2025.
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4. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.

Cetrimide, Lotion

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Antiseptic 2. Bactericidal activity against gram-positive bacteria			
Indications and Dosage	1. Treatment of **Acne Vulgaris** 2. General antiseptic and skin disinfectant for wounds, cuts and insect bites. Apply to the affected area as required or as directed by the physician.			
Method of Administration*	1. *Apply solution onto the face twice daily .* 2. *Cetrimide mix with water on palms, rub hand together until froth* 3. *Apply froth on face* 4. *Then rinse off with water* 5. *Dap dry* **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Should be used during pregnancy only if the potential benefits justify the potential risks to the fetus.			
	Breastfeeding			
	1. Generally considered safe for use during breastfeeding when applied topically. 2. Avoid applying it to the breast area to prevent accidental ingestion by the infant.			
	Elderly			
	1. Not applicable. Refer to the usual adult dose.			
	Paediatric			
	1. Generally considered efficacious in paediatric patients for antiseptic and disinfectant use. 2. Safety depends on different concentrations and skin conditions.			
	Fasting			
	1. **To refer to the latest advisory by religious authority**			
Side Effects and their Management*	1. Burning sensation Prolonged and repeated administration may lead to hypersensitivity. If this occurs, stop using the lotion and consult your physician.			
Storage*	1. Keep the container tightly closed.			

	2. Store at room temperature. 3. Protect from light, heat and moisture. 4. Keep medicine out of reach of children. 5. Dispose of any remaining product in the tube after completing your course of treatment or once the product has expired.			
Others	1. Do not use it if the skin is weeping or badly inflamed. 2. Avoid contact with eyes and middle ear. 3. It should not be used in body cavities (eg:mouth & ears) 4. For external use only.			

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References:

1. Xorix SDN BHD.(Feb 2023). Xortrim 2 Cetrimide 2% W/V lotion product insert. Retrieved from V_76558_20230222_102504_D4.pdf
2. Xorix SDN BHD.(Feb 2023). Xortrim 1 Cetrimide 1% W/V lotion product insert. Retrieved from V_76564_20230222_114648_D4.pdf
3. Formulari Ubat Kementerian Kesihatan Malaysia Bil 2/2024.

Clarithromycin

Name :		Unit :		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Macrolide			
Indications and Dosage	1. Second-line treatment for leprosy 2. Drug-resistant leprosy Adult : 500mg once daily (in combination with other anti-leprosy drugs)			
Method of Administration*	**Food:** Administered with or without food **RT administration:** No specific data on enteral tube administration are available for this formulation. Alternative route available: parenteral route. **Missed dose:** Take the missed dose as soon as possible **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Avoid unless benefits outweigh risks			
	Breastfeeding			
	Avoid			
	Elderly			
	Adverse effects may be increased in older patients			
	Paediatric			
	NA			
	Fasting			
	NA			
	Others: 1. Renal impairment (CrCl<30 mL/min): No dose adjustment required at doses used in leprosy 2. Liver Impairment: No dose adjustment required at doses used for leprosy			
Side Effects and their Management*	**Gastrointestinal Disturbance:** Dysgeusia, diarrhea, vomiting, nausea **Taste Alteration:** metallic taste, loss of taste sensation **Central nervous System:** Headache, dizziness, insomnia **Cardiovascular**: QT prolongation **Ototoxicity:** Hearing loss and tinnitus reported in association			

	with long-term use.			
Storage*	Store at room temperature (do not refrigerate) and protect from light			
Others	**Precautions:** 1. Myasthenia Gravis: Macrolides may aggravate myasthenia gravis. 2. Cardiovascular Disease: Due to the risk for QT prolongation, clarithromycin should be used with caution in patients with coronary artery disease, severe cardiac insufficiency, hypomagnesaemia, bradycardia (<50 bpm), or when co-administered with other medicinal products associated with QT prolongation. **Significant drug-drug / drug-food interactions:** 1. Avoid alcohol as it may worsen dizziness or other CNS side effects 2. Avoid driving or operating machinery if feeling dizzy or light-headed 3. Ticagrelol:increase the risk of serious life threatening bleeding complication 4. Simvastatin: Increase risk of side effect such as liver damage and rhabdomyolysis 5. Colchicine: Increase blood level of colchicine to dangerous level, and can affect muscles, blood cells and nervous system			
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References:

1. World Health Organization. Guidelines for the diagnosis, treatment and prevention of leprosy. 2018
2. World Health Organization. WHO model prescribing information: drugs used in leprosy. In WHO model prescribing information: drugs used in leprosy 1998
3. TB Drug Monographs. Clarithromycin. https://www.tbdrugmonographs.co.uk/ofloxacin.html
4. WHO Expert Committee on Leprosy. WHO Expert Committee on Leprosy: Eighth Report. World Health Organization. 2010
5. Critical Care Pharmacy Handbook. Pharmaceutical Services Programme. Second edition. 2020
6. Manual Pengurusan Kusta Edisi Ke-3. MOH. 2023
7. Protocol on Drug Administration Via Enteral Feeding Tubes. First edition. MOH. 2022

Clofazimine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Iminophenazine			
Indications and Dosage	1. First-line treatment for leprosy (Paucibacillary & Multibacillary) (to be used in combination with other anti-leprosy agents) a. Adult: 300mg once a month & 50mg once daily b. Children: i) 10-14 years old : 150mg once a month & 50mg on alternate day ii) <10 years old or <40kg: 6mg/kg once a month & 1mg/kg once daily C. Duration: Paucibacillary: 6 month Multibacillary: 12 mont*h* 2. Drug-resistant leprosy Adult : 50mg once daily (in combination with other anti-leprosy drugs)			
Method of Administration*	Oral; not available parenterally **Food** 1. To be taken with food to avoid stomach upset and improve absorption (including enteral feeding). **RT administration** 1. Capsules containing powdered therapeutic substances can be administered enterally **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Not recommended due to limited data (some reports of normal outcomes, some reports of neonatal deaths)			
	Breastfeeding			
	Avoided with breastfeeding due to pigmentation of the infant			
	Elderly			
	NA			
	Paediatric			
	The 100 mg soft gel capsule is difficult to swallow for young children and therefore countries are strongly encouraged to make the 50 mg tablet formulation available. [WHO WEIGHT BAND]			
	Fasting			
	To refer to the latest advisory by religious authority			

	Others			
	Use in renal disease: No dosage adjustment required Use in hepatic disease: Avoid in patients with liver impairment (Child-Pugh classes A, B, and C) unless benefit outweighs risk.			
Side Effects and their Management*	1. Orange-pink, red, or brownish-black discoloration of skin, conjunctiva, cornea, and body fluids. 2. Gastrointestinal intolerance 3. Photosensitivity 4. QT prolongation (risk for torsades de pointes) Advise patients to inform their healthcare providers if they experience any side effects. Inform pt discoloration effect goes away after stopping the medicine but may take a long time to do so (months to years). Patients should avoid the sun and use strong sunscreens.			
Storage*	Room temperature			
Others	**<u>Monitoring parameters:</u>** - ECG monitoring required *if other QT-prolonging drugs are taken concurrently **<u>Drug-drug interactions:</u>** Drugs prolong the QT interval Examples: - fluoroquinolones,bedaquiline and delamanid - ancillary and common drugs (azoles, macrolides, metoclopramide, efavirenz, furosemide, hydrochlorothiazide, SSRIs and TCAs: citalopram, escitalopram, methadone, antiarrhythmics and others).			

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1. World Health Organization. Guidelines for the diagnosis, treatment and prevention of leprosy. 2018
2. World Health Organization. WHO model prescribing information: drugs used in leprosy. In WHO model prescribing information: drugs used in leprosy 1998
3. TB Drug Monographs. Clofazimine. https://www.tbdrugmonographs.co.uk/ofloxacin.html
4. WHO Expert Committee on Leprosy. WHO Expert Committee on Leprosy: Eighth Report. World Health Organization. 2010
5. Critical Care Pharmacy Handbook. Pharmaceutical Services Programme. Second edition. 2020
6. Manual Pengurusan Kusta Edisi Ke-3. MOH. 2023
7. Protocol on Drug Administration Via Enteral Feeding Tubes. First edition. MOH. 2022
8. UpToDate Inc.
9. World Health Organization. (2022). WHO operational handbook on tuberculosis. Module 4: treatment-drug-resistant tuberculosis treatment, 2022 update. World Health Organization
10. Pharmaceutical Services Division Negeri Sembilan State Health Department. (2022). Protocol on Drug Administration Via Enteral Feeding Tubes. First Edition

Clopidogrel

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiplatelet-Thienopyridine P2Y12 Antagonist			
Indications and Dosage	1. **Indication 1**:Non-ST segment elevation acute coronary syndrome(unstable angina or non-Q-wave myocardial infarction) including patients undergoing a stent placement following percutaneous coronary intervention a. Dosage for indication 1: 75mg od 2. **Indication 2:** ST segment elevation acute myocardial infarction,in combination with acetylsalicylic acid (ASA) in medically treated patients eligible for thrombolytic therapy a. Dosage for indication 2: 75mg od 3. **Indication 3:** Ischaemic stroke a. Dosage for indication 3: 75mg od			
Method of Administration*	Take with or without food. Can be crushed to administer through an NG tube **Missed dose management:** Take a missed dose as soon as remembered.If it is close to the time for the next dose, skip and go back to normal time. Do not take 2 doses at the same time. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	No clinical data on exposure to clopidogrel during pregnancy are available			
	Breastfeeding			
	Limited data			
	Elderly			
	Safe in elderly			
	Paediatric			
	Should not be used in children			
	Fasting			
	Not applicable			
	Others			
	1. Experience is limited in patients with moderate hepatic			

	disease who may have bleeding diathesis. 2. Experience is limited in patients with severe and moderate renal impairment.			
Side Effects and their Management*	1. Haematoma,Epistaxis,Gastro-intestinal haemorrhage,diarrhoea,abdominal pain,dyspepsia,bruising			
Storage*	1. Store below 30°C. Protected from light			
Others	1. Concomitant use of Omeprazole or Esomeprazole with Clopidogrel should be discouraged. 2. Bleeding risk is increased with concomitant use of other drugs that increase bleeding (eg anticoagulants, antiplatelet agents, and chronic use of NSAIDs. 3. Interrupt use 5 days prior to elective surgery with major risk of bleeding, when possible.			

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References:

1. Troikaa Pharmaceuticals Ltd. Clopidogrel 75mg (AntiPlatt) Product Leaflet.Revised: August 2022
2. MIMS Gateway Online.Release version: October 2024
3. Formulari Ubat KKM. Database version:241115.0002

Clotrimazole, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antifungal agent: Imidazole Derivatives			
Indications and Dosage	**<u>Adult</u>** ***Candidal balanitis*** 1. Apply 2 or 3 times onto male sexual partner's genital organ, for up to 2 weeks. **Skin fungal infections** 1. Apply thinly to the affected area(s) 2 or 3 times per day. Continue treatment for at least 4 weeks (dermatophyte infections) or at least 2 weeks (candida infections) **<u>Paediatric</u>** **Tinea Cruris** 1. Apply twice daily (morning & night) *up to 2 weeks.* **Tinea Corporis and Tinea Pedis** 1. Apply twice daily (morning & night) up to 4 weeks **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Adult** 1. For external use only 2. Avoid contact with eyes and application to severely cracked or irritated areas of the skin. Apply a thin layer to the affected area. 3. Athlete's foot; pay special attention to spaces between the toes; wear well-fitting, ventilated shoes and change shoes and socks at least once a day. **Paediatric** 1. For external use only 2. Apply sparingly and rub gently into the cleansed, affected area. 3. Do not apply to the eye. 4. Tinea pedis: apply to spaces between toes **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Minimally absorbed following topical or vaginal administration. Pregnancy category (USFDA): C			
	Breastfeeding			
	1. Presence in breast milk is unknown			
	Elderly			
	1. Refer to adult dosing 2. Patients who use topical oils, creams, and ointments have potential fall risk .Patients may be advised to			

	wear nonslip socks if applying topical medications to feet. Patients should be advised to apply cream while seated or standing on non-slip surfaces.			
	Paediatric			
	Children under 12 years old should be supervised during use.			
	Others			
	No dosage adjustments in kidney impairment and liver impairment as well as paediatric populations			
Side Effects and their Management*	1. General disorders and administration site conditions: Application site reactions may include. peeling/exfoliation, stinging sensation, pain, discomfort 2. Skin and subcutaneous tissue disorders: Rash, urticaria, pruritus. 3. Local irritation:If irritation or sensitivity develops, discontinue therapy immediately. Consult a healthcare provider for appropriate alternative therapy.			
Storage*	1. Protect from light. 2. Store below 25°C / 30°C			
Others	1. Topical cream therapy may not be effective for treating infection of the scalp or nails. 2. Monitor the application site for signs of severe skin irritation (e.g. redness, itching, burning, blistering, swelling, oozing). 3. Hypersensitivity reactions, such as rash or swelling, may also occur. If such reactions are noticed, the use of the product should be stopped immediately, and medical advice should be sought.			

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References:

1. Clotimazole (topical) Adult & Paediatric (2024). UptoDate [Drug information]. Retrieved November 16, 2024, from https://www.uptodate.com
2. Formulari Ubat KKM (n.d.). Ministry of Health Malaysia. Retrieved December 20, 2024, from https://pharmacy.moh.gov.my/ms/apps/fukk
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4. HOE Pharmaceuticals Sdn. Bhd. (2023). Candazole Cream 1% w/w [Product insert]
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6. MIMS Pte Ltd (n.d.). Clotrimazole. Retrieved January 21, 2025, from https://online1.mimsgateway.com.my/Malaysia/home/index?redir=%2F%2Fdrug%2Finfo%2FClotrimazole%2FClotrimazole%3Ftype%3Dbrief%26mtype%3Dgeneric
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Clozapine

Name:		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Atypical Antipsychotics**			
Indications and Dosage	Treatment-resistant schizophrenia 1. Suggested starting dose : 12.5mg once or twice on the first day, followed by 25 or 50mg on the second day. If well tolerated, the dose may then be increased in increments of 25-50mg/day in order to achieve a daily dose of 300mg within 2-3 weeks. Thereafter, may be further increased in 50-100mg increments at half or weekly intervals. 2. Speed & dose titration depends if pt is naive and care setting e.g. inpatient vs outpatient) 3. Therapeutic dose range (usually given in two divided doses): i. Female 250mg/day [smokers, 450mg/day] ii. Male 350mg/day [smokers, 550mg/day] 4. Maximum dose : 900mg/day. Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Take Clozapine at the same time every day with water or a cool drink 2. This medication can be taken with or without food. **Missed dose management:** 1. Take as soon as you remember, omit If it is almost time for next dose 2. Take the next dose as usual. Do not double the dose. 3. If you miss 2 or more days of Clozapine doses, talk to your doctor before you start taking it again. You might have to restart the medicine at a lower dose. 4. Treatment interruption may lead to changes to the blood monitoring schedule **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	Animal-reproduction studies have not demonstrated a foetal risk but there is no controlled study in humans. Inform your doctor if you are planning for pregnancy or become pregnant while taking clozapine.			
	Breastfeeding			
	1. Lactating mothers on clozapine are advised not to breastfeed while on treatment. For those who do not wish to continue lactating, formula milk supplementation should be offered to the infants			

	Elderly			
	In older patients (≧60 years) initiation of treatment at a particularly low dose is recommended (12.5mg given once on the first day), with subsequent dose increment restricted to 25mg/day. Beers Criteria: 1) Avoid in adjunctive treatment of MDD or for short term use as antiemetic, except in FDA approved indications (e.g Schizophrenia, bipolar disorder, Parkinson disease psychosis). Increase risk of death, metabolic effects, orthostatic hypotension and cardiac arrhythmias. 2) Use is associated with fall risk. To advise on fall precautions. Micromedex: Black Box Warning :Avoid for behavioral problems related psychosis of dementia or delirium			
	Paediatric			
	Safety and effectiveness in pediatric patients have not been established			
	Fasting			
	1. Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**.			
	Pre-Operative			
	1. If clozapine was withheld before surgery and discontinued for more than 48 hours, treatment should be re-initiated. Changes to blood monitoring schedule may be required. Contact your prescriber.			
	Renal Impairment			
	1. Mild to moderate renal impairment: low starting dose (12.5mg on the first day)and increased slowly in small increments. 2. Contraindicated in severe renal impairment.			
	Hepatic Impairment			
	1. Contraindicated in active liver disease associated with nausea, anorexia or jaundice; progressive liver disease, hepatic failure. 2. If you develop symptoms of possible liver dysfunction such as yellowing of the skin, abdominal pain, nausea, vomiting and/or anorexia during clozapine treatment, Immediately contact your prescriber			
	Dietary and lifestyle considerations ● Adopt healthy lifestyle which includes well balanced diet, adequate hydration and exercise ● Cleaning teeth morning and night (this also helps keep white cell counts up) ● Reduce or quit smoking. Plan this with the doctor.			
Side Effects and their Management*	**Common side effects:** 1. Sedation: may improve with time. Avoid activity requiring mental alertness or coordination. Do not drink			

	alcohol during treatment with this medicine as it might increase the sedative effect. Do not drive or work with tools or machinery if affected. Inform prescriber at next appointment (to consider night-time dosing only) 2. Constipation: bowel habit monitoring, increase your physical activity, fluid and fibre intake. May require medications. Contact prescriber if unable to pass flatus or if there is abdominal pain/discomfort (warning sign) 3. Tachycardia: contact your prescriber if you experience persistent palpitation 4. Weight gain: Advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise. 5. Hypersalivation: often improves over time. If persistent, inform your prescriber at the next appointment. Use a towel on the pillow while sleeping and make sure to bring towel/tissue along. 6. Blood pressure changes: clozapine can cause both hypotension and hypertension 7. Hyperglycaemia: watch out for symptoms of increased sugar levels such as frequent urination, increased thirst and delay in wound healing **Rare but serious side effects** : 1. Severe infection (due to drop in white cells - a condition called Neutropenia): advise to seek urgent medical assessment it patient develop flu-like symptoms 2. Clozapine lowers the seizure threshold. Higher risk with higher doses. Immediately contact your prescriber in an event of seizure. 3. Cardiac complications including myocarditis and cardiomyopathy. In cases where tachycardia persists at rest and is associated with fever, hypotension or chest pain, it may indicate myocarditis. Immediately contact your prescriber.			
Storage*	Store at a temperature below 30°C.			
Others	Drug-lifestyle interactions ● Cigarette smoking can decrease clozapine levels. May require a decrease clozapine dose during periods of smoking cessation, please inform your prescriber Blood regular monitoring ● During the first 18 weeks of administration, patients are required to have their full blood count checked weekly. This changes to fortnightly after 18 weeks and then monthly after one year.			

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References:

1. UpToDate, Inc. (2024). Clozapine: Drug information (Version 3.68.1) [Mobile application]. UpToDate, Inc.
2. MADAUS GmbH.(2023). Product Information Leaflet: Clozaril .Retrieved from Quest 3+ Search on January 21, 2025
3. Sullivan, C. (2023, November 3). Clozapine counselling – OSCE guide. Geeky Medic. https://geekymedics.com/clozapine-counselling-osce-guide/
4. Ahmad S.N.A. et. al. CPG Management of Schizophrenia (Second Edition, 2021). Accessed on January 21, 2025. Available from: CPG Management of Schizophrenia (Second Edition) v20221219.pdf
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Corticosteroids, Topical

Name :		Unit :		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**TOPICAL CORTICOSTEROIDS** 1. Very Potent (Class I) Clobetasol propionate 0.05% cream/ointment 2. Potent (Class II) Betamethasone dipropionate 0.05% cream/ointment Betamethasone valerate 0.1% cream/ointment Mometasone furoate 0.1% cream/ointment 3. Moderate Potent (Class III) Betamethasone valerate 0.05% cream/ointment (1:2) Betamethasone valerate 0.025% cream/ointment (1:4) Clobetasone butyrate 0.05% cream/ointment 4. Mild Potent (Class IV) Betamethasone valerate 0.0125% cream/ointment (1:8) Hydrocortisone acetate 0.5-1% cream/ointment *Based on UK classification: Creams are generally less potent than ointments of the same medication.			
Indications and Dosage	For the relief of inflammatory and pruritic manifestations associated with steroid responsive dermatoses. For disease: • eczema – such as atopic eczema • contact dermatitis – which causes symptoms such as dandruff and scaly patches on the skin • psoriasis Apply as directed by the prescribing doctor.			
Method of Administration*	1. The medicine should only be applied to affected areas of skin. Gently smooth a thin layer onto your skin in the direction the hair grows. Wash your hands before and after you've applied the medicine, unless you are treating an area on your hands. 2. If you're using both topical corticosteroids and emollients, topical corticosteroids should be applied 20- 30 minutes after the application of emollient 3. Sometimes, the amount of medicine you're advised to use will be given in fingertip units (FTUs). 4. A FTU (about 500mg of cream/ointment or 2% Body Surface Area) is the amount needed to squeeze a line from the tip of an adult finger to the first crease of the finger. It should be enough to treat an area of skin double the size of your palm with your fingers together. 5. Duration of usage: a) short-term therapy with potent and very potent topical corticosteroids may be used to gain rapid clearance in psoriasis patients with limited			

	plaques. These preparations should be avoided on the face, genitalia and body folds. b) Limit use of super potent corticosteroids to less than 30g/week. c) Limit use of potent corticosteroids to less than 60g/week. d) Continuous use of potent corticosteroids should not exceed four weeks. e) Continuous use of super potent corticosteroids should not exceed two weeks. f) Mild potency corticosteroids may be used for face, genitalia and body folds. g) Do not abruptly discontinue using topical steroids as it can cause the disease to flare up. Apply the principle of Step down and Step up and not PRN basis. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Overall topical corticosteroids appear to be safe during pregnancy. High-potency topical corticosteroids should be avoided if possible and when they must be used they should be used only for a short time, the amount used should be kept to a minimum and fetal growth should be monitored.			
	Breastfeeding			
	There are no studies assessing the safety of topical corticosteroid use during lactation. It is recommended that the topical treatment in the nipple region be applied after nursing the child, to allow the drug to be absorbed before the next feeding, and that the nipple area be gently cleaned of the remaining drug before nursing.			
	Elderly			
	NA			
	Paediatric			
	Safety and efficacy of topical steroids are established in pediatric patients. Follow the specific instructed duration, use different potencies on different areas, avoid sensitive areas and occlusion unless directed, and monitor for side effects such as skin atrophy or systemic absorption.			
	Fasting			
	NA			
	Others			
	NA			
Side Effects and their Management*	1. When used correctly, topical corticosteroids rarely cause serious side effects. The most common side effect is a burning or stinging sensation, which typically improves with continued use. 2. Less common side effects can include: 3. Skin issues: Thinning, striae formation, contact			

	dermatitis, acne, rosacea, changes in skin color (more noticeable in dark skin), and excessive hair growth. 4. Infections: Worsening or spreading of existing infections and inflamed hair follicles (folliculitis). 5. Risks are higher with more potent steroids, prolonged use, large application areas, and in vulnerable groups like the elderly and young children. Prolonged use of high-potency steroids can lead to systemic effects like Cushing's syndrome or growth suppression in children. 6. For detailed side effect information, consult the medicine leaflet.			
Storage*	Keep the jar tightly closed. Store below 30°C and protect from heat, moisture, and light. Do not freeze. Keep out of reach of children.			
Others	● Unless the medication is formulated for the eye area, Do not use steroids on, in or around the eyes as it can cause cataracts and glaucoma.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Alabdulrazzaq, F., & Koren, G. (2012). Topical corticosteroid use during pregnancy. Canadian Family Physician, 58(6), 643–644. PMCID: PMC3374684, PMID: 22700732.
2. National Health Service. (2023). Topical steroids. NHS. Retrieved December 19, 2024, from https://www.nhs.uk/conditions/topical-steroids/
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5. Academy of Medicine Malaysia. (2018). Management of atopic eczema. https://www.acadmed.org.my/CPGdl/CPG%20Management%20of%20Atopic%20Eczema.pdf

Crotamiton, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Scabicide Antipruritic agent			
Indications and Dosage	1. Scabies for infant <2yo 2. Pruritus 3. Insect bite reaction *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**1. Scabies** a. Bath and dab dry before applying the cream. b. Apply the cream by massaging into the skin from the chin to the toes including skin folds and creases. Special attention should be paid to sites that are particularly susceptible to infestation by the mites (interdigital space, wrist, axillae and genitalia). c. Cut fingernails short and make sure to apply under fingernails too. d. DO NOT apply the cream in the eyes or mouth. e. DO NOT apply to raw, weeping, or inflamed skin. f. Areas where there is pus formation should be covered with a dressing impregnated with crotamiton. g. The application should be repeated once daily, preferably in the evening, for a total of 3-5 days depending on the response. h. For nodular scabies, apply to the nodules 3 times a day for 7-14 days. i. Finish the full course prescribed by your doctor even if you think your condition is better. **2. Pruritus and Insect bite reaction** a. Massage the cream into itchy patches until the medication is absorbed into the skin 2-3 times a day until itching has subsided. b. DO NOT apply the cream in the eyes or mouth. c. DO NOT apply to raw, weeping, or inflamed skin. **Miss dose management**: If a dose is missed, use it as soon as possible. If it is almost time for the next dose, use only that dose. Do not use double or extra doses. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Use during pregnancy, particularly during the first trimester is NOT ADVISED.			

	Breastfeeding			
	No data on the harmful effect on breastfeeding women. Nursing mothers should, in all events, avoid applying crotamiton in the area of the nipples.			
	Elderly			
	None specifically to the product			
	Paediatric			
	Dosing and treatment recommendations may vary among individual products or between countries.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	N/A			
Side Effects and their Management*	1. Burning, itching, rash, redness, stinging, swelling, numbness 2. Discontinue use if severe irritation or sensitization occurs.			
Storage*	1. Store at room temperature below 25C. 2. Protect from light 3. Discard any unused medicine after the expired date			
Others	1. Patients with scabies and their close physical contacts, even without symptoms, should receive treatment at the same time. 2. Wash clothing and bedding in hot water or by dry cleaning. Clothing that cannot be washed may be stored in a sealed plastic bag for three days. 3. If the treatment is applied by someone without scabies, this person should wear medical gloves during application 4. Avoid application to the face, eyes, mouth or an acutely inflamed, denuded or weeping skin. 5. After completion of treatment, patients should use fresh, clean bedding and clothing. 6. To prevent re-infestation, put freshly washed or dry-cleaned clothing and change bedding.			

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References:

1. MIMS Malaysia Online. Crotamiton (Available at https://www.mims.com/malaysia/drug/info/crotamiton?mtype=generic). Accessed on January 20, 2025.
2. Formulari Ubat KKM. (2025, January 1). Accessed on January 20, 2025.
3. Cleveland Clinic. Crotamiton topical cream or lotion (Available at https://my.clevelandclinic.org/health/drugs/18703-crotamiton-topical-cream-or-lotion). Accessed on January 20, 2025
4. UpToDate Online. Crotamiton: Drug information.(Available at https://www.uptodateonline.ir/contents/UTD.htm?12/45/13011?source=see_link) Accessed on January 20, 2025

Ismail, H.I.H.M., Ibrahim, H.M., Ng, H.P., Kesihatan, M.K. and Thomas, T. (2019) Paediatric Protocols for Malaysian Hospitals. 4th Edition, Ministry of Health, Putrajaya.

Dabigatran

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Direct Oral Anticoagulant - Direct Thrombin Inhibitor			
Indications and Dosage	1. Prevention of venous thromboembolic events in patients who have undergone total knee replacement or total hip replacement surgery. a. Following total knee replacement: Initially ADULT 110mg (ELDERLY, 75 mg) within 1- 4 hours after surgery, then 220 mg (ELDERLY, 150 mg) once daily thereafter for 6-10 days Following total hip replacement: Initially ADULT 110 mg (ELDERLY, 75 mg) within 1- 4 hours after surgery, then 220 mg (ELDERLY, 150 mg) once daily thereafter for 28-35 days 2. Reduction of the risk of stroke and systemic embolism in patients with non-valvular atrial fibrillation (AF) a. Recommended daily dose is 300mg taken orally as 150mg hard capsule twice daily. Therapy should be continued lifelong. b. For the following groups, the recommended daily dose is 220 mg taken as one 110mg capsule twice daily: - Patients aged 80 years or above -Patients who receive concomitant verapamil Special patient population for renal impairment: Renal function should be assessed by calculating the creatinine clearance (CrCl) prior to initiation of treatment with Dabigatran to exclude patients for treatment with severe renal impairment (i.e. CrCl < 30 ml/min). 3. Treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) and prevention of recurrent DVT and PE in adults. a. Recommended daily dose is 300mg taken as one 150mg capsule BD following treatment with a parenteral anticoagulant for at least 5 days. The duration of therapy should be individualized after careful assessment of the treatment benefit against the risk for bleeding. b. Same as 2b			
Method of Administration*	1. The capsules should be swallowed whole. 2. Breaking, chewing, or emptying the contents of the capsule can result in increased exposure.The oral bioavailability of dabigatran etexilate increases by 75% when the pellets are taken without the capsule shell compared to the intact capsule formulation. 3. Dabigatran can be taken with or without food. **Missed dose management :** 1. If a dose of dabigatran is not taken at the scheduled time, the dose should be taken as soon as possible on the same day; the missed dose should be skipped if it cannot be taken at least 6 hours before the next			

	scheduled dose. The dose of dabigatran should not be doubled to make up for a missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. There are no adequate and well-controlled studies in pregnant women. 2. Safety and effectiveness of dabigatran during labor and delivery have not been studied in clinical trials.			
	Breastfeeding			
	1. It is not known whether dabigatran is excreted in human milk.			
	Elderly			
	1. Dose reductions may be required as per 'Indications and Dosage' MALPIP: Increased risk of gastrointestinal bleeding; haemorrhagic stroke and haemorrhage. Avoid use in elderly patients with CrCl less than 30 mL/min Beers Criteria: Use caution in selecting dabigatran over other DOACs (e.g., apixaban) for long-term treatment of nonvalvular atrial fibrillation or VTE. Increased risk of GI bleeding compared with warfarin (based on head-to-head clinical trials) and of GI bleeding and major bleeding compared with apixaban (based on observational studies and meta-analyses) in older adults when used for long-term treatment of nonvalvular atrial fibrillation or VTE. * *When selecting among DOACs and choosing a dosage, pay special consideration to kidney function,indication, and body weight & swallowing status (dysphagia)*			
	Paediatric			
	Dosing is based on weight and age.			
	Fasting			
	Not applicable			
	Others			
	1. No dose adjustment of dabigatran is recommended in patients with mild or moderate renal impairment 2. Reduce the dose of dabigatran in patients with severe renal impairment (CrCl 15-30 mL/min). The recommended dose is 75 mg twice daily 3. Dosing recommendations for patients with a CrCl <15mls/min or on dialysis cannot be provided. 4. For patients with liver disease that is associated with changes in the blood tests, the use of dabigatran is not recommended.			
Side Effects and their	1. In some people, dabigatran can cause symptoms of an allergic reaction, including hives, rash, and itching.			

Management*	2. To seek medical assistance right away if you have any of the following symptoms of a serious allergic reaction with dabigatran: a. chest pain or chest tightness b. swelling of your face or tongue c. trouble breathing or wheezing d. feeling dizzy or faint 3. To seek emergency care right away if there are signs or symptoms of unusual or serious bleeding from any parts of the body. 4. Common side effects of dabigatran include: a. indigestion, upset stomach, or burning b. stomach pain			
Storage*	1. Store dabigatran at room temperature between 15°C to 30°C. 2. Keep dabigatran in the original blister package to keep it dry (protect the capsules from moisture). 3. Do not put dabigatran in pill boxes or pill organizers.			
Others	1. Monitoring parameters a. Serum creatinine b. Hemoglobin level *(Frequency of monitoring depends on the baseline level)* 2. Drug interactions a. P-gp Inducers Rifampin - Avoid b. P-gp Inhibitors: Dronedarone ketoconazole, amiodarone, verapamil, and quinidine Consider reducing the dose of dabigatran to 75 mg twice daily when dronedarone or systemic ketoconazole is coadministered with dabigatran in patients with moderate renal impairment (CrCl30-50 ml/min). The use of dabigatran and P-gp inhibitors in patients with severe renal impairment (CrCl 15-30 mL/min) should be avoided.			

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References:

1. Boehringer Ingelheim Pharmaceuticals, Inc. (2011). Product information leaflet: Pradaxa. Retrieved from Quest 3+ Product Search on January 1, 2025.
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Dapsone

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Sulfone antibiotic			
Indications and Dosage	*First-line treatment for leprosy (Paucibacillary & Multibacillary) (to be used in combination with other anti-leprosy agents)* *a. Adult: 100mg daily* *b. Children:* *i) 10-14 years old : 50mg daily* *ii) <10 years old or <40kg: 2mg/kg daily*			
Method of Administration*	**Food** To be taken with meals if GI upset occurs **RT administration** Tablet can be crushed, mixed with water and administered through Ryles Tube **Missed dose** Take as soon as remembered, skip if near next dose; do not double dose Do not stop taking your medication unless advised to do so by your prescriber			
Special Considerations	**Pregnancy**			
	Safe in pregnancy			
	Breastfeeding			
	Safe to be used in breastfeeding, but avoid for infants with G6PD deficiency.			
	Elderly			
	NA			
	Paediatric			
	Dapsone syrup 2mg/ml can be prepared			
	Fasting			
	NA			
	Others **Use in renal disease:** Can be used without dose adjustment **Use in hepatic disease:** No recommended dose adjustment, use with caution			
Side Effects and their Management*	1. GI disorders: nausea and vomiting 2. Headache 3. Haematologic: haemolytic anaemia, haemolysis,			

	methaemoglobinaemia 4. Hypersensitivity reaction, including SJS, TEN 5. Hepatitis, transaminitis *Advise patients to inform their healthcare providers if they experience any side effects.*			
Storage*	1. Tablet should be kept at room temperature 2. Suspension should be refrigerated and protected from light; stable for 91 days (Extemp formulation 2015)			
Others	*Avoid use in individuals with G6PD-deficiency.*			

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References:

1. Manual Pengurusan Kusta Kebangsaan, Edisi 3. (2023). Kementerian Kesihatan Malaysia.
2. Extemporaneous Formulation. (2015). Kementerian Kesihatan Malaysia.
3. Senarai Ubat Galenikal dan Ekstemporaneous (GAEX) Dalam PhIS, updated on 5 Dec 2024
4. X-Temp Oral Suspension Master Formulation Sheets. (2023). Pharm-D.
5. Dapsone (systemic): Drug information. UpToDate Inc. Accessed March 2025.

Darbepoetin Alfa

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Other antianemic preparations Darbepoetin Alfa			
Indications and Dosage	1. Treatment of anaemia associated with chronic kidney failure, including patients on dialysis and patients not on dialysis a. CKD **ON** dialysis: IV/SC: 0.45 mcg/kg once weekly or 0.75 mcg/kg once every 2 weeks b. CKD **NOT** on dialysis: SC: 0.45 mcg/kg once every 2 to 4 weeks Dose may be increased or decreased by 25% once every 4 weeks, according to Hb level. The dose should not exceed 180mcg per single injection. 2. Anemia with myelodysplastic syndrome a. 240 mcg as a single subcutaneous injection once weekly. The dose should be decreased in view of the degree of anemic symptoms and the patient's age. Dosing is according to product insert. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Route of Administration:** Intravenous (IV) or Subcutaneous (SC): **Site of administration for SC:** Lower part of abdomen, thigh or arm **Injection technique for SC (for self-administered)** 1. Take one syringe out of the package and check that the solution is clear, colourless and free from visible particles**.** 2. Allow the syringe to reach room temperature. 3. Wash your hands.. 4. Unscrew the cap from the syringe. 5. Remove the needle from the pack, fix it on the syringe and remove the protective cap from the needle. 6. Clean the skin at the site of injection using an alcohol swab. 7. Form a skin fold by pinching the skin between thumb and forefinger. 8. Fully insert the needle 45^0 or 90^0 angle into the skin fold with a quick, short motion. Once the needle is inserted, release the pinch. 9. Slowly inject the darbepoetin solution. 10. Withdraw the needle and apply pressure over the injection site with a dry and sterile pad. 11. Dispose the empty syringe in a special waste container 12. Tear off the medication label on the syringe and stick into the booklet/diary (e.g., CAPD book) after the injection for the administration record, if available.			

	Consideration: 1. Blood pressure (BP) cutoff for administering Erythropoietin Stimulating Agent (ESA) is individualised. Generally, ESA is not given if BP exceeds 160/100 mmHg. Patients need to be informed about their specific BP cutoff whether to continue or hold ESA at home. 2. The site of SC injection should be rotated. **Missed dose management:** The missed dose should be administered as soon as possible and administration of Darbepoetin Alfa is to be restarted at the prescribed dosing frequency. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Not recommended. 2. When use is necessary, should be limited to cases where expected therapeutic benefits outweigh possible risks			
	Breastfeeding			
	1. Not recommended. 2. When necessary,patients should avoid lactation during the treatment.Safety has not been established.			
	Elderly			
	1. Parameters such as the blood pressure, haemoglobin concentration and hematocrit level should be frequently measured, elderly generally have reduced physiological function and are likely to have cardiovascular complications such as hypertension			
	Paediatric			
	Safe to be used in children. The recommended dosing schedule should be individualized.			
	Fasting			
	Administer as usual			
	Others			
	No dosage adjustment was provided in the manufacturer's labelling.			
Side Effects and their management*	1. Common side effects, generally not serious: headache, increased blood pressure, irritation or pain at the injection site. Note: ● To advise on the importance of compliance with antihypertensive medications and dietary restrictions for BP control. ● If side effects persist, please consult a healthcare professional 2. Uncommon/rare: Pure red cell aplasia (PRCA)			
Storage*	1. Transport of ESA is only allowed in a cool box with ice			

	packs. 2. Preferably to return home immediately after getting ESA from the pharmacy to facilitate fast storage. 3. ESA is very sensitive to light and temperature. 4. Protect ESA from light 5. Store ESA in the refrigerator, do not freeze. Keep at 2-8°C. 6. Avoid fridge doors, and vegetable compartments. Ensure there is proper air circulation around your ESA. 7. If you're travelling, try to keep your medication in a cooler with ice packs, and avoid storing it in any place where it might get too hot, like in a car. 8. According to the stability data for NESP Injection, the syringe remains stable for up to 3 months when stored in its box or a dark place at 25°C. **Handling of disposal:** 1. Needles and syringes should never be reused. 2. Place all used needles and syringes into a sharps container (puncture-proof disposable container). 3. Keep the sharp container out of the reach of children. 4. Avoid disposing of used sharps containers in household waste. 5. Dispose of full sharps containers according to local regulations or at designated facilities.			
Others	**Precautions:** 1. Hypertension. 2. Cardiovascular disease including recent myocardia infarction (MI) and venous thromboembolism 3. Malignant disease 4. Patients with epilepsy, history of seizures, or medical conditions associated with a predisposition to seizure activity such as CNS infections and brain metastases. **Monitoring parameters:** 1. Blood pressure particularly at the start of therapy 2. Monitor haemoglobin at least monthly during the initiation phase. 3. Monitor iron status at least every 3 months during ESA therapy. **Contraindications:** 1. Known hypersensitivity to the active substance or to any of the excipients 2. Uncontrolled hypertension. 3. Pure red cell aplasia (PRCA) that begins after treatment with other erythropoietin stimulating agents (ESAs).			

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References :

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 1, 2025.
2. Bak Leong, G., Sunita, B., Rosnawati, Y., & Lily, M. (2023). Handbook of kidney replacement therapy (5th ed.). Ministry of Health Malaysia.
3. Kyowa Kirin (2019). Product information leaflet: NESP®. Retrieved from Quest 3+ Product Search on January 1, 2025.

Darunavir

Name : Darunavir 600mg Tablet		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Protease Inhibitors			
Indications and Dosage	HIV Infection in combination with other antiretroviral agents. Adult: Darunavir 600mg twice daily to be taken together with 100mg Ritonavir twice daily Children ≥ 12 years old or adolescents weighing ≥ 40kg: Darunavir 600mg together with 100mg Ritonavir twice daily			
Method of Administration*	Take Darunavir always together with Ritonavir Should take Darunavir with food (increase bioavailability) To take medication consistently at the same time everyday Enteral feeding/enteral tube: No data. Oral suspension formulation is available. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	There are no adequate and well-controlled studies on pregnancy outcome with darunavir in pregnant women. Studies in animals have not shown evidence of development toxicity or effect on reproductive function and fertility. Darunavir should be used during pregnancy only if the potential benefit justifies the potential risk.No dose adjustment is required for darunavir during pregnancy and postpartum.			
	Breastfeeding			
	It is not known whether darunavir is excreted in human milk. Studies in rats have demonstrated that Darunavir is excreted in milk. Because of both the potential for HIV transmission and the potential for serious adverse events in nursing infants, mothers should be instructed not to breastfeed if they are receiving Darunavir.			
	Elderly			
	N/A			
	Paediatric			
	Darunavir is not recommended in children below 3 years old and less than 10kg.			
	Fasting			
	Time of administration for this medication may be adjusted accordingly when fasting.			

	Others			
	Adult: 1. Renal impairment : No dosage adjustment needed 2. Hepatic impairment : Mild to moderate impairment - No dosage adjustment needed Severe impairment - Use is not recommended			
Side Effects and their Management*	1. Very common side effects (may affect more than 1 in 10 people) - diarrhoea 2. Common side effects (may affect up to 1 in 10 people) - vomiting, nausea, abdominal pain or distension, dyspepsia, flatulence headache, tiredness, dizziness, drowsiness, numbness, tingling or pain in hands or feet, loss of strength, difficulty falling asleep.			
Storage*	Do not store above 30°C.			
Others	Contraindications Coadministration with alfuzosin, dihydroergotamine, ergonovine, ergotamine, methylergonovine, cisapride, pimozide, oral midazolam, triazolam, St. John's Wort, lovastatin, simvastatin, rifampin and sildenafil (for treatment of pulmonary arterial hypertension)			
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References:

1. Wolter Kluwer. 2024 . UpToDate - Darunavir. UpToDate,Inc.
2. Janssen Pharmaceuticals Inc (2006). PREZISTA 600MG TABLET (Consumer Medication Information Leaflet

Deferasirox and Deferiprone

Name :		Unit :		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**ORAL IRON CHELATORS** **DEFERIPRONE (DFP)** Tab Deferiprone (DFP) 500mg Immediate Release (IR) Tab Deferiprone (DFP) 1000mg Delayed Release (DR) Syrup Deferiprone 100mg/ml **DEFERASIROX (DFX)** Tab Deferasirox (DFX) Film-Coated 90mg, 180mg, 360mg Can be used as monotherapy or in combination with other oral iron chelating agents.			
Indications and Dosage	To remove excessive iron in the body due to regular blood transfusion in thalassemia patients. The goal is to maintain a safe level of body iron at all times, to prevent iron overload from transfusion therapy. **DFP** 50-100mg/kg/day Tablet: Not recommended for children below 6 years of age. Syrup: Not recommended for children below 3 years of age. **DFX** 14-28mg/kg/day Not recommended for children below 2 years of age. *Tablets may be halved for necessary dose rounding.* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**DFP** DFP is available as: i) Syrup 100mg/ml form, ii) Tablet 500mg immediate-release (three-times-a-day) iii) Tablet 1000mg delayed release (twice-a-day) Always verify formulation prior to dispensing. Administration: To be taken orally. Oral solution 100mg/ml: Administer in **three divided dosing** (in the morning, at midday, and in the evening). Measure dose accurately. After dose administration, add 10mL to 15mL of water to the cup, swirl around to mix any remaining medication and consume. 500mg IR tablet: Administer in **three divided dosing** (in the morning, at midday, and in the evening). 1000mg DR tablet ONLY: Administer in **two divided doses**, approximately every 12 hourly. May be taken before or after a meal, but taking it after a meal may reduce nausea.			

	The tablets are scored and breakable in half. **Missed dose management :** **If a dose is missed, take it as soon as possible. If it is almost time for the next dose, skip the missed dose; do not catch-up or double doses to make up for the missed dose.** **DFX** DFX is available as a film-coated 90mg, 180mg, 360mg tablet. Administration: To be taken orally. Swallow it whole with a full glass of water. Take it on an empty stomach (30 minutes before eating) or with a light meal (low in fat), if necessary for better tolerability. Take it in the evening before dinner, and to be administered consistently at the same time. Can also be crushed and sprinkled on to soft food e.g. yoghurt or apple puree immediately prior to administration. (Does not require to be dissolved in water, compared to previous effervescent tablet form) **Missed dose management :** **If a dose is missed, take it as soon as possible. If it is almost time for the next dose, skip the missed dose; do not catch-up or double doses to make up for the missed dose.** These oral iron chelators can be taken in combinations of the following regimens including parenteral deferoxamine (DFO) & DFX, DFO & DFP or DFP & DFX). Combination use of DFP with DFO has synergistic effect and has been shown to improve outcome in patients with severe iron load in the heart. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	All oral iron chelators (DFP, DFX) should be discontinued 3 months prior to planned conception AND/OR once pregnancy is confirmed in thalassaemic patients. Pregnant patients should be immediately referred to haematologists for further management.			
	Breastfeeding			
	Breastfeeding should be encouraged unless the patient is HIV positive. Both oral iron chelators **<u>should be withheld</u>** as long as the patient is still breastfeeding, due to lack of safety data in breastfeeding patients. Resume oral iron chelators after cessation of breastfeeding			
	Elderly			
	DFP			

	Limited data on the use in elderly. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. **DFX** Use with caution due to the higher incidence of adverse drug reaction or toxicity (eg: hepatotoxicity) and fatal reactions during use; monitor closely. May require dose adjustment.			
	Paediatric			
	DFP 1. Syrup : For 3 years old and above 2. Tablet: For 6 years old and above (European Licensing); for 8 years old and above (USA Licensing) 3. Due to risk of agranulocytosis, monitoring of absolute neutrophil count (ANC) is needed as below: ● Baseline ● First 6 months : every week ● Subsequent 6 months: every 2 weeks ● After 1 year: every 2-4weeks **DFX** 1. For 2 years old and above			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	Dosing adjustment/treatment cessation **DFP** The dosing of DFP remains unchanged for patients with renal or liver impairment (refer to standard dose adjustment guide). Treatment may be interrupted/ceased if a patient shows toxicity (persistent increase in liver enzyme serum transaminase level, neutropenia, agranulocytosis). **DFX** The dosing of DFX may be adjusted in patients with renal or liver impairment (refer to standard dose adjustment guide). Treatment may be interrupted /ceased if a patient showing toxicity (auditory, vision, bone marrow suppression, severe rashes, gastrointestinal ulceration)			
Side Effects and their Management*	**DFP** Common adverse drug reactions : Dry skin (if associated with zinc deficiency), gastrointestinal disturbances which include abdominal pain, nausea &vomiting, dyspepsia; increased liver enzyme, joint pain & stiffness (10%), red coloring of urine (desirable side effect as it shows iron is being excreted through the urine). Serious adverse drug reactions: very low white blood cell count i.e agranulocytosis (2%), neutropenia (6%) Deferiprone can cause serious side effects, including a very low white blood cell count. One type of white blood cell that is important for fighting infection is called a neutrophil. If the neutrophil count is low (neutropenia) or severely low (agranulocytosis), patients can be at risk of developing a serious infection that may be life-threatening.			

	The healthcare provider will do a blood test before starting deferiprone and regularly during treatment to check the neutrophil count. **DFX:** Common adverse drug reactions: rash, protein in the urine (frothy urine), renal impairment, neurotoxicity (visual and auditory) Refer to dosage adjustment/cessation for management of these adverse effects. The doctor will monitor these side effects closely. Remind patients to attend clinic appointments as scheduled and inform their healthcare providers if they experience any of the above undesirable side effects.			
Diet & Lifestyle Advice	**Diet** 1. Restrict iron rich food intake (i.e beef, oyster, liver, spinach, *pucuk paku*, chickpeas, chocolate, egg yolk, iron -fortified cereals) 2. Take a high calcium diet i.e milk, cheese, oily fish, with calcium and vit D supplementation. 3. High calorie, nutrient dense diet to promote growth in children. **Lifestyle** 1. Weight-bearing exercise to strengthen bone (i.e walking, jogging, light weights lifting) 2. Avoidance of smoking and excessive alcohol consumption. Refer to the smoking cessation clinic, if applicable. **Supplementations** 1. Doctors may also prescribe zinc supplement (if deficient), vitamin D and calcium supplement for healthy bone. 2. Ascorbic acid (less than or equal to 100mg) may also be prescribed for those with vitamin C deficiency. The dosage may not exceed 100mg/day.			
Storage*	1. DFP : Store below 30°C. Protect from moisture and light. 2. Syrup DFP : stable for 35 days once opened. 3. DFX: Store your tablets in the original blister pack at or below 30°C. Protect from moisture and light.			
Others	Only a small fraction of body iron is available for iron chelation at any moment of time. Therefore, it is important to adhere to the regimen prescribed by the doctor. Speak to the doctor/pharmacist if a patient encounters difficulties in taking the medications as prescribed. To monitor the effectiveness of the medications, the doctor will order tests such as serum ferritin every 3 to 6 monthly and/or MRI T2* for heart and liver every 1 to 2 yearly. (depending on facilities) Due to an unknown mechanism of deferiprone-induced neutropenia, patients must avoid taking medicinal products known to be associated with neutropenia or those that can cause agranulocytosis. Ensure at least a 4 hours gap between oral iron chelators and any aluminium/magnesium containing antacids, calcium			

	supplements, thyroid medications or any other multivitamins, for best absorption. **Sick Day Management** It is important to advise if the patient has fever or shows signs of infections such as sore throat, mouth ulcers or flu-like symptoms, advise patient to **STOP** taking the iron chelators temporarily and seek medical attention **immediately (within 24 hours).** **Diet & Lifestyle** 1. Restrict iron rich food intake (i.e beef, oyster, liver, spinach, *pucuk paku*, chickpeas, chocolate, egg yolk, iron -fortified cereals) 2. Take a high calcium diet i.e milk, cheese, oily fish, with calcium and vit D supplementation. 3. High calorie, nutrient dense diet to promote growth in children. 4. Weight-bearing exercise to strengthen bone (i.e walking, jogging, light weights lifting) 5. Avoidance of smoking and excessive alcohol consumption. Refer to the smoking cessation clinic, if applicable. 6. Doctors may also prescribe zinc supplement (if deficient), vitamin D and calcium supplement for healthy bone. 7. Ascorbic acid (less than or equal to 100mg) may also be prescribed for those with vitamin C deficiency. The dosage may not exceed 100mg/day.			

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Remarks:

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References:

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2. European Medicines Agency. Ferriprox: EPAR- Product Information. (Available at: https://www.ema.europa.eu/en/documents/product-information/ferriprox-epar-product-information_en.pdf).
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Desferrioxamine B Methanesulphonate

<table>
<tr><td colspan="2">Name :</td><td colspan="3">Unit :</td></tr>
<tr><td colspan="2">● Please tick (✔) Yes for correct instruction.
● Please tick (✔) No for incorrect instruction.</td><td>Yes</td><td>No</td><td>Remarks</td></tr>
<tr><td>Pharmacological Group</td><td>Iron Chelating Agent</td><td></td><td></td><td></td></tr>
<tr><td>Indications and Dosage</td><td>Subcutaneous: Usually slowly infused over 8 - 12 hours (or in some patients, over 24 hr) using a small portable pump for 5 to 7 days per week.

The longer the infusion time, the more iron can be removed due to desferal's short half lives.

Chronic iron overload or toxicity

Adult:
Monotherapy
Usual average daily dose of 40-60 mg/kg daily.
Administer 5 -7 times a week, depending on the extent of iron overload.

Combination therapy (added with oral iron chelator)
Usual average daily dose of 40-50 mg/kg daily.
Administer 2 - 5 times a week

Guy's and St Thomas' (NHS) Guidelines for iron chelation in adults with a haemoglobinopathy or other inherited anaemia diagnosis. (2016) :

<table><tr><td>Ferritin</td><td>Desferrioxamine Dose (7 nights)</td><td>Desferrioxamine Dose (5 nights)</td></tr><tr><td><2000</td><td>25mg/kg/day</td><td>35mg/kg/day</td></tr><tr><td>2000-3000</td><td>35mg/kg/day</td><td>49mg/kg/day</td></tr><tr><td>>3000</td><td>Up to 50mg/kg/day</td><td>70mg/kg/day</td></tr></table>Note : ensure dose within therapeutic index

Pediatrics:
Usual average daily dose of 20-40 mg/kg daily.
Administer 5 -7 times a week depending on the extent of iron overload.

Aim for therapeutic index <0.025 at all times
Therapeutic index = Mean daily dose (mg/kg) / ferritin (ng/mL).

Combination or sequential dosing of desferrioxamine with oral chelators is indicated when monotherapy fails.

To counsel based on specific medication's indication and dosage as prescribed by the doctor</td><td></td><td></td><td></td></tr>
<tr><td>Method of Administration*</td><td>1. Choose a clean and well-lit area.
2. Gather all necessary items for the Desferrioxamine infusion: Desferrioxamine vials, syringe, sterile needle, extension tube, butterfly needle set/Thalaset, and a sharps bin.</td><td></td><td></td><td></td></tr>
</table>

	3. **Wash your hands thoroughly** and dry them with a clean towel. 4. **Unwrap a sterile syringe** and attach a new sterile needle. 5. **Break the top off an ampoule** of sterile Water for Injections (WFI). 6. **Draw the required amount of WFI** into the syringe: ○ For each 500 mg vial, use 5 mL of WFI to dissolve the powder. ○ For a 2 g vial, use 20 mL of WFI. 7. **Clean the rubber stopper** of the Desferal vial with an alcohol wipe. 8. **Inject the WFI** from the syringe into the vial through the rubber stopper. 9. **Shake the vial well** to dissolve the powder. The solution should become clear, colorless, or slightly yellowish. Do not use if the solution is cloudy or if you cannot see through it. 10. **Clean the stopper** of the vial again with an alcohol wipe, then draw the diluted Desferal solution back into the syringe. Preparing the Portable Pump 1. **Attach the extension tube** to the syringe. 2. **Connect the extension tube** to the butterfly needle (or Thalaset). 3. **Fill the extension tube** with the solution from the syringe. 4. **Place the syringe in the infusion pump** and secure it with the strap. 5. **Follow the instructions** provided by your healthcare provider or the pump manufacturer for setting up the pump. Infusion Sites & Administration 1. **Clean the injection site** with an alcohol swab. 2. **Insert the needle** at a 45-degree angle underneath the skin. 3. **Secure the needle** with a plaster. 4. **Place the pump in a pouch.** 5. The pump can be worn on a belt or in a shoulder holster, allowing you to move about while the infusion is ongoing (e.g., over 8-12 hours). 6. **Rotate the infusion sites regularly** to ensure proper absorption of the medication and to reduce the risk of skin breakdown or scar tissue formation. Needle Disposal 1. Remove the needle from the syringe and immediately place it in a proper sharps disposal container. 2. If a designated container is unavailable, a sturdy, empty hard plastic detergent bottle or a similar container can be used as a temporary solution. 3. Ensure that the container is tightly sealed and cannot be accessed by others. 4. Always refer to your local disposal regulations for proper disposal guidelines. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Consider the benefits and risks of Desferrioxamine for the mother and possible risks to the fetus when			

	prescribing Desferrioxamine to a pregnant woman.			
	Breastfeeding			
	1. Breastfeeding can be recommenced after delivery as its concentration is very low in breastmilk and not orally absorbed.			
	Elderly			
	1. Dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy 2. Elderly patients are at increased risk for hearing loss.			
	Paediatric			
	1. Desferrioxamine is licensed for patients 3 years and above. 2. High doses of Desferrioxamine and concomitant low ferritin levels have been associated with growth suppression in pediatric patients. Monitor growth in paediatric patients receiving Desferrioxamine every 3 months.			
	Fasting			
	1. Not applicable. **To refer to the latest advisory by religious authority**			
	Others			
	1. The dosing of desferrioxamine may be adjusted in patients with renal impairment (refer to standard dose adjustment guide). 2. Advise patients to temporarily discontinue desferrioxamine and seek immediate medical attention if showing signs and symptoms of infections.			
Side Effects and their Management*	Adverse events associated with desferrioxamine: ● injection site reactions ● neurotoxicity (visual, auditory) ● retinopathy ● hypersensitive reactions ● growth disturbance ● Yersinia and Mucor infections Management of adverse effects: 1. Hypersensitivity reactions, including anaphylaxis, have occurred in patients treated with **desferrioxamine**. These reactions have included skin flushing, urticaria, hypotension, and shock. They typically occur if desferrioxamine is administered via rapid intravenous injection; administered by slow IV infusion. 2. If the patient shows signs or symptoms of **Yersinia** infections (such as fever, diarrhea, or abdominal pain), advise them to temporarily discontinue **desferrioxamine** and seek immediate medical attention. 3. Local Skin Reactions			

	i) Ensure proper dilution (10%), appropriate infusion rate, and check for potential dressing allergies. ii) Rotate injection sites to prevent persistent local skin reactions. iii) For doses greater than 2g, consider dividing the infusion into two parts to reduce the risk of local skin reactions(e.g., divide 3g/24hr dose into 1.5g/12hrs x2) iv) In severe cases, your doctor may recommend adding mild steroids i.e. 5–10 mg of hydrocortisone to the infusion mixture. Alternatively, applying a topical low-potency corticosteroid cream after injection may help reduce local reactions. v) If skin ulceration occurs, ensure proper needle depth to avoid excessive skin trauma. Other considerations: 1. Desferrioxamine may cause dizziness, which can impair the ability to drive or operate machinery. 2. Careful monitoring of the eyes, ears, bones, and growth (in children) is necessary to detect any drug-related toxicity. 3. Urine discoloration: urine may have a pink, reddish or orange discoloration (vin rose discoloration).			
Storage*	1. Before reconstitution, store below 25°C (77°F). 2. After reconstitution, may store at room temperature up to 7 days. 3. Protect from light. 4. Do not refrigerate the reconstituted solution.			
Others	**Incompatibility** - Incompatible with heparin. **Contraindications** - Severe renal disease or anuria. **Drug Interaction** - Increased risk of neurological symptoms when used concurrently with phenothiazines. - May affect imaging results if given together with gallium-67 **Ascorbic Acid** - Ascorbic acid, when given to enhance iron excretion, should not exceed a dose of 2–3 mg/kg/day. - It should be administered 1 hour after the start of the **desferrioxamine** infusion, ideally beginning only after at least 1 month of regular **desferrioxamine** therapy. The maximum recommended doses are: ● 200 mg/day (in divided doses) for adults ● 50 mg/day for pediatric patients under 10 years old ● 100 mg/day for pediatric patients older than 10 years ● Do not administer desferrioxamine in combination with ascorbic acid in patients with pre-existing cardiac failure. **Monitoring** - To monitor the effectiveness of the medication, the doctor will order tests such as serum ferritin every 3 to 6 months and/or MRI T2* scans of the heart and liver every 1 to 2 years (depending on available facilities).			

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References:

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Digoxin

Name :		**Unit :**		
● *Please tick (✔) **Yes** for correct instruction.* ● *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Cardiac glycoside C01AA05			
Indications and Dosage	1. Heart failure (reserve for use in patients with persistent NYHA class III or IV symptoms despite optimal guideline-directed medical therapy) a) Loading dose not recommended b) Maintenance dose: 0.125mg to 0.25mg od 2.Supraventricular arrhythmias (particularly atrial fibrillation) a) May initiate with a loading dose followed by maintenance dosing if rapid titration if desired or initiate with maintenance dosing without a loading dose. 0.25mg to 0.5mg once, repeat doses of 0.25mg every 6 hours to a maximum of 1.5mg over 24 hours b) Maintenance dose: 0.0625 mg to 0.25mg od			
Method of Administration*	May be taken with or without food **Missed dose management:** If missed dose, to take as soon as possible, however, if near to next dose, skip the missed dose and go back to your regular dosing schedule **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	The use of digoxin in pregnancy is not contraindicated. Use should be considered only when the expected clinical benefit treatment to mother outweighs any possible risk to developing fetus			
	Breastfeeding			
	Digoxin is excreted in breast milk, but quantities are minute and breastfeeding is not contraindicated			
	Elderly			

	Beers Criteria: Avoid this rate control agent as first-line therapy for atrial fibrillation. Avoid first-line therapy for heart failure. See rationale for caution about withdrawal in long-term users with HFrEF. If used for atrial fibrillation or heart failure, **avoid dosages >0.125 mg/day.** Use in atrial fibrillation: should not be used as a first-line agent because there are safer and more effective alternatives for rate control. Use in heart failure: evidence for benefits and harms of digoxin is conflicting and of lower quality; most (but not all) evidence concerns use in HFrEF. There is strong evidence for other agents as first-line therapy to reduce hospitalizations and mortality in adults with HFrEF. In heart failure, higher dosages are not associated with additional benefit and may increase risk of toxicity. Use caution in discontinuing digoxin among current users with HFrEF, given limited evidence suggesting worse clinical outcomes after discontinuation. Decreased renal clearance of digoxin may lead to increased risk of toxic effects; further dose reduction may be necessary in those with Stage 4 or 5 chronic kidney disease.			
	Paediatric			
	Dose calculated based on body weight.			
	Fasting Not applicable			
	To refer to the latest advisory by religious authority			
	Others			
	1. Renal impairment: dosing recommendations should be considered as renal clearance of digoxin is reduced 2. Liver impairment: no dosage adjustment necessary			
Side Effects and their Management*	1. Digoxin toxicity is typically associated with level > 2ng/ml, however, due to its narrow therapeutic window, digoxin toxicity is possible at therapeutic levels. 2. Symptoms of digoxin toxicity: nausea, vomiting, visual disturbances (halos, yellow or blurred vision), lethargy, life threatening arrhythmias (paroxysmal atrial tachycardia, atrioventricular block, ventricular premature contractions, ventricular tachycardia, ventricular fibrillation) 3. Management: digoxin immune fab			
Storage*	Store below 30℃			
Others	*Monitoring* 1. Serum digoxin concentration monitoring if suspect digoxin toxicity, digoxin serum concentration should be drawn at least 6 to 8 hours after last dose 2. Digoxin therapeutic serum concentration: Heart failure: 0.5 - 0.9ng/ml Atrial fibrillation: 0.8 - 2ng/ml 3. Monitor serum electrolytes (serum, potassium, magnesium, calcium) and renal function			

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References:

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3. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.

Diltiazem

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Non dihydropyridine calcium-channel blocker			
Indications and Dosage	1. Treatment for angina a. Immediate release: Initial dose: 30mg four times daily, may be increased gradually at one to two day intervals until optimum response is achieved. Usual dose range: 180 to 360mg daily. b. Sustained release: Initial dose: 60mg twice daily, may be increased to 360mg daily if necessary. Max dose: 480mg daily 2. Hypertension a. Immediate release: Initial dose: 30 to 60mg thrice daily (90 to 180mg daily). b. Sustained release: Initial dose: 60 to 120mg twice daily, increase dose as needed after 7 to 14 days; usual dose: 120 to 360mg once daily **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	*May be taken with or without food. Swallow tablet,do not chew* **Missed dose management:** Take the missed dose as soon as remembered. If it is close to the time for the next dose, skip and go back to normal time. Do not take 2 doses at the same time **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Should not be administered to pregnant women or women who may possibly be pregnant.			
	Breastfeeding			
	1. Use not recommended in women who are breast feeding			
	Elderly			
	1. Consider lower initial doses (eg 120mg once daily using extended-release capsule) MALPIP: May increase the risk of bradycardia and interact with digoxin, beta-blockers Beers Criteria: Potential to promote fluid retention and/ or exacerbate heart failure (NSAIDs and COX-2 inhibitors, non-dihydropyridine CCBs, thiazolidinediones)			

	Paediatric			
	1. Hypertension a. Infants and children Immediate release: Initial dose 1.5 to 2 mg/kg/day in 3 to 4 divided doses, increase gradually at 1 to 2 day intervals until optimum response is obtained; Max: 3.5mg/kg/day Sustained release: Total daily dose of immediate release dose converted to extended release dose with appropriate interval (once or twice daily) in children able to swallow capsules whole b. Adolescents: Immediate release: Initial dose: 30 to 120mg /dose administered 3 to 4 times daily; usual daily dosage range:180 to 360mg/day. Sustained release: 120mg to 300mg once daily			
	Fasting			
	1. Take single dose of sustained release at night (10pm) after breaking fast 2. Take immediate release before fasting (morning) and after breaking fast. May omit afternoon dose.			
	Others			
	1. Renal impairment: No dosage adjustment. 2. Liver impairment: No dosage adjustment. Use with caution as Diltiazem is extensively metabolized by liver, half-life is increased in patients with cirrhosis			
Side Effects and their Management*	1. Bradyarrhythmia. May cause first-degree atrioventricular (AV) block, second-degree AV block, complete AV block. Reversal of symptoms is possible after discontinuation 2. Bradycardia 3. Peripheral edema			
Storage*	Store between 15 to 30^0C. Protect from light. Avoid storing in excessive heat and humidity			
Others	*Precautions* 1. Use with caution in patients with hepatic impairment, reduced left ventricular function, bradycardia, 1st degree AV block, prolonged PR interval (detected on ECG *Monitoring parameters* 1. Blood pressure, ECG, heart rate, liver function test (ALT) *Significant drug-drug interactions* 1. Ivabradine: Exacerbate bradycardia and conduction disturbances – potentially fatal 2. Amiodarone, Digoxin, beta blockers: Increase depression of cardiac conduction – increasing risk of bradycardia. 3. Clonidine: concomitant use may lead to sinus bradycardia leading to hospitalization and insertion of pacemaker 4. Lithium: May increase risk of lithium induced nephrotoxicity 5. Atorvastatin, Fluvastatin, Simvastatin: May increase risk			

	of myopathy and rhabdomyolysis *Significant drug-food interactions* 1. Grapefruit juice: Increase serum concentration of diltiazem			

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Remarks:

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References:

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Direct-Acting Antiviral (DAA)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	*NS5B polymerase inhibitor* 1. Tab Sofosbuvir 400mg *NS5A inhibitors* 1. Tab Daclatasvir 30mg/ 60mg 2. Tab Ravidasvir 200mg *NS5B polymerase inhibitor/NS5A inhibitors* 1. Tab Sofosbuvir 400mg & Velpatasvir 100mg			
Indications and Dosage	For the treatment of chronic hepatitis C virus (HCV) infection in adults • DAAs must be used in combination as per relevant guidelines. • The choice of DAA regimen, dosage and treatment duration is individualized and depends on the stage of liver disease. *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	• Must be taken orally at the same time everyday, with or without food, according to prescribed treatment regimen as instructed. • Tablets should be swallowed whole and should not be chewed or crushed (to avoid bitter aftertaste). • Patients must complete the prescribed treatment regimen. This is to ensure treatment effectiveness and prevent resistance. • **DO NOT RUN OUT OF MEDICATION**. Refill the prescription before it finishes. ***Missed dose management:*** • If you miss a dose and it is less than 18 hours past your usual time, take the missed dose as soon as possible. • If more than 18 hours have passed since your usual dose, skip the missed dose and take your next dose at the usual time. • DO NOT take two doses at the same time to make up for the missed dose. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	• Limited outcome data. Hence, it is preferable to avoid DAAs during pregnancy. • Use is not currently recommended for the purpose of reducing mother to child transmission of HCV due to lack of safety and efficacy data. • The decision to continue treatment in a patient who becomes pregnant while taking DAAs should be individualized after considering potential risks and benefits of therapy.			

	Breastfeeding			
	It is unknown whether sofosbuvir and its metabolites are excreted in human milk. A risk to new-borns/infants cannot be excluded.			
	Elderly			
	No significant precaution in elderly.			
	Paediatric			
	● Adolescents aged ≥ 12 years can be treated with regimens approved for adults, with caution pending on more safety data in this population. ● In children younger than 12 years, treatment should be deferred until DAAs are approved for this age group.			
	Fasting			
	To take once daily during *Sahur* or *Iftar*.			
	Renal impairment			
	● Renal impairment (eGFR <30 ml/min/1.73 m2) or those with end stage renal disease on dialysis: Sofosbuvir-free regime is preferred. If there is no alternative, a sofosbuvir-based regime may be used with close monitoring and treatment should be interrupted if renal function deteriorates. ● Hemodialysis: When a scheduled dose falls on hemodialysis day, DAAs should be taken after hemodialysis.			
Side Effects and their Management*	● Side effects may include fatigue, headache, nausea and diarrhoea. ● If patients experience any allergic reaction (e.g. rashes, breathlessness, swollen eyes), they should stop the medication immediately and seek immediate medical assistance.			
Storage*	● Store below 30°C. ● Keep medication in its original container, tightly sealed to protect from moisture and light. ● Keep out of reach and sight of children.			
Others	***Drug-drug/ Drug-food Interactions:*** ● Patients should report all prescribed medications, over-the-counter medications, traditional medicines or drinks, and health supplements, both before starting therapy and during treatment. ● They must stop taking any traditional or herbal medications, health supplements, or health drinks during treatment and should consult prescribers before starting any new medications. ***Vomiting Management:*** ● If vomiting occurs within 2 hours of dosing, an additional tablet should be taken. ● If vomiting occurs more than 2 hours after dosing, no additional dose is needed.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 21, 2025.
2. Strides Pharma Science Limited. (2019). Product information leaflet: Virso. Retrieved from Quest 3+ Product Search on January 21, 2025.
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5. European Egyptian Pharmaceutical Industries Co. (2024). Product information leaflet: RAVIDA. Retrieved from Quest 3+ Product Search on January 21, 2025.
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Dolutegravir

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Integrase Inhibitor			
Indications and Dosage	Dolutegravir 50mg tablets are used in treatment of HIV-1 infected, antiretroviral treatment naive or experienced adults, in combination with other antiretroviral medicinal products. a. 50 mg OD for patients without documented or clinically suspected resistance to the integrase class b. 50 mg BD for patients with resistance to the integrase class Dolutegravir tablets for oral suspension are used in pediatric patients (treatment-naïve or -experienced but INSTI naïve) aged at least 4 weeks and weighing at least 3 kg. a. 3 kg to < 6 kg - 5 mg once daily (one-half tablet) b. 6 kg to < 10 kg - 15 mg once daily (1 and one-half tablets) c. 10 kg to <14 kg - 20 mg once daily (2 tablets) d. 14 kg to <20 kg - 25 mg once daily (2 and one-half tablets) e. 20 kg and greater - 30 mg once daily (3 tablets) **Dolutegravir tablets and dolutegravir tablets for oral suspension are not bioequivalent and are not interchangeable on a milligram-per-milligram basis**			
Method of Administration*	Can be taken with or without food. Dolutegravir 50 mg tablet is ideally to be swallowed whole. The tablet may also be split into halves followed by immediate ingestion OR it may be crushed and added to a small amount of semi-solid food or liquid and to be consumed immediately. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. A small increase of neural tube defects (0.05-0.1%) occurs within the first 4 weeks of embryonic development after conception (~ 6 weeks after the last menstrual period). The benefits and risks of continuing dolutegravir versus switching to another regimen should be discussed with the patient. 2. Dolutegravir may be used during the second and third trimester of pregnancy when the expected benefits justify the potential risk to the fetus.			
	Breastfeeding			
	Dolutegravir is excreted in human milk in small amounts. There is insufficient information on its effects in neonates/infants. However, it is recommended HIV infected women do not			

	breast-feed their infants in order to avoid HIV transmission.			
	Elderly			
	Limited data is available for patients aged more than 65 years old. However, there is no evidence that elderly require different doses compared to younger adult patients.			
	Paediatric			
	Dolutegravir dispersible tablet for oral suspension is available for treatment-naive or treatment-experienced INSTI-naive patients aged at least 4 weeks and weighing at least 3 kg. Film coated 50 mg tablets are not bioequivalent to dispersible tablets.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	No data are available in patients with severe hepatic impairment (Child-Pugh Grade C). Use with caution in these patients.			
Side Effects and their Management*	Common side effects are nausea, headache and insomnia. Changing the administration time of dolutegravir to morning time may help to reduce the incidence of insomnia			
Storage*	Store below 30 degree celsius			
Others	Beware of dolutegravir-drug interactions. Kindly refer to Liverpool HIV Interactions website for further information. 1. Hepatic enzyme inducers such as rifampicin, phenytoin: Increase dolutegravir dose to 50 mg BD 2. Polyvalent cation such as multivitamin, calcium and ferrous containing medications: Administer dolutegravir at least 2 hours before or at least 6 hours after these medications			

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References:

1. Capetti AF et.al (2017). Morning Dosing for Dolutegravir-related Insomnia and Sleep Disorders. HIV Medicine.
2. Ministry of Health Malaysia (2022). Malaysian Consensus Guidelines on Antiretroviral Therapy
3. Myltega Product Leaflet
4. Tseng A et.al (2024). Oral Antiretroviral/HCV DAA Administration: Information on Crushing and Liquid Drug Formulations. Available at https://hivclinic.ca/ (Assessed on November 5, 2024)
5. Dolutegravir Tablets for oral suspension product leaflet

Dolutegravir /Lamivudine/Tenofovir Disoproxil Fumarate

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiretroviral: Combination of two Nucleoside Reverse Transcriptase Inhibitors (NRTIs): Lamivudine and Tenofovir disoproxil fumarate) with Integrase Inhibitor (INSTI): Dolutegravir			
Indications and Dosage	Indication: A complete regimen for the treatment of human immunodeficiency virus type 1 (HIV-1) infection in adults and adolescents above 12 years of age and weighing 40 kg or greater. Dosage: One tablet once daily.			
Method of Administration*	May be administered orally with or without food. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Safe to be used in pregnancy.			
	Breastfeeding			
	Studies found that all Dolutegravir, Lamivudine, and Tenofovir disoproxil fumarate are excreted in breast milk. It is recommended that HIV-1 infected mothers not to breastfeed their infants to avoid risking postnatal transmission of HIV-1 infection and potential of serious adverse reactions in nursing infants.			
	Elderly			
	Generally safe to be used among elderly patients, however monitoring on renal function is required as this preparation contains Tenofovir disoproxil fumarate that may induce renal toxicity.			
	Paediatric			
	Dolutegravir, Lamivudine, Tenofovir disoproxil fumarate should not be administered to children less than 12 years of age and those who weigh less than 35 kg.			
	Fasting			
	Time of administration for this medication may be adjusted accordingly when fasting.			
	Others			
	1. Hepatic impairment No dosage adjustment is necessary for patients with mild to moderate hepatic impairment (Child-Pugh Score A or B). The effect of severe hepatic impairment (Child-Pugh Score C) on the pharmacokinetics of dolutegravir has not			

	been studied. Therefore, dolutegravir is not recommended for use in patients with severe hepatic impairment. 2. Renal impairment Dolutegravir, Lamivudine, Tenofovir disoproxil fumarate is a fixed-dose tablet, thus it is not recommended to be used among patients requiring renal-dose adjustment.			
Side Effects and their Management*	1. Hypersensitivity reaction: Discontinue Dolutegravir, Lamivudine, Tenofovir disoproxil immediately. Delay in action may result in life-threatening reactions. 2. Renal toxicity, including cases of acute renal failure and Fanconi syndrome: Assess renal function prior to initiation of this medication. Avoid concomitant use with nephrotoxic agents such as high dose NSAIDs. 3. Hepatotoxicity: Avoid use in severe liver disease. 4. Bone effects of Tenofovir disoproxil fumarate: Supplementation with calcium and Vitamin D may be beneficial. Assessment on bone health should be monitored accordingly. 5. Insomnia effects of Dolutegravir: Adjust administration time accordingly to ensure good quality of sleep thus not affecting daily activities. 6. Others: TELDY may cause dizziness and reduce alertness. It is advisable for patients not to drive or operate machinery.			
Storage*	1. Store below 30°C. 2. Protect from light and moisture.			
Others	Special monitoring parameter(s): a. Drug-drug interaction especially involving Dolutegravir can lead to loss of virologic response and adverse drug reactions. Always review concomitant medications during therapy with Dolutegravir. b. Severe hypophosphatemia can be an indicator of renal impairment due to proximal renal tubulopathy which is also associated with worsening bone or muscle symptoms related to Tenofovir disoproxil fumarate. Significant drug-drug / drug-food interaction(s): a. Medications containing polyvalent cations (eg. Mg or Al), oral calcium or iron can reduce concentration of Dolutegravir: Administer doletugravir/lamivudine/tenofovir disoproxil fumarate at least 2 hours before or at least 6 hours after these medications. b. Metformin: Dolutegravir may increase concentration of Metformin. Limit the total daily dose of Metformin to 1000mg and monitor blood sugar accordingly. c. Hepatic enzyme inducers such as Rifampin, Carbamazepine, and Phenytoin will reduce the concentration of Dolutegravir: Additional dose of Dolutegravir 50mg should be taken after 12 hours of doletugravir/lamivudine/tenofovir disoproxil fumarate. Contraindication(s): Prior hypersensitivity reaction to dolutegravir, lamivudine, or tenofovir disoproxil fumarate.			

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References:

1. HETERO LABS LIMITED. (2022). TELDY (Dolutegravir 50 mg / Lamivudine 300 mg / Tenofovir Disproxil Fumarate 300 mg) Film-coated Tablets Product Insert.
2. Ministry of Health Malaysia (2022). Malaysian Consensus Guidelines on Antiretroviral Therapy. https://www.mashm.net/.

Edoxaban

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction or sequence.* • *Please tick (✔) **No** for incorrect instruction or sequence.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Direct Oral Anticoagulant - Factor Xa inhibitor			
Indications and Dosage	1. *Prevention of stroke and systemic embolism in adult patients with nonvalvular atrial fibrillation (NVAF) with one or more risk factors, such as congestive heart failure, hypertension, and age ≥ 75 years, diabetes mellitus, prior stroke or transient ischaemic attack (TIA).* *a.* The recommended dose is 60 mg edoxaban once daily for life-long. b. The recommended dose is 30 mg once daily in patients with one or more of the following clinical factors: - Moderate or severe renal impairment (creatinine clearance (CrCL) 15 - 50 mL/min) - Low body weight ≤ 60 kg - Concomitant use of the following P-glycoprotein (P-gp) inhibitors: ciclosporin, dronedarone, erythromycin, or ketoconazole.			
Method of Administration*	1. Swallow the tablet, preferably with water. 2. Edoxaban may be taken with or without food. 3. The tablet may be crushed and mixed with water or apple puree immediately before administration. **Missed dose management:** If a dose of edoxaban is missed, the dose should be taken immediately and then be continued the following day with the once-daily intake as recommended. The prescribed dose should not take doubled on the same day to make up for a missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Contraindicated during pregnancy			
	Breastfeeding			
	Contraindicated during breastfeeding			
	Elderly			
	1. No dose reduction is required (After taking renal function and body weight into account, age had no additional clinically significant effect on edoxaban pharmacokinetics in a population pharmacokinetic analysis of the pivotal Phase 3 study in NVAF (ENGAGE AF-TIMI 48). 2. The co-administration with ASA in elderly patients should be used cautiously because of a potentially higher bleeding risk			

	MALPIP 1. Use with caution and monitor bleeding risk 2. Increased serum concentration may occur with renal impairment and dose adjustment may be indicated. Assess renal profile before initiation. START/STOPP criteria 1. No added benefit for anti-platelet combination therapy with factor Xa inhibitor in patients with chronic atrial fibrillation unless there is concurrent coronary artery stent or presence of high grade (>50%) coronary artery stenosis. 2. No added benefit for anti-platelet combination therapy with factor Xa inhibitor in patients with stable coronary, cerebrovascular/peripheral arterial disease. 3. Concomitant use with P-glycoprotein (P-gp) inhibitors increased risk of bleeding. 4. Concomitant use with NSAID or SSRI leads to risk of major gastrointestinal bleeding and increased bleeding risk respectively. 5. Avoid factor Xa inhibitor use in patients with concurrent significant bleeding risk.			
	Pediatric			
	The safety and efficacy of edoxaban in children and adolescents less than 18 years of age have not been established. No data available.			
	Fasting:			
	Not applicable			
	Others			
	1. The recommended dose in patients with renal impairment a. Mild (CrCl > 50 – 80 mL/min): 60 mg once daily. b. moderate or severe (CrCl 15 – 50 mL/min): 30 mg once daily c. end stage renal disease (ESRD) (CrCl < 15 mL/min) or on dialysis: Not recommended 2. The recommended dose in patients with liver impairment a. Mild to moderate: 60 mg once daily b. Elevated liver enzymes (alanine aminotransferase (ALT) or aspartate transaminase (AST) 6 > 2 x upper limit of normal (ULN) or total bilirubin ≥ 1.5 x ULN: Use with caution because these patients were excluded from studies c. Severe: Not recommended d. Hepatic disease associated with coagulopathy and clinically relevant bleeding risk: Contraindicated			
Side effects and their Management*	1. To seek emergency care right away if there are signs or symptoms of unusual or serious bleeding from any parts of the body. 2. Common side effects of edoxaban include: a. Stomach pain b. Dizziness & tiredness			

Storage*	1. Store between 20-25°C 2. Do not use this medicine after the expiry date which is stated on the carton and on each blister (after EXP). The expiry date refers to the last day of that month.			
Others	1. Monitoring parameters a. Renal profile b. Liver profile 2. Drug interactions: a. P-gp inhibitors (ciclosporin, dronedarone, erythromycin, ketoconazole): dose reduction to 30 mg once daily. b. P-gp inducers (phenytoin, carbamazepine or phenobarbital): Avoid c. Anticoagulants, antiplatelets, NSAIDs and SSRIs/SNRIs: Use with caution due to increased risk of bleeding			

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References:

1. A.Menarani Singapore Pte Ltd. (2023) Product information leaflet: Lixiana. Retrieved from Quest 3+ Product Search on January 20, 2025.
2. Formulari Ubat KKM. (2025). Accessed on January 20, 2025.
3. MIMS Malaysia. (2024). Edoxaban. In MIMS Online. Retrieved 26 November, 2024, from https://www.mims.com/malaysia/drug/info/edoxaban
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5. Chang, C. T., Chan, H. K., Cheah, W. K., Tan, M. P., Ch'ng, A. S. H., Thiam, C. N., ... & Lee, S. W. H. (2023). Development of a Malaysian potentially inappropriate prescribing screening tool in older adults (MALPIP): a Delphi study. Journal of Pharmaceutical Policy and Practice, 16(1), 122.
6. O'Mahony, D., Cherubini, A., Guiteras, A. R., Denkinger, M., Beuscart, J. B., Onder, G., ... & Curtin, D. (2023). STOPP/START criteria for potentially inappropriate prescribing in older people: version 3. European geriatric medicine, 14(4), 625-632

Efavirenz

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)			
Indications and Dosage	1. Treatment for HIV-1 infections in combination with other antiretroviral agents indicated a) Adults : 600 mg or 400mg PO once daily on an empty stomach, preferably at or before bedtime b) Children aged >3 years weighing >10 kg : 13-15kg 200mg once daily 15-20kg 250mg once daily 20-25kg 300mg once daily 25-32kg 350mg once daily 33-40kg 400mg once daily >40kg 600mg once daily			
Method of Administration*	1. Efavirenz may be taken with or without food. It is recommended that efavirenz be taken on an empty stomach. The increased efavirenz concentrations observed following administration of efavirenz with food may lead to an increase in frequency of adverse reactions. 2. In order to improve the tolerability of central nervous system side effects, bedtime dosing is recommended and in patients who continue to experience these symptoms. 3. Efavirenz 200mg/600mg tablet is ideally to be swallowed whole. *Missed dose management* 1. To take medication consistently at the same time everyday. Any missed dose to be taken as soon as possible. 2. However if the gap is more than 12 hours, to skip and continue with a regular dosing schedule. Do not double the dose on the next administration time. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	1. Efavirenz has a moderate level of transfer across the human placenta. 2. Based on data from the Antiretroviral Pregnancy Registry, an increased risk of overall teratogenic effects has not been observed following first trimester exposure to efavirenz. Neural tube and other CNS defects have been reported; however, data collected by the registry has shown that the risk for neural tube defects after efavirenz exposure in the first trimester			

	are not greater than those in the general population. 3. Patients who become pregnant while taking efavirenz may continue if viral suppression is effective and the regimen is well tolerated. 4. Although not recommended by the manufacturer, available guidelines do not restrict the use of efavirenz in the first trimester.			
	Breastfeeding			
	1. Efavirenz is present in breast milk. 2. It is recommended that HIV infected women do not breastfeed their infants under any circumstances to avoid transmission to the infant.			
	Elderly			
	1. Insufficient data to determine whether they respond differently than younger patients 2. In general, dose selection for an elderly patient should be cautious, reflecting the greater frequency of decreased hepatic, renal, or cardiac function and of concomitant disease or other therapy. 3. May cause changes in lipid profiles, including increased LDL and triglycerides, which is particularly relevant for elderly patients with cardiovascular risk factors.			
	Paediatric			
	Use of efavirenz tablets in patients younger than 3 months of age OR less than 3.5 kg body weight is not recommended because the safety, pharmacokinetics, and antiviral activity of efavirenz tablets have not been evaluated in this age group and there is a risk of developing HIV resistance if efavirenz tablets are underdosed.			
	Fasting			
	To be discussed with the infectious disease consultant.			
	Others			
	1. Efavirenz tablets are not recommended for patients with moderate or severe hepatic impairment because there is insufficient data to determine whether dose adjustment is necessary. Patients with mild hepatic impairment may be treated with efavirenz without any adjustment in dose. Because of the extensive cytochrome P450-mediated metabolism of efavirenz and limited clinical experience in patients with hepatic impairment, caution should be exercised in administering efavirenz tablets to these patients. 2. EFV 400mg daily was found to be better tolerated than standard dose of EFV 600mg daily and is comparable to EFV 600mg in terms of viral suppression and mortality. 3. EFV 400mg can be co-administered with rifampicin-containing anti-TB treatment 4. The impact of renal impairment on efavirenz			

	elimination should be minimal.			
Side Effects and their Management*	1. Nervous system symptoms: a) The frequently reported undesirable effects are dizziness, insomnia, somnolence, impaired concentration and abnormal dreams. b) Nervous system symptoms usually begin during the first one or two days of therapy and generally resolve after the first 2-4 weeks. c) These symptoms may occur more frequently when efavirenz is taken concomitantly with meals possibly due to increased plasma levels. d) Dosing at bedtime seems to improve tolerability and can be recommended. 2. Psychiatric disorder such as anxiety and depression 3. Hepatic disorder:Increased liver enzymes (incidence higher with hepatitis B and/or C coinfection) 4. Gastrointestinal disorder:Abdominal pain, diarrhea, nausea, vomiting 5. Metabolic disorder:Increased serum cholesterol, increased HDL, increased triglycerides 6. Hypersensitivity reactions:Rash			
Storage*	1. Do not store above 30°C.			
Others	1. Efavirenz plasma concentrations may be altered by substrates, inhibitors, or inducers of CYP3A. Important to screen for drug interactions.			

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References:

1. Panel on Antiretroviral Therapy and Medical Management of Children Living with HIV. (2024). Guidelines for the use of antiretroviral agents in pediatric HIV infection. Department of Health and Human Services. Retrieved December 2, 2024, from https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv
2. European AIDS Clinical Society (EACS). (2022). EACS guidelines (Version 11.1, October 2022).
3. Efavirenz. (2024). In UpToDate Lexi-Drugs.
4. Panel on Antiretroviral Guidelines for Adults and Adolescents. (2024). Guidelines for the use of antiretroviral agents in adults and adolescents with HIV. Department of Health and Human Services. Retrieved December 2, 2024, from https://clinicalinfo.hiv.gov/en/guidelines/adult-and-adolescent-arv
5. Malaysian Society for HIV Medicine. (2022). Malaysian consensus guidelines on antiretroviral therapy 2022.

Enoxaparin

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction or sequence.* • *Please tick (✔) **No** for incorrect instruction or sequence.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antithrombotic Agent - Low Molecular Weight Heparin (LMWH)			
Indications and Dosage	1. Prophylaxis of venous thromboembolism (VTE) in surgical patients a. moderate risk - 20mg or 40mg once daily b. high risk - 40mg once daily 2. Prophylaxis of venous thromboembolism (VTE) in medical patients a. 40mg once daily 3. Treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) a. 1mg/kg twice daily (recommended), or b. 1.5mg/kg once daily 4. Prevention of extra corporeal thrombus during hemodialysis a. 1mg/kg b. high risk of hemorrhage - 0.5 mg/kg for double vascular access or 0.75 mg/kg for single vascular access 5. Treatment of unstable angina and non-Q-wave myocardial infarction (NSTEMI) a. 1mg/kg twice daily 6. Treatment of acute ST-segment Elevation Myocardial Infarction (STEMI) including patients to be managed medically or with subsequent Percutaneous Coronary Intervention (PCI) a. single IV bolus of 30 mg plus a 1 mg/kg SC dose, followed by 1 mg/kg twice daily 7. Prevention of DVT in antenatal and/or postnatal women with VTE risk scoring of 3 or more. a. <50 kg: 20mg OD b. 50-90 kg: 40mg OD c. 91-130 kg: 60mg OD d. 131-170 kg: 80mg OD e. >170 kg: 0.6mg/kg/day To counsel based on specific medication's indication and dosage as prescribed as doctor			
Method of Administration*	1. Subcutaneous (SC) injection: prevention of VTE, treatment of DVT and PE, treatment of unstable angina NSTEMI and acute STEMI. 2. IV bolus injection: single IV bolus injection immediately followed by a subcutaneous injection, for treatment of acute STEMI. 3. Arterial line injection: administered through the arterial line of a dialysis circuit for the prevention of thrombus formation in the extra-corporeal circulation during haemodialysis			

	4. Should **NOT** be administered by intramuscular route.			
	Subcutaneous Injection Technique **Preparation** 1. Prior to injection, wash your hands thoroughly with soap and water. Towel dry. 2. Adjust the dose to be injected (if necessary): Hold the syringe pointing down (to keep the air bubble in the syringe) and expel the excess medicine into an appropriate container. 3. When there is no need to adjust the dose, the prefilled syringe is ready to use. Do not expel any air from the syringe before administering the injection. You may lose some of the medicine if you do. 4. Sit in a comfortable position so you can easily see the area of their stomach where you will be injecting. A lounge chair, recliner,or bed (propped up with pillows) is ideal. **Inspection** 5. Check the expiry date on the syringe. Do not use if the date has passed. 6. Check the syringe is not damaged and the medicine in it is a clear solution without particles. If the syringe is damaged or the medicine is not clear, use another syringe. **Injection site** 7. Choose an area on the right or left side of your stomach. This should be at least 5 centimetres away from your belly button and out towards your sides. 8. Change the place where you inject between the left and right sides of your stomach, depending on the area you were last injected. This is to prevent scarring which will make it harder to inject the area and also affect how the medication is released into your body. Avoid injecting on scars and bruises. **Injection technique** 9. Cleanse (do not rub) the selected site for injection with an alcohol swab. 10. Remove the protective cap off the needle, do not allow the needle to touch anything to make sure it stays clean. 11. Hold the syringe in the hand you write with (like a pencil) and with your other hand, gently pinch the cleaned area of your abdomen between your forefinger and thumb to make a fold in the skin. Make sure you hold the skin fold throughout the injection. 12. Hold the syringe with the needle pointing downwards (vertically at 90 degree angle) and inject a full length needle into the skin fold. Inject at 45° angle for needle length ≥8 mm or if the patient is thin. 13. Press down plunger with your finger (thumb). Complete the injection using all of the medicine in the syringe. Hold for 10 seconds. 14. Remove the needle by pulling it straight out. Let go of the skin fold. 15. To avoid bruising, do not rub the injection site. 16. Drop the used syringe into a hard, puncture-proof container. Close the container lid tightly and place the container out of reach of children. 17. When the container is full, dispose of it safely.			
	Missed dose management If you miss a dose of Enoxaparin, inject it as soon as you remember. If it is too near the next dose, skip the missed dose and go back to your usual dosing times. Do not double dose.			

	Do not stop taking your medication unless advised to do so by your prescriber			
Special Considerations	**Pregnancy**			
	Safe to use			
	Breastfeeding			
	Safe to use			
	Elderly			
	1. For treatment of STEMI In patients ≥ 75 years of age, do not use an initial IV bolus. Initiate dosing with 0.75 mg/kg SC every 12 hours (maximum 75 mg for each of the first two SC doses only, followed by 0.75 mg/kg SC dosing for the remaining doses). 2. Increased incidence of bleeding with doses of 1.5mg/kg/day or 1mg/kg every 12 hours (therapeutic dosage range). 3. Careful clinical monitoring is advised, particularly elderly < 45kg.			
	Paediatric			
	Dosing based on age and body weight			
	Others			
	1. Renal impairment a. Not recommended for patients with end stage renal disease (creatinine clearance < 15ml/min) due to limited clinical data b. Severe renal impairment (creatinine clearance 15-30 ml/min) prophylactic dose - 20mg once daily c. Severe renal impairment (creatinine clearance 15-30 ml/min) treatment dose - 1mg/kg once daily 2. Hepatic impairment - Use with caution			
Side effects and their Management*	1. May develop hematoma at the injection site (a localised swelling that is filled with blood). 2. Symptoms of bleeding such as bruises with unknown cause, blood in urine/dark coloured urine, black stools, gum bleeding or heavy menstrual bleeding 3. Seek medical attention if any sign or symptom of bleeding occurs			
Storage*	Do not store above 30°C, do not freeze.			
Others	1. Enoxaparin is derived from animal sources (mainly porcine). Please confirm the source and disclose it to the patient, if needed. 2. Inform healthcare professionals (dentist, surgeon, doctor, pharmacist) if the patient is planning to get a tooth extraction, or when consulting for medication, supplement or herbal remedies 3. Monitoring parameters a. Full blood count b. Renal function			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Aamani Jupalli; Arshad Muhammad Iqbal. Enoxaparin. NIH. Last Update: August 28, 2023.
2. Formulari Ubat KKM. (2025). Accessed on January 20, 2025.
3. Medispec M Sdn Bhd (2021) Product information leaflet: Inhixa. Retrieved from Quest 3+ Product Search on January 20, 2025.
4. UpToDate. (2024) UpToDate (Version 3.70.4) [Mobile App] Mobile Clinical Decision Support App | UpToDate | Wolters KluwerWolters Kluwer

Entecavir

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nucleoside reverse transcriptase inhibitors			
Indications and Dosage	First line treatment of Chronic Hepatitis B in patients who satisfy the criteria for treatment and require long-term therapy or have a very high baseline viral load Dosage: 0.5-1mg once daily. *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	• Should be taken orally on an **EMPTY STOMACH** (2 hours before or after a meal) • Must be taken at the same time every day as instructed for it to be effective. • Continue taking this medicine as prescribed, even if you feel better. This medication does not cure hepatitis B; it helps to suppress the virus and prevent relapse. • **DO NOT RUN OUT OF MEDICATION**. Refill the prescription before it finishes. ***Missed dose management*** • Take the missed dose as soon as you remember, on an empty stomach • If the missed dose is close to your next dose, skip the missed dose and take the next dose at the usual time. • DO NOT take two doses at the same time to make up for the missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	• Agents other than entecavir are recommended when hepatitis B treatment is needed in pregnant patients. • Patients who become pregnant while taking entecavir should be switched to the preferred agent.			
	Breastfeeding			
	• It is not known if entecavir is present in breast milk. The effect of this exposure on a nursing infant is unknown. • Patients requiring antivirals for hepatitis B may breastfeed if the infant received immunoprophylaxis (hepatitis B immune globulin at birth & hepatitis B vaccine series soon after birth)			
	Elderly			
	No significant precaution for elderly.			
	Paediatric			

	For children ≥ 2 years with weighing ≥10kg			
	Fasting			
	To refer to the latest advisory by religious authority			
	Renal Impairment			
	1. CrCl ≥ 50 mL/min: No dosage adjustment required 2. CrCl 30 - 49 mL/min: administer the usual indication-specific dose every 48 hours 3. CrCl 10 - 29 mL/min: administer the usual indication-specific dose every 72 hours 4. CrCl <10 mL/min, hemodialysis, or CAPD: administer the usual indication-specific dose every 7 days. 5. When a scheduled dose falls on hemodialysis day, entecavir should be taken after hemodialysis.			
Side Effects and their Management*	1. Side effects may include nausea, dizziness, headache and fatigue. 2. Advise patients to report symptoms of lactic acidosis (nausea, vomiting, abdominal pain, tachypnea) and liver problems (dark urine, light-coloured stools, or yellow skin or eyes)			
Storage*	1. Store below 30°C. 2. Keep medication in its original container, tightly sealed to protect from moisture and light. 3. Keep out of reach and sight of children.			
Others	1. Advise patients against sudden discontinuation of the drug due to potential exacerbation of hepatitis B. 2. Advise patients to practise safe sex and ensure to take proper precautions to avoid transmission. This drug does not prevent disease transmission.			

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Remarks:

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***Mandatory for validation / peer review**

References:

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 21, 2025.
2. Entecavir. (2024). MimsGateway. Retrieved January 21, 2025, from https://online1.mimsgateway.com.my/
3. Y.S.P. Industries (M) Sdn. Bhd. (2024). Product information leaflet: Hebecavir. Retrieved from Quest 3+ Product Search on January 21, 2025.
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Erythropoietin Human Recombinant (Alfa/Beta)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Other antianemic preparations Erythropoietin **Product available:** Erythropoietin alfa - Erysaa ®, Eprex ®, Binocrit ® Erythropoietin beta - Recormon ®			
Indications and Dosage	1. Treatment of anaemia associated with chronic renal failure. Dialysis patients who have haemoglobin less than 10 g/dL or are exhibiting symptoms of anaemia although haemoglobin more than 10 g/dL and pre-transplant cases. a. Initiation: 50 IU/kg three times per week, with dose adjustments should be made in increments of 25 IU/kg three times per week at intervals of at least 4 weeks. b. Maintenance: Total weekly dose is between 75 to 300 IU/kg. 2. Anaemia in cancer (non-myeloid malignancies) with concomitant chemotherapy a. EPO Alfa: Initiation: 150 IU/kg three times weekly or 40,000 IU once weekly. May increase to 60,000 IU once weekly units after 4 weeks if necessary. b. EPO Beta: Initiation:: 450 IU/kg once weekly or 30,000 IU once weekly. Max: 60,000 IU/week. Dosing is according to product insert. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Route of Administration:** Intravenous (IV) or Subcutaneous (SC): Erythropoietin alfa (Eprex®, Binocrit ®) and Erythropoietin beta (Recormon ®) Intravenous (IV) ONLY for Erythropoietin alfa (Erysaa ®) **Site of administration for SC:** Lower part of abdomen, thigh or arm **Injection technique for SC (for self-administered):** 1. Take one syringe out of the package and check that the solution is clear, colourless and free from visible particles**.** 2. Allow the syringe to reach room temperature. 3. Wash your hands. 4. Remove the rubber cap from the syringe. 5. Remove the needle from the pack, fix it on the syringe and remove the protective cap from the needle. 6. Expel air from the syringe and needle by holding the syringe vertically and gently pressing the plunger upwards. 7. Clean the skin at the site of injection using an alcohol swab. 8. Form a skin fold by pinching the skin between thumb and forefinger.			

	9. Fully insert the needle 45^0 or 90^0 angle into the skin fold with a quick, firm action. 10. Inject erythropoietin solution. 11. Withdraw the needle quickly and apply pressure over the injection site with a dry, sterile pad. 12. Dispose the empty syringe in a special waste container 13. Tear off the medication label on the syringe and stick into the booklet/diary (e.g., CAPD book) after the injection for the administration record, if available. **Consideration:** 1. Blood pressure (BP) cutoff for administering Erythropoetin Stimulating Agent (ESA) is individualised. Generally, ESA is not given if BP exceeds 160/100 mmHg. Patients need to be informed about their specific BP cutoff whether to continue or hold ESA at home. 2. Site of SC injection should be rotated **Missed dose management:** The missed dose should be administered as soon as possible and administration of Erythropoietin is to be restarted at the prescribed dosing frequency. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Safety information is based on post-marketing experience. Consult the prescriber if pregnant.			
	Breastfeeding			
	Unknown risk to the infant. The decision to continue should be based on the benefits outweigh the risks.			
	Elderly			
	No dosage adjustment provided in the manufacturer's labelling.			
	Paediatric			
	Safe to be used in children. The younger the patients, the higher erythropoietin doses required. However, the recommended dosing schedule should be individualized.			
	Fasting			
	Administer as usual			
	Others			
	No dosage adjustment was provided in the manufacturer's labelling.			
Side Effects and their management*	1. Common side effects, generally not serious: headache, increased blood pressure, irritation or pain at the injection site. Note: ● To advise on the importance of compliance with antihypertensive medications and dietary restrictions for BP control. ● If side effects persist, please consult a healthcare professional 2. Uncommon/rare: Pure red cell aplasia (PRCA).			

<table>
<tr>
<td>Storage*</td>
<td>
1. Transport of ESA is only allowed in cool box with ice packs.
2. Preferably to return home immediately after getting ESA from the pharmacy to facilitate fast storage.
3. ESA is very sensitive to light and temperature.
4. Protect ESA from light
5. Store ESA in the refrigerator, do not freeze. Keep at 2-8°C.
6. Avoid fridge doors, and vegetable compartments. Ensure there is proper air circulation around your ESA.
7. If you're travelling, try to keep your medication in a cooler with ice packs, and avoid storing it in any place where it might get too hot, like in a car.

Do not take out the ESA from the fridge unless it is time for use. If the ESA is accidentally left outside the fridge, it should be used as soon as possible to prevent damage. Below is the expiry period following a break in the cold chain:
<table>
<tr><td>Product</td><td>Expiry period after break of cold chain</td></tr>
<tr><td>Recormon</td><td>3 Days</td></tr>
<tr><td>Erysaa</td><td>7 days</td></tr>
<tr><td>Eprex</td><td>7 days</td></tr>
<tr><td>Binocrit</td><td>3 Days</td></tr>
</table>
Handling of disposal:
● Needles and syringes should never be reused.
● Place all used needles and syringes into a sharps container (puncture-proof disposable container).
● Keep the sharp container out of the reach of children.
● Avoid disposing of used sharps containers in household waste.
● Dispose of full sharps containers according to local regulations or at designated facilities.
</td>
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<tr>
<td>Others</td>
<td>
Precautions:
1. Hypertension.
2. Cardiovascular disease including recent myocardia infarction (MI) and venous thromboembolism
3. Malignant disease
4. Patients with epilepsy, history of seizures, or medical conditions associated with a predisposition to seizure activity such as CNS infections and brain metastases.

Monitoring parameters:
1. Blood pressure particularly at the start of therapy
2. Monitor haemoglobin at least monthly during the initiation phase.
3. Monitor iron status at least every 3 months during ESA therapy.

Contraindications :
1. Known hypersensitivity to the active substance or to any of the excipients
2. Uncontrolled hypertension.
3. Pure red cell aplasia (PRCA) that begins after treatment with other erythropoietin stimulating agents (ESAs).
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References:

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 1, 2025.
2. Kidney Disease: Improving Global Outcomes (KDIGO) Anemia Work Group. (2012). KDIGO clinical practice guideline for anemia in chronic kidney disease. Kidney International Supplements, 2(4), 279–335.
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4. Duopharma (2018). Product information leaflet: Erysaa®. Retrieved from Quest 3+ Product Search on January 1, 2025.
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6. Sandoz GMBH (2024). Product information leaflet: Binocrit®. Retrieved from Quest 3+ Product Search on January 1, 2025.
7. Bahagian Perkhidmatan Farmasi, Kementerian Kesihatan Malaysia. (2016). Garis panduan pemantauan keselamatan produk erythropoietin stimulating agents (ESAs) dan pelaporan kesan advers pure red cell aplasia (PRCA).

Everolimus

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Mammalian target of rapamycin (mTOR) kinase inhibitors Everolimus			
Indications and Dosage	1. Prophylaxis of organ rejection in adult patients at low to moderate immunological risk receiving an allogeneic renal or cardiac transplant in combination with ciclosporin for microemulsion and corticosteroids. Product available - Certican ®: Tablet dosage form available in two strength: 0.25mg and 0.75mg : Dose is adjusted based on therapeutic drug monitoring. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	To be swallowed whole twice daily, 12 hours apart. Do not chew or crush the tablets. Must be taken at the same time every day either with or without food, but advisable to be taken on empty stomach. To ensure the accuracy of everolimus levels, it is important to take the everolimus after the blood is drawn for therapeutic drug monitoring. **Missed dose management:** 1. If the everolimus dose is missed, patients should take it as soon as possible within **six hours** after regular dose. 2. If it is more than 6 hours, skip the missed dose and return to normal dosing schedule. 3. Do not double a dose under any circumstances. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. The potential risk to humans is unknown. There is no adequate data from the use of Certican in pregnant women. 2. Everolimus should not be given to pregnant women unless the potential benefit outweighs the potential risk to the fetus 3. To inform specialist if you want to get pregnant / pregnant			
	Breastfeeding			
	1. Everolimus is excreted into breast milk, thus breastfeeding is not recommended			
	Elderly			

	1. Dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range.			
	Paediatric			
	1. There are limited data on the use of Everolimus in children and adolescents however, Everolimus can be used in renal transplant pediatric patients			
	Fasting			
	1. Transplant patients should consult with transplant specialists to assess their conditions and determine whether fasting is safe for them. 2. If fasting is permissible,tacrolimus can be taken on an empty stomach during Sahur and Iftar. It's important to stay hydrated throughout the night. If you miss a dose during Sahur, you must break your fast that day to take the missed dose.			
	Others			
	1. Mild hepatic impairment (Child-Pugh Class A), reduce the dose to 2/3 of the normal dose. 2. Moderate hepatic impairment (Child-Pugh B) reduce the dose to ½ of the normal dose. 3. Severe hepatic impairment (Child-Pugh C) reduce the dose to 1/3 of the normal dose Further dose titration should be based on therapeutic drug monitoring			
Side Effects and their Management*	1. Metabolic abnormalities: Diabetes mellitus, Hyperlipidaemia, hypokalemia 2. Delayed wound healing 3. Increased risk of infection. Seek healthcare advice if have any symptoms of infections such as fever, chills, or flu-like symptoms. 4. GI disorder: Nausea, diarrhea, vomiting, dry mouth, mouth ulcer, mucositis 5. Hypertension 6. Nephrotoxicity			
Storage*	1. Store at room temperature. 2. Store in the original package in order to protect from light and moisture. 3. The tablet should remain in the blister when kept in the pillbox.			
Others	1. Avoid live-attenuated vaccination. 2. Concomitant use with strong CYP3A4 inhibitors such as ritonavir, ketoconazole, erythromycin, verapamil, diltiazem may increase everolimus level. 3. Concomitant use with strong CYP3A4 inducers such as rifampicin, phenytoin, carbamazepine may decrease everolimus level, potentially increasing the risk of rejection. 4. Avoid the fruit and juice of grapefruit, pomelo and pomegranate as it may increase the everolimus level.			

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References:

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 1, 2025.
2. Novartis (2022). Product information leaflet: Certican. Retrieved from Quest 3+ Product Search on January 1, 2025.
3. MIMS GATEWAY (2025). Everolimus. MIMS. Retrieved January 20, 2025, from https:// www.mims.com/malaysia/drug/info/everolimus

Evolocumab

Name :		Unit :		
• *Please tick (✔) **Yes** for correct instruction or sequence.* • *Please tick (✔) **No** for incorrect instruction or sequence.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Lipid modifying agent - PCSK9 inhibitors			
Indications and Dosage	1. Prevention of cardiovascular events a. 140mg every 2 weeks b. 420mg monthly 2. Primary hyperlipidemia (including heterozygous familial hypercholesterolemia HeFH) a. 140mg every 2 weeks b. 420mg monthly 3. Homozygous familial hypercholesterolemia HoFH a. 420mg monthly			
	When switching dosing regimen, administer the first dose of the new regimen on the next scheduled date of the prior regimen.			
Method of Administration*	1. Evolocumab is administered under the skin (subcutaneously), every 2 weeks or 1 time each month. 2. 420mg dose can be administered by giving 3 injections consecutively within 30 minutes at different injection sites.			
	Preparation 1. Remove the pre-filled pen from the original package carefully. Return the original package with unused pre-filled pen to the refrigerator. 2. Wait for at least 30 minutes for the pre-filled pen to reach room temperature before injecting. This will minimise pain at the injection site. Do not warm or expose to direct sunlight to warm the pre-filled pen. 3. Do not shake the pre-filled pen. **Inspection** 4. Check the solution in the window. It should be clear and colourless to slightly yellow. 5. Do not use if ● The solution is cloudy or discoloured or contains large lumps. ● Any part of the pre-filled pen appears cracked or broken. ● If the pre-filled pen has been dropped. ● The orange cap is missing or not securely attached. ● The expiration date has passed. **Injection Site** 6. Only inject at these injection sites: ● Thigh ● Abdomen, except 2 inches (5 cm) area around belly button. ● Outer area of upper arm (not for self-injection). 7. Rotate injection site. If you need to use the same injection site, make sure it is not the same spot on the site you used in the previous injection. 8. Do not inject into areas where the skin is tender,			

	bruised, red or hard. Avoid injecting into areas with scars or stretch marks. 9. Do not co-administer with other injectable drugs at the same administration site. **Injection Technique** 10. Clean the injection site with alcohol wipe. Let the skin dry before injection. Do not touch this area again before injecting. 11. Pull the orange cap straight off. ● Do not twist, bend or wiggle the orange cap. ● Do not put the orange cap back onto the pre-filled pen. ● Do not leave the orange cap off for more than 5 minutes as this can dry out the medicine. 12. It is normal to see a drop of liquid at the end of the needle or yellow safety guard. Do not put fingers into the yellow safety guard. 13. Create a firm surface at the selected injection site by using either stretch method or pinch method. ● Stretch method: stretch the skin firmly by moving your thumb and fingers in the opposite direction, creating an area about 2 inches (5 cm) wide. ● Pinch method: pinch the skin firmly between your thumb and fingers, creating an area about 2 inches (5 cm) wide. It is important to keep skin stretched or pinched while injecting. 14. Keep holding the stretched or pinched skin. With the orange cap off, put the yellow safety guard on your skin at 90 degrees. The needle is inside the yellow safety guard. Do not touch the grey button yet. 15. Firmly push down the pre-filled pen onto the skin until it stops moving. 16. When you are ready to inject, press the grey start button. You will hear a click. 17. Keep pushing down on the skin. Window on the pre-filled pen turns from clear to yellow when the injection is done. You may hear a second click. Your injection could take about 15 seconds. 18. Lift your thumb while still holding the pre-filled pen on your skin. 19. Remove the pre-filled pen from your skin. The needle will be automatically covered. Do not recap the pre-filled pen or put fingers into yellow safety guard. 20. Discard the used pre-filled pen and orange cap in a hard, puncture-proof disposal container. 21. If there is blood at injection site, press a cotton ball or gauze pad on your injection site. Do not rub the injection site. Apply a plaster if needed.			
	Missed dose management 1. If a dose is missed and administer within 7 days from the missed dose, you can resume the original schedule. 2. If a 2-weekly dose is not administered within 7 days, wait until the next dose of the original schedule and inject. 3. If a monthly dose is not administered within 7 days, administer the dose and start a new schedule based on the new injection date. Do not stop taking your medication unless advised to do so by your prescriber			

Special Considerations	**Pregnancy**			
	1. No data on use of evolocumab to inform a drug-associated risk.			
	Breastfeeding			
	1. No data on the presence of evolocumab in human milk.			
	Elderly			
	1. No differences in safety or effectiveness were observed between the elderly (≥ 65 or ≥ 75 years old) and younger patients, but greater sensitivity of some older individuals cannot be ruled out.			
	Pediatric			
	1. Safety and effectiveness have not been established in pediatric patients with primary hyperlipidemia or HeFH; and HoFH who are younger than 10 years old			
	Others			
	1. Renal Impairment - No dose adjustment is needed. 2. Hepatic impairment a. No dose adjustment for mild to moderate hepatic impairment (Child-Pugh A or B). b. No data for severe hepatic impairment. (Child-Pugh C). Use with caution			
Side effects and their Management*	Hypersensitivity reaction (e.g. rash, urticaria). Inj. evolocumab is contraindicated in patients with a history of serious hypersensitivity reaction.			
Storage*	1. Store in a refrigerator (2 - 8°C). Do not freeze or use the pre-filled pen if it has been frozen. 2. May be stored at room temperature (25°C) and used within 1 month. 3. Protected from light.			
Others	Drug - drug interaction with statin Approximately 20% increase in clearance of evolocumab: No statin dose adjustment is necessary when used concomitantly with evolocumab			

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Reference:

1. Amgen Biopharmaceuticals Malaysia Sdn Bhd (2024) Product information leaflet: Repatha. Retrieved from Quest 3+ Product Search on January 20, 2025.

Felodipine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Dihydropyridine Calcium Antagonist - Antihypertensive			
Indications and Dosage	1. *Hypertension* a. *Initial 5mg OD, may titrate to maximum dose 20mg/day*			
Method of Administration*	1. Felodipine should preferably be taken in the morning on an empty stomach or following a light, low fat or carbohydrate meal. 2. Felodipine tablets must be swallowed with water and not be divided, crushed or chewed **Missed medication management** If you forgot to take a dose of felodipine, take it as soon as you remember it. However, if it is almost time for your next dose, skip the missed dose. Do not take a double dose (two doses at the same time) to make up for a forgotten dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Avoid use in pregnant women as there is a risk of harm to the foetus.			
	Breastfeeding			
	1. Although detected in breast milk. when taken in therapeutic dose felodipine is unlikely to affect the infant			
	Elderly			
	1. Initial treatment with lowest available dose should be considered, and titrate at no less than 2 week intervals to response. 2. Prolonged- release tablets must not be divided, crushed or chewed. Consideration should be given in elderly with dysphagia or requiring enteral tube feeding. MALPIP 1. Increased risk of ankle oedema, to consider dosage adjustment, switching CCB or switching to other classes if necessary			
	Paediatric			
	Limited data			
	Fasting			
	Not applicable			

	Others			
	1. No dose adjustment is required. However, Plendil should be used with caution in patients with severely impaired renal function 2. Patients with impaired hepatic function may have elevated plasma concentrations of felodipine and may respond to treatment at lower doses			
Side Effects and their Management*	1. Most of reactions are dose dependent & appear at the start of treatment or after dose increment such as flushing,headache,palpitations, dizziness and fatigue 2. Dose-dependant ankle swelling,results from precapillary vasodilation and not related to fluid retention If pedal edema occurs, may consider to elevate feet using a stool or pillow, and avoid prolonged sitting or standing 3. Mild gingival enlargement with pronounced gingivitis/peridontitis			
Storage*	Do not store above 30^0C			
Others	1. Drug-drug interaction a. Enzyme inhibitor of cytochrome P450 (Erythromycin, Itraconazole, Ketoconazole, grapefruit juice) has been shown to cause increase in Felodipine plasma concentrations b. Enzyme inducer of cytochrome P450 (phenytoin, carbamazepine, rifampicin, barbiturates & St. John's wort) may cause decrease in Felodipine plasma concentrations 4. Avoid for patients with hereditary galactose intolerance or glucose-galactose malabsorption as Felodipine contains lactose.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

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Fentanyl, Transdermal Patch

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Opioid analgesic			
Indications and Dosage	1. As a second line drug in the management of opioid responsive, moderate to severe chronic cancer pain. 2. It should only be considered in patients with stable opioid requirements who have difficulties in swallowing and intractable nausea and vomiting. a. Dose requirement is established using short-acting preparations before switching to transdermal formulation. b. Dose is individualised based on patient-specific factors and severity of pain, and is given every 72 hours. c. Subsequently, dose is adjusted according to patient response, taking into account the amount of rescue medication used, pain score, functional assessment and side effects. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Step 1: Preparing the Skin** a. Make sure the skin is completely dry, clean and cool before putting the patch on. b. Sites of application are chest, back and upper arms **Step 2: Open the sachet** a. Each patch is sealed in its own sachet b. Tear or cut open the sachet at the notch, shown by the arrow **Step 3: Peel and press** a. Carefully peel one half of the shiny plastic backing away from the centre of the patch. Try not to touch the sticky side of the patch b. Press the sticky part of the patch onto the skin c. Remove the other part of the backing and press the whole patch onto the skin with the palm of your hand. d. Hold for at least 30 seconds. Make sure it sticks well, especially the edges e. The date and time of application and/or renewal should be written on the patch. **Step 4: Disposing of the patch** a. As soon as take a patch off, fold it firmly in half so that the sticky side sticks to itself b. Put it back in its original sachet and dispose of the sachet as instructed **Step 5: Wash** a. Always wash the hands after handling the patch using clean water only **Step 6: Change of patch** a. Change patch every 3 days at the same time of day b. If the patch falls off before the scheduled change date (3 days), discard it and apply a new patch to a different skin site.			

	c. Rotate the site after each patch removal and wait for at least 3 days before reapplying to the same site. **Missed dose management:** 1. Apply a new patch as soon as you remember 2. Do not apply twice the number of patches to make up for the patch that you missed. 3. This will increase the chance of you getting unwanted side-effects **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Prolonged use of opioid analgesics during pregnancy may cause neonatal opioid withdrawal syndrome			
	Breastfeeding			
	1. Fentanyl is excreted in human milk; therefore, it is not recommended for use in nursing women because of the possibility of effects in their infants.			
	Elderly			
	1. Increased sensitivity to weak opioids in elderly patients can result in excessive sedation, dizziness, confusion, and an elevated risk of delirium and lead to falls. 2. Use with caution in the elderly, debilitated or cachectic patients have an increased risk for respiratory depression. 3. Use in elderly patients carry risks of constipation that lead to delirium and increased risk of falls. 4. Avoid in patients with a history of fractures or falls, it may contribute to additional fall. 5. Use caution in elderly patients. Starts at lower dosage in this population. 6. Avoid in patients with very low BMI (< 18.5kg/m2) due to concern about absorption variability. 7. Caution in patient with thin, fragile skin : a. it may reduce the patch adhesion to the skin b. reduce absorption due to inadequate subcutaneous fat			
	Paediatric			
	1. Use with caution in paediatric patients. Starts at lower dosage in this population.			
	Others			
	1. Addiction: abuse, misuse, or opioid addiction may occur. Use cautiously in patients with a history of substance abuse or mental illness. 2. Heat exposure: Avoid heat exposure to application site or surrounding areas (e.g: heating pads, electric blankets, heating lamps, sauna, hot water or direct sunlight) 3. Concomitant use with others: Benzodiazepines or Central Nervous System(CNS) depressants including alcohol may result in profound sedation, respiratory depression, coma, and death			

Side Effects and their Management*	1. Opioid-induced constipation a. A common side effect b. Tolerance does not develop, hence laxatives must be taken regularly c. Use combination of stimulant (e.g. bisacodyl) + softener (e.g. lactulose) d. Increase fluid and dietary fibre intake, maintain good physical activity, and try to establish a toilet routine 2. Opioid-induced sedation / impaired alertness a. May occur upon initiation of opioids b. Avoid driving and other activities that require mental alertness until it is clear how morphine/ Oxycodone affects the patient c. Tolerance develops after 5 - 10 days 3. Opioid-induced neurotoxicity (delirium, confusion) a. May occur, but usually transient b. May consider use of haloperidol for delirium 4. Opioid-induced nausea and vomiting a. May occur upon initiation of opioids b. Tolerance develops 5 - 10 days after starting c. May use antiemetics (e.g. metoclopramide, haloperidol or prochlorperazine) d. Be consistent when taking morphine with or without meals 5. Opioid-induced dry mouth a. Sip water often, let small ice chips melt in your mouth b. Minimise intake of caffeinated drinks, such as coffee, tea, and some sodas as well as use of tobacco and alcohol c. Chew sugarless gum or suck on sugarless hard candy to stimulate saliva flow 6. Dermatologic: a. Severe application site reactions may occur. Onset ranged from days to months after initiation.			
Storage*	1. Store your medication in a cool, dry place away from heat, moisture and direct sunlight. 2. Disposal: FOLD used patches so that the adhesive side adheres to itself.			
Others	1. Do not drink alcohol while using Transdermal Fentanyl Patch 2. Do not drive or use any tools or machines if patient complaints of sleepy or dizzy 3. Do not shave the skin if it is hairy. Instead, clip the hair as close to the skin as possible 4. Overdosage: Patient can present with respiratory depression, somnolence progressing to stupor or coma, skeletal muscle flaccidity, cold and clammy skin, constricted pupils, and in some cases, pulmonary edema, bradycardia, hypotension, partial or complete airway obstruction, atypical snoring, and death.			

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References:

1. Clinical Practice Guidelines Management of Cancer Pain (Second Edition) (2023) Ministry of Health Malaysia.
2. Fentanyl (2025). MEDSCAPE Drug Reference version v1158.0. Retrieved January 20, 2025 from https://reference.medscape.com/drug/duragesic-fentanyl-transdermal-999646
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Flecainide Acetate

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiarrhythmic, Class 1C			
Indications and Dosage	1. Sustained monomorphic ventricular tachycardias a. Initial dose: 50 to 100mg twice daily for 3 to 5 days. Reduced to the lowest dose that controls the arrhythmias. Max: 400mg daily 2. Pre excited atrial fibrillation or Syndrome Reciprocating Atrio-Ventricular tachycardias (AVT) associated with Wolff Parkinson White Syndrome a. Initial dose: 50mg every 12 hours; increase by 50mg twice daily at 4-day intervals. Max: 300mg/day 3. Supraventricular tachycardias due to Intra-Atrio Ventricular Nodal Reentry a. Initial dose: 50mg twice daily. Max: 300mg daily			
Method of Administration*	May be taken with or without food Take flecainide at about the same time each day. **Missed dose management** If you miss a dose, take it as soon as you remember. If it is near to the next dosing time, do not take a double dose to replace it. Just take the dose as usual. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Maybe considered in sustained fetal tachycardia (maternal/transplacental administration): a. Initial dose: 100 to 300mg/day in divided doses administered every 8 to 12 hours. Dose adjusted to fetal response. Maximum dose: 450mg/day. Avoid use during the first trimester. There is no evidence as to drug safety in human pregnancy. Data have shown that Flecainide crosses the placenta to the foetus in patients taking Flecainide during pregnancy.			
	Breastfeeding			
	1. Flecainide is excreted in human milk and appears in concentrations which reflect those in maternal blood. Relative infant dose (RID) of flecainide is 8% when calculated using the highest average breast milk concentration located and compared to a weight -adjusted maternal dose of 200mg/day. Breast feeding is considered acceptable when the RID of a medication is < 10%. 2. The risk of adverse effects to the nursing infant is very			

	small. The benefit of Tambocor® Tablet 100mg during lactation should therefore be weighed against the possible effects on the child.			
	Elderly			
	1. The dose for elderly patients should not exceed 300 mg per day (or 150 mg twice daily). MALPIP 1. May increase risk of bradycardia, orthostatic hypotension, urinary retention, and falls. 2. Examine drug-drug interactions, tailor regime according to patient's physiology and medication profile. 3. Routine blood test and ECG warranted.			
	Paediatric			
	1. Tambocor Tablet 100mg is not recommended for children under 12 years of age, as there is insufficient evidence of its use in this age group 2. Children are particularly susceptible to flecainide toxicity given its narrow therapeutic window and the frequent need among younger patients for extemporaneous compounding of a liquid formulation,increasing the risk for medication dosing errors.			
	Fasting			
	Not applicable			
	Others			
	1. Renal impairment CrCl ≤ 35 ml/min: Max initial dose: 100mg daily. Dose may be adjusted after 6-7 days as tolerated. 2. Hepatic impairment Max dose: 100mg daily 3. Patients with permanent pacemaker; Patients receiving cimetidine or amiodarone Max dose: 100mg daily			
Side Effects and their Management*	Common side effects: 1. Heartbeat changes, it starts to pound, or it gets faster or slower 2. Skin problems associated with exposure to sunlight 3. Nausea and vomiting 4. Increased in liver enzyme or jaundice 5. Giddiness, dizziness, and light-headedness. 6. Numb and tingling hand or feet 7. Unsteady walking or uncontrolled movement 8. Small cloudy spot on the eyeball 9. Double vision and blurring of vision 10. Certain lungs disease (pulmonary fibrosis) or inflammation of the lungs (pneumonitis)			
Storage*	Store between 20 to 25^{0}C			
Others	Precautions 1. May cause dizziness and visual disturbance, not to drive or operate machinery Special monitoring parameters 1. Monitor ECG, BP, and respiratory functions			

	Significant drug-drug / drug-food interactions (if applicable) 1. Drug-drug interaction a. Amiodarone -may enhance QTc prolonging effect of Flecainide. Decrease Flecainide dose by 50% when using commitantly b. Haloperidol, Risperidone, Quinolone antibiotics – enhance QTc prolonging effect of Flecainide			

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Remarks:

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***Mandatory for validation / peer review**

References:

1. Anderson PO et al(2016). Modeling drug passage into human milk. Clinical Pharmacology Therapy.
2. Flecainide. (2024). MIMS (online).
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7. Chang, C. T., Chan, H. K., Cheah, W. K., Tan, M. P., Ch'ng, A. S. H., Thiam, C. N., ... & Lee, S. W. H. (2023). Development of a Malaysian potentially inappropriate prescribing screening tool in older adults (MALPIP): a Delphi study. Journal of Pharmaceutical Policy and Practice, 16(1), 122.

Follitropin Alpha (Recombinant Human FSH)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Recombinant Human Follicle-Stimulating Hormone (FSH)			
Indications and Dosage	**Indication** Anovulation, including polycystic ovarian syndrome (PCOS), in women who have been unresponsive to treatment with clomiphene citrate. **Dosage** : 75 - 150 IU daily, should commence within the first 7 days of the menstrual cycle and increase by 37.5 IU or 75 IU at 7- or 14-days intervals. Max daily dose 225 IU **Indication** Controlled ovarian hyperstimulation to induce the development of multiple follicles for assisted reproductive technologies (ART). **Dosage** : 150 - 225 IU daily commencing on days 2 or 3 of the cycle. Max daily dose 450 IU. Dosing is individualised and according to product insert/protocol.			
Site & Method of Administration*	**Site of administration or injection:** • Abdomen (preferably) • Buttock **Method of administration:** a) Wash your hands with soap and water. b) Check that the - The expiry had not passed - The solution is clear and colourless and does not contain particle - The pre-filled pen is not damaged c) Sit in a comfortable position so you can easily see the area of their stomach where you will be injecting. d) Select an area on the right or left side of your stomach, at least 2 inches from your navel. Alternate left and right side of the lower abdominal area at each injection. Do not inject yourself within about 2 inches of your navel, near scars, bruises or stretch marks. e) Clean the area you have selected for your injection with an alcohol swab and allow the area to dry. f) Remove the protective cap. g) Screw a new needle to the pen. Remove the inner and outer cap. h) Prime the Gonal-F pen with the needle pointing upwards for			

	when you use a new cartridge. (Observe at least a drop of medication at the needle tip before injecting.) i) Dial the dose knob to the desired dose by turning the dose knob. j) If by mistake you dial past the correct number, turn the dose setting knob backward to correct the dose. k) Once you have set the correct dose, swab the site of injection with an alcohol swab and pinch the area with two fingers. l) Insert the pen needle into the skin at an angle of 90° and push the end of the dose knob until the figure in the dose window returns to 0. m) Count to 10 slowly before withdrawing the needle from the skin. Counting past 10 may be necessary for higher doses. This is to ensure full dose delivery and prevent leakage. n) Recap the used pen needle using the outer needle cap on and unscrew the needle. o) Replace the pen cap. p) Immediately discard the used needle into a designated disposal bin. q) Do not rub the injection site after administration **Do not stop taking your medication unless advised to do so by your prescriber** **Missed dose :** Administer as soon as you remember. If it is close to the next dose, omit the current dose and administer the current dose. **DO NOT DOUBLE THE DOSE**			
	Administer as soon as you remember. If it is close to the next dose, omit the current dose and administer the current dose. **DO NOT DOUBLE THE DOSE**			
Special Considerations	**Pregnancy**			
	Contraindicated			
	Breastfeeding			
	Contraindicated			
	Elderly			
	NA			
	Paediatric			
	The safety and efficacy of Follitropin Alpha in paediatric patients below age 18 have not been established.			
	Fasting			

	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	1. Bloating 2. Nausea & vomiting 3. Breast tenderness 4. Injection site reaction (bruising, pain, redness) ***Note for IVF**: **<u>Ovarian Hyperstimulation Syndrome (OHSS) warning signs and symptoms:</u>** Severe abdominal pain, severe nausea and vomiting, difficulty in breathing Seek help from doctor if symptoms worsen			
Storage*	● Store at 2-8 °C (in a refrigerator). ● DO NOT FREEZE. ● Avoid storage at the door of the fridge and vegetable compartment, ensure there is proper air circulation around medication. ● TRANSPORT of medication is only allowed in a COOL BOX WITH ICE/ICE PACKS ● Preferable return home immediately after getting medication from pharmacy to facilitate proper storage			
Others	***Administration timing and importance of compliance*** ● Always inject at the same specified time of the day for adequate follicular response ● Importance of rotation of side of administration ***Disposal of sharps (syringe, needles, vial, ampoule)*** ● Dispose sharps in a container before disposal ● Collect sharps in a container and return to the pharmacy or healthcare facility for proper disposal into a sharp bin.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for peer review/validation**

References:

1. Hospital Tunku Azizah, (2023), Fertility Pharmacy Services, Pharmacy Department of Hospital Tunku Azizah.
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Follitropin Beta (Recombinant Human FSH)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Recombinant Human Follicle-Stimulating Hormone (FSH)			
Indications and Dosage	**<u>Indication</u>** Anovulation, including polycystic ovarian syndrome (PCOS), in women who have been unresponsive to treatment with clomiphene citrate. **Dosage** : 50 IU daily, maintaining the starting dose for at least 7 days. **<u>Indication</u>** Controlled ovarian hyperstimulation to induce the development of multiple follicles for assisted reproductive technologies (ART). **<u>Dosage</u>** : 100-225 IU daily, maintaining the starting dose for at least the first 4 days. Dosing is individualised and according to product insert/protocol.			
Site & Method of Administration*	**Site of administration or injection:** • Abdomen (preferably) • Buttock ***Method of administration:*** a) Wash your hands with soap and water. b) Check that - The expiry had not passed - The cartridge solution is clear and colourless and does not contain particle - The puregon pen is not damaged c) Sit in a comfortable position so you can easily see the area of their stomach where you will be injecting. d) Select an area on the right or left side of your stomach, at least 2 inches from your navel. Alternate left and right side of the lower abdominal area at each injection. Do not inject yourself within about 2 inches of your navel, near scars, bruises or stretch marks. e) Clean the area you have selected for your injection with alcohol swab and allow the area to dry. f) Remove the protective cap and unscrew the cartridge holder. g) Insert the cartridge into the cartridge holder. Screw the cartridge holder to the pen body tightly. h) Screw a new needle to the pen. Remove the inner and outer cap. i) Prime the Puregon pen with the needle pointing upwards for when you use a new cartridge. (Observe at least a drop of medication at the needle tip before injecting.)			

	j) Dial the dose knob to the desired dose by turning the dose knob. k) If by mistake you dial past the correct number, DO NOT try to turn the knob backward to fix the mistake. Continue to turn the dosage knob in the same direction past the 450iu mark, as far as it will turn. The dosage scale must move freely. Push the injection button all the way. Start to dial again starting from 0 upwards. l) Once you have set the correct dose, swab the site of injection with an alcohol swab and pinch the area with two fingers. m) Insert pen needle into the skin at an angle of 90° and push the end of the dose knob until the figure in the dose window returns to 0. n) Count to 10 slowly before withdrawing the needle from the skin. Counting past 10 may be necessary for higher doses. This is to ensure full dose delivery and prevent leakage. o) Recap the used pen needle using the outer needle cap on and unscrew the needle. p) Replace the pen cap. q) Immediately discard the used needle into a designated disposal bin. r) Do not rub the injection site after administration **Do not stop taking your medication unless advised to do so by your prescriber** **Missed Dose :** Administer as soon as you remember. If it is close to the next dose, omit the current dose and administer the current dose. **DO NOT DOUBLE THE DOSE**			
Special Considerations	**Pregnancy**			
	Contraindicated			
	Breastfeeding			
	No information available from clinical or animal studies.			
	Elderly			
	NA			
	Paediatric			
	The safety and efficacy of Follitropin Beta in paediatric patients below age 18 have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			

	NA			
Side Effects and their Management*	1. Bloating 2. Nausea & vomiting 3. Breast tenderness 4. Injection site reaction (bruising, pain, redness) ***Note for IVF**: **<u>Ovarian Hyperstimulation Syndrome (OHSS) warning signs and symptoms :</u>** Severe abdominal pain, severe nausea and vomiting, difficulty in breathing Seek help from doctor if symptoms worsen			
Storage*	● Store at 2-8 °C (in a refrigerator). DO NOT FREEZE. Avoid storage at the door of the fridge and vegetable compartment, ensure there is proper air circulation around medication. ● TRANSPORT of medication is only allowed in a COOL BOX WITH ICE/ICE PACKS ● Preferable return home immediately after getting medication from pharmacy to facilitate proper storage			
Others	***Administration timing and importance of compliance*** ● Always inject at the same specified time of the day for adequate follicular response ● Importance of rotation of side of administration ***Disposal of sharps (syringe, needles, vial, ampoule)*** ● Dispose sharps in a container before disposal ● Collect sharps in a container and return to the pharmacy or healthcare facility for proper disposal into a sharp bin.			
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References:

1. Hospital Tunku Azizah, (2023), Fertility Pharmacy Services, Pharmacy Department of Hospital Tunku Azizah.
2. Ministry of Health (2024), Formulari Ubat KKM (FUKKM), Retrieved from https://i.pharmacy.gov.my/fukkm/1458
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Fondaparinux

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction or sequence.* • *Please tick (✔) **No** for incorrect instruction or sequence.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antithrombotic Agent - Synthetic and Selective Inhibitor of activated Factor X (Xa)			
Indications and Dosage	1. Prophylaxis of venous thromboembolism (VTE) in surgical patients a. 2.5mg once daily 2. Prophylaxis of venous thromboembolism (VTE) in medical patients a. 2.5mg once daily 3. Treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE), dose depends on body weight a. <50kg: 5mg once daily b. 50-100kg: 7.5mg once daily c. >100kg: 10mg once daily 4. Treatment of unstable angina and non-Q-wave myocardial infarction (NSTEMI) a. 2.5mg once daily 5. Treatment of acute ST-segment Elevation Myocardial Infarction (STEMI) *a.* 2.5mg once daily, first dose administered intravenously and subsequent doses administered by subcutaneous injection			
Method of Administration*	1. Subcutaneous (SC) injection: prevention of VTE, treatment of DVT and PE, treatment of unstable angina NSTEMI and acute STEMI. 2. IV bolus injection: first dose in treatment of acute STEMI. 3. Should **NOT** be administered by intramuscular route.			
	Subcutaneous Injection Technique : **Preparation** 1. Prior to injection, wash your hands thoroughly with soap and water. Towel dry. 2. Sit in a comfortable position so you can easily see the area of their stomach where you will be injecting. A lounge chair, recliner, or bed (propped up with pillows) is ideal. **Inspection** 1. Check the expiry date on the syringe. Do not use it if the date has passed. 2. Check the syringe is not damaged and the medicine in it is a clear solution without particles. If the syringe is damaged or the medicine is not clear, use another syringe. 3. Do not expel any air from the syringe before administering the injection. You may lose some of the medicine if you do.			

	Injection Site 1. Only inject at these injection sites: ● Thigh ● Abdomen, except 2 inches (5 cm) area around belly button. ● Outer area of upper arm (not for self-injection). 2. Choose an area on the right or left side of your stomach. This should be at least 5 centimetres away from your belly button and out towards your sides. 3. Rotate injection site. Change the place where you inject between the left and right sides of your stomach, depending on the area you were last injected. This is to prevent scarring which will make it harder to inject the area and also affect how the medication is released into your body. Avoid injecting on scars and bruises. 4. Do not co-administer with other injectable drugs at the same administration site. **Injection Technique** 1. Clean (do not rub) the injection site with alcohol wipe. Let the skin dry before injection. Do not touch this area again before injecting. 2. Hold the syringe in the hand you write with (like a pencil) and with your other hand, gently pinch the cleaned area of your abdomen between your forefinger and thumb to make a fold in the skin. Make sure you hold the skin fold throughout the injection 3. Hold the syringe with the needle pointing downwards (vertically at 90 degree angle) and inject a full length needle into the skin fold. Inject at 45° angle for needle length ≥8 mm or if the patient is thin. 4. Press down plunger with your finger (thumb). Complete the injection using all of the medicine in the syringe. Hold for 10 seconds. 5. Release the plunger and the needle will withdraw automatically from the skin and retract into the security sleeve where it will be locked permanently. Let go of the skin fold. 6. To avoid bruising, do not rub the injection site. 7. Drop the used syringe into a hard, puncture-proof container. Close the container lid tightly and place the container out of reach of children. 8. When the container is full, dispose of it safely. 9. If there is blood at the injection site, press a cotton ball or gauze pad on your injection site. Do not rub the injection site. Apply a plaster if needed. 10. Do not stop taking your medication unless advised to do so by your prescriber.			
	Missed dose management If you forget to take a dose, inject it as soon as you remember. Do not inject a double dose to make up for a forgotten dose **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Not recommended unless potential benefit outweighs risk			
	Breastfeeding			
	1. Not recommended			

	Elderly			
	1. Used with caution in older adults (from 75 years age and above) due to the risk of hemorrhage. MALPIP 1. Use caution and monitor bleeding risk.			
	Paediatric			
	1. The safety and efficacy of fondaparinux in patients under the age of 17 has not been established			
	Others 1. Renal impairment - Not recommended in severe renal impairment (creatinine clearance <30 ml/min) 2. Liver impairment - no dose adjustment 3. Body weight below 50 kg are at increased risk of bleeding			
Side Effects and their Management*	1. May develop hematoma at the injection site (a localised swelling that is filled with blood). 2. Educate patient on symptoms of bleeding such as bruises with unknown cause, blood in urine/dark coloured urine, black stools, gum bleeding or heavy menstrual bleeding 3. Seek immediate medical attention if any sign or symptom of bleeding occurs			
Storage*	1. Store below 25°C, do not freeze.			
Others	1. To inform healthcare professionals (dentist, surgeon, doctor, pharmacist) if the patient is planning to get a tooth extraction, or when consulting for medication, supplement or herbal remedies 2. Monitoring parameters a. Full blood count b. Renal function			
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***Mandatory for validation / peer review**

References:

1. Formulari Ubat KKM. (2025). Accessed on January 21, 2025.
2. Aspen Medical Products Malaysia Sdn Bhd (2019) Product information leaflet: Arixtra. Retrieved from Quest 3+ Product Search on January 21, 2025.
3. Robert-Ebadi, H., Le Gal, G., & Righini, M. (2009). Use of anticoagulants in elderly patients: practical recommendations. Clinical interventions in aging, 165-177.
4. Chang, C. T., Chan, H. K., Cheah, W. K., Tan, M. P., Ch'ng, A. S. H., Thiam, C. N., ... & Lee, S. W. H. (2023). Development of a Malaysian potentially inappropriate prescribing screening tool in older adults (MALPIP): a Delphi study. Journal of Pharmaceutical Policy and Practice, 16(1), 122.

Fusidic Acid, Topical

Name : Fusidic acid 2% w/w		**Unit : 15gram tubes**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Fusidic acid cream is a topical antibiotic (Group: Fusidanes) used to treat bacterial skin infections.			
Indications and Dosage	Fusidic acid is indicated for the treatment of mild to moderately severe skin and soft-tissue infections which include impetigo, folliculitis, erythrasma, furunculosis, abscesses and infected traumatic wounds and infected eczema Fusidic acid is particularly effective against **Gram-positive organisms**, with ***Staphylococcus aureus***, including **methicillin-resistant *Staphylococcus aureus* (MRSA)**, being one of its most notable targets. **Dosage** Apply to the affected area 2 - 3 times daily for a duration of 7 days. Do not use it for more than 2 weeks. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Apply a thin layer of fusidic acid cream to the affected area 2 to 3 times a day, or as directed by a healthcare provider. 2. Clean the affected area gently before application to remove any dirt or debris. 3. Treatment duration generally lasts 7 to 14 days, depending on the severity of the infection, or as prescribed by a healthcare provider. Do not discontinue treatment prematurely, even if symptoms improve, unless advised by your healthcare provider. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. No effects during pregnancy are anticipated. 2. Topical fusidic acid cream/ointment can be used during pregnancy. However, if administration is necessary, its potential benefits should be weighed against possible hazards to the fetus.			
	Breastfeeding			
	1. No effects on the breast-fed new-born/infant are anticipated since systemic exposure of topically applied fusidic acid/sodium fusidate to the breast-feeding woman is negligible. 2. Topical fusidic cream can be used during breast-feeding but it is recommended to avoid applying on the breast.			
	Elderly			

	1. Patients who use topical oils, creams, and ointments have potential fall risk .Patients may be advised to wear nonslip socks if applying topical medications to feet. Patients should be advised to apply cream while seated or standing on non-slip surfaces.			
	Paediatric			
	1. The frequency, type and severity of adverse reactions in children are expected to be the same as in adults.			
Side Effects and their Management*	1. Various skin reactions such as pruritus and rash 2. Application site reactions such as pain and irritation. 3. Hypersensitivity and angioedema.			
Storage*	1. Keep out of reach of children. 2. Keep the container tightly closed. 3. Store in a dry place below 30°C. 4. Protect from light.			
Others	1. Overdose is unlikely to occur. 2. Unless hypersensitivity to fusidic acid or any of the excipients exists, accidental ingestion of fusidic acid and the concentration of the excipients is too low to constitute a safety risk. 3. Avoid prolonged use as it may lead to antibiotic resistance. 4. Do not apply to the eyes, mouth, or mucous membrane. 5. Avoid using under occlusive dressings unless directed by a physician.			

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References:

1. Dynapharm (M) SDN BHD (2022). *Dyna fusidic cream 2% [product insert]*, Revision: Feb 2022.
2. J. D., Wilkinson (1998). *Fusidic acid in dermatology*. Br J Dermatol. 1998 Dec;139 Suppl 53:37-40.
3. Price KN, Grinnell M, Butler D, Shah A. Art of prevention: Practical tips for improving adherence to treatments for older patients in dermatology. Int J Womens Dermatol. 2021 Mar 18;7(4):478-481.

Gamma Benzene Hexachloride, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Topical insecticide			
Indications and Dosage	1. **For topical treatment of head lice (Second-line treatment)** Risk of neurologic toxicity. Should only be used in patients who cannot tolerate or have failed first-line treatment with safer medications for the treatment of scabies. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Before applying, wash hair with shampoo for at least 1 hour and dry it thoroughly. Do not use any creams, oils, or conditioners. 2. Shake the lotion well. Apply just enough lotion to make hair, scalp, and the small hairs on the back of neck wet. 3. Leave the shampoo on your hair for exactly 4 minutes. Keep hair uncovered during this time. 4. At the end of 4 minutes, use a small amount of warm water to lather the shampoo. Do not use hot water. 5. Wash all of the shampoo off of hair and skin with warm water. 6. Dry hair with a clean towel. 7. Comb hair with a fine tooth comb (nit comb) or use tweezers to remove nits (empty egg shells). 8. **Missed dose management**: If a dose is missed, use it as soon as possible. If it is almost time for the next dose, use only that dose. Do not use double or extra doses. **Do not stop your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. There are no adequate and well-controlled studies of gamma benzene hexachloride in pregnant women. Another safer agent should be used.			
	Breastfeeding			
	1. Topical application may increase drug milk levels for at least several days. Because it is potentially toxic in infants, is a persistent environmental contaminant, and possibly has estrogenic effects that could decrease lactation as well as affect the nursing infant, another agent should be used .			
	Elderly			
	1. Use with caution due to increased systemic absorption and neurotoxicity.			

	Paediatric			
	1. Use with caution due to increased systemic absorption and neurotoxicity. 2. Contraindicated for premature infants because their skin may be more permeable than that of full term infants and their liver enzymes may not be sufficiently developed to metabolize gamma benzene hexachloride.			
	Fasting			
	N/A			
	Others			
	1. Cotraindicated in individuals with known uncontrolled seizure disorders. 2. Increased systemic absorption and neurotoxicity for people weighing less than 50 kg and d individuals with other skin conditions (eg, atopic dermatitis, psoriasis).			
Side Effects and their Management*	1. If irritation, sensitization, drowsiness, headache, dizziness, seizure occurs, the patient should be advised to consult a physician.			
Storage*	1. Store below 30 degrees. 2. Keep out of reach of children. 3. For external use only.			
Others	1. Cleaning of items in prolonged or intimate contact with the head (eg, hats, pillowcases, brushes and combs) may be warranted. Washing the item in hot water (66°C), drying it in a hot dryer for 15 min or storing it in an occlusive plastic bag for two weeks can kill lice and nits.			

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References:

1. National Institute of Health (2024). Lindane. MedlinePlus. Retrieved from: https://medlineplus.gov/druginfo/meds/a682651.html
2. Formulari Ubat KKM (2025). Accessed on January 21, 2025.
3. Lindane Lotion USP, % (2025). Retrieved from: https://www.accessdata.fda.gov/drugsatfda_docs/label/2003/006309lotionlbl.pdf. Accessed on January 21. 2025.
4. Lidane. Drug and Lactation Database. Retrieved from: https://www.ncbi.nlm.nih.gov/books/NBK501378/. Accessed on January 21. 2025.

Ganirelix

Name :		Unit :		
• *Please tick (✔)* ***Yes*** *for correct instruction.* • *Please tick (✔)* ***No*** *for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Gonadotropin-releasing hormone (GnRH) antagonist			
Indications and Dosage	**Indication** Prevention of premature luteinizing hormone surges in women undergoing controlled ovarian hyperstimulation for assisted reproduction technique **Dose** Given by SC 0.25 mg once daily, starting on day 6 of ovarian stimulation and continued until ovulation induction			
Method of Administration*	**Site of administration or injection:** ● Upper leg (preferably) ● Abdomen ● Buttock **Method of administration:** a) Wash hands with soap and water. Dry your hands b) Check that the - The expiry had not passed - The solution is clear and colourless and does not contain particle - The syringe had not been opened or damaged c) Sit in a comfortable position so you can easily see the area of site of injection d) Do not inject within 2 inches of your navel area, near scars, bruises or stretch marks. Use alternate site for the next dose e) Clean the area you have selected for your injection with alcohol swab and allow the area to dry for at least 1 minute f) Remove the cap to expose the needle. To prevent infection, do not touch the needle or let it come in contact with any surface before injection. g) Do not press on the plunger to get rid of air bubbles. This can lead to a loss of the medicine. h) Hold the syringe with the dominant hand and with the other hand, gently pinch the cleaned area of the injection site between the forefinger and thumb to make a fold in the skin. Make sure to hold the skin folded throughout the injection. i) Insert the full length of the needle into the skin fold at an angle of 45-90 degree and press down the plunger fully. j) Hold for 10 seconds before removing the needle by pulling it straight out, then let go of the skin fold. k) Immediately discard the used needle into a designated disposal bin l) Do not rub the injection site after administration **Do not stop taking your medication unless advised to do so by your prescriber** **Missed dose management:** If you realize that you forgot a dose, administer it as soon as possible. Do not inject a double dose to make up for a missed dose. If you are more than 6 hours late (so the time between two injections is longer than 30 hours) administer the dose as			

	soon as possible, and contact your doctor for further advice.			
Special Considerations	**Pregnancy**			
	Contraindicated			
	Breastfeeding			
	Contraindicated			
	Elderly			
	NA			
	Paediatric			
	The safety and efficacy of Ganirelix in paediatric patients below age 18 have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	Redness, swelling of skin at the injection site. Headache, Nausea, Dizziness. Tiredness and malaise (general feeling of being unwell) Abdominal pain, Hot flushes, Vaginal bleeding. Seek help from doctor if symptoms worsen			
Storage*	● Keep out of reach and sight of children. ● Store at room temperature between 15°C and 30°C. ● Store in the original package in order to protect from light			
Others	**Administration timing and importance of compliance** ● Always inject at the same specified time of the day ● Importance of rotation of side of administration **Disposal of sharps (syringe, needles, vial, ampoule)** ● Dispose sharps in a container before disposal ● Collect sharps in a container and return to the pharmacy or healthcare facility for proper disposal into a sharp bin.			
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References:

1. Fertility Pharmacy Services Hospital Tunku Azizah Protocol 2023
2. Formulari Ubat KKM (FUKKM). (Version 241030.001) Retrieved from https://i.pharmacy.gov.my/fukkm
3. Product Insert Orgalutran

Gentamicin, Topical

Name :		Unit :		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antibiotic, Topical			
Indications and Dosage	Indication: For the treatment of primary and secondary skin infections caused by susceptible bacteria. Dosage: Apply 2 - 4 times daily to affected area **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Clean the affected area and remove any crusts (e.g., in cases of impetigo contagiosa) if necessary 2. Apply a small amount of cream/ointment gently to the affected area. 3. The treated area may be covered with a sterile gauze dressing, if needed, to protect the application site. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. When gentamicin is applied topically to large, denuded areas of skin, there is a potential risk of fetal ototoxicity, as systemic absorption may occur. 2. Use during pregnancy should be considered only if the potential benefits outweigh the risks, and under the guidance of a healthcare provider.			
	Breastfeeding			
	1. While systemic absorption of topical gentamicin is generally low, caution should be exercised if applied to large, denuded areas of skin, as this may increase the risk of systemic absorption and potential ototoxicity in the breastfeeding infant. 2. Avoid applying gentamicin to the breast area to prevent accidental ingestion by the infant.			
	Elderly			
	1. Refer to adult dosing May consider: - Systemic absorption of gentamicin from topical application is usually minimal; however, caution is advised in elderly patients, particularly when applied to large or denuded areas of skin, as absorption may be increased due to age-related changes in skin integrity. - Elderly patients may also have an increased risk of nephrotoxicity and ototoxicity if systemic absorption occurs, especially in those with pre-existing renal impairment. - Close monitoring is recommended for prolonged use or extensive application. - Patients who use topical oils, creams, and ointments			

	have potential fall risk .Patients may be advised to wear nonslip socks if applying topical medications to feet. Patients should be advised to apply cream while seated or standing on non-slip surfaces.			
	Paediatric			
	1. Apply a small amount gently to the cleansed affected area. May cover with gauze dressing.			
	Others			
	1. Hepatic and renal impairment: There are no dosage adjustments provided in the manufacturer's labelling for kidney and liver impairment. However, dosage adjustment is unlikely due to low systemic absorption. 2. Contraindication: Hypersensitivity to gentamicin or any component of the formulation			
Side Effects and their Management*	1. Hypersensitivity reactions: Topical use has been associated with itching, redness, swelling and other signs of irritation that are not present before therapy. Discontinuation of therapy normally brings relief to the symptoms. 2. Superinfection: Prolonged use may result in fungal or bacterial superinfection; discontinue if superinfection is noted.			
Storage*	1. Store under room temperature, below 30°C			
Others	1. For external use only; not for ophthalmic use. 2. Long-term use: Not intended for long-term therapy.			

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References:

1. Gentamicin (topical) (2024). UpToDate [Drug information] Retrieved November 14, 2024, from https://www.uptodate.com
2. Hovid BHD (2021). Gentamicin cream 0.1% [product Insert]
3. MIMS Malaysia. (n.d.) Gentamicin. MIMS Pte Ltd. Retrieved November 13, 2024, from https://www.mims.com/malaysia/drug/info/gentamicin?mtype=generic.
4. Price KN, Grinnell M, Butler D, Shah A. Art of prevention: Practical tips for improving adherence to treatments for older patients in dermatology. Int J Womens Dermatol. 2021 Mar 18;7(4):478-481.

Glucagon like peptide-1 Receptor Agonist (GLP-1 RA)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**GLP-1 receptor agonist (GLP-1 RA)** 1. Currently available in Malaysia: a. Liraglutide (daily injection) b. Dulaglutide (weekly injection) c. Semaglutide (weekly injection and oral tablet) d. combination of insulin Glargine with Lixisenatide (daily injection)			
Indications and Dosage	1. Treatment for T2DM. Dosage: titration and maintenance dose depending on agent a. Liraglutide: i. Initiate at 0.6 mg injected subcutaneously once daily for one week then increase to 1.2 mg daily. ii. If additional glycemic control is required, increase the dose to 1.8 mg daily after one week of treatment with the 1.2 mg daily dose. b. Dulaglutide: i. Recommended starting dosage is 0.75 mg injected subcutaneously once weekly. ii. After 4 weeks, the dosage may be increased to 1.5 mg once weekly for additional glycemic control. iii. If additional glycemic control is needed, increase the dosage in 1.5 mg increments after at least 4 weeks on the current dosage. iv. The maximum recommended dosage is 4.5 mg injected subcutaneously once weekly c. Semaglutide (injection): i. Start at 0.25 mg once weekly. ii. After 4 weeks, increase the dosage to 0.5 mg once weekly. iii. If additional glycemic control is needed, increase the dosage to 1 mg once weekly after at least 4 weeks on the 0.5 mg dose. iv. If additional glycemic control is needed, increase the dosage to 2 mg once weekly after at least 4 weeks on the 1 mg dosage d. Semaglutide (oral tablet): i. Day 1 to 30: The recommended starting dosage is 3 mg orally once daily for 30 days (this dosage is not effective for glycemic control) ii. Days 31 to 60: Increase the dosage to 7 mg orally once daily. iii. On Day 61 or thereafter, if: No additional glycemic control is needed, maintain the dosage at 7 mg orally once daily. Additional			

	glycemic control is needed, increasing the dosage to 14 mg orally once daily. e. Lixisenatide (in combination with insulin Glargine): i. Discontinue therapy with basal insulin or a GLP-1 RA prior to initiation of insulin glargine + lixisenatide. ii. In patients inadequately controlled on less than 30 units of basal insulin or on lixisenatide, the starting dosage is 15 units (15 units insulin glargine/5 mcg lixisenatide) given subcutaneously once daily. iii. In patients inadequately controlled on 30 to 60 units of basal insulin, the starting dosage is 30 units (30 units insulin glargine/10 mcg lixisenatide) given subcutaneously once daily. iv. Titrate the dosage upwards or downwards by two to four units every week based on the patient's metabolic needs, blood glucose monitoring results, and glycemic control goal until the desired fasting plasma glucose is achieved. v. Maximum daily dosage is 60 units (60 units of insulin glargine and 20 mcg of lixisenatide). 2. Treatment for obesity a. Liraglutide: Doses up to 3 mg daily are approved for obesity management. b. Semaglutide: Higher doses (e.g., 2.4 mg weekly SC) have been approved for weight management in obesity.			
Method of Administration*	<u>Injection</u> **Administration and missed dose management** A. Liraglutide *(Victoza®)* 1. Administer subcutaneously (SC) in the abdomen, thigh, or upper arm once daily at any time of the day, with or without meals. 2. Rotate injection sites to reduce irritation. 3. When using injection of Liraglutide with insulin, administer as separate injections. It is acceptable to inject Liraglutide and insulin in the same body region but the injections should not be adjacent to each other. 4. If a dose is missed less than 12 hours, administer the dose as soon as possible. If more than 12 hours have passed, skip the dose and resume the once-daily dosage regimen as prescribed with the next scheduled dose. Do not administer an extra dose or increase the dose to make up for the missed dose. 5. If more than 3 days elapsed since the last dose, initiate therapy at 0.6 mg/day to avoid GI symptoms. B. Dulaglutide *(Trulicity®)*			

	1. Administer subcutaneously (SC) in the abdomen, thigh, or upper arm once weekly on the same day each week at any time of the day, with or without food. 2. Rotate injection sites to reduce irritation. 3. When using injection Dulaglutide with insulin, administer as separate injections. It is acceptable to inject Dulaglutide and insulin in the same body region but the injections should not be adjacent to each other. 4. If a dose is missed, administer as soon as possible within 4 days after the missed dose. If less than 3 days remain before the next scheduled dose, skip the missed dose and administer the next dose on the regularly scheduled day. 5. The day of weekly administration can be changed, if necessary, as long as the last dose was administered 3 or more days before the new day of administration. C. Semaglutide *(Ozempic®)* 1. Administer subcutaneously (SC) in the abdomen, thigh, or upper arm once weekly at any time of day, with or without meals. 2. Rotate injection sites to reduce irritation. 3. When using injection Semaglutide with insulin, administer as separate injections. It is acceptable to inject Semaglutide and insulin in the same body region but the injections should not be adjacent to each other. 4. If a dose is missed, administer it as soon as possible within 5 days after the missed dose. If more than 5 days have passed, skip the missed dose and administer the next dose on the regularly scheduled day. In each case, patients can then resume their regular once-weekly dosing schedule. 5. The day of weekly administration can be changed if necessary as long as the time between two doses is at least 2 days (>48 hours). D. Lixisenatide/ insulin Glargine (*Soliqua®*) 1. Administer subcutaneously (SC) in the abdomen, thigh, or upper arm once daily, 60 minutes before the first meal of the day. 2. Rotate injection sites to reduce irritation. 3. If a dose is missed, resume the once-daily regimen as prescribed with the next scheduled dose. **Injection technique** Dulaglutide *(Trulicity®)* 1. Before removing the cap, make sure the pen is locked. Pull off the grey base cap. Do not put the base cap back on because this could damage the needle. 2. Place the clear base flat and firmly against the skin at the injection site. Unlock by turning the lock ring. 3. Press and hold the green injection button. Listen for the first click to indicate injection start. 4. Hold in place until the second click (5–10 seconds), which signals needle retraction.			

	5. Remove the pen from the skin. The injection is complete when the grey part is visible. 6. Remove the needle from the skin, recap it with the outer cap, and unscrew it carefully. Replace the pen cap. Semaglutide *(Ozempic®)* and Liraglutide *(Victoza®)* 1. Remove the protective tab from the outer needle cap. 2. Remove the paper tab, screw the needle to the pen and remove the inner and outer cap (do not keep the inner cap). 3. Prime only before the first use of a new pen. To prime, turn the dose knob until the flow check symbol. Hold the pen with the needle pointing up, and tap the cartridge gently with your finger a few times to bring any air bubbles to the top of the cartridge. 4. Keep the needle pointing up and press the dose button until 0 mg aligns with the pointer and until a drop can be seen at the needle tip. 5. Turn the dose knob until the needed dose aligns with the pointer. 6. If mistakenly select a wrong dose, change it by turning the dose knob backwards or forwards until the correct dose aligns with the pointer. Be careful not to press the dose button when turning the dose knob. 7. Inject by pressing the dose button until 0 mg aligns with the pointer. Hold in place for at least 6 seconds. 8. Remove the needle from the skin, recap it with the outer cap, and unscrew it carefully. Replace the pen cap. Lixisenatide/ insulin Glargine (*Soliqua®*) 1. Remove the protective tab from the outer needle cap. 2. Remove the paper tab, screw the needle to the pen and remove the inner and outer cap (do not keep the inner cap). 3. Prime before each injection. To prime, select 2 units by turning the dose selector until the dose pointer is at the 2 mark. 4. Keep the needle pointing up and press the injection button all the way in. 5. Turn the dose knob until the needed dose aligns with the pointer. 6. If mistakenly select a wrong dose, change it by turning the dose knob backwards or forwards until the correct dose aligns with the pointer. Be careful not to press the dose button when turning the dose knob. 7. Inject by placing the thumb on the injection button. Then press all the way in and hold for 10 seconds. 8. Remove the needle from the skin, recap it with the outer cap, and unscrew it carefully. Replace the pen cap. <u>Oral</u> Semaglutide tablet (*Rybelsus®*) 1. Should be taken on an empty stomach upon waking up. 2. The tablet should not be split, crushed or chewed. 3. It should be swallowed whole with a sip of plain water (up to half a glass of plain water equivalent to 120 ml). Taking the tablet with more than 120ml of water may result in adverse absorption of the drug.			

	4. Wait at least 30 minutes to 2 hours before eating or drinking. Taking semaglutide with food or less than 30 minutes before food, beverages or other oral drugs may decrease the absorption of the drug. 5. If a dose is missed, skip the dose for that day and take the next dose on the following day. 6. Do not place tablets in pill boxes, keep in original blister packs until use. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Should be avoided in pregnancy. Discontinue agents at least 2 months before trying to conceive.			
	Breastfeeding			
	Should be avoided in breastfeeding.			
	Elderly			
	Limited experience in patients aged >75 years. Use with caution, particularly in underweight elderly patients which can cause undernutrition and lead to osteopenia and osteoporosis.			
	Paediatric			
	1. Lixisenatide, Semaglutide: Safety and efficacy not established in individuals under 18 years. 2. Liraglutide and Dulaglutide: Safety and efficacy not established in children under 10 years.			
	Fasting			
	GLP-1 RA can be safely used during fasting (e.g., Ramadan) if dose titration is completed 2–4 weeks prior. No further modifications are needed.			
	Others			
	1. GLP-1 RA is not a substitute for insulin. 2. GLP-1 RA cannot be used for patients with T1DM. 3. GLP-1 RA can be used as an adjunct to oral glucose-lowering drugs and with insulin therapy. 4. GLP-1 RA should not be used in patients with a history of pancreatitis. 5. GLP-1 RA should not be used in patients with a history of or a family history of MEN 2A or 2B or medullary thyroid cancer. 6. Lixisenatide should not be used in patients with gastroparesis. 7. For Semaglutide, patients with a history of diabetic retinopathy should be monitored for progression of retinopathy and slower dose titration may be warranted. 8. Use with caution in patients at risk of kidney injury due to dehydration or volume contraction (e.g., polyuria, polydipsia, or those on renin-angiotensin system inhibitors).			
Side Effects and their	1. Gastrointestinal symptoms - The most common side effects are usually mild to			

Management*	moderate but some patients may experience severe symptoms that can increase the risk of acute kidney injury due to volume contraction. - Usually started with a low dose of GLP-1 RA and increased slowly to reduce the likelihood of GI side effects. - General advice to reduce the likelihood of GI side effects: 1. <u>Improve eating habits:</u> - Eat slowly - Eat when hungry and stop at the first sign of fullness - Eat smaller, more frequent meals. - Choose easy-to-digest food (ie. bland options) - Drink in small sips throughout the day - Avoid lying down after having a meal - Try not to be too active after eating - Avoid eating too close to bedtime 2. Get some fresh air and do some light exercise 3. Keeping a food diary may be useful in identifying foods and meal timing that worsen GI side effects - Additional advice for managing GI side effects: a. Nausea - avoid strong smells - eat crackers, mint, or ginger-based food or drinks about half an hour after taking a GLP-1 RA. b. Vomiting - stay well hydrated - have more frequent meals in smaller amounts. c. Diarrhea - drink plenty of water - avoid dairy products and high-fiber foods until symptoms resolve - Eat chicken broth, rice, carrots, very ripe fruit without skin d. Constipation - Drink generous amounts of water or other sugar-free liquids - Ensure adequate intake of fibre in diet - Increase physical activity - In case of persistence of nausea and/or vomiting, avoid drinks during meals, rather have them between 30 and 60 min before and/or after meals 2. Skin side effects - Injection site reactions (rash, erythema or itching) - Usually mild, often transient in nature - Management: rotate injection sites and use proper injection techniques. Cold compresses can help reduce pain. 3. Small increase in heart rate, clinically not significant 4. Infections (Upper respiratory tract infections and nasopharyngitis) 5. Headache			

	- Monitor and manage symptomatically.			
Storage*	A. Liraglutide *(Victoza®)* - Store new, unused pens in the refrigerator at 2°C to 8°C. Do not freeze. - After first use, the pen can be stored for 30 days at controlled room temperature (15°C to 30°C) or in a refrigerator (2°C to 8°C). - Keep the pen cap on when not in use. Protect the pen from excessive heat and sunlight. - Always remove the needle after each injection and store the pen without the needle attached. This reduces the risk of contamination, infection, leakage and inaccurate dosing. B. Dulaglutide (Trulicity®) - Store new, unused pens in the refrigerator at 2°C to 8°C. Do not freeze - If needed, each single-dose pen can be kept at room temperature, not to exceed 30°C for a total of 14 days. - Keep the pen cap on when not in use. Protect the pen from excessive heat and sunlight. - Storage in the original carton is recommended until the time of administration. C. Semaglutide *(Ozempic®)* - Store new, unused pens in the refrigerator at 2°C to 8°C. Do not freeze - After the first use, pens can be stored at room temperature (15°C to 30°C) or refrigerated (2°C to 8°C) and used within 56 days. - Keep the pen cap on when not in use. Protect the pen from excessive heat and sunlight. - Always remove and safely discard the needle after each injection and store the pen without an injection needle attached. D. Lixisenatide/ insulin Glargine (*Soliqua®*) - Store new, unused pens in the refrigerator at 2°C to 8°C. Protect the pen from light. Do not freeze the pen and do not use it if it has been frozen. - After first use, store the pen at room temperature no higher than 25°C. Use the pen for up to 28 days. - Replace the pen cap after each use to protect it from light. - Remove the needle after each injection and store the pen without a needle attached.			
Others	1. Risk of hypoglycaemia in patients taking concurrent insulin or sulfonylurea. Consider reducing the dose of insulin or sulfonylurea when starting GLP-1 RA. 2. Combination therapy with GLP-1 receptor agonists and dipeptidyl peptidase-4 inhibitors is not recommended due to minimal additional glycemic benefits observed in studies, alongside an increased risk of adverse effects such as enhanced hypoglycemia. Both drug classes work on the incretin pathway, making their combined use redundant 3. Concurrent administration of GLP-1 RA with warfarin may alter the absorption of warfarin as GLP-1 RA delays gastric motility. Regular INR monitoring is recommended in patients taking concomitant GLP-1			

	RA and warfarin. 4. Several drugs (paracetamol, digoxin, oral contraceptive pills, statin, ACE inhibitor) have been reported to interact with GLP-1 RA resulting in delayed absorption with no significant clinical outcome. To avoid delayed absorption of interacting drugs, administer at least one hour before GLP-1 RA. 5. Risk of developing pancreatitis especially in patients with risk factors. GLP-1 RA should be discontinued in patients who develop acute pancreatitis.			

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Glyceryl Trinitrate (GTN) Sublingual Spray

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nitrate; Antianginal agent			
Indications and Dosage	1. Angina pectoris 2. Variant angina Dosage: 1-2 metered sprays sublingual every 5 minutes as required or 5-10minutes prior to activities that might precipitate an acute attack. Dosing is according to product insert or protocol.			
Method of Administration*	1. Priming: Before using GTN spray for the first time, check that the spray is working by pressing the spray button a few times until it produces a fine mist of liquid. 2. During application the patient should rest, ideally in the sitting position. Advise patients to hold breath prior to spray. 3. The canister should be held vertically with the valve head uppermost and the spray orifice as close to the mouth as possible. Press down the button firmly. 4. The spray should not be inhaled. 5. A spray may be repeated approximately every 5 minutes as needed. 6. If chest pain persists after a total of 3 sprays, prompt medical attention is recommended. 7. Patients should be instructed to familiarise themselves with the position of the spray orifice, which can be identified by the finger rest on top of the valve, in order to facilitate orientation, for administration at night. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	• There is no, or inadequate, evidence of safety of nitrates in human pregnancy. • Nitrates should not be administered in pregnancy unless considered essential. • To inform the prescriber if you are pregnant.			
	Breastfeeding			
	• It is unknown if the drug is present in breast milk. Related data is limited. • There is no, or inadequate, evidence of safety of nitrates in lactation; nitrates should not be administered in lactation unless considered essential. • To inform the prescriber if you are breastfeeding.			
	Elderly			
	1. Nitroglycerin can be used safely in elderly patients with careful dose management, monitoring for side effects, and patient education to mitigate risks like			

	hypotension, falls, and tolerance.			
	Paediatric			
	1. No data			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	Side effects may include severe headache, blurred vision, dry mouth, dizziness or flushing. If affected, do not drive or operate machinery.			
Storage*	1. Store below 30°C. 2. Do not refrigerate or freeze. 3. Do not use GTN Spray if you are near a naked flame, e.g. a cigarette.			
Others	1. Continuous use may result in a tolerance to GTN spray, reducing its effectiveness. 2. Inability to relieve chest pain after 3 doses may signal acute myocardial infarction necessitating emergency management.			

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References:

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Glyceryl Trinitrate (GTN) Sublingual Tablet

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nitrate; Antianginal agent			
Indications and Dosage	Prophylaxis and treatment of angina and left ventricular failure Dosage: 0.5-1 mg sublingually may be repeated every 5 minutes until relief is obtained.			
Method of Administration*	**Treatment of angina** 1. During an acute angina attack, the patient should rest, preferably in a sitting position. 2. Place one tablet under the tongue, allowing it to dissolve. Do not swallow or chew the tablet. 3. If pain remains, remove the undissolved tablet and place a new tablet under the tongue. The dose may be repeated every 5 minutes for a maximum of 3 times. 4. If pain persists or becomes more intense after a total dose of 3 times in 15 minutes, patient should call the ambulance or go to the hospital. **Prophylaxis of angina** 1. Take 1 tablet 5 to 10 minutes before exercise or exertion to prevent an attack. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	1. There is no, or inadequate, evidence of safety of nitrates in human pregnancy. 2. Nitrates should not be administered in pregnancy unless considered essential. 3. To inform the prescriber if you are pregnant.			
	Breastfeeding			
	1. It is unknown if the drug is present in breast milk. Related data is limited. 2. There is no, or inadequate, evidence of safety of nitrates in lactation; nitrates should not be administered in lactation unless considered essential. 3. To inform the prescriber if you are breastfeeding.			
	Elderly			
	Nitroglycerin can be used safely in elderly patients with careful dose management, monitoring for side effects, and patient education to mitigate risks like hypotension, falls, and tolerance.			
	Paediatric			
	No data			
	Fasting			

	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	Side effects may include severe headache, blurred vision, dry mouth, dizziness or flushing. If affected, do not drive or operate machinery.			
Storage*	1. Store the tablets below 25°C in a cool, dry place, protected from direct sunlight. 2. Discard the tablets 2 months after first opening of the bottle (mark the date on the bottle). 3. Do not put cotton wool, other medicines, or anything else in the bottle with the tablets. 4. Do not expose the opened bottle or keep the bottle in a humid condition/area. 5. Keep out of reach and sight of children			
Others	Inability to relieve chest pain after 3 doses may signal acute myocardial infarction necessitating emergency management.			

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References:

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Gonadotropin-Releasing Hormone Antagonists / Gonadotropins

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Gonadotropin-Releasing Hormone (GnRH) Antagonists :** 1. Cetrorelix (Asporelix) 0.25 mg Injection 2. Cetrorelix (Cetrotide) 0.25mg Injection **Gonadotropins :** 1. Human Chorionic Gonadotrophin (Hucog) 5000IU Injection 2. Menotrophin, Highly Purified (Humog) 75iu Injection 3. Urofollitropin (Folliculin) 75iu, 150iu Injection			
Indications and Dosage	**To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Preparation and Reconstitution of Medicine	**[For preparation of Cetrorelix - see <u>Preparation and Administration of Cetrorelix Injection</u>]** **Preparation and Administration :** Preparation of medication and disposables required for administration of medication ● Medication (powder in vial) and diluent (ampoule) ● Syringe 3cc ● Needle (23G x 25mm) ● Needle (26G x 12mm) ● Alcohol swab Reconstitution of medication: a) Wash hands with soap and water. Dry your hands b) Check that the - The expiry had not passed - The correct drug and strength - The vial and ampoule is not damaged c) Attach needle to syringe for mixing (23G x 25mm), twist to tighten. Set aside. d) Hold the glass ampoule base upright. Tap the ampoule gently to ensure all solution is at the base. Look for a scoring/line at the neck of the ampoule. Hold the top and base firmly. e) For safety, use a piece of paper/cloth to hold the top. Apply pressure at 90°, turn and snap the top off. The ampoule should break at the neck only. f) Insert needles that were set aside in (a) and draw out all the solution from the ampoule. g) Remove the cap from the vial and wipe the top of the vial with an alcohol swab. h) Insert the needle at an angle through the grey rubber circle. Point the needle tip to the wall of the vial and gently empty the solution into it. i) Swirl the bottle to solubilise the powder inside the vial while keeping the needle inside until the solution becomes a clear solution. j) Invert the vial upside down. Inject air into the vial to put more pressure into the vial. k) Gently pull back the tip of the needle to the same level as the rubber stopper of the vial. l) Release the plunger of the syringe and the solution will enter			

	the syringe automatically. m) Repeat step (b) to (j) until you have reached the prescribed dose. n) Remove the needle from the syringe while it is still in the vial for safety. o) Attached the smaller needle (26G x 12mm). p) Turn the syringe upside down, slowly tap the syringe to remove air bubbles. Depress plunger to expel air out of the syringe through the needle slowly until a tiny drop of solution appears at the tip of the needle. The solution is now ready to be injected. **<u>Preparation and Administration of Cetrorelix Injection :</u>** Preparation of medication and disposables required for administration of medication ● Medication (powder in vial) and prefilled syringe with diluent ● Needle (20G x 40mm) ● Needle (27G x 19mm) ● Alcohol swab **Reconstitution of medication:** a) Wash hands with soap and water. Dry your hands b) Check that the - The expiry had not passed - The solution in the syringe is clear and colourless and does not contain particle - The vial is not opened or damaged c) Attach the pre-filled syringe to the marked yellow needle, twist to tighten. d) Remove the cap from the vial and wipe the top of the vial with an alcohol swab. e) Insert the needle at an angle through the grey rubber circle. Point the needle tip to the wall of the vial and gently empty the solution into it. f) Swirl the bottle to solubilise the powder inside the vial while keeping the needle inside until the solution becomes a clear solution. g) Invert the vial upside down. Inject air into the vial to put more pressure into the vial. h) Gently pull back the tip of the needle to the same level as the rubber stopper of the vial. i) Release the plunger of the syringe and the solution will enter the syringe automatically. Repeat until all dissolved solution is transferred into the syringe. j) Remove the needle from the syringe while it is still in the vial for safety. k) Attached the marked grey needle to the syringe with the dissolved medicine inside, twist to tighten. l) Turn the syringe upside down, slowly tap the syringe to remove air bubbles. Depress plunger to expel air out of the syringe through the needle slowly until a tiny drop of solution appears at the tip of the needle. The solution is now ready to be injected.			
Method of Administration*	**Site of administration or injection:** ● Abdomen (preferably) ● Buttock **Method of administration:** a) Sit in a comfortable position so you can easily see the area of their stomach where you will be injecting. b) Select an area on the right or left side of your stomach, at least 2 inches from your navel. Alternate left and right side of			

	the lower abdominal area at each injection. Do not inject yourself within about 2 inches of your navel, near scars, bruises or stretch marks. c) Clean the area you have selected for your injection with alcohol swab and allow the area to dry d) Remove the protective needle cap. e) Insert needle into the skin at an angle of 90° and push the entire length of the needle into the subcutaneous tissue. Push all the solution into the tissue. f) Count to 10 slowly before withdrawing the needle from the skin at the same angle it was inserted. This is to ensure full dose delivery and prevent leakage. g) Immediately discard the used needle into a designated disposal bin. h) Do not rub the injection site after administration **Missed Dose** Administer as soon as you remember. If it is close to the next dose, omit the current dose and administer the current dose. **DO NOT DOUBLE THE DOSE** **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Contraindicated			
	Breastfeeding			
	Contraindicated			
	Elderly			
	NA			
	Paediatric			
	NA			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	1. Injection site reaction (bruising, pain, redness) 2. Headache Seek help from doctor if symptoms worsen			
Storage*	1. Store at 2-8 °C (in a refrigerator). DO NOT FREEZE. Avoid storage at the door of the fridge and vegetable compartment, ensure there is proper air circulation around medication. 2. TRANSPORT of medication is only allowed in a COOL BOX WITH ICE/ICE PACKS 3. Preferable return home immediately after getting medication from pharmacy to facilitate proper storage			
Others	**Administration timing and importance of compliance** 3. Always inject at the same specified time of the day for adequate follicular response			

	4. Importance of rotation of side of administration **Disposal of sharps (syringe, needles, vial, ampoule)** 1. Dispose sharps in a container before disposal 2. Collect sharps in a container and return to the pharmacy or healthcare facility for proper disposal into a sharp bin.			

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References:

1. Fertility Pharmacy Services Hospital Tunku Azizah Protocol 2023
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Heparin Sodium

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antithrombotic agent			
Indications and Dosage	1. **Prophylaxis and treatment of venous thrombosis and pulmonary embolism.** a. By intravenous injection, loading dose of 5000 units (10,000 units in severe pulmonary embolism) followed by continuous infusion of 15-25 units/kg/hr. By subcutaneous injection (for DVT) of 15,000 units every 12 hours (laboratory monitoring on daily basis essential to adjust dose). 2. **Treatment of myocardial infarction and arterial embolism.** a. Same as 1 a. 3. **Prevention of clotting in arterial and heart surgery and for prevention of cerebral thrombosis** a. Prophylaxis in general surgery,by subcutaneous injection 5000 units 2 hr before surgery, then every 8-12 hrs for 7 days or until patient is ambulant.During pregnancy (with monitoring), 5000-10000 units every 12 hours.An adjusted dose regimen may be used for major orthopaedic surgery or low molecular weight heparin may be selected. To counsel based on specific medication's indication and dosage as prescribed as doctor			
Method of Administration*	1. Administer only by intermittent IV injection, IV infusion, or deep subQ injection; avoid IM administration			
	Preparation 1. Prior to injection, wash your hands thoroughly with soap and water. Towel dry. 2. Sit in a comfortable position so you can easily see the area of their stomach where you will be injecting. A lounge chair, recliner,or bed (propped up with pillows) is ideal. **Inspection** 1. Check the expiry date on the syringe. Do not use it if the date has passed. 2. Check the syringe is not damaged and the medicine in it is a clear solution without particles. If the syringe is damaged or the medicine is not clear, use another syringe. **Injection site** 1. Choose an area on the right or left side of your stomach. This should be at least 5 centimetres away from your belly button and out towards your sides. 2. Change the place where you inject between the left and right sides of your stomach, depending on the area you were last injected. This is to prevent scarring which will make it harder to inject the area and also affect how the medication is released into your body.Avoid injecting on scars and bruises. **Dose preparation** 1. Wipe the top of the heparin vial with an alcohol swab.			

	2. Remove the cap from the plunger. 3. Attach a long needle (21G) and remove the shield from the needle to withdraw heparin. 4. Pull the plunger back to draw air into the syringe equal to the dose of heparin to be injected. 5. Insert the needle into the rubber stopper of the heparin vial at a 45° angle. 6. Press down the plunger to inject air into the vial. 7. Turn the vial upside down. 8. Pull the plunger back to draw the desired dose into the syringe. 9. To remove air bubbles (if present) in the syringe, draw up several more units of heparin, tap the barrel to move them to the top then expel them by pushing the plunger 10. Remove the needle straight out of the vial and change to a shorter needle (26G) for injection purposes **Injection technique** 1. Cleanse (do not rub) the selected site for injection with an alcohol swab. 2. Remove the protective cap off the needle, do not allow the needle to touch anything to make sure it stays clean. 3. Hold the syringe in the hand you write with (like a pencil) and with your other hand, gently pinch the cleaned area of your abdomen between your forefinger and thumb to make a fold in the skin. Make sure you hold the skin fold throughout the injection 4. Hold the syringe with the needle pointing downwards (vertically at 90 degree angle) and inject a full length needle into the skin fold. Inject at 45° angle for needle length ≥8 mm or if the patient is thin. 5. Press down plunger with your finger (thumb). Complete the injection using all of the medicine in the syringe. Hold for 10 seconds 6. Remove the needle by pulling it straight out. Let go of the skin fold 7. To avoid bruising, do not rub the injection site. 8. Drop the used syringe into a hard, puncture-proof container. Close the container lid tightly and place the container out of reach of children. 9. When the container is full, dispose of it safely.			
	Missed dose management If you miss a dose of heparin, inject it as soon as you remember. If it is too near the next dose, skip the missed dose and go back to your usual dosing times. Do not double dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Available evidence is inconclusive or inadequate for determining fetal risk when used in pregnant women.			
	Breastfeeding			
	1. Heparin is not distributed in milk			
	Elderly			
	1. Older adults >60 years of age, especially women may have higher serum levels and clinical response (longer aPTTs) as compared to younger patients receiving			

	similar dosages. 2. Dosage reduction and monitoring of APTT may be advisable.			
	Paediatric			
	As some heparin preparations may contain benzyl alcohol, its use should be avoided in children under two years of age. Not to be used in neonates.			
	Fasting			
	Not applicable			
	Others			
	No dosage adjustment required in both hepatic and renal impairment			
Side Effects and their Management*	1. May develop hematoma at the injection site (a localised swelling that is filled with blood). 2. Symptoms of bleeding such as bruises with unknown cause, blood in urine/dark coloured urine, black stools, gum bleeding or heavy menstrual bleeding 3. Seek medical attention if any sign or symptom of bleeding occurs			
Storage*	1. Do not store above 30ºC.Do not refrigerate. 2. Stable for 28 days if aseptic technique is used.			
Others	1. Heparin is derived from animal sources (mainly bovine). Please confirm the source and disclose it to the patient, if needed. 2. Drug - drug interactions a. Enhanced anticoagulant effect with other drugs affecting platelet function or the coagulation system (aspirin, clopidogrel, warfarin, NSAIDs) b. Potassium level may be increased when co-administrated with drugs that may cause elevated potassium levels (ACEi// ARB) 3. Monitor parameters a. Full blood count b. Coagulation profile			

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2. Ain Medicare Sdn Bhd (2020) Product information leaflet: Heparinol. Retrieved from Quest 3+ Product Search on January 21, 2025.
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Imiquimod

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Immune response modifier			
Indications and Dosage	External Genital/Perianal Warts **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	Apply Imiquimod exactly as directed by your doctor or according to the instructions on the label. Do not use it more often or over a larger area than instructed by the doctor. 1. Wash your hands. 2. Clean and thoroughly dry the affected area before application, usually before bedtime. 3. Open the sachet and squeeze some cream onto your fingertip. 4. Apply a thin layer on the affected area and rub the cream gently on the skin until it disappears. Do not cover, wrap or bandage the area unless instructed by the doctor. 5. Leave the cream on the affected area for a certain time as prescribed by the doctor. Do not bathe, shower or swim after applying the cream. 6. After the prescribed treatment time, wash the affected area with mild soap and water. 7. Wash your hands carefully after application. 8. Cream sachets should not be reused once opened. Open a new sachet each time you use the cream. Throw away the opened sachet according to your doctor or pharmacist's instructions even if all the cream was not completely used. **MISSED DOSE** : Apply cream as soon as you remember and then continue in your regular schedule. Do not apply the cream more than once per day. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Drugs should be given only if the potential benefit justifies the potential risk to the fetus.			
	Breastfeeding			
	Not known			
	Elderly			
	No overall differences in safety or effectiveness were observed between elderly and younger patients.			

	Paediatric			
	The safety and efficacy in paediatric patients below age 12 have not been established.			
	Fasting			
	N/A			
	Others			
	N/A			
Side Effects and their Management*	1. Wart Site – very common: erythema, erosion, excoriation/flaking, oedema, itching, burning 2. Remote Site – common: bleeding, burning, itching, pain, tenderness, tinea cruris			
Storage*	1. Store at below 25°C. 2. Store in a place that is not exposed to heat and moisture. 3. Do not freeze. 4. Keep this medication in the original container, tightly closed and out of reach of children.			
Others	Special precautions for: 1. Patient with pre-existing autoimmune disorders, inherent sensitivity to sunlight or potential for considerable sun exposure (e.g. occupational reasons); 2. Reduced haematologic reserve. 3. Immunocompromised patients, including organ transplant patients. 4. Not indicated for urethral, cervical, rectal, intravaginal, or intra-anal HPV disease. 5. Not recommended to be used until the skin has healed from any previous sunburn, drug or surgical treatment. 6. Not intended for oral, nasal, or ophthalmic use. 7. Avoid contact of Imiquimod with your eyes, lips, or nostrils. Rinse immediately with water if this medicine gets into your eyes, lips, or nostrils. Alert your doctor if you start to have any problems with your eyes. 8. Do not apply on broken or sunburned skin. 9. If you are using Imiquimod for genital or anal warts, avoid getting this medicine into your anus. Females must take special care when applying near the vaginal opening to avoid getting it into the vagina. Uncircumcised males treating warts under their penis foreskin must pull their foreskin back and clean the area daily before each treatment. 10. Avoid or minimize exposure to sunlight, UV lights, and tanning beds; use protective clothing during therapy. 11. Avoid the use of excessive amounts of cream or occlusive dressing. 12. Avoid sexual contact while the cream is on the skin as it may weaken condoms and diaphragms (when used for external genital or perianal warts). Monitoring parameters; Monitor for local skin reactions and signs and symptoms of hypersensitivity. Significant drug-drug / drug-food interactions			

	Due to its immunostimulating properties, Imiquimod cream should be used with caution in patients who are receiving immunosuppressive medication.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

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Insulin

Name :		Unit :		
• *Please tick (✔)* ***Yes*** *for correct instruction.* • *Please tick (✔)* ***No*** *for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**A. BOLUS** 1. Short-acting regular human insulin: E.g: ● Actrapid® ● Insugen®R 2. Rapid-acting analogue insulin: a. Aspart (Novorapid®) b. Lispro (Humalog®) c. Glulisine (Apidra®) **B. BASAL** 1. Intermediate-acting or NPH insulin. E.g: ● Insulatard® ● Insugen®N 2. Long-acting analogue insulin: a. Glargine U100 (Basalog®, Lantus® Solostar) b. Detemir (Levemir®) c. Glargine U300 (Toujeo® Solostar) d. Degludec (Tresiba®) **C. PREMIXED** 1. Premixed human insulin: a. (30% regular insulin + 70% NPH): ● Mixtard®30 ● Insugen®30/70 2. Premixed analogue insulin: a. 30% insulin aspart + 70% insulin aspart protamine (Novomix®30) b. 25% insulin lispro + 75% insulin lispro protamine (HumalogMix®25™) c. 50% insulin lispro + 50% insulin lispro protamine (HumalogMix®50™) **D. CO-FORMULATION** 1. 70% insulin degludec + 30% insulin aspart; iDegAsp (Ryzodeg® 70/30) 2. Insulin glargine + lixisenatide (Soliqua™)			
Indications and Dosage	A. Bolus insulin – administered pre-meal due to its short or rapid onset of action. It is used to control the post-meal glucose excursion and can be used with an insulin pump B. Basal insulin – administered once or twice daily due to its intermediate or long-acting profile. It covers the basal insulin requirements between meals and overnight secondary to endogenous hepatic glucose production C. Premixed insulin – biphasic insulin incorporating a combination of short or rapid-acting insulin with its intermediate-acting counterpart into a single formulation. It covers both post-prandial glucose excursions as well as basal insulin requirements simultaneously D. Co-formulations – a combination of two types of insulin or insulin with a glucagon like peptide-1 receptor analogue (GLP1-RA) such as:			

	1. Insulin Degludec-Aspart (iDegAsp) – a combination of a rapid-acting (insulin aspart) and an ultra-long-acting (insulin degludec) insulin in a single formulation, which can be injected once a day to provide both bolus and basal insulin coverage 2. Insulin glargine/lixisenatide – a combination of long-acting insulin and a GLP1RA in a single formulation. Insulin glargine provides basal insulin while lixisenatide stimulates endogenous insulin secretion to cover for bolus insulin requirement. Insulin dosage is individualised and dose adjustments are typically made weekly based on the patient's metabolic needs, blood glucose monitoring results, and glycemic control goal until the desired glycaemic control is achieved. **Counsel based on specific medication indications and dosages as prescribed by the doctor.**			
Administration time	1. Short-acting regular human insulin: ● 30 minutes before meals 2. Rapid-acting analogue insulin: ● Inject immediately before meals or when necessary, 0-15 minutes before or after meals 3. Intermediate-acting regular human insulin: ● For daily dosing, usually inject before sleep (1 hour before bed) ● For twice daily dosing, inject pre-breakfast and pre-bed 4. Long-acting analogue insulin: ● Inject once daily at any time of the day, preferably at the same time every day ● Insulin Detemir: Administer once-daily doses with the evening meal or at bedtime. For twice-daily dosing, administer the evening dose with the evening meal, at bedtime, or 12 hours after the morning dose. 5. Premixed human insulin: ● Once daily doses: 30 minutes before dinner ● Twice daily doses: 30 minutes before breakfast and dinner 6. Premixed analogue insulin: ● Inject immediately before meals or when necessary, 0-15 minutes before or after meals 7. Co-formulation: ● Ryzodeg® - Can be administered once or twice daily with the main meal(s). When needed, the time of administration can be changed, as long as it is dosed with the main meal when taken once daily ● Soliqua™ - Once a day within the hour before the first meal of the day			
Method of Administration*	1. Gently roll refrigerated insulin between the palms 10 times to warm the insulin. 2. Pull off the pen cap. 3. Inserting a new cartridge (Only for non-prefilled insulin pen): i. Detach the cartridge holder by twisting & pulling gently away from the pen with a click. ii. Reset the plunger rod by pushing the plunger rod gently back into the pen body.			

	iii. Insert the insulin cartridge into the cartridge holder of the insulin pen and screw the cartridge holder to the pen body tightly. 4. Mixing / Resuspending the insulin pen (only for cloudy insulin eg NPH, and premixed insulin). i. Gently tip cloudy insulin up and down for 10 cycles or until uniformly cloudy. Vigorous shaking should be avoided since this produces bubbles which reduce dose accuracy ii. Visually check for milky white appearance. ● Inadequate resuspension of cloudy insulin before injection may lead to varying concentrations of medication dosage that can cause unpredictable clinical responses 5. Fix the needle to the insulin pen. i. Remove the paper tab of a new needle, screw the needle to the pen and remove the inner and outer cap (do not keep the inner cap). ● Shorter needles (4, 5, 6 mm) provide equal efficacy and safety when compared with the longer needle (8 mm) and are suitable for all patients regardless of BMI. ● 8 mm needles should be discouraged to prevent the risk of intramuscular injection ii. Using a new needle each time may reduce the risk of needle breakage in the skin, clogging of the needle, inaccurate dosing and complications associated with using blunt needles (e.g. lipohypertrophy, abscess) 6. Priming the insulin pen i. Priming should be done when changing to new insulin cartridge/ prefilled pen and before each injection. ii. To prime, turn the dose selector to select 2 units and hold the insulin pen with the needle pointing up. iii. Tap the top of the pen gently a few times to let any air bubbles rise to the top. iv. Press and hold in the dose button until the dose counter shows “0”. The “0” must line up with the dose pointer. A drop of insulin should be seen at the needle tip v. If you do not see a drop of insulin, repeat steps ii - iv. 7. Dial the correct dose – Check the dose indicator to ensure the correct dose is selected. 8. Identify proper injection site/rotation. ● For ease of self-injection, the abdomen and thighs are the two main recommended injection sites for adults. a. Abdomen – inject at any place between the bottom of the ribs and the pubic area, 3 fingers width away from the navel. b. Thighs – inject in the top and outer part of the thigh, between 5 fingers width away from the knee and 5 fingers width away from the groin. Avoid the inner thigh. c. Buttocks and flanks – Inject into the upper, outer area of the buttocks. This site can be very difficult to use for self-injection and may require another person for administration. d. Arm – inject at the back of the arm, between 4 fingers width away from the			

	shoulder and 4 fingers width away from the elbow. ● Injection site rotation within any quadrant or half should be done systematically with spacing of at least 1 cm apart from each injection to prevent repeat tissue trauma. ● Advise to rotate injection sites within the same part of the body, not to change the injection part of the body too frequently due to different absorption of insulin at different parts of the body. ● Do not inject where the skin has pits, is thickened, or has lumps. Do not inject where the skin is tender, bruised, scaly or hard, or into scars or damaged skin. 9. Inject the insulin on clean skin. i. Insert the needle into the skin at 90°. ● For extremely thin adults with diabetes (BMI <19), the proper injection technique is to use the 4 mm needle accompanied by the lifting of the skin fold when injecting to avoid the intramuscular injection ● Individuals who have to continue using ≥8 mm needles should always lift a skin fold and/or inject at 45º to avoid intramuscular injections ii. Press the injection button until the figure in the dose window returns to 0. iii. Count to 10 slowly before withdrawing the needle from the skin iv. Counting past 10 may be necessary for higher insulin doses. This is to ensure full dose delivery and prevent insulin leakage 10. Disposal of used needle i. Recap the used insulin needle using the outer cap. ii. Always remove and safely discard the needle after each injection and store the pen without an injection needle attached. This reduces the risk of contamination, infection, leakage and inaccurate dosing. 11. Keep the insulin pen in its case at room temperature, away from heat and light			
Special Considerations	**Pregnancy**			
	Insulin is considered the “gold standard” treatment in managing gestational diabetes mellitus (GDM) and T2DM during pregnancy. ● Short-acting regular human insulin and intermediate-acting regular human insulin are generally considered safe and labelled Category B by the US FDA. ● Several insulin analogues (insulin aspart, insulin lispro and insulin detemir) are also classified as Category B ● Insulin glargine can be given when the potential benefits outweigh the potential risk. Although there is no randomised controlled trial on its use in pregnancy, many case reports and observational studies did not find any association with adverse maternal or neonatal outcome.			
	Breastfeeding			
	Exogenous insulin has been detected in human milk, including			

	biosynthetic insulin. Insulin is not absorbed by the infant but may have beneficial local activity in the gastrointestinal tract.			
	Elderly			
	1. Cautions in elderly with cognitive impairment; they may have difficulty recognising or responding appropriately to the symptoms of hypoglycaemia. 2. Consider patient-related factors such as manual dexterity, hand strength, tremors, vision, comorbidities, cognition and others. 3. Hypoglycemia in elderly significantly increases the risk of falls.			
	Paediatric			
	1. The safety and effectiveness of insulin Glargine and insulin Glulisine in paediatric patients below 6 years old have not been established 2. The safety and effectiveness of insulin Lispro in paediatric patients below 3 years old have not been established 3. The safety and effectiveness of insulin Detemir and insulin Aspart in paediatric patients below 2 years old have not been established 4. Treatment recommendations may vary among individual products and countries, refer to local treatment guidelines			
	Fasting			
	Appropriate adjustments of dose and time of administration of insulin should be made for patients who are eligible to fast to reduce risk of hypoglycaemia and other complications during fasting.			
	Others			
	NA			
Side Effects and their Management*	1. Hypoglycaemia (Plasma glucose level below 3.9 mmol/L) ● It may happen if the patient a. did not take a meal after the injection b. if he/she has a sudden change in diet c. alcohol consumption with no carbohydrate intake d. excessive physical activity e. excessive dose f. sick day or poor appetite g. inject the wrong type of insulin ● Recognition of hypoglycaemia symptoms a. Shivering b. Palpitation c. Sweating d. Dizziness e. Hunger pangs f. Tingling or numbness ● Treatment of hypoglycaemia (Rule of 15) i. Check plasma glucose level to confirm that the plasma glucose level is below 4.0 mmol/L (or 70 mg/dL) if possible ii. In <u>adult</u> patients, consume 15 grams of simple			

	carbohydrate e.g: ● 1 tablespoon of honey, ● 150-200 ml of fruit juice such as orange juice or regular soft drink; or ● 3 teaspoons of table sugar dissolved in water iii. In <u>children</u>, give 0.3g/kg of simple carbohydrates. iv. After consuming the CHO, wait for 15 minutes to allow the glucose to be absorbed and the plasma glucose to rise v. Recheck plasma glucose. If plasma glucose remains below 4.0 mmol/L, repeat step ii. vi. Once hypoglycaemia has been reversed (BG > 4.0 mmol/L), the patient should have the usual meal that is due at that time of the day or 15g of complex carbohydrate to prevent recurrent hypoglycaemia. E.g: ● 3 pieces of crackers ● 1 piece of bread 2. Weight gain ● Insulin-related weight gain may be a consequence of several factors: a. Improving metabolic control reduces glycosuria resulting in fewer calories lost in this manner b. The fear of hypoglycaemia might induce increased snacking between meals, increasing calorie intake. c. The anabolic nature of insulin can increase lean body mass. d. Using insulin can also cause salt and water retention ● Educate patient on steps to counter weight gain: a. Advise restricting calories and using portion control, particularly for carbohydrates and fats. b. Advise patients to keep physically active and practice regular exercise. c. Avoiding high doses of insulin by reducing carbohydrate intake and being physically active (reduces insulin requirement). d. Preventing hypoglycaemia as it can lead to defensive eating/snacking			
Storage*	A. New insulin cartridges and prefilled pen ● Unopened insulin should be kept at a refrigerated temperature between 2°C–8°C. ● Do not keep the insulin at the side of the fridge door and do not put it inside the freezer. ● Do not use insulin that has been frozen. ● Check the manufacturer's storage instructions as there may be possible differences from one manufacturer to the other B. In-use insulin cartridges and prefilled pen ● In-use insulin pens can be stored at room temperature (15 -30°C). ● Do not remove cartridges from non-prefilled insulin pen between use and never refrigerate non-prefilled insulin pen. ● Write the date of opening on insulin cartridges or prefilled insulin pens. Most insulins can be used within 28 - 42 days once opened. ● Please refer to the individual product information for further details.			

Others	1. Supply of insulin cartridges, insulin pens and needles ● Insulin cartridges will be supplied to the patient by the pharmacy ● Non-prefilled insulin pens will be given free for first-time users ● If the pen is damaged after the first supply, patients have to acquire their own replacement pen ● Change the needle after each use (using a needle more than once is at the patient's own risk) ● Needles can be bought from retail pharmacies ● Dispose the needles safely (e.g. inside the puncture-proof container) before being discarded. 2. Sick day management ● ALWAYS TAKE your diabetes pills unless you are vomiting ● ALWAYS TAKE your insulin. Your insulin dose may be decreased or increased. Seek advice from your doctor/pharmacist for insulin dose adjustment ● Test your blood sugar level more often. Test before and two hours after each meal. If you are not able to eat your regular meals, you should check your blood sugar levels every 2-4 hours. Record readings with date and time ● Try to eat the same amount of food as usual ● Drink plenty of fluids: drink at least every hour or take small sips every 10-15 minutes 3. Encourage home glucose monitoring using a glucometer ● Record glucose readings and meals in a diary for review by the healthcare provider.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

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Iron Supplements, Oral

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Iron bivalent, oral preparations ferrous fumarate ferrous sulfate Iron trivalent, oral preparations ferric oxide polymaltose complexes			
Indications and Dosage	1. Prevention and treatment of iron deficiency anaemia Tablet formulations: a. Ferrous fumarate 200 mg tablet (66 mg elemental iron per tablet) b. Zincofer® capsule (Ferrous fumarate salt providing 115 mg elemental iron per capsule) c. Iberet® Folic 500 tablet (Ferrous sulfate salt providing 105 mg elemental iron per tablet) d. New Obimin® tablet (Ferrous fumarate salt providing 30 mg elemental iron per tablet) e. Maltofer® (Iron (III) hydroxide polymaltose complex providing 100 mg elemental iron per tablet) Syrup formulations: a. Ferric ammonium citrate solution (providing 17.2 mg/ml elemental iron) b. Maltofer® syrup (Iron (III) hydroxide polymaltose complex providing 10 mg/ml elemental iron) **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Ferrous fumarate tablets should be taken on an empty stomach (1 hour before or 2 hours after meals) for better absorption. However, may take with meals to minimise gastrointestinal (GI) irritation. It can be crushed and administered via Ryle's tube. 2. Zincofer® capsule should be taken with meal. 3. Iberet® Folic to be swallowed whole with or without meals. Do not chew or crush as Iberet is formulated with a controlled-release vehicle. 4. Maltofer® may be chewed or swallowed whole during or immediately after meals. 5. New Obimin® tablet to be taken with/ without meal. May be taken with meals for better absorption or if GI discomfort occurs. **Missed dose management:** In case of a missed dose, take it immediately. Omit the dose if totally forgotten and remember to take as per instructed during the next dose. **Do not stop taking your medication unless advised to do so by your prescriber**			

Special Considerations	**Pregnancy**			
	Iron supplements are safe to be taken in pregnancy.			
	Breastfeeding			
	Iron supplements are safe to be taken while breastfeeding.			
	Elderly			
	Lower doses of iron may have similar clinical efficacy but with less gastrointestinal side effects compared to higher doses.			
	Paediatric			
	Dosage range: 3 - 6 mg elemental iron/kg/day. Milk and/or dairy products should be avoided for approximately one hour before and two hours after each dose because such products limit iron absorption.			
	Fasting			
	To take at either Sahur (before fasting) or Iftar (breakfast).			
	Others			
	No dosage adjustment necessary			
Side Effects and their Management*	1. Gastrointestinal side effects e.g. metallic taste, nausea, vomiting, darkening of stools, constipation, stomach cramps. 2. Increase fluid and fibre intake to ease constipation. If constipation persists, the use of stool softeners or laxatives may be considered.			
Storage*	1. Store in room temperature and dry place. 2. Keep out of reach of children. 3. Keep Maltofer tablets in original packaging in order to protect from light.			
Others	1. May take with ascorbic acid to enhance iron absorption. 2. Take oral iron one hour before or two hours after calcium tablets. 3. Take iron tablets two hours before or four hours after ingestion of antacids as antacids impair iron absorption. 4. Absorption of tetracycline and fluoroquinolone antibiotics is reduced with concurrent iron intake. Space two to three hours between these drugs. 5. Do not take levothyroxine within four hours of iron tablets. Absorption of levothyroxine is affected by oral iron. 6. Do not take with caffeinated drinks (tea, coffee and cola) or calcium-containing foods and beverages as it may interfere with iron absorption. 7. Oral and parenteral iron therapy should not be used concurrently.			

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Remarks:

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***Mandatory for validation / peer review**

References:

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Isosorbide Dinitrate/ Isosorbide Mononitrate

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nitrate; Antianginal agent • Isosorbide dinitrate (ISDN) • Isosorbide mononitrate (ISMN)			
Indications and Dosage	1. Prophylaxis and treatment of angina pectoris a. Isosorbide dinitrate 5-20mg 2-3 times daily (up to 120mg per day). b. Isosorbide mononitrate 30 to 120mg daily (up to 240mg per day) 2. Heart failure a. Isosorbide dinitrate 20-40mg tds; trials were done in combination with hydralazine. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. ISDN & ISMN should be taken without food, preferably first thing in the morning, and same time everyday, as advised 2. Swallow controlled release tablets whole because if they are crushed or chewed they won't work properly. 3. In general, immediate release tablets may be cut or crushed. 4. Allow nitrate-free intervals of 10-12 hours to prevent development of tolerance. 5. Isosorbide dinitrate a. For twice daily dosing, consider administering at 8am and 1pm b. For 3-times-daily dosing, consider 8am, 1pm, and 6pm. 6. Isosorbide mononitrate, a. consider once daily dosing at the same time everyday. b. For twice daily dosing, consider administering at 8am and 1pm **Missed dose management** If you miss a dose of this medicine, take it as soon as possible. However, if it is almost time for the next dose, skip the missed dose and go back to the regular dosing schedule. Do not double doses. Do not stop taking your medi**cation unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Use with caution if benefits outweigh risks.			
	Breastfeeding			
	It is unknown if the drug is distributed into breast milk.To inform the doctor if you are breastfeeding.			
	Elderly			
	1. Use with caution 2. Administer the lowest recommended adult daily dose			

	initially and titrate upward. 3. *Isosorbide Mononitrate*: Prolonged- release tablets must not be divided, crushed or chewed. Consideration should be given in elderly with dysphagia or requiring enteral tube feeding. MALPIP 1. Increased risk of orthostatic hypotension. START/STOPP criteria 1. Avoid use in patients with recurrent falls with persistent postural hypotension, due to increased risk of syncope and falls. 2. Aim to carefully reduce and discontinue these drugs in patients who have had no reported anginal symptoms in previous 12 months AND who have no proven or objective evidence of coronary artery disease.			
	Paediatric			
	The safety and effectiveness of isosorbide dinitrate in children has not been established.			
	Fasting			
	Not applicable			
Side Effects and their Management*	1. Report these symptoms to the physician: Severe headache, blurred vision, dizziness or flushing. 2. If affected, do not drive or operate machinery.			
Storage*	1. Store under room temperature. Protect from moisture.			
Others	*Drug-drug interactions:* Avoid use with Phosphodiesterase-5 (PDE-5) inhibitors (e.g. avanafil, sildenafil, tadalafil, vardenafil) as it may cause severe hypotension.			

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Remarks:

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***Mandatory for validation / peer review**

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Ivabradine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	I_f current inhibitors Other cardiac preparations Ivabradine			
Indications and Dosage	1. Symptomatic treatment of chronic stable angina pectoris in coronary artery disease adults with normal sinus rhythm and heart rate ≥ 70 bpm a. Dosage adjustment based on resting heart rate: Initial: 5mg twice daily or 2.5mg twice daily (patients with history of conduction defects/hemodynamic compromise due to bradycardia) If heart rate > 60bpm: Increase dose by 2.5mg twice daily; maximum dose: 7.5mg twice daily. If heart rate 50 to 60 bpm: Maintain dose. If heart rate <50bpm or signs and symptoms of bradycardia: Decrease dose by 2.5mg twice daily; if current dose is 2.5mg twice daily, discontinue therapy. 2. Treatment of chronic heart failure NYHA II to IV class with systolic dysfunction, in patients in sinus rhythm and whose heart rate is ≥ 70 bpm a. Initial: 2.5mg to 5mg twice daily; titrate up in increments of 2.5mg after 3 to 4 weeks if symptoms persists and heart rate is >60 bpm; maximum dose: 7.5mg twice daily			
Method of Administration*	Taken twice daily orally i.e. once in the morning and once in the evening with food **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Contraindicated during pregnancy. Animal studies data have shown embryotoxic and teratogenic effects.			
	Breastfeeding			
	Contraindicated during breast feeding. Animal studies indicate that Ivabradine is excreted in milk			
	Elderly			
	1. In patients aged 75 years or more, a lower starting dose should be considered (2.5mg twice daily i.e. one half 5mg tablet twice daily) before up titration if necessary. 2. Risk of bradycardia, especially in elderly patients or those with concomitant conditions that lower heart rate.			
	Paediatric			
	1. Data available for use in 6 months old and older.			

	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	1. Renal impairment ● No dose adjustment is required in patients with renal insufficiency and creatinine clearance (CrCl) above 15 ml/min. No data are available in patients with CrCl less than 15 ml/min. Ivabradine should be therefore be used with precaution 2. Hepatic impairment ● No dose adjustment is required in patients with mild hepatic impairment. Caution should be exercised when using Ivabradine in patients with moderate hepatic impairment. Ivabradine is contraindicated for use in patients with severe hepatic insufficiency, since it has not been studied in this population.			
Side Effects and their Management*	Common side effects include: 1. Nervous system disorders: Headache (generally during first month of treatment), dizziness (related to bradycardia) 2. Eye disorders: Blurred vision 3. Cardiac disorders: Bradycardia, AV 1st degree block, Atrial fibrillation 4. Vascular disorders: Uncontrolled blood pressure			
Storage*	Store below 30^0C			
Others	*Significant drug-drug / drug-food interactions (if applicable)* 1. Concomitant use of the below medications/food with ivabradine is not recommended: ● Cardiovascular QT prolonging medicinal products (e.g quinidine, amiodarone) ● Non cardiovascular QT prolonging medicinal products (e.g pentamidine, intravenous erythromycin) ● Concomitant use of potent CYP3A4 (e.g azole antifungals, macrolide antibiotics, HIV protease inhibitors) is contraindicated ● Concomitant use with grape juice is contraindicated as ivabradine exposure will be increased by 2-fold following co administration with grapefruit juice 2. Concomitant use with caution ● Potassium depleting diuretics (thiazide diuretics and loop diuretics). As ivabradine may cause bradycardia, combination of hypokalaemia and bradycardia is a predisposed factor to the onset of severe arrhythmias.			

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Remarks:

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References:

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Ketoconazole / Selenium Sulfide Lotion/Shampoo

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Imidazole Antimycotic and Topical Antifungal			
Indications and Dosage	**A) Ketoconazole 2% Shampoo** 1. Seborrhoeic dermatitis & dandruff a) Apply twice weekly for 2 to 4 weeks. 2. Pityriasis versicolor a) Apply once daily for up to 5 days. 3. Prophylaxis a) Once every 1 or 2 weeks. **B) Selenium Sulfide 2.5% Lotion/Shampoo** 1. Dandruff & seborrheic dermatitis of scalp a) Use twice weekly at first, then as necessary as directed by the physician. 2. Pityriasis versicolor a) Apply daily for 1 week, then apply 2-3 times per week.. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**A) Ketoconazole 2% Shampoo:** Apply onto skin/hair and leave it for 3-5 minutes before rinsing. **B) Selenium Sulfide 2.5% Lotion/Shampoo:** i) Dandruff & seborrheic dermatitis of scalp: Apply onto wet hair, lather and leave on scalp for 3 minutes. Rinse and repeat application, then rinse thoroughly. ii) Pityriasis versicolor: Apply to affected areas and lather with small amounts of water for 10-15 minutes, then rinse thoroughly. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	A) Ketoconazole 2% Shampoo: There are no adequate and well-controlled studies in pregnant women. There are no known risks associated with its use in pregnancy. **B) Selenium Sulfide 2.5% Lotion/Shampoo:** Should only use it on the scalp, and not on the body to treat skin infections. Risks and benefits should be discussed with the doctor before use.			
	Breastfeeding			
	A) Ketoconazole 2% Shampoo: There are no adequate and well-controlled studies in lactating women. There are no known risks associated with its use in lactation. **B) Selenium Sulfide 2.5% Lotion/Shampoo:** It is not known whether or not this drug is secreted in human milk. Caution should be exercised when this product is administered to a nursing woman.			
	Elderly			

	None specifically to those products.			
	Paediatric			
	The safety and efficacy of Ketoconazole Shampoo in paediatric patients below age 12 have not been established. The safety and efficacy of Selenium Sulfide in paediatric patients below age 5 have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	Burning sensation and contact dermatitis may occur with all the above preparations.			
Storage*	1. Store in a cool dry place below 30 degrees Celsius. 2. Protect from light and heat. 3. Keep out of reach of children.			
Others	**A) Ketoconazole 2% Shampoo:** Avoid contact with the eyes and other mucous membranes. If hypersensitivity or irritation occurs, discontinue use and contact healthcare providers. **B) Selenium Sulfide 2.5% Lotion/Shampoo:** Avoid contact with the eyes. If contact with the eyes occurs, rinse thoroughly with water. When treating tinea versicolor of genital areas or skin folds, the areas should be rinsed thoroughly following application to minimise irritation. Remove jewellery before application, as it may get damaged. Avoid using this 48 hours before or after permanent waving, tinting or bleaching.			

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References:

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Lamivudine

Name : Lamivudine 150 mg Tablet		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nucleoside or Nucleotide Reverse Transcriptase Inhibitors (NRTI)			
Indications and Dosage	1. Indication : HIV Infection in combination with other antiretroviral agents. a. Dosage for indication : ADULT 150 mg BD or 300 mg OD. b. Dosage for indication Neonates and Children : > 32 weeks Gestation at Birth, Birth to age 4 weeks : 2 mg/kg BD. Age > 4 weeks and Child 3 months or over : 4mg/kg BD. (Maximum 300 mg daily)			
Method of Administration*	1. May be administered without regard to meals. 2. Crushability: Not to be cut. For patients who are unable to swallow tablets, the tablet is crushed and added to a small amount of semi-solid or liquid and immediately consumed. **Missed dose management** 1. To take medication consistently at the same time everyday. Any missed dose to be taken as soon as possible. 2. For lamivudine prescribed twice daily dosing, if the gap is more than 6 hours, to skip and continue with a regular dosing schedule. Do not double the dose on the next administration time. 3. For lamivudine prescribed once daily dosing, if the gap is more than 12 hours, to skip and continue with the regular dosing schedule. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. First-trimester exposure to lamivudine is not associated with increased risk of congenital anomalies. 2. Lamivudine use during pregnancy has not been associated with adverse maternal, obstetric, or infant outcomes.			
	Breastfeeding			
	1. Lamivudine is detected in breastmilk. The lack of long-term safety data with long-term, low-level infant exposure should be discussed with the mother. 2. It is recommended that HIV infected women do not breastfeed their infants under any circumstances in order to avoid transmission of HIV.			
	Elderly			
	None specifically to Lamivudine.			
	Paediatric			
	Use extra caution during calculations to ensure accurate mg of			

	lamivudine administered.			
	Fasting			
	To be discussed with infectious disease consultant			
	Renal Impairment			
	1. Dose adjustment required for CrCl (ml/min) : a) 30-49 : 150mg OD b) 15-29 : 1 x 150mg, then 100mg OD, or 150mg OD c) 15 : 1 x 150mg, then 50mg OD, or 75mg OD d) Haemodialysis : 1 x 50mg, then 25-50mg OD, or 75mg OD *Note - Intermittent HD or PD : No additional doses are required, negligible amounts are removed by 4 hour HD or PD.			
	Hepatic Impairment			
	1. Adult : No dosage adjustment necessary. However, it has not been studied in the setting of decompensated liver disease 2. Paediatrics : No dose adjustment is required. Safety and efficacy have not been established in patients with decompensated liver disease.			
Side Effects and their Management*	1. Minimal toxicity 2. Severe acute hepatitis flare may occur in HBV co-infected patients who discontinue lamivudine.			
Storage*	1. Suggest to refer to product leaflet (in respect to brand purchased) 2. General recommendation is to store below 30ºC and protect from light & moisture.			

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Lamotrigine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiepileptic drugs/ Anticonvulsants drugs			
Indications and Dosage	1. Adjunct or monotherapy for partial seizure and generalised tonic clonic seizures a. up to 200 mg daily in single or divided dose 2. Prevention of mood episodes a. 25-200 mg daily Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. May be taken with or without food 2. Try to take lamotrigine at the same time each day *Missed dose management (if applicable):* 1. If you forget to take a dose, take it as soon as you remember. 2. Do not take two doses at once. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Possible risk but likely to be low			
	Breastfeeding			
	Passes in uncertain levels into breast milk, not known to cause harm to infant			
	Elderly			
	1. Beers criteria:avoid use in elderly with history of falls or fractures (unless used for seizure or mood disorders) and unless safer alternatives are not available, syncope , impaired psychomotor function, or ataxia may occur 2. Avoid concomitant use of 3 or more CNS active agents in any combination due to increased risk of falls.			
	Paediatric			
	1. To adhere strictly to recommended initial dose, titration schedules and adjustments to reduce the risk of severe reaction. 2. With valproic acid: The safety and efficacy of Lamotrigine in patients below age 2 have not been established.			
	Fasting			

	To refer to the latest advisory by religious authority			
	Others			
	1. Hepatic: Doses should generally be reduced by 50% in moderate impairment and by 75% in severe hepatic impairment 2. Renal: In end-stage renal failure, initial doses of lamotrigine should be based on patients' concomitant medicinal products; reduced maintenance doses may be effective in significant renal impairment			
Side Effects and their Management*	1. Sleepiness, nausea and vomiting, general aches – including joint point and back ache, headache, tremor, dizziness, aggression or irritability, rash 2. It is recommended that people taking lamotrigine should avoid alcohol. This is because both can cause drowsiness and if the two are taken together, severe drowsiness can result.			
Storage*	1. Store lamotrigine as directed by the manufacturers information, it does not usually require any special storage conditions.			
Others	1. Precaution: Patient should report if any sign and symptoms of fever, sore throat or any unusual bleeding, facial swelling 2. Avoid excessive exposure to sunlight or UV lights; use protective clothing and sunscreen when going outdoor 3. Drug-drug interaction: a. Valproate increased concentration of lamotrigine b. Carbamazepine, phenytoin, phenobarbitone reduces the concentration of lamotrigine 4. Monitoring parameters: a. Serum level of concomitant anticonvulsants b. Liver function test, renal function c. ECG			
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References:

1. Ministry of Health Malaysia. (2024). Formulari Ubat Kementerian Kesihatan Malaysia.
2. GlaxoSmithKline UK. Summary of Product Characteristics: Lamictal Tablets.February 28, 2022. Available at: https://www.medicines.org.uk/emc/product/8052/smpc
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Lanthanum Carbonate

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Drugs for treatment of hyperkalemia and hyperphosphatemia Lanthanum carbonate			
Indications and Dosage	1. Phosphate binding agent for the treatment of hyperphosphataemia in dialysis patients with sustained hypercalcaemia of more than three months and secondary hyperparathyroidism a. Initial: 750 to 1500 mg/day in divided doses with meals, then titrate in increments of 750 mg/day at intervals of 2 to 3 weeks. b. Maintenance: 1500-3000 mg/day in divided doses. Max: 3750 g/day **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. To chew / crush and take **WITH** meals / snacks or **IMMEDIATELY** after meals. 2. Do not swallow intact tablets. 3. Consider crushing tablets completely for patients with poor dentition. **Missed dose management:** In case of a missed dose, take it during the meal or immediately after the meal. Omit the dose if totally forgotten and remember to take as per instructed during the next meal. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Not recommended (Lanthanum may cross the placenta)			
	Breastfeeding			
	There is no data on the presence of lanthanum carbonate in human milk, the effects on the breastfed infant, or the effects on milk production.			
	Elderly			
	NA			
	Paediatric			
	Not recommended			
	Fasting			
	1. Adjust the timing of administration according to the fasting schedule during Ramadhan. To take during Sahur (before fasting) and Iftar (breaking fast). 2. If more than two doses have been prescribed, consult with the healthcare provider to adjust your phosphate binder administration.			
	Others			

	NA			
Side Effects and their Management*	1. Significant: a. Gastrointestinal: nausea, vomiting, abdominal pain, constipation, dyspepsia. ,metallic taste 2. Others: a. Endocrine: hyperparathyroidism, hyperglycemia b. Dermatologic: alopecia, sweating c. Musculoskeletal: bone deposition, myalgia, arthralgia, osteoporosis *Advise patients to chew or crush the tablet completely to reduce the risk of serious adverse gastrointestinal events.*			
Storage*	1. Store at room temperature. 2. Store in a dry place and protect from moisture. 3. Keep out of reach of children.			
Others	1. Serious cases of gastrointestinal obstruction, ileus, subileus, gastrointestinal perforation, and faecal impaction have been reported. 2. **Significant drug-drug interactions:** a. **Drug binding to Antacids**: There is a potential for lanthanum carbonate to interact with compounds that bind to cationic antacids (i.e., aluminium-, magnesium-, or calcium-based) -space out 1 hour or 2 hours from lanthanum carbonate b. **Quinolone antibiotics**: Oral quinolone antibiotics must be taken at least 1 hour before or 4 hours after Lanthanum Carbonate. c. **Levothyroxine**: Do not take thyroid hormone replacement therapy within 2 hours of dosing with Lanthanum Carbonate. Monitoring of TSH levels is recommended in patients receiving both medicinal agents. 3. **Contraindications:** Hypersensitivity to Lanthanum Carbonate or to any ingredient in the formulation, bowel obstruction, ileus, and faecal impaction. 4. Advise patients to notify their physician that they are taking Lanthanum Carbonate prior to an abdominal X-ray (as Lanthanum Carbonate is considered radiopaque) or if they have a history of gastrointestinal disease.			

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References:

1. MPI Pharmaceutical (2019). Product information leaflet: Lanthanum Carbonate. Retrieved from Quest 3+ Product Search on January 1, 2025.
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Levofloxacin

Name : Levofloxacin		**Unit :**		
*Please tick (✔) **Yes** for correct instruction.* *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Fluoroquinolone			
Indications and Dosage	**Indication:** Secondary-line leprosy treatment **Dosage :** 500mg daily f*or 6-18 months (in combination with other anti-leprosy agents)*			
Method of Administration*	**Food:** Can be administered with or without food. Should not be administered by mouth within 2 hours of ingestion of milk-based products, antacids, or other medications containing divalent cations (iron, magnesium, calcium, zinc, vitamins, didanosine, sucralfate). **RT administration:** 1. Tablets do not disperse readily in water. 2. The tablet can be crushed, but the flaky coating makes crushing difficult. It takes a few minutes for the coating to dissolve when mixed with water. 3. Use an 8Fr NG tube to ease administration/minimize blockage. **Suggestion:** 1. As the tablets do not disperse readily in water, consider changing to an alternative antibiotic available in a liquid or dispersible tablet formulation. 2. When continued therapy with oral levofloxacin is essential use the extemporaneous preparation; consider using the higher end of the dose range. 3. Stop feed 1 hour before dose and restart feed 2 hours after dose **Missed dose:** Administer as soon as possible if ≥8 hours until next scheduled dose; otherwise, wait until next scheduled dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. US FDA Category C (PO) 2. Levofloxacin crosses the placenta and can be detected in the amniotic fluid and cord blood. 3. Based on available data, use of levofloxacin in pregnancy does not increase risk of major birth defects, miscarriage or other adverse fetal outcomes 4. There is limited data on the use of levofloxacin in pregnant women. Nonclinical studies suggest a risk of damage by fluoroquinolones to the weight-bearing cartilage of the growing organism. Consider alternate inhalation therapy to levofloxacin during pregnancy.			

	Breastfeeding			
	Based on data on other fluoroquinolones and very limited data on levofloxacin it can be presumed that levofloxacin will be excreted in human milk. Because of the potential for serious adverse reactions from levofloxacin in nursing infants, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother			
	Elderly			
	Geriatric patients are at increased risk for developing severe tendon disorders including tendon rupture when being treated with a fluoroquinolone. This risk is further increased in patients receiving concomitant corticosteroid therapy			
	Paediatric			
	Quinolones, including levofloxacin, cause arthropathy and osteochondrosis in juvenile animals of several species.			
	Fasting			
	N/A To refer to the latest advisory by religious authority			
	Others: 1. **Renal impairment** (If usual recommended dose is 500mg daily) - CrCl ≥50ml/min: no dosage adjustment - CrCl 20 - <50ml/min: 500mg initial dose, then 250mg daily - CrCl <20ml/min: 500mg initial dose, then 250mg every 48H - HD, intermittent (3x/week) / PD: 500mg initial dose, then 250mg every 48H **or** 125mg daily - Administer dose after HD after on dialysis days - CRRT: 500mg initial dose, then 250mg daily **or** 500mg 48H - PIRRT: 500mg initial dose, then 250mg daily (after PIRRT treatment when possible) - Moxifloxacin may be preferred in renal failure **2. Liver impairment** The pharmacokinetics of levofloxacin are not expected to be affected by hepatic impairment. **3. Obesity** Patients with BMI ≥40kg/m2 and CrCl >110ml/min; consider use TDM (if available) or alternative treatment options			
Side Effects and their Management*	1. Tendon Effects 2. Hypersensitivity reactions 3. Hepatotoxicity 4. Central nervous system effects 5. Clostridium difficile-associated diarrhea 6. Peripheral neuropathy 7. Prolongation of the QT interval 8. Blood glucose dDisturbances 9. Photosensitivity / Phototoxicity			
Storage*	Store at room temperature (do not refrigerate) and protect from light.			

Others	**Precautions:** 1. Long QT syndrome 2. Hypokalaemia, malnutrition, hypothyroidism in those aged >60 years, multiple QT-prolonging drugs 3. Increased risk of QTc prolongation 4. Diabetes**:** Increased risk of hypoglycaemia. 5. May cause sun sensitivity: use sunscreen 6. May induce convulsions in patients with or without history of convulsions, use with caution if epileptic or conditions predisposing seizures **Significant drug-drug / drug-food interactions:** 1. Chelation Agents: Antacids, Sucralfate, Metal Cations, Multivitamins: may interfere with the gastrointestinal absorption of levofloxacin, resulting in systemic levels considerably lower than desired 2. Warfarin: levofloxacin will enhance the anticoagulant effect of warfarin 3. Antidiabetic: disturbance of blood glucose (including hypoglycemia and hyperglycemia) 4. Theophylline: concomitant administration of other fluoroquinolones with theophylline has resulted in prolonged elimination half-life, elevated serum theophylline levels, and a subsequent increase in the risk of theophylline-related adverse reactions in the patient population 5. Cyclosporin: elevated serum levels of cyclosporine have been reported in the patient population when co-administered with some other fluoroquinolones			

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References:

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Lignocaine (Lidocaine), Medicated Plaster

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Local Anaesthetic, Topical			
Indications and Dosage	Symptomatic relief of neuropathic pain associated with previous herpes zoster infection (post-herpetic neuralgia, PHN) a. 1 plaster once daily. Cover the painful area for up to 12 hours within a 24-hour period. Not more than 3 plasters should be applied at the same time. b. Renal impairment: No special dose adjustments necessary in patients with renal impairment. c. Hepatic impairment: No special dose adjustments necessary in patients with hepatic impairment. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Step 1: Preparing the skin** a. The plaster must be applied to the most painful area. The area must be intact, dry, non-irritated skin. **Step 2: Cut the plaster** a. The plaster may be cut into smaller sizes with scissors prior to removal of the release liner. **Step 3: Apply the plaster** a. The plaster must be applied to the skin immediately after removal from the sachet and following removal of the release liner from the gel surface. b. Leave the plaster on for 12 hours only. c. If your pain is worse during the day, apply the plaster in the morning and remove it after 12 hours in the evening. **Step 4: Disposing of the plaster** a. To remove previous plaster, use your finger to peel off slowly. Fold the plaster into half and press firmly to seal it shut. Discard properly. b. Remove immediately if a burning sensation occurs. **Missed dose management:** a. Apply a new plaster as soon as you remember b. Do not apply twice the number of plasters to make up for the plaster that you missed. c. This will increase the chance of you getting unwanted side-effects **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Lignocaine crosses the placenta. However, the potential risk of human is unknown. Therefore, it should not be used during pregnancy unless clearly necessary.			
	Breastfeeding			
	1. Lignocaine is excreted in breast milk. However, there			

	are no studies of the plaster in breast-feeding women. The metabolism of lidocaine occurs relatively fast and almost in the liver, only very low levels of lidocaine to be excreted into human milk.			
	Paediatric			
	1. The safety and efficacy in paediatric patients below 18 years old have not been established.			
	Others			
	1. The plaster should be used caution in patients with severe cardiac impairment, severe renal impairment or severe hepatic impairment			
Side Effects and their Management*	Rash, skin irritation, burning, dermatitis erythema, pruritus.			
Storage*	1. Store your medication in a cool, dry place (below 30°C) away from heat, moisture and direct sunlight 2. After first opening, keep the sachet tightly closed. The plaster contains water and will dry out if the sachet is not closed properly.			
Others	1. Do not shave the skin if it is hairy. Instead, clip the hair as close to the skin as possible.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References :

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Lithium

Name:		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Mood stabiliser			
Indications and Dosage	1. Indication: a. Prophylaxis and treatment of acute mania b. Prophylaxis and treatment of acute hypomania c. Prophylaxis of manic depression in bipolar illness or bipolar depression and recurrent depression 2. Dosage: a. Acute Mania: 600 - 1800 mg/day in divided dose. (Therapeutic range: 0.8 to 1.2 mEq/L (SI: 0.8 to 1.2 mmol/L) b. Usual Maintenance dose: 300 - 1800 mg/day. May be given as a single dose at night. (Therapeutic range 0.8 to 1 mEq/L (SI: 0.6 to 1 mmol/L) 3. Blood levels can be drawn to make sure you are in the right range to get the most benefit with the least side effects.Encourage patients to learn their own blood levels. a. Blood sampling should be done 5 - 7 days after initiation or after a dose/formulation change or after introduction of interacting medication, & weekly until levels are stable. b. A 12-hour trough level is preferred, but in some circumstances it may be drawn 8 to12 hours post dose (I,e, TDS dose). Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Administration instruction a. Take each dose at the same time every day with water or a cool drink b. This medication can be taken with or without food. 2. Missed dose management: a. Take the missed dose as soon as you remember. If it's nearly time for your next dose, skip the missed one and take only the next dose. Do not take two doses at once. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Inform your doctors if you are planning to become pregnant 2. Seek immediate medical advice if you become pregnant while taking Lithium			
	Breastfeeding			

	Breastfeeding should be avoided during maternal use of lithium			
	Elderly			
	Clearance is decreased in elderly patients secondary to age-related decreases in renal function. Monitor closely for emergence of adverse reactions or toxicity ● **Beers Criteria:** Avoid using with ACEi, ARB, ARNI, Loop diuretics. Interaction with the listed class of drug increased risk of toxicity. Monitor lithium concentration. ● **STOPP/Start Criteria:** Monitor ECG in view of predictably for prolonged QTc interval ● **MALPIP:** May affect cognitive function, cause hypothyroidism, impair renal functions.			
	Paediatric			
	1. The safety and efficacy of Lithium for the treatment of acute manic and mixed episodes in bipolar disorder have not been established in patients younger than 7 years of age. 2. The safety and efficacy of sustained -release (SR) Lithium for the treatment of acute manic and mixed episodes in bipolar disorder have not been established in patients younger than 12 years of age.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **Kindly refer to the latest advisory by religious authority**			
	Pre-Operative			
	Inform your prescriber if you're planned for surgery Lithium should be withheld 24 hours before minor surgery and up to 72 hours prior to major surgery.			
	Renal Impairment			
	1. Mild to moderate (30 – 89 ml/min) : Initiate lower doses and titrate more slowly. 2. Use is not recommended when CrCl is less than 30 ml/min.			
	Hepatic Impairment			
	No dose adjustment			
Side Effects and their Management*	1. Possible side effects a. Dry mouth and / or metallic taste, sedation, mild diarrhoea, mild shaking or tremor of your hands, thirst, Gastrointestinal discomforts (e.g. nausea), weight gain, low thyroid activity (tiredness, easily feel cold), excessive thirst and frequent urination 2. Signs and symptoms of toxicity (when there is too much lithium in your body) a. Severe hand shakes (tremor), blurred vision, being unsteady on your feet, clumsiness, confusion, feeling unusually sleepy, difficulty			

	in speaking or slurring of words, muscle twitches or weakness, stomach-ache along with feeling sick and having diarrhoea 3. Dietary and lifestyle considerations to ensure stable blood medication levels a. Adequate hydration (2 - 3 L of water everyday) b. Keep salt intake about the same (avoid drastic changes in salt intake) c. Avoid alcohol if possible OR avoid alcohol in the first month or two, then drink in moderation i.e. up to 1 - 2 drinks 3 times a week d. Avoid excessive use and keep caffeine intake (e.g. coffee, tea, cola, other soft drinks) about the same e. Seek doctor's review if you fall sick (e.g. fever, sore throat, flu-like symptoms) or have diarrhoea more than a day			
Storage*	Store at a temperature below 30°C.			
Others	Drug-drug interactions 1. Always inform your other doctor, pharmacist or healthcare professional that you are taking lithium 2. Should not be taken with NSAIDs, diuretics, ACE-Inhibitors, SLGT2 inhibitors, sodium-containing antacids (seek medical advice first)			

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***Mandatory for validation / peer review**

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Loop Diuretics

Name :		**Unit :**		
Pharmacological Group	Loop Diuretics : Furosemide Bumetanide			
Indications and Dosage	Indications: Signs and symptoms of congestion 1. Furosemide: Initial daily dose: 20-40mg od/bd Usual daily dose: 20-40mg od/bd 2. Bumetanide Initial daily dose: 0.5-1mg od/bd Usual daily dose: 0.5-1mg od/bd **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. May administer with or without food. 2. Preferably to take in day time to avoid frequent urination at sleep time. **Do not stop taking your medication unless advised to do so by your prescriber**			
Self Dosage Adjustment (in selected patient)	1. If there is a consistent increase in weight of > 2kg in 3 days, selected patients can be taught to self-adjust the dose of furosemide. (eg. additional dose of furosemide 20-40mg/day / bumetanide 0.5-1mg/day) 2. Once dry weight is achieved, change furosemide dose to baseline. 3. If there is no response to the increased furosemide dose after 3 days (or earlier if condition deteriorates), seek medical attention immediately. 4. Dose may need to be decreased if there is fluid loss (e.g. due to diarrhoea/vomiting, excessive sweating).			
Special Considerations	**Pregnancy**			
	1. Heart failure in pregnancy is associated with adverse maternal and fetal outcomes. Furosemide may be used for symptoms management in pregnant patients with HF 2. Closely monitor volume status and adjust dose to minimize risk of placenta hypoperfusion			
	Breastfeeding			
	1. Furosemide is present in breast milk. 2. Large doses of loop diuretics have the potential to decrease milk volume and suppress lactation; When used for the treatment of heart failure, furosemide may be considered with close neonatal monitoring (AHA/ACC/HFSA [Heidenreich 2022]).			
	Elderly			
	1. Refer to adult dosing. Consider lower initial doses and titrate to response. 2. STOPP/START Criteria: Increase risk of falls, urinary incontinence, acute			

	kidney injury, electrolyte imbalances. Should not be used as first-line agent			
	Paediatric			
	Consider lower initial doses and titrate to response.			
	Renal impairment			
	1. eGFR ≥30 mL/minute/1.73 m2: No dosage adjustment necessary. 2. eGFR <30 mL/minute/1.73 m2: Higher doses may be required to achieve desired diuretic response due to decreased secretion into the tubular fluid. 3. ESRF- Anuric patients: There is no expected clinical benefit; use not recommended.			
	Liver impairment			
	Diminished natriuretic effect with increased sensitivity to hypokalemia and volume depletion in cirrhosis. Monitor effects, particularly with high doses.			
Side Effects and their Management*	1. Asymptomatic low blood pressure a. Dose may be reduced if there are no symptoms or signs of congestion. 2. Symptomatic hypotension a. Dizziness/light-headedness; reduce dose if no signs/symptoms of congestion. b. Review medications and reconsider the need for nitrates, CCBs and other vasodilators. 3. Hypokalaemia/hypomagnesaemia a. Increase an ACE-I/ARB dose b. Add an MRA, K+ supplements; magnesium supplements 4. Hyponatraemia (<135 mmol/L) a. If volume depleted: ● Stop thiazide ● Reduce dose/stop loop diuretics if possible b. If volume overloaded: (seek specialist advice-patient might need IV diuretic) ● Fluid restriction ● Consider increasing dose of loop diuretic ● Consider AVP antagonist (e.g. tolvaptan if available) 5. Hypovolaemia / dehydration a. Assess volume status; consider a diuretic dosage reduction 6. Hyperuricaemia / gout a. For gouty flares use colchicine for pain relief. b. Avoid NSAIDs. c. Consider allopurinol prophylaxis (not initiated during acute exacerbation) 7. Insufficient diuretic response/diuretic resistance a. Check adherence and fluid/salt intake. b. Increase dose of diuretic / consider switching from furosemide to bumetanide c. Add an MRA/increase dose of an MRA. d. Combine loop diuretic and thiazide/metolazone. e. Administer loop diuretic twice (or more times) daily or on empty stomach 8. Worsening of renal function a. Check for hypovolaemia/dehydration. b. If using concomitant loop and thiazide			

	diuretic, stop thiazide diuretic. c. Avoid nephrotoxic agents, e.g. NSAIDs, trimethoprim. d. Withhold an MRA. e. Consider reducing a dose of ACE-I/ARB.			
Storage*	1. Store at room temperature protected from light. Store in a dry place. 2. Keep all drugs in a safe place. Keep all drugs out of the reach of children. 3. Throw away unused or expired drugs.			
Others	**Monitoring Parameters** a. Renal function b. Fluid status - Fluid input and output] c. Serum electrolyte - Sodium, potassium, magnesium d. Blood pressure e. Body weight **Drug-drug Interactions** Nonsteroidal Anti-Inflammatory Agents: May diminish the therapeutic effect of Loop Diuretics. Loop Diuretics may enhance the nephrotoxic effect of Nonsteroidal Anti-Inflammatory Agents.			
Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered. **Remarks:** **Reviewed by: Name & Signature** **Date:**				

***Mandatory for validation / peer review**

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Lopinavir/Ritonavir

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiretroviral: Protease Inhibitor (PI)			
Indications and Dosage	Second line treatment of HIV-1 infected patients, in combination with other antiretroviral medicinal products. a. Adults: Therapy-naive patients: 400/100mg BD or 800/200mg once daily (with no prior PI used) Therapy-experience patients: 400/100mg BD. b. Children (> 6 months): Oral tablet: 15-25kg or > 0.6 -<0.9m2: 200mg/50mg BD 25-35kg or > 0.9 -<1.4m2: 300mg/50mg BD >35kg or > 1.4m2: 400mg/100mg BD Oral solution (based on LPV component): 7-14kg: 12mg/kg BD 15-40kg: 10mg/kg BD > 40kg: 400mg BD c. Infants (14 days - 6 months) 300mg/75mg LPV/r per m2 BD or 16mg/4mg LPV/r per kg BD			
Method of Administration*	Lopinavir/Ritonavir solution: To be taken with food. Lopinavir/Ritonavir tablets: May be taken with or without food. The tablets should be swallowed whole and not chewed, crushed or broken. Use of Oral solution with feeding tube: Lopinavir/Ritonavir oral solution can be administered via feeding tube. Missed dose management 1. Patients should take Lopinavir/Ritonavir as soon as they remember it. However, if it is almost time for the next dose, the patient should skip the missed dose and simply resume the normal dosing schedule. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Available human data suggest Lopinavir/Ritonavir does not increase the risk of overall major defects compared to the background rate. Lopinavir/Ritonavir can be used during pregnancy if clinically indicated.			
	Breastfeeding			
	Lopinavir/Ritonavir are present in breast milk. Because of both the potential for HIV transmission and the potential for serious adverse reactions in nursing infants, mothers should be instructed not to breastfeed if they are receiving Lopinavir/Ritonavir.			

	Elderly			
	Limited data is available for patients aged more than 65 years old. In general, appropriate caution should be exercised in the administration and monitoring of Lopinavir/Ritonavir in elderly which may include hepatic, renal and cardiac function.			
	Paediatric			
	1. The safety and efficacy of Lopinavir/Ritonavir in premature neonates below the age of 14 days have not been established. 2. Reserve when benefits outweigh risks and no alternatives are available.			
	Fasting			
	To discuss with ID Consultant as it would be based on the patient's latest viral load status.			
	Others			
	1. Hepatic impairment: No data are available in patients with severe hepatic impairment (Child-Pugh Grade C). Use with caution in these patients. 2. Renal Impairment: Lopinavir pharmacokinetics have not been studied in patients with renal insufficiency. However, since renal clearance of lopinavir is negligible, a decrease in total body clearance is not expected in patients with renal insufficiency			
Side Effects and their Management*	1. Commonly reported adverse reactions to Lopinavir/Ritonavir included diarrhea, nausea, vomiting, hypertriglyceridemia and hypercholesterolemia. 2. Diarrhea, nausea and vomiting may occur at the beginning of the treatment.			
Storage*	1. Lopinavir/Ritonavir solution: (2-8℃) until dispensed. Avoid exposure to excessive heat. Refrigeration is not required if used within 2 months and stored below 25℃. 2. Lopinavir/Ritonavir tablets: store tablets at or below 30℃.			
Others	Beware of Lopinavir/ritonavir-drug interactions. Kindly refer to Liverpool HIV Interactions website for further information. 1. Lopinavir/Ritonavir is an inhibitor of the P450 isoform CYP3A. Co-administration of Lopinavir/Ritonavir and drugs primarily metabolized by CYP3A may result in increased plasma concentrations of the other drugs (e.g. HMG CoA reductase, dihydropyridine calcium channel blockers, immunosuppressant etc) 2. Overdoses with Lopinavir/Ritonavir have been reported in association with complete AV block, cardiomyopathy, lactic acidosis and acute renal failure. Treatment of overdose should consist of general supportive measures including monitoring of vital signs and clinical status of patients.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

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Methadone

Name :		Unit :		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Full opioid agonist** 1. Synthetic opioid that acts as a full agonist at the μ-opioid receptor and other opioid receptors. 2. These μ-opioid receptors are located in different parts of the central nervous system (CNS), such as the brainstem, locus coeruleus, periaqueductal gray matter, and various parts of the gastrointestinal tract. 3. These receptors are crucial in modulating various neurochemical activities linked to analgesia, euphoria, and sedation. 4. It induces receptor internalization and recycling, contributing to reduced opioid tolerance in patients. 5. It occupies and activates these opioid receptors, it does so more slowly than other opioids in an opioid-dependent person. 6. Treatment doses do not produce euphoria. **Brief pharmacokinetic of Methadone** 1. Onset: 30 minutes 2. Peak effects: ~ 3 hours 3. Half-life: 24-36 hours 4. Time to reach steady state: 3-10 days 5. Absorption (PO): 30 minutes 6. Metabolized in the liver by the cytochrome P450 system through N-demethylation and cyclization. Susceptible to interactions with other drugs by speeding up or slowing down its breakdown			
Indications and Dosage	Detoxification treatment or maintenance treatment of narcotic addiction. **Dosage** Initial 10-20mg per day, increasing by 10 - 20mg per day until there are no signs of withdrawal or intoxication. Usual therapeutic dose 40 - 60mg per day Therapeutic dose in opioid dependence is determined by methadone ability to prevent cravings, prevent withdrawal symptoms, and prevent relapse without inducing euphoria or sedation. **Induction Dosage** Initial: 10 - 20mg per day Maximum induction dose: 40mg per day Reevaluation is advised within 2 to 4 hours, once peak levels have been attained. The timing of reassessment should not impede the initiation of methadone Supplementary dose of 5mg can be given on the same day after induction dose (not counted as total therapeutic dose) **Titration Dosage:** Increase 5 - 10mg every 3 days Maximum increment: 20mg per week **Maintenance Dosage** Usual maintenance dose: 40 - 60mg per day But some patient may require higher doses (80 - 100mg per day)			

	In certain cases, dosages exceeding 120mg per day may be cautiously considered, especially for patients misusing highly potent opioids such as fentanyl and other synthetic opioids Due to methadone's extended half-life, caution is essential to prevent rapid dose escalation within the initial 1 to 3 weeks of therapy. Patients should be informed that experiencing discomfort is expected during the initial days of methadone titration. **Detoxification:** In general, methadone treatment is a long-term treatment, similar to other chronic conditions. However, for patients who wish to discontinue treatment, they should be referred to a doctor for appropriate assessment and intervention. i. The reduction of the methadone dose should be discussed with the patient. It is advisable for the patient to gradually reduce the dose over a long period until they feel comfortable with the tapering regimen to ensure that the withdrawal process can be safely managed. ii. It is recommended to reduce the methadone dose by 10 mg per week until reaching 40 mg per day, and then by 5 mg per week thereafter, and should only be done once a week. **Contraindication** Methadone is contraindicated in individuals with: ● Severe respiratory depression or asthma. Methadone can further depress breathing, increasing the risk of respiratory arrest or death ● Recent use of MAO inhibitors (e.g., Selegiline) within the last 14 days. Combining methadone with MAOIs can cause serious, potentially fatal interactions, such as serotonin syndrome ● Paralytic ileus due to the risk of intestinal obstruction and gastrointestinal (GI) complications or severe liver disease (e.g., cirrhosis or liver failure) due to the risk of increased methadone levels and toxicity. ● Severe CNS depression, including head injuries or coma. ● Significant hypersensitivity to methadone. It is essential that methadone use be carefully monitored especially for individuals with any of the above conditions, to avoid serious side effects, including overdose, respiratory depression, and death.			
Method of Administration*	Once daily (OD) dispensing in low-concentration liquid form via Direct-Observation Therapy (DOT) and Take Away (TA) doses per orally (PO) **Direct-Observation Therapy (DOT)** 1. Methadone has to be diluted until 30ml or more and must be swallowed completely. 2. Appropriate measures must be in place to ensure methadone is swallowed completely and reduce any risk of diversion such as by a. Directly observe the patient while they take their dose of methadone b. Drink the remaining methadone dose by rinsing the container c. Encourage patient to speak after swallowing methadone			

	Takeaway (TA) dose 1. Methadone dose should be diluted as follows or as according to latest guideline: a. For a methadone dose ≤ 25 mg, dilute to 30 ml. b. For a methadone dose > 25 mg, dilute to 50 ml or more. 2. Hand over TA doses to the patient. In situations where the patient is accompanied by a guardian, it is recommended that TA doses be handed over to the guardian. Ideally to be taken in the morning and after meal In specific cases, total daily dose can be divided into BD dose. Dosing interval for BD dose is not restricted to 12 hours interval Takeaway and divided doses should be supplied in Unit of Dose (UoD) in a separate labelled container **Missed dose management** Take full dose immediately as soon as patient remember within the same day ● 1-2 days missed dose: Maintain same dose ● 3 days missed dose: Half of total dose and discuss with prescriber ● 4 days missed dose: Discuss with prescriber before dispensing ● 5 days and more missed dose: Reinitiation with induction dose **Do not inject methadone dose** **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Maintenance treatment should be continued in pregnant women with opioid dependence 2. Patient may require higher dose during pregnancy 3. FDA Category: C			
	Breastfeeding			
	1. Methadone can be excreted through human milk 2. Therefore, patient is advised to breastfeed their infant to prevent Neonatal Abstinence Syndrome (NAS) 3. Abrupt weaning of breastfed infants of women on methadone might result in precipitation of or an increase in infant withdrawal symptoms, and gradual weaning is advised 4. Methadone patient with HIV is not advised to breastfeed and infant to be monitored for Neonatal Abstinence Syndrome (NAS)			
	Elderly			
	If methadone is deemed necessary for opioid dependence management, it should be done under strict medical supervision, with **dose adjustments** based on the individual's age, renal function, hepatic function, and concomitant medications (Refer Beers Criteria) Beers Criteria:			

	a. Avoid in patients with or at high risk for delirium, as may induce or worsen delirium. b. Avoid in patients with a history of fractures or falls (excludes pain management for severe acute pain) as ataxia, syncope, impaired psycho-motor function or additional falls may occur. c. Avoid concomitant use of 3 or more CNS active agents in any combination due to increased risk of falls			
	Paediatric			
	1. Safety and efficacy of Methadone in paediatric patients under 18 years old have not been established in detoxification or maintenance treatment of narcotic addiction.			
	Fasting			
	1. Patient is advised to drink during pre-dawn meal (sahur)			
	Others			
	Hepatic Impairment Close dose monitoring required for patient with hepatic impairment **Vomited dose** 1. If a patient vomits the given dose: ● Less than 15 minutes after taking the dose: replace the full dose ● Between 15 minutes to 30 minutes after taking the dose: replace 50% of the dose ● If vomiting occurs more than 30 minutes after taking the dose: no replacement dose			
Side Effects and their Management*	**Drowsiness** 1. Cause: overdose, concomitant substance use (benzodiazepine, alcohol, CNS depressants) 2. Plan: a. Inform your doctor or pharmacist. b. Avoid driving a vehicle or operating machinery for at least the first two weeks **Nausea, vomiting and loss of appetite** 1. Cause: methadone syrup 2. Plan: Avoid taking on an empty stomach **Craving towards heroin** 1. Cause: insufficient dose 2. Plan: Inform your doctor or pharmacist **Increase in body weight** 1. Cause: water retention in body 2. Plan: ○ Inform your doctor or pharmacist for dose review ○ Healthy lifestyle & diet adjustment **Constipation** 1. Cause: methadone syrup, unhealthy diet & lifestyle 2. Plan: ○ Inform your doctor or pharmacist for dose			

	review ○ Healthy lifestyle & diet adjustment ○ Medication for constipation **Insomnia** 1. Cause: underdose or overdose, time of methadone consumption, concomitant substance use (stimulants) 2. Plan: ○ Adjust methadone dose and time of methadone consumption ○ Sleep hygiene ○ Identify & advise on concomitant substance use **Dental issues** 1. Cause: methadone syrup reduces saliva production, inappropriate dental care 2. Plan: increase awareness of oral hygiene **Decrease in libido & sexual function** 1. Cause: high methadone dose, psychological & personal issues 2. Plan: ○ Discuss with doctor or pharmacist for dose review ○ Seek advice from counselor **Lethargy** 1. Cause: environmental factor, overdose 2. Plan: ○ Discuss with doctor or pharmacist ○ Enough rest **Excess perspiration** 1. Cause: overdose 2. Plan: ○ Wear clothing that is not too thick ○ Discuss with doctor or pharmacist **Bruised and itchy skin** 1. Cause: methadone syrup 2. Plan: Inform your doctor or pharmacist **Tachycardia / Bradycardia** 1. Cause: overdose 2. Plan: Seek medical treatment **Breathing difficulties** 1. Cause: overdose 2. Plan: Seek medical treatment			
Storage*	Methadone syrup that is taken home must be stored: 1. In a safe place (in a high, locked cabinet or drawer) and out of reach of children. 2. At room temperature (in a dry place and not hot), and not in the refrigerator. 3. Do not store with other food or medications 4. Avoid exposure to sunlight 5. Use a sling bag or pouch to store the newly obtained takeaway doses temporarily 6. Do not transfer takeaway doses into unlabelled containers as it could cause confusion			

Others	**Drug-drug interaction** ● Alcohol: Alcohol increases the effect of Methadone. It is advised to avoid alcohol consumption ● Antiepileptics ○ Phenytoin: decrease the effect of Methadone. To overcome this, Methadone dose may need to be increased or divided. ○ Carbamazepine: decrease the effect of methadone ● Antifungal (e.g. Fluconazole): QT prolongation ● Antipsychotic - Typical ○ Haloperidol: QT prolongation ○ Chlorpromazine: QT prolongation ● Antipsychotic - Atypical ○ Aripiprazole: CNS depressant ○ Amisulpride: QT prolongation ○ Clozapine: QT prolongation ○ Olanzapine: CNS depressant ○ Paliperidone: QT prolongation ○ Risperidone: QT prolongation ○ Quetiapine: QT prolongation ● Antituberculosis ○ Isoniazid: Increase plasma level of methadone ○ Rifampicin: Decreases the effect of Methadone ● Benzodiazepines: Benzodiazepines increase the effect of Methadone. Use of benzodiazepines should be limited. ● Ciprofloxacin: Ciprofloxacin increases the effect of Methadone. Methadone dose may need to be reduced. ● Highly Active Antiretroviral Therapy (HAART): ○ Efavirenz: Efavirenz decreases the effect of Methadone. Methadone dose may need to be increased or divided. ○ Zidovudine: Zidovudine has no significant effect on Methadone, but it may increase zidovudine levels. The Zidovudine dose may need to be reduced. ● Nicotine: Nicotine decreases the effect of Methadone. It is advised to encourage the patient to stop smoking. ● Neuropathic agent ○ Gabapentin: CNS depressant ○ Pregabalin: CNS depressant ● Opiod ○ Buprenorphine: QT prolongation ○ Codein: CNS depressant ○ Morphine: CNS depressant ● Selective Norepinephrine Reuptake Inhibitor (SNRI) ○ Duloxetine: Increase plasma level of methadone ○ Venlafaxine: CNS depressant ● Selective Serotonin Reuptake Inhibitor Sertraline (SSRI) ○ Escitalopram: QT prolongation ○ Fluoxetine: QT prolongation and increases the effect of Methadone. It is recommended to switch to another SSRI ○ Fluvoxamine: Increases the effect of Methadone. It is recommended to switch to another SSRI. ○ Sertraline: QT prolongation ● Tricyclic Antidepressants (e.g. Amitriptyline): Increase the effect of Methadone. ● Urine acidifiers (e.g., Ascorbic Acid): Urine acidifiers decrease the effect of Methadone. ● Urine alkalinizers (e.g., Sodium Bicarbonate): Urine			

	alkalinizers increase the effect of Methadone. Do not take over-the-counter (OTC) medications for cough, cold, or pain relief during methadone treatment without consulting a doctor first. These medications may contain alcohol or narcotic substances that could harm condition or affect urine drug test results **Drug-food Interaction** Grapefruit: Increased serum concentration St John's Wort: Decreased serum plasma concentration with			
	Overdose Overdose can occur when more than one drug (or a combination of drugs) is taken excessively into the body and can be fatal. Symptoms of overdose include: 1. Pinpoint pupils 2. Nausea 3. Dizziness 4. Excessive sweating 5. Sleepiness (nodding off) 6. Slurred speech 7. Unsteady gait, 8. Snoring 9. Low blood pressure 10. Slow pulse (bradycardia) 11. Shallow breathing (hypoventilation) 12. Frothing at the mouth 13. Coma Types of Substances/Drugs involved: ● Depressant Drugs (reduce nervous system activity): 1. Heroin 2. Morphine 3. Methadone 4. Sleeping pills 5. Benzodiazepines (e.g., diazepam), alcohol Depressant drugs work by reducing nervous system activity to dangerous levels, which can cause the patient to stop breathing. ● Stimulant Drugs (accelerate nervous system activity): 1. Amphetamines 2. Ecstasy 3. Caffeine 4. Nicotine Stimulant drugs work by accelerating body activity and can cause increased blood pressure, increased heart rate, and raised body temperature. Factors that influence the effects of drugs on an individual: 1. Tolerance to the drug: for example, how sensitive a person's body is to the drug and how frequently the drug is used. 2. Quantity of the drug taken 3. Mixing with other drugs, such as any medication that may have been taken and is still present in the system. 4. Method of taking the drug, such as injecting, swallowing,			

	or inhaling. Injecting Methadone can pose serious health risks. It can increase the risk of overdose and can cause blood clots, narrowing of blood vessels, and other complications. Toxicity management: IV Naloxone 0.4-2mg should be administered every 2-3 minutes, depending on the patient's needs			
	Special Monitoring Parameter: 1. Urine drug screening test 2. Liver function test 3. Electrocardiogram 4. CNS status 5. Respiratory status			
	Withdrawal Symptoms Three or more of the following effects may occur within minutes or days after stopping or reducing the dose/usage of opioids that have been taken for several weeks or more. If someone experiences an overdose with heroin, Methadone, or other opioids, IV Naloxone 0.4-2mg every 2-3 minutes should be administered depending on the patient's needs. Some withdrawal symptoms include: 1. Dysphoria 2. Nausea and vomiting 3. Muscle aches 4. Runny nose and watery eyes 5. Pupillary dilation (enlarged pupils) 6. Diarrhea 7. Excessive yawning 8. Fever 9. Insomnia			
	Self-care for patients 1. Do not give methadone syrup to others as it is very dangerous and can cause accidental drug overdose. 2. Do not inject methadone syrup as it can cause dangerous complications. 3. Please visit your dentist at least twice a year for a dental check-up. 4. Drink at least 2 liters of water a day (about 8 glasses). 5. Engage in regular exercise. 6. Eat a balanced diet. 7. Maintain personal hygiene. 8. Engage in religious activities to find inner peace.			

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Remarks:

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6. Polisi dan Prosedur Operasi Piawai Program Rawatan Methadone, May 2016

Methoxy Polyethylene-glycol Epoetin Beta

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Other antianemic preparations methoxy polyethylene glycol-epoetin beta			
Indications and Dosage	1. Treatment of anaemia associated with chronic kidney failure.Patients who require higher doses of erythropoietin if it is more cost saving to use a long-acting agent instead of short-acting agents. a.CKD **ON** dialysis: IV/SC: 0.6 mcg/kg once every 2 weeks b.CKD **NOT** on dialysis: SC: 0.6 mcg/kg once every 2 weeks or 1.2 mcg/kg once monthly Dosing is according to product insert **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Route of Administration:** Intravenous (IV) or Subcutaneous (SC) **Site of administration for SC:** Lower part of abdomen, thigh or arm **Injection technique for SC (for self-administered):** 1. Take one syringe out of the package and check that the solution is clear, colourless and free from visible particles**.** 2. Allow the syringe to reach room temperature. 3. Wash your hands. 4. Holding the syringe by the middle of the body without touching the release clip to avoid premature release of the safety device. 5. Remove the rubber tip cap from the syringe (bend and pull). 6. Break the seal of the needle, using a twisting motion, and remove the needle cap. Do not remove the needle shield that protects the needle. 7. Attach the needle to the syringe by pushing it firmly on the syringe by twisting it. Pull off the needle shield and throw it away. 8. Hold the syringe with the needle pointing up and tap the syringe gently to bring any bubble to the top. Push the plunger up slowly to remove the air. 9. Clean the skin at the site of injection using an alcohol swab. 10. Pinch a fold of loose skin at the clean injection site. 11. Fully insert the needle 90^0 angle into the skin in a quick, ''dart-like'' motion. Once the neddle is inserted, release the pinch. 12. Slowly push the plunger until all the medicine is injected. The plunger rod should be fully pushed down until hear a click indicating the activation of the needle guard. Do not release the plunger before the end of injection. 13. Take the needle out of the skin without releasing the plunger.			

	14. Once the needle is fully out, release the plunger to activate the needle guard. 15. Dispose the empty syringe in a special waste container. 16. Tear off the medication label on the syringe and stick into the booklet/diary (e.g., CAPD book) after the injection for the administration record, if available. **Consideration:** 1. Blood pressure (BP) cutoff for administering Erythropoietin Stimulating Agent (ESA) is individualised. Generally, ESA is not given if BP exceeds 160/100 mmHg. Patients need to be informed about their specific BP cutoff whether to continue or hold ESA at home. 2. The site of SC injection should be rotated if necessary. **Missed dose management:** The missed dose should be administered as soon as possible and administration of MIRCERA is to be restarted at the prescribed dosing frequency.. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	No adequate data on the use of MIRCERA in pregnant women			
	Breastfeeding			
	Unknown			
	Elderly			
	Dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range			
	Paediatric			
	MIRCERA can be used in children from 3 months to 17 years old if the patient's hemoglobin is already stabilized on either epoetin or darbepoetin.			
	Fasting			
	Administer MIRCERA as usual			
	Others			
	No dosage adjustment was provided in the manufacturer's labelling.			
Side Effects and their Management*	Common side effects, generally not serious: Headache, increased blood pressure, irritation or pain at the injection site. Note: ● To advise patients on the importance of compliance with antihypertensive medications and dietary restrictions for BP control. ● If side effects persist, please consult a healthcare professional Uncommon/rare:			

<table>
<tr><td></td><td>Pure red cell aplasia (PRCA).</td><td></td><td></td><td></td></tr>
<tr><td>Storage*</td><td>
1. Transport of ESA is only allowed in cool box with ice packs.
2. Preferably to return home immediately after getting ESA from the pharmacy to facilitate fast storage.
3. ESA is very sensitive to light and temperature.
4. Protect ESA from light
5. Store ESA in the refrigerator, do not freeze. Keep at 2-8°C.
6. Avoid fridge doors, and vegetable compartments. Ensure there is proper air circulation around your ESA.
7. If you're travelling, try to keep your medication in a cooler with ice packs, and avoid storing it in any place where it might get too hot, like in a car.

Do not take out the ESA from the fridge unless it is time for use. If the ESA is accidentally left outside the fridge, it should be used as soon as possible to prevent damage. Below is the expiry period following a break in the cold chain:

<table>
<tr><td>Product</td><td>Expiry period after break of cold chain</td></tr>
<tr><td>Mircera</td><td>30 Days</td></tr>
</table>

Handling of disposal:
● Needles and syringes should never be reused.
● Place all used needles and syringes into a sharps container (puncture-proof disposable container).
● Keep the sharp container out of the reach of children.
● Avoid disposing of used sharps containers in household waste.
● Dispose of full sharps containers according to local regulations or at designated facilities.
</td><td></td><td></td><td></td></tr>
<tr><td>Others</td><td>
Precautions:
1. Hypertension.
2. Cardiovascular disease including recent myocardia infarction (MI) and venous thromboembolism
3. Malignant disease
4. Patients with epilepsy, history of seizures, or medical conditions associated with a predisposition to seizure activity such as CNS infections and brain metastases.

Monitoring parameters:
1. Blood pressure particularly at the start of therapy
2. Monitor haemoglobin at least monthly during the initiation phase.
3. Monitor iron status at least every 3 months during ESA therapy.

Contraindications :
1. Known hypersensitivity to the active substance or to any of the excipients
2. Uncontrolled hypertension.
3. Pure red cell aplasia (PRCA) that begins after treatment with other erythropoietin stimulating agents (ESAs).
</td><td></td><td></td><td></td></tr>
</table>

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References:

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Methylphenidate

		Unit :		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Centrally acting sympathomimetics			
Indications and Dosage	Indication: Attention deficit hyperactivity disorder (ADHD) Dosage: 1. **Immediate-release Tablet (Ritalin**): **Children & adolescent ≥ 6 years old** Initially 5 mg OD or BD with 5 or 10 mg gradual increments weekly. Max: 60 mg daily. 2. **Modified-release Capsule (Ritalin LA**): **Adult** Initially 20 mg od. Max: 80 mg daily. Treatment in adults should only use Ritalin LA formulation. 3. **Extended-release Tablet (Concerta)**: **Patient new to methylphenidate**: **Children & adolescents** 18 mg OD **Adult** 18 or 36 mg OD **Patients currently using methylphenidate** 18-72 mg OD depending on previous methylphenidate daily dose. May be adjusted in 18 mg increments at weekly intervals. Max: 54 mg daily (Children) and 72 mg daily (Adolescent) Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. **Immediate-release Tablet (Ritalin)**: a. May be taken with or without food. The rate of absorption is faster when taken with food. Take consistently either always with or always without food. b. If given twice daily, doses should be taken at breakfast and lunch (second dose should not be later than 6pm) c. Only immediate release formulation can be crushed or chewed. 2. **Modified-release Capsule (Ritalin LA)**: May be swallowed whole. Alternatively, carefully open capsule & sprinkle contents over room temperature soft food (e.g. applesauce). Swallow mixture immediately without chewing. Do not store for future use. 3. **Extended-release Tablet (Concerta)**: May be taken with or without food. Swallow whole, do not divide, chew or crush. Contain non-absorbable tablet shells, which will be eliminated from the body. Empty tablets may appear in the stool normally. **Do not stop taking your medication unless advised to do so by your prescriber**	`		
Special Considerations	**Pregnancy**			
	1. Should not be given to pregnant women unless the potential benefit outweighs the risk to the fetus. 2. For ADHD patients, MPH should generally be discontinued before anticipated pregnancies.			

	3. Inform your prescriber if you are planning for pregnancy or become pregnant while taking this medication.			
	Breastfeeding			
	1. Detected in human milk and the breastfed infant may experience irritability, agitation and crying. It is recommended to avoid breastfeeding. 2. Can decrease breast milk production.			
	Elderly			
	MALPIP: 1. May increase risk of cardiovascular events. 2. Use of methylphenidate in patients over 65 years old has not been studied in controlled trials. Should not be used in patients over 65 years old.			
	Paediatric			
	The safety and efficacy of Methylphenidate in pediatric patients younger than 6 years of age have not been established.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Renal impairment			
	No data available.			
	Hepatic Impairment			
	No data available			
Side Effects and their Management*	**1. Decreased Appetite** a. Largest cases reported during lunch time. Instruct patients to eat a nutritious, high calorie breakfast and dinner. b. May require switching to another formulation or non-stimulant, talk to your prescriber. **2. Insomnia** a. When given twice daily, the second dose should be taken preferably at lunch or no later than 6pm b. May require switching to another formulation or non-stimulant, talk to your prescriber. **3. Gastrointestinal Distress** **a.** Take doses with food. **b.** May require switching to another formulation or non-stimulant, talk to your prescriber. **4. Irritability** **a.** May require switching to another formulation or non-stimulant, talk to your prescriber **5. Headache** a. Taking doses with food might help. Taking analgesics may help b. May require the dose to be divided, decreased, or changed to another stimulant or non-stimulant talk to your prescriber **6. Other potentially common side effects** a. Nasopharyngitis, dry mouth, nervousness,			

	dizziness, anxiety, restlessness, increased blood pressure, irregular heart beats, rash, itchiness, blurred vision, growth suppression			
Storage*	1. Store at a temperature below 30°C.. 2. Keep out of the reach of children. 3. Store in the original package in order to protect from moisture. (Ritalin) 4. Keep the container tightly closed. (Ritalin LA & Concerta)			
Others	**Drug Interactions** 1. Not to be used with MAOIs. 2. Possible increased blood pressure with vasopressor agents. 3. Decreased effectiveness of antihypertensives. 4. Increased risk of sudden blood pressure & heart rate with halogenated anesthetics. 5. Serotonin syndrome with serotonergic drugs. 6. Pharmacodynamic interaction with antipsychotics. 7. Inhibited metabolism of coumarin anticoagulants, anticonvulsants (e.g. phenobarbitone, phenytoin, primidone) and some antidepressants (TCAs, SSRIs). 8. Use with other psychostimulants can have addictive effects (e.g. increase BP, HR). 9. Antacids, PPIs and H2 receptor antagonists can affect the absorption of methylphenidate, particularly LA formulation. **Food Interactions** 1. Alcohol may exacerbate adverse CNS effects of MPH. **Patient Education** 1. When taken appropriately, the risk of misusing stimulants is low. Untreated ADHD increases the risk of substance misuse compared with treated ADHD children.			

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Miconazole, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antifungals for dermatological use.			
Indications and Dosage	Miconazole cream used for the treatment of fungal skin infections, including: 1. Cutaneous candidiasis: 2. Tinea infections a. Tinea pedis (athlete's foot) b. Tinea capitis (scalp ringworm) c. Tinea corporis (ringworm of the body) d. Other dermatophyte infections caused by Trichophyton and Epidermophyton species. Apply a thin layer of cream to the affected area twice daily. Treatment usually lasts 2 to 6 weeks, depending on the localization and severity of the infection.			
Method of Administration*	1. Clean and dry the affected area before applying the cream. 2. Apply a thin layer to the affected skin and surrounding area. 3. Gently rub the cream into the skin until absorbed. **Do not stop using your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Since topical and vaginal miconazole are not well absorbed, they are unlikely to increase risks to a pregnancy. Most studies have shown that miconazole at low doses (<400 mg/day) does not increase the chance of birth defects.			
	Breastfeeding			
	It is not known if miconazole is present in breast milk. Use with caution.			
	Elderly			
	Patients who use topical oils, creams, and ointments have potential fall risk .Patients may be advised to wear nonslip socks if applying topical medications to feet. Patients should be advised to apply cream while seated or standing on non-slip surfaces.			
	Paediatric			
	The safety and efficacy of Miconazole cream 2% in paediatric patients age below 2 have not been established.			

	Fasting			
	1. Cream is permissible to be used during fasting. 2. While it may absorb into the skin to treat the infection, this does not reach systemically in a way that would invalidate fasting. **To refer to the latest advisory by religious authority.**			
	Others			
	N/A			
Side Effects and their Management*	Allergic contact dermatitis, burning sensation of skin and maceration of skin. Discontinue if sensitivity or irritation occurs			
Storage*	Store between 20 - 25 ℃. Protect from light.			
Others	1. Cleanse and thoroughly dry the affected area before application. 2. Apply a thin layer of the cream to the affected area and extend 2-3 cm beyond the edge of the lesion. 3. Rub the cream well into the skin until it has been completely absorbed. 4. For Tinea pedis (athlete's foot), pay special attention to the spaces between the toes. 5. Wash hands after applying the cream to avoid spreading the infection. 6. Continue treatment for up to 1-2 weeks after the lesion has disappeared to ensure complete eradication of the infection.			

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References:

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Minocycline

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Tetracycline			
Indications and Dosage	Second-line leprosy treatment/drug-resistant leprosy Dosage: 100mg daily for 6-18 months (in combination with other anti-leprosy agents)			
Method of Administration*	Oral : 1. Take at the same time each day. 2. To be taken with or without food. 3. Pellet-filled capsule should be taken on an empty stomach 4. May be taken with food to reduce GI discomfort. 5. Swallow whole. Take with a full glass of water or a small amount of food. This is to avoid oesophageal irritation and ulceration. 6. Food and/or milk products may decrease the rate and extent of oral absorption. 7. Avoid products containing iron, aluminium, calcium or magnesium at least 2 hours before/after administration. 8. Avoid alcohol Missed dose : 1. Take a missed dose as soon as remembered, however, if near to the next dose, skip the dose and continue with the usual dosing time. Do not double the dose or take extra doses. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. US FDA category D (PO) 2. Minocycline crosses the placenta, and may cause fetal harm following maternal use during pregnancy. 3. Causes permanent tooth staining in the fetus and is more likely to occur following long-term exposure or repeated exposure.			
	Breastfeeding			
	1. Minocycline is present in breastmilk 2. Tetracyclines have generally been avoided in breastfeeding patients due to theoretical concerns that they may cause problems in bone and tooth development. 3. In general, antibiotics that are present in breast milk may cause modification of bowel flora, therefore, should monitor infants for GI disturbances. 4. Long-term use is not recommended in breastfeeding patients. 5. Use alternatives if possible.			
	Elderly			

	1. Recommended to start with the lowest effective dose 2. Generally, it is safe to give the normal recommended dosage in elderly, however need to be done cautiously, taking into consideration the declining in hepatic and renal function as well as the use of other medications.			
	Paediatric			
	1. Contraindicated for patients under 12 years old. 2. Safety and effectiveness for those below 12 years old have not been established 3. Contraindicated in neonates and those below 8 years old due to teeth staining and potentially suppresses bone growth			
	Fasting			
	N/A **To refer to the latest advisory by religious authority**			
	Others Renal impairment 1. No dosage adjustment Hepatic impairment 1. Hepatotoxicity has been reported. Use with caution.			
Side Effects and their Management*	1. Headache 2. Nausea and vomiting 3. Stomach pain 4. Indigestion 5. Difficulty swallowing 6. Joint pain and stiffness 7. Swollen tongue 8. Nail discolouration Minocycline can cause abnormal blood test results.			
Storage*	1. Keep in original packaging 2. Store below 30°C			
Others	Precautions : 1. Use in patients below 8 years old may cause permanent tooth staining. 2. Enamel hypoplasia in renal failure has been reported 3. Super infection 4. Avoid prolonged exposure to sunlight or UV lamps. Apply sunscreen and wear loose fitting clothes when going outdoors Monitoring Parameters : 1. Perform culture and susceptibility test before treatment initiation. 2. In prolonged therapy, monitor LFTs, renal function and BUN 3. Serum Mg in renal impairment patients 4. Monitor antinuclear antibody (ANA) and CBC if symptomatic for autoimmune disorder. 5. Perform ophthalmologic evaluation if visual disturbances occur. 6. In patients with idiopathic intrac=ranial hypertension, monitor intracranial pressure until stabilisation. Significant drug-drug / drug-food interactions (if applicable) : 1. **Food and milk products** including **iron-containing**			

	preparations, may interfere with drug absorption 2. May potentiate effects of **anticoagulants**. Reduce plasma prothrombin activity by inhibiting the production of Vitamin K. 3. **Colestyramine, colestipol, quinapril, antacids** or **drugs containing Al, Ca, or MG, ulcer-healing agents (e.g. sucralfate, bismuth salts), oral iron preparations** may impaired absorption. 4. **Diuretics** may aggravate nephrotoxicity 5. With **penicillin**, may interfere with bactericidal action 6. Decrease the efficacy of **oral contraceptives**. 7. **Sodium bicarbonate** may inhibit tetracyclines in the digestive tract by increasing the pH. 8. Increased risk of ergotism with **ergotamine** and **ergometrine**. 9. Reduce therapeutic effect of t**yphoid vaccine**. 10. Concurrent use with **methoxyflurane** may lead to renal toxicity. 11. Increase risk of benign intracranial hypertension with **isotretinoin** or other **systemic retinoids**.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

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Mirtazapine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Noradrenaline and Specific Serotonergic Agent (NaSSA)			
Indications and Dosage	1. Major Depressive Disorder a. Initial 15 mg daily at bedtime, increase based on response and tolerability to max 45mg daily as single dose at bedtime or in 2 divided dose *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Orodispersible Tablet: a. In order to prevent crushing the tablet, do not push against the tablet pocket. b. Each strip contains six tablet pockets, which are separated by perforations. Tear off one tablet pocket along the dotted lines. c. Carefully peel off the lidding foil, starting in the corner indicated by the arrow. d. The tablet should be taken out of the strip with dry hands and should be placed on the tongue. The tablet will rapidly disintegrate and can be swallowed without water. 2. Tablet: Swallow the tablets with some fluid **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Risk of treatment to the child must be weighed against the risk of no treatment to the mother and child. Inform your doctor if you are planning for pregnancy or become pregnant while taking this medication.			
	Breastfeeding			
	1. Some of this drug is found in mother's breast milk. 2. Consult your prescriber if your child becomes irritable or sedated. Breastfeeding or drugs may need to be discontinued.			
	Elderly			
	Use with caution and dose conservatively by starting at the low end of range To be aware of hypersomnolence (sleepiness) adverse effects especially during the initiation period. To advise on fall precautions. Mirtazapine is also associated with increased appetite & weight gain. Suggest for routine monitoring. Beers Criteria: 1) May exacerbate or cause SIADH or hyponatremia; monitor sodium level closely when starting or changing dosages in older adults.			

	Pediatrics			
	Safety and efficacy in pediatrics patients have not been established. Should not be used in children under the age of 18 years. *If based on clinical need, a decision to treat is nevertheless taken, should carefully monitor suicidal symptoms.*			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Hepatic Impairment			
	Moderate to severe: A decrease in dosage may be necessary.			
	Renal impairment			
	egfr > 30ml/min : No dosage adjustment necessary egfr < 30ml/min : Initial 7.5mg to 15mg OD, titrate dosage carefully			
Side Effects and their Management*	1. Endocrine metabolic: weight gain, increased appetite. a. advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise. 2. Anticholinergic: a. Constipation can be managed by physical activity, fluid and fibre intake or laxatives b. Dry mouth 3. Neurologic a. Headache, dizziness, fatigue. May require dosage adjustment. Inform prescriber at next appointment b. Sedation: Avoid activity requiring mental alertness or coordination. Do not drink alcohol during treatment with this medicine as it might increase the sedative effect. Do not drive or work with tools or machinery if affected. Inform prescriber at next appointment. Most side effects are immediate but often go away with time. It may take a few weeks before you feel any improvement. Therefore, do not change the dose of the medicine or stop taking the medicine without consulting your doctor first. Instruct patient to immediately report worsening depression, suicidal ideation, especially at initiation of therapy (children and adolescents are at higher risk for these effects during the first few months of therapy).			
Storage*	Store below 30'C. Avoid light & moisture.			
Other	**1. Significant Pharmacodynamic Interactions** a. Risk of life-threatening Serotonin syndrome when SSRIs co-prescribed with serotonergic drugs. (e.g. tramadol, ondansetron, sumatriptan, MAOI) **Signs and Symptoms:** i. Mild: Insomnia, anxiety, nausea, diarrhea, hypertension, tachycardia, hyper-reflexia			

	ii. Moderate:Agitation, myoclonus, tremor, mydriasis, flushing, diaphoresis, low fever (<38.5°C) iii. Severe: Severe hyperthermia, confusion,rigidity, respiratory failure, coma, death **Management:** Seek immediate medical attention if you experience any of the symptoms mentioned above. b. Increase risk of upper GI bleeding if SSRIs are used together with Aspirin and NSAID due to inhibition of platelet aggregation. Watch out for black or tarry stools, easily bleeding gums or spontaneous bruises c. Risk of hyponatremia especially if SSRIs are used with drugs such as diuretics. **2. Discontinuation Syndrome** a. SSRIs should not be stopped abruptly as this may cause discontinuation/ withdrawal symptoms. The symptoms are usually mild and selflimiting (e.g. include flu-like symptoms, insomnia, nausea, imbalance, sensory disturbances and hyperarousal), but can occasionally be severe and prolonged. b. The patients must inform prescribers if they wish to change or stop medications			
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***Mandatory for validation / peer review**

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Moxifloxacin

Name :		**Unit :**		
*Please tick (✔) **Yes** for correct instruction.* *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Fluoroquinolone			
Indications and Dosage	1. Second-line treatment for leprosy (Moxifloxacin may replace Ofloxacin) 2. Drug-resistant leprosy Adult : 400mg once daily (in combination with other anti-leprosy drugs)			
Method of Administration*	**Food:** Administered with or without food **RT administration:** Absorption was not significantly affected by concurrent enteral nutrition; however, it may be advisable to hold enteral nutrition for up to 2 hours before and after administration to ensure optimal absorption **Missed dose:** Take as soon as remembered if more than 8 hours before the next scheduled dose. Skip the missed dose if less than 8 hours remain before the next dose **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Avoid unless benefits outweigh risks			
	Breastfeeding			
	Limited data available-- use with caution			
	Elderly			
	Increased risk of adverse effects—use with caution			
	Paediatric			
	Limited data			
	Fasting:			
	NA			
	Others: 1. Renal impairment: No dose adjustment needed 2. Liver Impairment: No dose adjustment needed			
Side Effects and their Management*	**Common Side Effects** Gastrointestinal: Abdominal cramps, abdominal pain, nausea, vomiting, diarrhoea			

	Neurological: Headache, dizziness, insomnia **Serious but Rare Side Effects** Tendinopathy and tendon rupture Peripheral neuropathy QTc prolongation			
Storage*	Store in a cool, dry place, away from sunlight			
Others	**Precautions:** 1. QT prolongation risk : avoid in patients with cardiac arrhythmias or those on QT-prolonging drugs 2. May cause photosensitivity: use sunscreen and wear protective clothing 3. May trigger seizures: caution in epilepsy or seizure-prone patients 4. Avoid in patients with myasthenia gravis: may worsen symptoms 5. Tendon pain or swelling: stop medication and see your doctor immediately **Significant drug-drug / drug-food interactions:** 1. Avoid taking with milk, calcium, iron supplements, or antacids as these reduce absorption. Administer at least 4 hours before or 8 hours after these products. 2. Avoid alcohol as it may worsen dizziness or other CNS side effects 3. Avoid driving or operating machinery if feeling dizzy or light-headed			
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***Mandatory for validation / peer review**

References:

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2. TB Drug Monographs. Moxifloxacin. https://www.tbdrugmonographs.co.uk/moxifloxacin.html
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Mupirocin, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antibiotics for dermatological use			
Indications and Dosage	Bacterial skin infection,e.g. impetigo, folliculitis and furunculosis: Apply 2-3 times daily for 5 days. The duration may be extended up to 10 days, depending on the clinical response.			
Method of Administration*	**Topical Application:** Apply a small amount of mupirocin ointment to the affected area, ensuring it is fully covered. If desired, the treated area may be covered with a dressing, though this is optional unless specifically advised by a healthcare provider. **Completion of Treatment:** Continue using the medication for the full prescribed duration, even if symptoms improve before completing the treatment. Do not discontinue the ointment unless instructed by a healthcare provider. This ensures the infection is fully treated and helps prevent resistance.			
Special Considerations	**Pregnancy**			
	There is no evidence of harm to the fetus, as there is no clinical data on its use during pregnancy. Mupirocin should be used during pregnancy only if the potential benefits outweigh the possible risks.			
	Breastfeeding			
	1. Compatible with breastfeeding 2. If applied to the breast or nipple area, it is advisable to cleanse the area thoroughly before breastfeeding to prevent any contact with the infant.			
	Elderly			
	1. No restriction of use. 2. Patients who use topical oils, creams, and ointments have potential fall risk .Patients may be advised to wear nonslip socks if applying topical medications to feet. Patients should be advised to apply cream while seated or standing on non-slip surfaces.			
	Paediatric			
	1. Application as per adult patients.			
	Others			
	1. Do not use polyethylene glycol-based ointments in conditions where absorption of large quantities of polyethylene glycol is possible (e.g. extensive burn or			

	open wounds), especially in the presence of moderate to severe renal impairment.			
Side Effects and their Management*	Burning localized to the area of application is usually transient and resolves with continued use. However, if the burning persists, discontinue use. The patient should be treated supportively, with appropriate monitoring as needed.			
Storage*	1. Store in a dry place at a temperature below 30°C. 2. Protect from light. 3. Do not freeze.			
Others	**Sensitization or severe irritation:** If a sensitization reaction or severe local irritation occurs at the application site, discontinue treatment immediately. Wash the affected area thoroughly to remove the ointment. **Prolonged use:** As with other antibacterial products, prolonged use of mupirocin ointment may lead to the overgrowth of non-susceptible organisms, including fungi. If this occurs, appropriate treatment should be initiated. **Drug interactions:** No significant drug interactions have been identified with mupirocin ointment, as it is minimally absorbed through the skin.			
Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered. **Remarks:** **Reviewed by: Name & Signature** **Date:**				

***Mandatory for validation / peer review**

References:

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Mycophenolate Mofetil/Mycophenolate Sodium

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Selective immunosuppressants mycophenolic acid			
Indications and Dosage	1. Prophylaxis of acute organ rejection in patients receiving allogeneic kidney, cardiac and hepatic transplant 2. Used with steroids for induction and maintenance of severe lupus nephritis Available in two formulations: i) Mycophenolate mofetil (MMF) - Cellcept ®, Mycofit ® - Available in 250 mg capsule and 500 mg tablet ii) Mycophenolate sodium (MPS) - Myfortic ® - Available in 180 mg tablet and 360 mg tablet Equimolar dose in terms of mycophenolic acid: i) MMF 250 mg = MPS 180 mg ii) MMF 500 mg = MPS 360 mg • Both are **NOT** interchangeable. : (WARNING: These two formulations are at risk of medication errors) **Dose will be adjusted based on indication, kidney function & immune response.* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. To be swallowed whole twice daily, 12 hours apart. 2. It may be taken before a meal to improve absorption. If a patient experiences gastrointestinal adverse effects, may take it after a meal to reduce the incidence of adverse effects. Be consistent on either taking it before or after a meal. 3. Do not cut/ crush/ open/ chew the capsule or tablet. **Missed dose management:** 1. If dose is missed, patients should take it as soon as possible within **six hours** after regular dose. 2. If it is more than 6 hours, skip the missed dose and return to normal dosing schedule. 3. Do not double a dose under any circumstances. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Contraindicated in pregnancy. Use appropriate contraception. Pregnancy needs to be pre-planned and switched to an alternative agent before, during pregnancy and breastfeeding. 2. Contraception should be practised before initiation of mycophenolate, during the therapy and 6 weeks after discontinuation of the medication. 3. For male patients who are taking mycophenolate and			

	are still sexually active, their partner should also use an effective contraceptive method.			
	Breastfeeding			
	Mycophenolate may be excreted into breast milk and thus, breastfeeding is not recommended while the patient is taking mycophenolate.			
	Elderly			
	Elderly patients may be at an increased risk of adverse events such as infections, possibly gastrointestinal haemorrhage and pulmonary oedema.			
	Paediatric			
	Paediatric patients have the same adverse effect profile as adult patients. Apply the same counselling points as adult patients.			
	Fasting			
	1. If fasting is permissible, take mycophenolate during Sahur (the meal before dawn) and Iftar (the meal after sunset). 2. It's important to stay hydrated throughout the night. If you miss a dose during Sahur, you must break your fast that day to take the missed dose.			
	Others			
	1. Teratogenic effect. Capsules should not be opened, and tablets should not be crushed. 2. Avoid inhalation or contact of the skin or mucous membranes with the powder in the capsules. Wash thoroughly with soap and water, rinse eyes with plain water if such contact occurs.			
Side Effects and their Management*	1. Gastrointestinal - heartburn, nausea, vomiting, diarrhoea - May take the dose after a meal - May discuss with the prescriber to split the dosing into TDS or QID to minimise the adverse effect. For example, Mycophenolate mofetil 500 mg TDS instead of 750 mg BD - May discuss with the prescriber to switch to a different strength or different formulation. For example, switch from MMF to MPS, or replace every 500 mg MMF tablet with two 250 mg MMF capsule - Notify the prescriber if symptoms persist 2. Cytopenias, including anaemia, leukopaenia and thrombocytopaenia - Monitor blood counts - Take note of signs and symptoms of infections (such as fever, cough, sore throat, pain or difficulty in passing urine) - Take note of signs and symptoms of bleeding (such as bruising, tarry stools, blood in vomitus or blood in urine) - Seek treatment immediately when signs and symptoms occur 3. Increase risk of infections - Practise frequent hand-washing - Avoid close contact with sick people who have			

	active infections - Seek treatment immediately when signs and symptoms occur 4. Increase risk of malignancies, especially lymphoma and skin cancer - Use sunscreen with a high protection factor and wear protective clothing that covers the head, neck, arms and legs when being outdoors.			
Storage*	1. Store at room temperature. Protect from moisture. Store in the original package. 2. Mycophenolate capsules or tablets should remain in the blister when kept in the pillbox. 3. Mycophenolate capsules or tablets should be taken immediately after being removed from the blister pack.			
Others	1. Do not switch to another brand of mycophenolate without informing the prescriber. 2. Avoid live-attenuated vaccination. 3. Drug-drug interactions: i) Antacid or proton-pump inhibitor- May decrease mycophenolate level. Try to leave a 2 hours gap between mycophenolate and antacid or proton-pump inhibitor. ii) Sevelamer – May decrease mycophenolate level. Try to leave a 1 to 3 hours gap between mycophenolate and sevelamer.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

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Neomycin, Topical

Name :		Unit :		
• *Please tick (✔)* ***Yes*** *for correct instruction.* • *Please tick (✔)* ***No*** *for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antibiotic, Topical			
Indications and Dosage	Neomycin is indicated for the treatment of skin infection caused by susceptible organisms: Apply sparingly to the affected area up to 3 times daily (for short term use, 1-2 weeks).			
Method of Administration*	1. Clean the affected area thoroughly with soap and water before applying the cream. Dry the area completely with a clean towel or cloth. 2. Apply a thin layer of the cream to the affected area, gently massaging it in to ensure even coverage. 3. If desired, you can cover the treated area with a sterile gauze dressing after application, but this is not required unless a healthcare provider recommends it. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Safety for use in pregnancy has not been established. (Pregnancy Category: C)			
	Breastfeeding			
	Safety for use in breastfeeding has not been established.			
	Elderly			
	Patients who use topical oils, creams, and ointments have potential fall risk .Patients may be advised to wear nonslip socks if applying topical medications to feet. Patients should be advised to apply cream while seated or standing on non-slip surfaces.			
	Paediatric			
	There is limited data specifically regarding the use of topical neomycin in pediatric populations. Therefore, there is no specific information available comparing the safety and efficacy of neomycin cream in children.			
	Fasting			
	Not applicable			
	Others			
	N/A			
Side Effects and their Management*	**Hypersensitivity Reactions:** - Common reactions (often delayed) include burning, redness, or irritation at the application site. These are			

	typically mild and resolve after discontinuing use. **Serious Side Effects (Rarely Reported):** - Balance or hearing problems (especially with prolonged or widespread use, as neomycin can be systemically absorbed in certain cases). - Folliculitis: Small red bumps or pustules may appear on the skin.			
Storage*	Store at or below 30°C. Protect from freezing.			
Others	1. Contraindication in patients with hypersensitivity to neomycin or other aminoglycosides. 2. Do not apply to deep or punctured wounds, serious burns, or raw areas unless specifically directed by a physician 3. Avoid contact with the eyes or the inside of the moutj. If the medication comes into contact with these areas, wipe it off immediately and rinse thoroughly with water.			

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References:

1. Formulari Ubat KKM (2025). Ministry of Health Malaysia. Retrieved January 20, 2025 from https://pharmacy.moh.gov.my/ms/apps/fukkm?generic=neomycin&category=&indications=
2. Hovid BHD (2023). Neomycin cream 0.5% [product Insert]
3. Price KN, Grinnell M, Butler D, Shah A. Art of prevention: Practical tips for improving adherence to treatments for older patients in dermatology. Int J Womens Dermatol. 2021 Mar 18;7(4):478-481.

Nevirapine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)			
Indications and Dosage	Treatment for HIV-1 infections in combination with Nucleoside Reverse Transcriptase Inhibitors (NRTIs) 1. Adults: a. 200mg OD for the first 14 days upon initiation, followed by 200mg BD if no rash or hepatitis. b. If a patient experiences non-severe rash (without constitutional symptoms) during the 14-day lead-in period with 200mg/day, do not increase to 200mg BD until rash has resolved. If rash continues beyond 28 days on the 200mg/day dose, use an alternative regimen. b. Re-introduce with lead-in dose for 14 days if treatment is interrupted for >7 days. 2. Paediatrics: a. Infants and children <8 years: 200mg/m^2/dose OD (max: 200mg/dose) the first 14 days upon initiation, followed by 200mg/m^2/dose BD (max: 200mg/dose) if no rash. b. Children ≥8 years: 120-150mg/m^2/dose OD (max: 200mg/dose) the first 14 days upon initiation, followed by 120-150mg/m^2/dose BD (max: 200mg/dose) if no rash. c. Adolescents: 200mg OD for the first 14 days upon initiation, followed by 200mg BD if no rash. c. If a patient experiences non-severe rash (without constitutional symptoms) during the 14-day lead-in period, do not increase the dose until the rash has resolved. If rash continues beyond 28 days, use an alternative regimen. d. If nevirapine is interrupted ≤ 14 days (infants/children) or ≤ 7 days (adolescents), restart at the full dose. Re-introduce with lead-in dose for 14 days if treatment is interrupted for >7 days.			
Method of Administration*	1. May be taken with or without food. 2. For oral suspensions, shake the suspension gently prior to administration, the use of oral dosing syringe is recommended. *Missed dose management* 1. To take medication consistently at the same time everyday. Any missed dose to be taken as soon as possible. 2. However if the gap is more than 6 hours, to skip and continue with a regular dosing schedule. Do not double the dose on the next administration time. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special	**Pregnancy**			

Considerations	*1.* Nevirapine is not recommended in female patients who are trying to conceive. 2. Nevirapine has a high level of transfer across the human placenta. 3. Nevirapine is not recommended as an initial NNRTI for use in treatment of naïve pregnant patients because of the potential adverse events. 4. Patients who become pregnant while on nevirapine may continue if viral load suppressive is achieved and the regimen is well tolerated.			
	Breastfeeding			
	1. Nevirapine is present in breast milk. 2. Mothers living with HIV are not recommended to breastfeed their infants to avoid risk of transmission to the baby. Because of the potential for HIV transmission in breastfed infants, advise women not to breastfeed.			
	Elderly			
	None specifically to Nevirapine			
	Paediatric			
	1. May use the oral suspension or tablet formulation. 2. CD4 >15%: 3-fold increased risk of rash and hepatotoxicity during initiation.			
	Fasting			
	1. To be discussed with infectious disease consultant			
	Others			
	1. Contraindicated in moderate or severe hepatic impairment (Child-Pugh B or C). 2. No renal dose adjustment needed for any degree of impairment. An additional dose of nevirapine should be given following dialysis.			
Side Effects and their Management*	1. Rash, including Stevens-Johnson syndrome - Patients must be monitored intensively during the 18 weeks of therapy to detect any potentially life-threatening event. 2. Hepatotoxicity - Patients must be monitored intensively during the 18 weeks of therapy to detect any potentially life-threatening hepatotoxicity. - Do not restart nevirapine following clinical hepatitis, transaminitis combined with rash or other systemic symptoms 3. Abdominal pain, diarrhoea			
Storage*	Store at room temperature.			
Others	1. Nevirapine is a substrate and inducer of cytochrome P450 (CYP) 3A4 and CYP2B6. To check for any potential drug interactions. 2. Nevirapine should not be initiated in antiretroviral naïve patients with elevated CD4 counts i.e. females with CD4>250cells/mm; males with CD4>400cells/mm3			

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Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

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3. Malaysian Society for HIV Medicine. (2022). Malaysian Consensus Guidelines on Antiretroviral Therapy 2022
4. Nevirapine. (n.d.). In UpToDate. Retrieved January 21, 2025.

Nifedipine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nifedipine			
Indications and Dosage	1. Hypertension a. 10mg TDS. Maximum 60mg/day 2. Antianginal a. 10mg TDS. Maximum 60mg/day **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Should be taken swallowed with water,before or after meal 2. Avoid taking with grapefruit juice. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Human Data Suggest Low Risk in pregnancy			
	Breastfeeding			
	Nifedipine is excreted into breast milk. Classified as compatible with breastfeeding			
	Elderly			
	1. Initial treatment with lower daily dose should be considered. 2. Beers Criteria: Avoid use, potential for hypotension; risk of precipitating myocardial ischemia.			
	Paediatric			
	Limited data.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	1. Renal impairment: No dosage adjustment. Not removed by hemo- or peritoneal dialysis; supplemental dose is not necessary 2. Liver impairment: No dosage adjustment. Use with caution as clearance of Nifedipine is reduced in cirrhotic patients. A dose reduction may be necessary.			
Side Effects and their Management*	1. Significant: Peripheral oedema, deterioration of heart failure; symptomatic hypotension with or without syncope (conventional form). Rarely, exacerbation of			

	angina and/or acute MI (during treatment initiation or dose increase 2. Cardiac disorders: Palpitations 3. Gastrointestinal disorders: Constipation, abdominal pain, dyspepsia, diarrhoea, flatulence, dry mouth, nausea, heartburn. 4. Musculoskeletal and connective tissue disorders: Muscle cramps 5. Nervous system disorders: Headache, dizziness, tremor. 6. Psychiatric disorders: Nervousness, mood changes. 7. Respiratory, thoracic and mediastinal disorders: Nasal congestion, cough, wheezing, sore throat, dyspnoea. 8. Skin and subcutaneous tissue disorders: Dermatitis, rash, pruritus, urticaria, diaphoresis. 9. Vascular disorders: Vasodilation, flushing.			
Storage*	1. Room temperature. Do not store above 30^0C			
Others	1. Enzyme inhibitor of cytochrome P450 has been shown to cause increase in Nifedipine plasma concentrations such as: - Erythromycin - Ritonavir - Ketoconazole - Fluoxetine - Valproic Acid 2. Enzyme inducer of cytochrome P450 may cause decrease in Nifedipine plasma concentrations such as: - Phenytoin - Carbamazepine - Rifampicin - Barbiturates			

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References:

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3. Nifedipine (2024). MIMS (online)
4. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.

Non-steroidal Anti-inflammatory Drugs (NSAIDs) / COX-2 Inhibitors

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiinflammatory and antirheumatic products, non-steroids			
Indications and Dosage	**Indication** 1. Pain and inflammation in rheumatic disease **Dosage** 1. Celecoxib: 200 - 400 mg daily in 1-2 divided doses 2. Diclofenac: Initial dose of 150 mg daily. Mild or long term: 75 - 150 mg daily in 2 to 3 divided doses after food. 3. Etoricoxib: 60 - 120 mg once daily 4. Ibuprofen: 200 - 400 mg 3 times daily after food, maximum 3.2 g daily 5. Mefenamic acid: 250 - 500 mg 3 times daily after meals. 6. Meloxicam: initially 7.5 mg daily. May be increased to 15 mg daily 7. Naproxen: 500 mg initially then 250 mg every 6 - 8 hour as required **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Immediate release:** 1. Administer IR formulations with food or milk to avoid gastric distress. 2. RT administration: IR formulations can be crushed (e.g.: Ibuprofen) or capsules (e.g.: Celecoxib) can be opened and mixed with water for RT administration. **Extended release:** 1. Do not break, crush or chew delayed-release or ER tablets. Should swallow the tablet whole with food or milk to avoid gastric distress. 2. In the event RT administration is required: Place the tablet in 10 mL of water, where it quickly breaks into fine granules that can be easily mixed and flushed through a RT. 3. E.g.: Etoricoxib and Meloxicam **Please refer to the specific brand guidelines for feasibility and instructions for RT administration.** **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. NSAIDs can cross the placenta and may increase the risk of miscarriage if used around the time of conception. 2. Avoid NSAIDs during pregnancy unless absolutely necessary. They should not be used in the third			

	trimester.			
	Breastfeeding			
	1. The use of NSAIDs during breastfeeding is generally considered safe as they typically pass into breast milk in very small amounts.			
	Elderly			
	1. Beers criteria: a. Avoid combining NSAIDs with steroids, blood thinners, or medications that prevent clots unless absolutely necessary. If needed, a stomach-protecting medicine should also be used. b. Potential to promote fluid retention and lead to heart failure exacerbation 2. Always start with the lowest possible dose.			
	Paediatric			
	To improve NSAID safety in the paediatric population, therapy should be initiated with the lowest age-appropriate or weight-based dose. Duration of treatment and drug doses used should be regularly evaluated and maximum dose limits and other recommendations by the manufacturer or expert committees should be followed.			
Side Effects and their Management*	1) **Gastrointestinal (Stomach) Effects:** **Management:** Take NSAIDs with food or antacids to reduce stomach irritation. If you're at higher risk (e.g., elderly or history of ulcers), a stomach-protecting medicine like a proton pump inhibitor may help. 2) **Cardiovascular Effects:** **Management:** Before starting NSAIDs, your doctor will check for heart-related risks. If you have heart disease or high blood pressure, other pain relievers like acetaminophen might be safer. 3) **Kidney Effects:** **Management:** Avoid NSAIDs if you have severe kidney problems (e.g., CrCl ≤ 30 ml/min). Stay well-hydrated, use the lowest dose for the shortest time, and your doctor may monitor kidney function if you're using NSAIDs long-term. 4) **NSAID-Exacerbated Respiratory Disease:** **Management:** Use with caution in patient with pre-existing asthma			
Storage*	1. Store the medication at room temperature in a safe location, away from direct sunlight and humidity. 2. Keep the medication out of children's reach.			
Others	1. **Chronic non-cancer pain:** Do not use NSAIDs / COX-2 inhibitors longer than 1-2 weeks. You may use them for a few days to get control of a flare up of chronic pain, but they should never be given for long term as the patient will have a risk of developing renal failure and higher risk of cardiovascular events.			

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References:

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Nystatin, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antifungal for dermatological use.			
Indications and Dosage	**1. Adult** Fungal infections (cutaneous and mucocutaneous) caused by *Candida albicans*: Apply to the affected areas twice daily or as indicated until healing is complete. **2. Paediatric** Diaper dermatitis, Mucocutaneous candida infection: Apply 2 to 4 times daily to the affected area.			
Method of Administration*	1. **Wash and dry your hands:** Before application, cleanse your hands thoroughly with soap and water and dry them completely. 2. **Prepare the affected area:** Gently clean and dry the skin where the cream will be applied. Ensure the area is free of dirt or residue. 3. **Check the cream label:** Verify the cream's label to confirm you are using nystatin cream as prescribed. 4. **Apply the cream:** - Remove the cap and squeeze a small amount of cream onto your fingertip. - Apply a thin layer of the cream to the affected area, ensuring complete coverage. - For areas with hair, apply the cream gently in the direction of hair growth to reduce irritation and ensure even application. 5. **Avoid contamination:** Do not touch the tube's tip to the skin or any other surface to prevent contamination. 6. **Post-application hygiene:** Wash your hands again with soap and water to remove any residual cream unless the treated area is on your hands. 7. **Follow prescribed duration:** - Continue using the cream for the full duration prescribed by your healthcare provider, even if symptoms improve early. - Do not skip doses or stop the treatment prematurely to ensure the infection is fully treated. **Additional Notes:** • Avoid contact with eyes, mouth or other mucous membranes unless directed by a healthcare provider. • Inform your healthcare provider if irritation or worsening of symptoms occurs during use.			
Special Considerations	**Pregnancy :**			
	1. Animal reproduction studies have not been conducted. 2. Nystatin topical preparations should be prescribed for a pregnant woman only if the potential benefit to the mother outweighs the potential risk to the fetus.			

	Breastfeeding			
	It is not known if nystatin is excreted in breast milk;. The manufacturer recommends that caution be exercised when administering nystatin to nursing women.			
	Elderly			
	Patients who use topical oils, creams, and ointments have potential fall risk .Patients may be advised to wear nonslip socks if applying topical medications to feet. Patients should be advised to apply cream while seated or standing on non-slip surfaces.			
	Paediatric			
	Dosage recommendations may vary among individual products. To refer to individual products.			
	Fasting			
	1. Cream is permissible to be used during fasting. 2. While it may absorb into the skin to treat the infection, this does not reach systemically in a way that would invalidate fasting. **To refer to the latest advisory by religious authority**			
Side Effects and their Management*	If irritation or sensitisation develops, treatment should be discontinued and appropriate measures taken as indicated.			
Storage*	1. Keep the container tightly closed in a dry place. 2. Store below 30° C. or at 20- 25° C. 3. Protect from light and avoid freezing.			
Others	1. For topical external use only; not for systemic, oral, intravaginal or ophthalmic use. 2. Since nystatin is not absorbed systemically when applied to intact skin or mucous membranes, the likelihood of drug interactions or incompatibilities is minimal.			

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References:

1. Idaman Pharma Manufacturing Sdn Bhd (n.d.) Candistatin Cream 100,000 U/g. Retrieved November 10, 2024, from https://www.npra.gov.my
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Nystatin Oral Suspension

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Polyenes Antifungal			
Indications and Dosage	Nystatin 100,000units/ml Suspension Prevention and treatment of candidiasis of the skin and mucous membranes, protection against candidas overgrowth during antimicrobial /corticosteroid therapy and as selective decontamination regimens (Dosage as per prescribed)			
Method of Administration*	1. Shake the bottle well before use, then draw up the correct amount into the measuring dropper provided. 2. The suspension should be swished throughout or be retained in the mouth for as long as possible(several minutes) before swallowing. 3. Individuals should avoid taking food or drink earlier than one hour after a dose. In infants and young children, apply one half of a dose in each side of the mouth. 4. The dosage should be continued for 48 hours after lesions have resolved. **Missed dose management** Take the missed dose as soon as you remember. If it is almost time for your next dose, wait until then to take the medicine and skip the missed dose. Do not take a double dose to make up for the missed dose.			
	Do not stop taking your medication unless advised to do so by your prescriber			
Special Considerations	**Pregnancy**			
	N/A			
	Breastfeeding			
	Nystatin is poorly absorbed after oral administration, if at all, serum and milk levels would not occur.			
	Elderly			
	None specifically to Nystatin			
	Paediatric			
	Some dosage forms may contain propylene glycol. In neonate receiving propylene glycol > 3000mg/day via orally, intravenously or topically have been associated with toxicities e.g. seizures,renal failure and central nervous system depression			
	Fasting			
	To refer to the latest advisory by religious authority			

	Others			
	NA			
Side Effects and their Management*	1. Nausea 2. Vomiting 3. Diarrhoea 4. Mouth irritation or sensitivity Management: 1. Drink plenty of water to avoid dehydration 2. Stop using medication if you experience any irritation or sensitivity and seek medical assistance.			
Storage*	1. Store below 30°C in a well-closed container. 2. Do not freeze and protect from light. 3. Refer product insert			
Others	Not intended to treat systemic mycoses. If hypersensitivity develops, discontinue use			

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References:

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Ofloxacin

Name :		**Unit :**		
*Please tick (✔) **Yes** for correct instruction.* *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Fluoroquinolone			
Indications and Dosage	1. Second-line treatment for leprosy 2. Drug-resistant leprosy Adult : 400mg once daily (in combination with other anti-leprosy drugs)			
Method of Administration*	**Food:** Administered with or without food **RT administration:** Significant interaction when mixed directly with the enteral formula. Should not be given within 2 hours before or 4 hours after enteral formulas **Missed dose:** Take the missed dose as soon as possible **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Avoid unless benefits outweigh risks			
	Breastfeeding			
	Avoid			
	Elderly			
	Adverse effects may be increased in older patients			
	Paediatric:			
	Use with caution – risk of arthropathy			
	Fasting			
	NA			
	Others: 1. Renal impairment CrCl ≥20 mL/min: No dose adjustment required at doses used in leprosy 2. Liver Impairment: No dose adjustment required at doses used for leprosy			
Side Effects and their Management*	**Common Side Effects** Gastrointestinal: Abdominal cramps, abdominal pain, nausea, vomiting, diarrhoea			

	Neurological: Headache, dizziness, insomnia **Serious but Rare Side Effects** Tendinopathy and tendon rupture Peripheral neuropathy QTc prolongation			
Storage*	Store in a cool, dry place, away from sunlight			
Others	**Precautions:** 1. QT prolongation risk : avoid in patients with cardiac arrhythmias or those on QT-prolonging drugs 2. May cause photosensitivity: use sunscreen and wear protective clothing 3. May trigger seizures: caution in epilepsy or seizure-prone patients 4. Avoid in patients with myasthenia gravis: may worsen symptoms 5. Tendon pain or swelling: stop medication and see your doctor immediately **Significant drug-drug / drug-food interactions:** 1. Avoid taking with milk, calcium, iron supplements, or antacids as these reduce absorption. Separate doses by at least 2 hours before or after these substances 2. Avoid alcohol as it may worsen dizziness or other CNS side effects 3. Avoid driving or operating machinery if feeling dizzy or light-headed			
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***Mandatory for validation/ peer review**

References:

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8. UpToDate Inc.

Opioids, Short Acting Strong

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Opioid Analgesic Available preparations: 1. Aqueous Morphine 10mg/5ml 2. Oxycodone HCL 1mg/ml Oral Solution 3. Oxycodone HCL 5mg and 10mg Immediate Release Capsules			
Indications and Dosage	**1. Aqueous morphine:** For use in management of moderate to severe pain especially that associated with neoplastic disease **Dose**: 5-20mg or more regularly every 4 hours in terminal pain. **2. Oxycodone HCl 1mg/ml Oral Solution:** As a second-line drug in the management of responsive, moderate to severe pain in patients who; a. Have difficulty swallowing b. Require low dose oxycodone (<5mg) **Dose:** Initial dose for opioid naïve patients or patients presenting with severe pain uncontrolled by weak opioids is 5mg, 4-6 hourly. The dose should be carefully titrated, as frequently as once a day, to achieve pain relief. **3. Oxycodone HCl 5mg and 10 mg Immediate Release Capsules** a. As a second line drug in the management of opioid responsive, moderate to severe chronic cancer pain b. As a step-down analgesic drug in post-operative procedures **Dose:** Initially 5 mg every 4 to 6 hours, increased if necessary, according to severity of pain **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**How to take immediate release solution** 1. Take exactly as instructed 2. Aqueous morphine solution/ Syrup Oxycodone Immediate Release is usually taken every 4 - 6 hours. 3. Take the solution by mouth. Use a plastic syringe to measure your dose. 4. Your doctor may instruct you to take additional doses for breakthrough pain – as often as every hour. 5. Record the number of additional doses you have taken and inform your doctor at the next visit. 6. DO NOT exceed the dose prescribed by your doctor. 7. If you find that you are still in pain whilst taking this drug, discuss this with your doctor. **How to take Oxycodone Immediate Release Capsules** 1. Take exactly as instructed 2. DO NOT break, crush or chew them. 3. Swallow your capsule whole with a glass of water.			

	4. OxyNORM capsules are usually taken every 4 - 6 hours. 5. OxyNORM capsules may also be prescribed as “when needed” medication for breakthrough pain. (Breakthrough pain occurs despite regular painkillers) · Always take the capsules exactly as instructed. 6. Record the number of additional doses you have taken and inform your doctor at the next visit. 7. DO NOT exceed the dose prescribed by your doctor. 8. If you find that you are still in pain whilst taking this drug, discuss this with your doctor. **Missed dose management** 1. If you forget a dose, take it as soon as you remember it and take your next dose at the usual time. 2. DO NOT take a double dose to make up for a forgotten dose **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy & Breastfeeding**			
	1. Opioid crosses the placenta and can be detected in breast milk too. 2. Use during pregnancy and breastfeeding needs to be carefully considered and there is a need to balance pain management and the risk of neonatal opioid withdrawal symptoms.			
	Elderly			
	1. Increased sensitivity to weak opioids in elderly patients can result in excessive sedation, dizziness, confusion, and an elevated risk of delirium and lead to falls. 2. Use with caution in the elderly, debilitated or cachectic patients have an increased risk for respiratory depression. 3. Use in elderly patients carry risks of constipation that lead to delirium and increased risk of falls. 4. Avoid in patients with a history of fractures or falls, it may contribute to additional fall.			
	Paediatric			
	1. Although opioids are highly effective in treating pain, their use frequently results in various side effects including nausea and vomiting, pruritus, constipation, sedation as well as potentially fatal respiratory depression in children.			
	Abuse / Misuse / Diversion			
	1. Use with caution in patients with a history of substance use disorder, as the potential for drug dependency exists.			
Side Effects and their Management*	1. Opioid-induced constipation a. A common side effect b. Tolerance does not develop, hence laxatives must be taken regularly c. Use combination of stimulant (e.g. bisacodyl) + softener (e.g. lactulose) d. Increase fluid and dietary fibre intake,			

	maintain good physical activity, and try to establish a toilet routine 2. Opioid-induced sedation / impaired alertness a. May occur upon initiation of opioids b. Avoid driving and other activities that require mental alertness until it is clear how morphine/ Oxycodone affects the patient c. Tolerance develops after 5 - 10 days 3. Opioid-induced neurotoxicity (delirium, confusion) a. May occur, but usually transient b. May consider use of haloperidol for delirium 4. Opioid-induced nausea and vomiting a. May occur upon initiation of opioids b. Tolerance develops 5 - 10 days after starting c. May use antiemetics (e.g. metoclopramide, haloperidol or prochlorperazine) d. Be consistent when taking morphine with or without meals 5. Opioid-induced dry mouth a. Sip water often, let small ice chips melt in your mouth b. Minimise intake of caffeinated drinks, such as coffee, tea, and some sodas as well as use of tobacco and alcohol c. Chew sugarless gum or suck on sugarless hard candy to stimulate saliva flow			
Storage*	1. Medication may be kept at room temperature, in a safe place and out of direct sunlight, and humidity. 2. Ensure medication is out of the reach of children and pets.			
Others	1. Respiratory depression is rare but may occur if morphine is used incorrectly and can be fatal. 2. Do not take more than what has been prescribed. 3. Concurrent use of other central nervous system (CNS) depressants, such as benzodiazepines, barbiturates, sedatives, hypnotics, or alcohol, can potentiate the sedative and respiratory depressant effects of morphine, increasing the risk of profound sedation, respiratory depression, coma, or death. 4. Medication should be tapered gradually when discontinuing therapy to minimize withdrawal effects..			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. *Journal of the American Geriatrics Society*, *71*(7), 2052-2081.
2. Clinical Practice Guidelines Management of Cancer Pain (Second Edition) (2023) Ministry of Health Malaysia.
3. Morphine Sulphate. (2024). *Micromedex* (electronic version). Retrieved October 23, 2024 from http://www.micromedexsolutions.com/
4. Oxycodone Hydrochloride. (2024). *Micromedex* (electronic version). Retrieved October 23, 2024 from http://www.micromedexsolutions.com/

Opioids, Sustained-Release Strong

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Opioid Analgesic Preparations available: 1. Morphine Sulphate Prolonged Release Tablets 2. Oxycodone Hydrochloride Controlled Release Tablets			
Indications and Dosage	**1. Moderate to severe cancer pain** **2. Non-cancer chronic pain refractory to adjuvant analgesics and non-pharmacological approaches** a. Dose requirement is established using short-acting preparations before switching to long-acting formulations. b. Dose is individualised based on patient-specific factors and severity of pain, and usually given in 12 hourly intervals (twice a day). c. Subsequently, dose is adjusted according to patient response, taking into account the amount of rescue medication used, pain score, functional assessment and side effects. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Tablets must be swallowed whole, with enough water to ensure complete swallowing. 2. Do not crush, chew or dissolve the tablets as it may result in uncontrolled delivery of drugs. 3. Cannot be administered through a feeding tube. 4. May be administered with food. **Missed dose management** 1. In the event of a missed dose, take it as soon as possible. Omit the dose if more than 6 hours has passed. Never double a dose to make up for a missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy & Breastfeeding**			
	1. Opioid crosses the placenta and can be detected in breast milk too. 2. Use during pregnancy and breastfeeding needs to be carefully considered and there is a need to balance pain management and the risk of neonatal opioid withdrawal symptoms.			
	Elderly			
	1. Increased sensitivity to weak opioids in elderly patients can result in excessive sedation, dizziness, confusion, and an elevated risk of delirium and lead to falls.			

	2. Use with caution in the elderly, debilitated or cachectic patients have an increased risk for respiratory depression. 3. Use in elderly patients carry risks of constipation that lead to delirium and increased risk of falls. 4. Avoid in patients with a history of fractures or falls, it may contribute to additional fall. 5. Avoid use in patients with dysphagia.			
	Paediatric			
	1. Although opioids are highly effective in treating pain, their use frequently results in various side effects including nausea and vomiting, pruritus, constipation, sedation as well as potentially fatal respiratory depression in children.			
	Abuse / Misuse / Diversion			
	1. Use with caution in patients with a history of substance use disorder, as the potential for drug dependency exists.			
	Others (*eg. hepatic impairment, renal impairment which will be relevant to the patient)*			
	1. The use of long-acting formulations is not advisable if a patient develops renal impairment or hepatic impairment. 2. Speak to your doctor about using a more appropriate analgesic to manage your pain.			
Side Effects and their Management*	1. Opioid-induced constipation a. A common side effect b. Tolerance does not develop, hence laxatives must be taken regularly c. Use combination of stimulant (e.g. bisacodyl) + softener (e.g. lactulose) d. Increase fluid and dietary fibre intake, maintain good physical activity, and try to establish a toilet routine 2. Opioid-induced sedation / impaired alertness a. May occur upon initiation of opioids b. Avoid driving and other activities that require mental alertness until it is clear how morphine/ Oxycodone affects the patient c. Tolerance develops after 5 - 10 days 3. Opioid-induced neurotoxicity (delirium, confusion) a. May occur, but usually transient b. May consider use of haloperidol for delirium 4. Opioid-induced nausea and vomiting a. May occur upon initiation of opioids b. Tolerance develops 5 - 10 days after starting c. May use antiemetics (e.g. metoclopramide, haloperidol or prochlorperazine) d. Be consistent when taking morphine with or without meals e. 5. Opioid-induced dry mouth a. Sip water often, let small ice chips melt in your mouth b. Minimise intake of caffeinated drinks, such as			

	coffee, tea, and some sodas as well as use of tobacco and alcohol c. Chew sugarless gum or suck on sugarless hard candy to stimulate saliva flow.			
Storage*	1. Medication may be kept at room temperature, in a safe place and out of direct sunlight, and humidity. 2. Ensure medication is out of the reach of children and pets.			
Others	1. Respiratory depression is rare but may occur if morphine is used incorrectly, and can be fatal. 2. Do not take more than what has been prescribed. 3. Concurrent use of other central nervous system (CNS) depressants, such as benzodiazepines, barbiturates, sedatives, hypnotics, or alcohol, can potentiate the sedative and respiratory depressant effects of morphine, increasing the risk of profound sedation, respiratory depression, coma, or death. 4. Medication should be tapered gradually when discontinuing therapy to minimize withdrawal effects.			
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References:

1. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.
2. Clinical Practice Guidelines Management of Cancer Pain (Second Edition) (2023) Ministry of Health Malaysia.
3. Morphine Sulphate. (2024). Micromedex (electronic version). Retrieved October 23, 2024 from http://www.micromedexsolutions.com/
4. Oxycodone Hydrochloride. (2024). Micromedex (electronic version). Retrieved October 23, 2024 from http://www.micromedexsolutions.com/

Opioids, Weak

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Weak opioid Analgesic Preparations available: 1. Tramadol HCl 50mg Tablet 2. Dihydrocodeine Tartrate 30mg Tablet(DF118)			
Indications and Dosage	1. Tramadol: Moderate to severe acute or chronic pain a. Dose: 50 – 100 mg 6 – 8-hourly (Maximum dose: 400 mg/day) b. Paediatric: Over 12 years: Maximum dose 1 mg/kg 6-8h, max 400 mg/day c. Renal adjustment: CrCl <30 ml/min : 200 mg/day, BD dosing d. Severe hepatic impairment: 50 mg BD 2. Dihydrocodeine: For the control of moderate to severe pain a. 30 – 60 mg, 4-6 hourly (Maximum dose: 240 mg/day) b. Paediatric: Over 4 years: 0.5-1mg/kg (adult 15-60mg) 4-6h c. Renal/hepatic adjustment: To avoid or reduce dose **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Tramadol a. May be taken with or without food. b. Capsules can be opened easily and the contents mix easily with water to form a fine suspension that flushes easily via a Ryle's Tube (RT). 2. Dihydrocodeine a. Should be taken with food. b. Tablets can be crushed. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Tramadol a. Human data suggest risk. b. Prolonged use of opioid analgesics during pregnancy may cause neonatal opioid withdrawal syndrome. 2. Dihydrocodeine Human data suggest risk in third trimester			
	Breastfeeding			
	1. Tramadol Limited human data. Unlikely to cause harm in healthy			

	term infants 2. Dihydrocodeine No human data. Probably compatible			
	Elderly			
	1. Increased sensitivity to weak opioids in elderly patients can result in excessive sedation, dizziness, confusion, and an elevated risk of delirium and lead to falls. 2. Use in elderly patients carry risks of constipation that lead to delirium and increased risk of falls.			
	Paediatric			
	1. Although opioids are highly effective in treating pain, their use frequently results in various side effects including nausea and vomiting, pruritus, constipation, sedation as well as potentially fatal respiratory depression in children.			
	Others			
	1. Tramadol a. Risk of seizures in patients with a history of seizures and with high doses. b. Use with caution in patients taking drugs which decrease seizure threshold eg: tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRI) & serotonin noradrenalin reuptake inhibitors (SNRI). c. Avoid concomitant use with or within 14 days following MAO inhibitor therapy. 2. Dihydrocodeine Cautions and contraindications: a. May cause the release of histamine thus should not be administered during an asthmatic attack. b. Respiratory depression, acute alcoholism, paralytic ileus, raised intracranial pressure			
Side Effects and their Management*	1. Opioid-induced constipation a. A common side effect b. Tolerance does not develop, hence laxatives must be taken regularly c. Use combination of stimulant (e.g. bisacodyl) + softener (e.g. lactulose) d. Increase fluid and dietary fibre intake, maintain good physical activity, and try to establish a toilet routine 2. Opioid-induced sedation / impaired alertness a. May occur upon initiation of opioids b. Avoid driving and other activities that require mental alertness until it is clear how morphine/ Oxycodone affects the patient c. Tolerance develops after 5 - 10 days 3. Opioid-induced neurotoxicity (delirium, confusion) a. May occur, but usually transient b. May consider use of haloperidol for delirium			

	4. Opioid-induced nausea and vomiting a. May occur upon initiation of opioids b. Tolerance develops 5 - 10 days after starting c. May use antiemetics (e.g. metoclopramide, haloperidol or prochlorperazine) d. Be consistent when taking morphine with or without meals 5. Opioid-induced dry mouth a. Sip water often, let small ice chips melt in your mouth b. Minimise intake of caffeinated drinks, such as coffee, tea, and some sodas as well as use of tobacco and alcohol c. Chew sugarless gum or suck on sugarless hard candy to stimulate saliva flow.			
Storage*	1. Medication may be kept at room temperature, in a safe place and out of direct sunlight, and humidity. 2. Ensure medication is out of the reach of children and pets.			
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2. Briggs, G. G., Freeman, R. K., Towers, C. V., & Forinash, A. B. (2017). Drugs in pregnancy and lactation: a reference guide to fetal and neonatal risk. Eleventh edition. Philadelphia, PA, Wolters Kluwer.
3. MIMS Malaysia. (n.d.). Tramadol. In MIMS online. Retrieved October 10, 2024, from https://www.mims.com/malaysia
4. MIMS Malaysia. (n.d.). Dihydrocodeine. In MIMS online. Retrieved October 10, 2024, from https://www.mims.com/malaysia
5. Ministry of Health Malaysia (2018). Pain as The 5 th Vital Sign Guideline: 3 rd Edition. [online] Available at: https://www.moh.gov.my/moh/resources/Penerbitan/Program%20Bebas%20Kesakitan/Garis%20Panduan/2_in_1_P5VS_Guide
6. Tramadol (2024). UpToDate Inc. [Drug information]. Lexi-Drugs, UpToDate Lexidrug. Retrieved October 10, 2024, from http://online.lexi.com

Paracetamol

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Non-opioid analgesic			
Indications and Dosage	**Indication** 1. Relief of fever 2. Relief of pain **Dosage** 1. Adults and children above 12 years: 500mg - 1g every 4 - 6 hours. Maximum 4g daily. 2. Children: a. 0 - 3 months: 15mg/kg 6 – 8H (Max: 60mg/kg/day; if preterm 28-32 CGA, max 30mg/kg/day) b. > 3months -12 years: 15mg/kg 4-6H (Max: 75mg/kg/day or 4 grams/day) **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. May be taken with or without food. 2. Missed dose management: Take the missed dose as soon as you remember. If it is almost time for your next dose, wait until then to take the medicine and skip the missed dose. Do not take a double dose to make up for the missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Pregnancy category: B 2. Paracetamol crosses the placenta but the drug has been used widely as an analgesic in pregnancy and no adverse fetal effects have been recorded.			
	Breastfeeding			
	1. Compatible with breast feeding.			
	Elderly			
	1. Use the lowest effective dose for the shortest duration (example ≤ 3gm/ day). 2. Caution for long term use in elderly; deranged liver enzyme.			
	Paediatric			

	1. There are different types of paracetamol, including two strengths of oral syrup. Care must be taken to avoid accidental overdose.			
	Others			
	1. Should be given with care to patients with impaired kidney or liver function 2. Contraindicated in patients with severe hepatic impairment or active liver disease			
Side Effects and their Management*	1. Cutaneous hypersensitivity reaction including skin rashes, angioedema, Stevens Johnson Syndrome 2. Risk of hepatotoxicity			
Storage*	1. Store in a dry place, below 30℃			
Others	1. Be careful when using other products that contain paracetamol at the same time. 2. Caution in alcoholism			

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References:

1. Briggs, G. G., Freeman, R. K., Towers, C. V., & Forinash, A. B. (2017). Drugs in pregnancy and lactation: a reference guide to fetal and neonatal risk. Eleventh edition. Philadelphia, PA, Wolters Kluwer.
2. CCM Pharmaceutical (2021). Uphamol tablet 500mg product Information.
3. MIMS Malaysia. (n.d.). Paracetamol. In MIMS online. Retrieved October 10, 2024, from https://www.mims.com/malaysia
4. Ministry of Health Malaysia (2018). Pain as The 5 th Vital Sign Guideline: 3rd Edition. [online] Available at: https://www.moh.gov.my/moh/resources/Penerbitan/Program%20Bebas%20Kesakitan/Garis%20Panduan/2_in_1_P5VS_Guide
5. Ministry of Health Malaysia (2023). Paediatric Pain Management Guidelines. Retrieved January 20, 2025 from https://www.moh.gov.my/moh/resources/Penerbitan/Program%20Bebas%20Kesakitan/Garis%20Panduan/PAEDIATRIC_PAIN_MANAGEMENT_GUIDELINE_-_2023.pdf
6. Paracetamol (2024). UpToDate [Drug information]. Lexi-Drugs, UpToDate Lexidrug. Retrieved October 10, 2024,from http://online.lexi.com
7. Reid, O., Ngo, J., Lalic, S., Su, E., & Elliott, R. A. (2022). Paracetamol dosing in hospital and on discharge for older people who are frail or have low body weight. British Journal of Clinical Pharmacology, 88(10), 4565-4572.

Permethrin, Lotion

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Scabicides; Topical insecticide			
Indications and Dosage	1. **Permethrin 1% Lotion** For topical treatment of head lice 2. **Permethrin 5% Lotion** Treatment of scabies **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**<u>Permethrin 1% Lotion (Treatment of head lice)</u>** 1. Before application, wash hair with a mild regular shampoo and towel dry. 2. Apply sufficient amounts to completely saturate the hair and scalp (especially behind the ear and nape of the neck). 3. Leave on the hair for 10 minutes then rise thoroughly with water. 4. Remove nits with fine-toothed comb as necessary. 5. May repeat treatment 7 - 1 days after initial application if live lice or nits are found. **<u>Permethrin 5% Lotion (Treatment of scabies)</u>** 1. Applied from the jawline downwards, and left overnight for 8–14 hours. Reapplication is needed if hands are washed during the treatment period. Infants, the elderly, and the immunosuppressed should also treat the face and scalp. 2. Application should include under the nails and between the toes. 3. Treatment should be repeated after 7–10 days. **Missed dose management**: If a dose is missed, use it as soon as possible. If it is almost time for the next dose, use only that dose. Do not use double or extra doses. **Do not stop your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Safe for pregnant women.			
	Breastfeeding			
	1. Safe for breastfeeding women.			
	Elderly			
	None specifically to the product			

	Paediatric			
	1. Not recommended for infants less than 2 months of age.			
	Fasting			
	N/A			
	Others			
	N/A			
Side Effects and their Management*	Itching & burning/stinging sensation on application.			
Storage*	1. Store at room temperature below 25C. 2. Protect from light. 3. Discard any unused medicine after the expired date.			
Others	1. Patients with scabies and their close physical contacts, even without symptoms, should receive treatment at the same time. 2. Avoid contact with eyes or mucous membranes or the area around the mouth. 3. In infants, hands covered with mittens will prevent removal and ingestion of the treatment product. 4. If the treatment is applied by someone without scabies, this person should wear medical gloves during application. 5. After completion of treatment, patients should use fresh, clean bedding and clothing. 6. Itching and rash may continue for up to 4 weeks after treatment, but this is usually a temporary reaction. 7. Wash all toys in very hot soapy water for 5-10min or seal in an airtight plastic bag for 2 weeks. This is especially important for stuffed toys used on the bed.			

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1. MIMS Malaysia (2025). Permethrin. Retrieved from: https://www.mims.com/malaysia/drug/info/permethrin?mtype=generic. Accessed on January 21, 2025.
2. Vasanwala et al. (2019). Management of Scabies. Singapore Medical Journal. Retrieved from: http://www.smj.org.sg/sites/default/files/SMJ-60-281.pdf
3. DermNet®. Retrieved from: https://dermnetnz.org/topics/scabies. Accessed on January 21, 2025.
4. Formulari Ubat KKM (2025). Accessed on January 1, 2025.
5. Ministry of Health Malaysia (2015). Guideline for Management of Scabies in Adults and Children.

Podophyllum Paint

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Keratolytic Agent			
Indications and Dosage	Indication: External genital warts Dosage: Apply 2-3 drops carefully to lesion after protecting the surrounding area with white soft paraffin. Wash off after 6 hours or if you feel a burning sensation. Repeat 2-3 times weekly or once weekly.			
Method of Administration*	1. Use a toothpick or a cotton-tipped or given applicator to apply this medicine. Apply 1 drop at a time, allowing time for drying between drops, until the affected area is covered. 2. After podophyllum is applied, allow it to remain in the affected area for 1 to 6 hours as directed by your doctor. Then, remove the medicine by thoroughly washing the affected area with soap and water. If this medicine contains tincture of benzoin, it may be removed more easily by swabbing the affected area with rubbing alcohol. However, this may be more irritating than washing with soap and water. 3. Immediately after applying this medicine, wash your hands to remove any medicine that may be on them. Missed dose management: If you miss a dose of this medicine, take it as soon as possible. However, if it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not double doses. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Contraindicated			
	Breastfeeding			
	1. Use in breastfeeding patients is contraindicated by the manufacturer. 2. Avoid use during breastfeeding.			
	Elderly			
	None specifically to Podophyllum			
	Paediatric			
	The safety and efficacy in paediatric patients have not been established.			

	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	Not applicable			
Side Effects and their Management*	Local skin irritation Special care must be taken to ensure application is restricted to the wart itself.			
Storage*	Room Temperature			
Others	1. Avoid normal (unaffected) skin and open wound 2. Do not use it if wart or surrounding tissue is inflamed or irritated. 3. Do not use on bleeding warts, moles, birthmarks, or unusual warts with hair growing from them. 4. Do not treat large areas or many warts at one time.			

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References:

1. Stephanie Abel, PharmD, BCPS et al (2025), Podophyllum resin (Podophyllin resin): Drug information. Retrieved from https://www.uptodate.com/contents/podophyllum-resin-podophyllin-resin-drug-information?search=podophyllum&source=panel_search_result&selectedTitle=1%7E15&usage_type=panel&kp_tab=drug_general&display_rank=1
2. Product Information Leaflet, Podophyllum Resin.

Ranolazine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antianginal drug – as adjunct therapy MOA: inhibition of the late sodium current in heart cells.			
Indications and Dosage	1. Add-on therapy for the symptomatic treatment of patients with stable angina pectoris who are inadequately controlled or intolerant to first-line antianginal therapies (such as beta-blockers and/or calcium antagonists) a. Initial 375mg bd, titrate to 500mg bd after 2-4 weeks; may further titrate to maximum 750mg bd according to patient's response b. Down-titration to 375mg or 500mg bd or even discontinued may be required if patient experiences treatment-related adverse events.			
Method of Administration*	Should be swallowed whole and not crushed, broken, or chewed. They may be taken with or without food. If you forget to take a dose, take it as soon as you remember unless it is nearly time (less than 6 hours) to take your next dose. Do not take a double dose to make up for a forgotten dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Limited data. Should not be used during pregnancy unless clearly necessary.			
	Breastfeeding			
	Should not be used during breast-feeding.			
	Elderly			
	Use with caution in patients ≥75 years of age, they may experience more adverse events and drug discontinuation due to adverse events			
	Paediatric			
	No data available.			
	Fasting			
	Not applicable.			
	Others			
	Contraindicated in concomitant administration of potent CYP3A4 inhibitors; crcl <30 ml/min; moderate or severe hepatic			

	impairment; concomitant administration of Class Ia (e.g. quinidine) or Class III (e.g. dofetilide, sotalol) antiarrhythmics other than amiodarone.			
Side Effects and their Management*	Side effects usually develop within the first 2 weeks of treatment. 1. Nervous system disorders: dizziness, headache. 2. Gastrointestinal disorders: constipation, vomiting, nausea. 3. General fatigue and weakness (asthenia)			
Storage*	This medicinal product does not require any special storage conditions. Store below 30°C.			
Others	1. Avoid grapefruit juice. 2. Caution should be exercised when prescribing or uptitrating ranolazine to patients in whom an increased exposure is expected: ● Concomitant administration of moderate CYP3A4 inhibitors ● Concomitant administration of P-gp inhibitors ● Mild hepatic impairment ● Mild to moderate renal impairment (crcl 30–80ml/min) ● Elderly ● Patients with low weight (≤ 60 kg) ● Patients with moderate to severe CHF (NYHA Class III–IV)			

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References:

1. Product Information Leaflet. (2020). Ranexa®. Menarini.
2. Consumer Medication Information Leaflet (RiMUP). (2020). RANEXA Prolonged Release Tablets. A. Menarini Singapore Pte Ltd.
3. Rich, M. W., Crager, M., & McKay, C. R. (2007). Safety and efficacy of extended‐release ranolazine in patients aged 70 years or older with chronic stable angina pectoris. The American Journal of Geriatric Cardiology, 16(4), 216-221.

Renin-angiotensin aldosterone system inhibitor (RAASi)

<table>
<tr><td colspan="2">Name :</td><td colspan="3">Unit :</td></tr>
<tr><td colspan="2">Please tick (✔) Yes for correct instruction.
Please tick (✔) No for incorrect instruction.</td><td>Yes</td><td>No</td><td>Remarks</td></tr>
<tr><td>Pharmacological Group</td><td>Angiotensin-Converting Enzyme Inhibitors (ACE-I)
Angiotension Receptor Blocker (ARB)
Anigiotensin Receptor Blocker Neprisylin Inhinitor (ARNI)</td><td></td><td></td><td></td></tr>
<tr><td>Indications and Dosage</td><td>Hypertension
<table>
<tr><th>Drug</th><th>Initial dose</th><th>Maksimum dose</th></tr>
<tr><th colspan="3">ACE-I</th></tr>
<tr><td>Captopril</td><td>25mg bd</td><td>50g tds</td></tr>
<tr><td>Enalapril</td><td>2.5mg od</td><td>20g bd</td></tr>
<tr><td>Lisinopril</td><td>5mg od</td><td>80mg od</td></tr>
<tr><td>Perindopril erbumine</td><td>2mg od</td><td>8mg od</td></tr>
<tr><td>Ramipril</td><td>2.5mg od</td><td>8mg od</td></tr>
<tr><th colspan="3">ARB</th></tr>
<tr><td>Candesartan</td><td>8mg od</td><td>16mg od</td></tr>
<tr><td>Losartan</td><td>50mg od</td><td>100mg od</td></tr>
<tr><td>Valsartan</td><td>80mg od</td><td>160mg od</td></tr>
</table>
Heart Failure
<table>
<tr><th>Drug</th><th>Initial dose</th><th>Maksimum dose</th></tr>
<tr><th colspan="3">ACE-I</th></tr>
<tr><td>Captopril</td><td>6.25mg bd</td><td>50mg tds</td></tr>
<tr><td>Enalapril</td><td>2.5mg od</td><td>10-20mg bd</td></tr>
<tr><td>Lisinopril</td><td>2.5-5.mg od</td><td>20-40mg od</td></tr>
<tr><td>Perindopril erbumine</td><td>2mg od</td><td>8-16mg od</td></tr>
<tr><td>Ramipril</td><td>2.5mg od</td><td>10mg od</td></tr>
<tr><th colspan="3">ARB</th></tr>
<tr><td>Candesartan</td><td>4-8mg od</td><td>32mg od</td></tr>
<tr><td>Losartan</td><td>25-50mg od</td><td>50-150mg od</td></tr>
<tr><td>Valsartan</td><td>40mg od</td><td>160mg bd</td></tr>
<tr><th colspan="3">ARNI</th></tr>
<tr><td>Sacubutril/ Valsartan</td><td>100mg bd</td><td>200mg bd</td></tr>
</table>
Stable Coronary Artery Disease
<table>
<tr><th>Drug</th><th>Initial dose</th><th>Maximum dose</th></tr>
<tr><th colspan="3">ACE-I</th></tr>
<tr><td>Captopril</td><td>6.25mg bd/tds</td><td>25-50mg tds</td></tr>
<tr><td>Enalapril</td><td>2.5-5mg od</td><td>20g bd</td></tr>
<tr><td>Lisinopril</td><td></td><td></td></tr>
<tr><td>Perindopril erbumine</td><td>2mg</td><td>8mg od</td></tr>
<tr><td>Ramipril</td><td>2.5mg od</td><td>10mg od</td></tr>
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</table>
To counsel based on specific medication’s indication and dosage as prescribed by the doctor</td><td></td><td></td><td></td></tr>
</table>

<table>
<tr><td>Method of Administration*</td><td>
<table>
<tr><th>Drug</th><th>Before Food</th><th>After Food</th><th>Compatible with RT administration</th><th>Consideration on fluid restriction</th></tr>
<tr><td>ACE-I</td><td>☑</td><td>☐</td><td>☑</td><td>☐</td></tr>
<tr><td>ARB</td><td>☑</td><td>☑</td><td>☑</td><td>☐</td></tr>
<tr><td>ARNI</td><td>☑</td><td>☑</td><td>☑</td><td>☐</td></tr>
</table>
Missed dose management:

Single daily dosing regime: missed dose taken upto until 12 h after the scheduled dosing

Twice daily dosing regime: missed dose taken up until 6 h after the scheduled intake

Do not stop taking your medication unless advised to do so by your prescriber
</td><td></td><td></td><td></td></tr>
<tr><td rowspan="14">Special Considerations</td><td>Pregnancy</td><td></td><td></td><td></td></tr>
<tr><td>Contraindicated</td><td></td><td></td><td></td></tr>
<tr><td>Breastfeeding</td><td></td><td></td><td></td></tr>
<tr><td>Contraindicated</td><td></td><td></td><td></td></tr>
<tr><td>Elderly</td><td></td><td></td><td></td></tr>
<tr><td>1. To start with lower dose and safely titrate to tolerated dose. Hypotensive effects are unpredictable in elderly.

Beers Criteria:
Avoid routinely using 2 or more RAS inhibitors, or a RAS inhibitor and potassium sparing diuretic, concurrently in those with chronic kidney disease Stage 3a or higher due to an increased risk of hyperkalemia.</td><td></td><td></td><td></td></tr>
<tr><td>Paediatric</td><td></td><td></td><td></td></tr>
<tr><td>Dose calculated based on body weight</td><td></td><td></td><td></td></tr>
<tr><td>Fasting</td><td></td><td></td><td></td></tr>
<tr><td>To refer to the latest advisory by religious authority</td><td></td><td></td><td></td></tr>
<tr><td>Others</td><td></td><td></td><td></td></tr>
<tr><td>Renal impairment: consider starting at low dose, monitor renal function and potassium level closely</td><td></td><td></td><td></td></tr>
<tr><td>Side Effects and their Management*</td><td>1. Dizziness,symptomatic hypotension, hyperkalaemia (To seek medical attention immediately)
2. For ACE-I induced cough: consider replacement with ARB
3. Angioedema: switching among RAASi is not recommended</td><td></td><td></td><td></td></tr>
<tr><td>Storage*</td><td>To store at room temperature</td><td></td><td></td><td></td></tr>
<tr><td>Others</td><td>ACE-i need to be stopped at least 36 hours prior to the initiation of ARNI</td><td></td><td></td><td></td></tr>
</table>

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Malaysian Clinical Practice Guidelines: Management of Heart Failure 2023 (5th Edition)
2. Malaysian Clinical Practice Guidelines Management of Hypertension 2018 (3rd Edition)
3. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.

Ribavirin

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Purine nucleoside analogue			
Indications and Dosage	For the treatment of chronic hepatitis C - Use as part of an appropriate combination regimen. • <75 kg: 1 g/day in 2 divided doses • ≥75 kg: 1.2 g/day in 2 divided doses • Dosage is individualized and titrated in accordance with the baseline characteristics of the disease and patient's liver status *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. To be taken orally with food to improve absorption 2. Must be taken at the same time everyday. 3. Capsules should not be opened, crushed, or broken. 4. Patients must complete the prescribed treatment regimen. This is to ensure treatment effectiveness and prevent resistance. 5. **DO NOT RUN OUT OF MEDICATION**. Refill the prescription before it finishes. ***Missed dose management:*** 1. If you miss a dose and it is less than 6 hours past your usual time, take the missed dose as soon as possible. 2. If more than 6 hours have passed since your usual dose, skip the missed dose and take the next dose at the usual time. 3. DO NOT take double doses to make up for the missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Contraindicated in pregnancy 2. Contraindicated in male patients whose partners are pregnant			
	Breastfeeding			
	It is not known whether ribavirin is excreted in human milk. Because of the potential for adverse reactions in nursing infants, a decision should be made either to discontinue nursing or not to initiate therapy.			
	Elderly			
	Use with caution in the elderly; may be more susceptible to adverse effects such as anemia. Monitor renal function closely.			
	Paediatric			

	Not recommended for paediatric patients less than 3 years old			
	Fasting			
	To take twice daily during *Sahur* and *Iftar*.			
	Renal Impairment			
	The dosage of ribavirin may be adjusted based on the patient's kidney function. 1. CrCl ≥ 50mL/min: No dosage adjustments necessary 2. CrCl 30-50mL/min: Alternate 200mg and 400mg every other day 3. CrCl < 30mL/min: 200mg once daily 4. Hemodialysis: 200mg once daily			
	Hepatic Impairment			
	1. Low initial dosage (600 mg/day) with titration as tolerated is recommended in patients with Child-Pugh Class C. 2. During treatment of Hepatitis C: ○ Asymptomatic increases in ALT <10-fold: Closely monitor with repeat testing every 2 weeks. If persistent elevation, consider stopping therapy ○ Symptomatic (weakness, nausea, vomiting, jaundice) increases in ALT <10-fold from baseline **OR** significantly increased bilirubin, alkaline phosphatase, or INR: Discontinue DAA ○ ≥10-fold increase in ALT from baseline: Discontinue DAA			
Side Effects and their Management*	1. Hemolytic anemia: Usually occurs within 1 to 2 weeks after starting therapy. a. Hematologic tests should be performed prior to starting therapy and at treatment weeks 2 and 4. 2. Birth defects - advise on contraception 3. Insomnia - to take higher doses in morning 4. Fatigue, nausea, rash, dry skin and itch 5. If patients experience any allergic reaction (e.g. rashes, breathlessness, swollen eyes), they should stop the medication immediately and seek immediate medical assistance.			
Storage*	1. Store below 30°C. 2. Keep medication in its original container, tightly sealed to protect from moisture and light. 3. Keep out of reach and sight of children.			
Others	**Drug-drug/ Drug-food Interactions:** 1. Patients should report all prescribed medications, over-the-counter medications, traditional medicines or drinks, and health supplements, both before starting therapy and during treatment. 2. They must stop taking any traditional or herbal medications, health supplements, or health drinks during treatment and should consult prescribers before starting any new medications. **Precautions:** 1. Advise female patients to use effective form of contraception during treatment and for 9 months			

	post-therapy 2. As for male patients with female partners, effective forms of contraception should be used during treatment and for 6 months post-therapy.			

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References:

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 20, 2025.
2. American Association of the Study of Liver Diseases/ Infectious Diseases Society of America (AASLD/IDSA). Recommendations for testing, managing, and treating hepatitis C. www.hcvguidelines.org. Accessed on January 20, 2025.
3. Ribavirin. (2024). MimsGateway. Retrieved January 21, 2025, from https://online1.mimsgateway.com.my/
4. F. Hoffmann-La Roche Ltd. (2015). Product information leaflet: Copegus. Retrieved January 21, 2025, from https://assets.roche.com/f/170883/x/a0bd86b4d0/copegus-pi-jul-2015.pdf
5. Uptodate 2024 Medical Apps Application. Wolters Kluwer. Accessed on January 22, 2025.

Rifampicin

Name :		**Unit :**		
● *Please tick (✔) **Yes** for correct instruction.* ● *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Rifamycin antibiotic			
Indications and Dosage	1. First-line treatment for leprosy (Paucibacillary & Multibacillary) (to be used in combination with other anti-leprosy agents) a. Adult: 600mg once a month b. Children: i) 10-14 years old : 450mg once a month ii) <10 years old or <40kg: 10mg/kg once a month 2. Contact chemoprophylaxis (to be administered as single dose only) a. Adult (age 15 years and above): 600mg b. Children: i) 10-14 years old: 450mg ii) 6-9 years old (body weight ≥20kg): 300mg iii) ≥2 years old (body weight <20kg)): 10-15mg/kg			
Method of Administration*	**Food** To be taken preferably before food. However, this can be disregarded if Direct Observation Therapy (DOT) is being performed. **RT administration** Capsule can be opened, its content mixed with water and administered through Ryles Tube **Missed dose** Take as soon as remembered, skip if near next dose; do not double dose **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Safe in pregnancy			
	Breastfeeding			
	Safe to be used in breastfeeding			
	Elderly			
	NA			
	Paediatric			
	Extemporaneous preparations with different concentrations can be compounded: ● Rifampicin syrup 10mg/ml ● Rifampicin suspension 25mg/ml ● Rifampicin suspension 50mg/ml			

	Fasting			
	NA			
	Others 1. Use in renal disease: Can be used without dose adjustment 2. Use in hepatic disease: Use with caution. Consider discontinuation if hepatic function worsens.			
Side Effects and their Management*	1. Orange discolouration of body fluids (e.g. urine, saliva, tears, sweat) 2. Rash and pruritus 3. GI upset (nausea, vomiting) 4. Flu-like symptoms 5. Hepatotoxicity (jaundice and hepatitis) *A*dvise patients to inform their healthcare providers if they experience any side effects.			
Storage*	1. Capsules should be kept at room temperature 2. 10mg/ml syrup should be refrigerated and protected from light; stable for 28 days (Extemp formulation 2015) 3. 25mg/ml and 50mg/ml oral suspensions can be stored at room temperature and protected from light; stable for 90 days (X-Temp Oral Suspension Master Formulation Sheets)			
Others	Monitor liver function closely if given with other potential hepatotoxic medications			

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References:

1. Manual Pengurusan Kusta Kebangsaan, Edisi 3. (2023). Kementerian Kesihatan Malaysia.
2. Extemporaneous Formulation. (2015). Kementerian Kesihatan Malaysia.
3. Senarai Ubat Galenikal dan Ekstemporaneous (GAEX) Dalam PhIS, updated on 5 Dec 2024
4. X-Temp Oral Suspension Master Formulation Sheets. (2023). Pharm-D.
5. Rifampin (rifampicin): Drug information. UpToDate Inc. Accessed March 2025.

Rilpivirine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Non-nucleoside reverse transcriptase inhibitors (NNRTIs)			
Indications and Dosage	Children and adolescent (aged >12 years and weighing >35 kg) and adult dose : 1. Indicated with other antiretroviral agents for the treatment of human immunodeficiency virus type 1 (H1V-1) infection in antiretroviral treatment-naive adult patients with a viral load is less than 100,000 copies/mL. a. The recommended dose is 25 mg once daily taken with meals. 2. Indicated in combination with cabotegravir as a complete regimen for short-term treatment of human immunodeficiency virus type 1 (HIV-1) infection in adults who are virologically suppressed (HIV-1 RNA <50 copies/mL) on a stable antiretroviral therapy (ART) regimen with no history of treatment failure and with no known or suspected resistance to either cabotegravir or rilpivirine. a. The recommended dose is 25 mg once daily taken with meals.			
Method of Administration*	Must administer a meal of at least 500 calories on a regular schedule (a protein drink alone does not constitute a meal) once a day. Antacids should be administered either at least 2 hours before or at least 4 hours after Rilpivirine. Enteral feeding/enteral tube: Swallow tablet whole with water, cannot crush. Tablets for oral suspension are available for dispersing in water for administration. If the patient missed a dose, the patient should take the missed dose as soon as possible with a meal. However,if it has been more than 12 hours since the last dose, skip the missed dose and continue the regular dosing schedule. Do not take a double dose to make up for a missed one. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Available data from the Antiretroviral Pregnancy Registry (APR) show no difference in the overall risk of birth defects for rilpivirine compared with the background rate for major birth defects of 2.7% in the Metropolitan Atlanta Congenital Defects Program (MACDP) reference population. 2. In animal reproduction studies, no adverse developmental outcomes were observed when drug was administered orally at exposure up to 15 (rats) and			

	70 (rabbits) times exposure in humans at recommended dose of 25 mg once daily.			
	Breastfeeding			
	It is not known whether Rilpivirine is secreted in human milk. Because of both the potential for HIV transmission and the potential for adverse effect events in nursing infants, mothers should be obstructed not to breastfeed if they are receiving Rilpivirine.			
	Elderly			
	None specifically to Rilpivirine.			
	Paediatric			
	Rilpivirine should not be administered to children less than 12 years of age and those who weigh less than 25 kg.			
	Fasting			
	Advice for nighttime dose taking.			
	Others			
	1. Mild to moderate renal impairment: No dose adjustment required. 2. Severe renal impairment or ESRD: Used with caution and with increased monitoring for adverse effects, plasma concentrations may be increased because of altered drug absorption, distribution and metabolism secondary to renal impairment. 3. Severe hepatic impairment (Child-Pugh Class C): Has not been studied.			
Side Effects and their Management*	1. Common side effects are rash along with fever, swelling of the face, lips, mouth, tongue or throat, blisters, trouble breathing or swallowing, mouth sores, redness or swelling of the eyes (conjunctivitis), pain on the right side of the stomach (abdominal) area, or dark colored urine. 2. Severe skin and hypersensitivity reactions reported with rilpivirine-containing regimens, immediately discontinue treatment if hypersensitivity or rash develop and closely monitor clinical status, including hepatic serum biochemistries. 3. May increase risk for depressive disorders if coadministration with other NNRTIs. Avoid use with other NNRTIs.			
Storage*	Store it at room temperature and away from light, excess heat and moisture.			
Others	1. Coadministration with drug (eg, CYP inducers like phenobarbital, dexamethasone, oxcarbazepine, phenytoin, or carbamazepine) where significant decreases in rilpivirine plasma concentrations may occur, which may result in loss of virologic response and possible resistance and drug-resistance to other NNRTIs. 2. Contraindicated with drugs that increase gastric pH (eg, esomeprazole, rabeprazole) that may decrease rilpivirine absorption and result in decreased rilpivirine plasma concentrations. Antacids should be			

	administered either at least 2 hours before or at least 4 hours after Rilpivirine. 3. More rilpivirine treated individuals with HIV-1 RNA >100,000 copies/mL at the start of therapy experienced virological failure compared to those with <100,000 copies/mL.			

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References:

1. Janssen Pharmaceuticals Inc (2023). EDURANT 25MG TABLET (Consumer Medication Information Leaflet
2. Wolter Kluwer (2024) . UpToDate - Rilpivirine. UpToDate,Inc.
3. Panel on Antiretroviral Therapy and Medical Management of Children Living with HIV (2024). Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection. Department of Health and Human Services. 2024. Available at https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv. Accessed December 2, 2024.

Rivaroxaban

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction or sequence.* • *Please tick (✔) **No** for incorrect instruction or sequence.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Factor Xa inhibitors			
Indications and dosage	1. *Prophylaxis of postoperative venous thromboembolism* Dosage: 10 mg once daily. Dose starts 6-10 hours after surgery. Treatment duration: 2 weeks (major knee surgery); 5 weeks (major hip surgery). 2. *Prophylaxis of stroke and systemic embolism in adult patients with non-valvular atrial fibrillation (AF) with one or more risk factors, such as congestive heart failure, hypertension, age≥75 yrs, diabetes mellitus, prior stroke or transient ischaemic attack.* Dosage: 20 mg OD (CrCl≥50 mL/min) or 15 mg OD (CrCl 15-49 mL/min) 3. *Deep vein thrombosis, Pulmonary embolism* Dosage: Treatment: Initially, 15 mg twice daily for 3 weeks. Maintenance: 20 mg once daily. Prevention of recurrence: 10 mg once daily, following completion of at least 6 months of anticoagulant therapy. May consider 20 mg daily in patients at high risk of recurrence. 4. *Prevention of atherothrombotic events* Dosage: In cases following an acute coronary syndrome: 2.5 mg twice daily in combination with aspirin alone, or aspirin plus clopidogrel or ticlopidine.			
Method of Administration*	1. Must be taken at the dose prescribed 2. Swallow the tablet whole with water 3. MUST be taken with food to maximise absorption 4. Aim to take at the same time each day 5. Do not stop taking your medication unless advised to do so by your prescriber 6. If a dose is missed, take it as soon as possible (do not double the dose) **Once daily dosing:** take within 12 hours of missed dose, if more than 12 hours, omit the dose and then continue at the usual time. **Twice daily dosing:** take within 6 hours of missed dose, if more than 6 hours, omit the dose and then continue at the usual time.			
Special Considerations	**Pregnancy**			
	Use Rivaroxaban with caution in pregnant women due to the potential for obstetric haemorrhage and/or emergent delivery. Promptly evaluate signs and symptoms of blood loss.			

	Breastfeeding			
	Discontinue drug or discontinue nursing			
	Elderly			
	Beers Citeria: 1. At doses used for long-term treatment of VTE or nonvalvular atrial fibrillation, rivaroxaban appears to have higher risk of major bleeding and GI bleeding in older adults than other DOACs, particularly apixaban 2. Rivaroxaban may be reasonable in special situations, for example when **once-daily dosing** is necessary to facilitate medication adherence. ** alternative patient on enteral tube feeding			
	Paediatric			
	Rivaroxaban was not studied and therefore dosing cannot be reliably determined or recommended in children less than 6 months who were less than 37 weeks of gestation at birth, had less than 10 days of oral feeding, or had a body weight of less than 2.6 kg.			
	Others			
	1. Renal impairment: To avoid usage when CrCl ≤50 mL/min 2. Moderate to severe hepatic impairment (Child-Pugh class B and C): Contraindicated.			
Side Effects and their Management*	1. The most concerning side effect is the bleeding, which is the result of the blood being too thin. ● Bruising ● Nosebleeds ● Bleeding gums (careful when brushing teeth – use soft toothbrush) ● Pink or brown urine ● Red or black stools ● Vomiting blood or material that looks like coffee grounds 2. Allergic reactions ● Itching or hives ● Swelling in face, hands, mouth, or throat ● Difficulty breathing or chest tightness ● Skin rash			
Storage*	1. Store at room temperature between 15°C to 30°C			
Others	1. Avoid activities that may cause bleeding/bruising (acupuncture, massage, cupping/'bekam', aggressive sports). 2. Monitoring of creatinine clearance should be done at least ○ Once or twice a year for patients who had CrCl ≥ 50ml/min ○ Every 6 months for patients who had CrCl ≤ 50ml/min 3. Drug-drug interactions : ○ Interactions below lead to an increased bleeding risk – patients should be monitored closely for signs of bleeding and anaemia. ■ Concomitant use of systemic azole			

	antimycotics e.g. ketoconazole, itraconazole, voriconazole, posaconazole ■ HIV protease inhibitors ■ Other anticoagulants ■ NSAIDs (e.g. ibuprofen, naproxen, diclofenac and platelet aggregation inhibitors(e.g. aspirin, clopidogrel) ○ Interactions below lead to a decrease in anticoagulant concentration therefore treatment may be suboptimal ■ Concomitant use strong CYP3A4 inducers e.g. phenytoin, carbamazepine, phenobarbital 4. Drug-food interaction : ○ Decreased serum concentration with St. John's wort			

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References:

1. MIMS Malaysia. (2024). Rivaroxaban In MIMS Online. Retrieved 26 November, 2024, from https://www.mims.com/malaysia/drug/info/rivaroxaban?mtype=generic
2. Xarelto Product Leaflet
3. Anticoagulation MTAC (AC-MTAC) Protocol 2nd Edition
4. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.

Salicylic Acid, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Keratolytic Agent			
Indications and Dosage	Salicylic Acid 2-10% Cream/Ointment 1. Indication: Seborrhoeic dermatitis, scalp, psoriasis & hyerkeratotic skin disorders.Dosage:Apply sparingly to the affected area 2-3 times daily Salicylic Acid 20% Ointment 2. Indication: Plantar warts. Dosage: Apply daily.May need to continue up to 3 months			
Method of Administration*	Salicylic Acid 2-10% Cream/Ointment NA Salicylic Acid 20% Ointment: a) Before using Salicylic Acid 20% ointment, moisten or soak the wart in warm water for but 5 minutes to help soften the treatment area. b) Dry thoroughly. c) Use the emery board to remove the top dead skin layer of the skin. d) Protect surrounding healthy skin (eg white soft paraffin or specifically designated plaster). e) Apply the ointment onto the affected area.			
Special Considerations	**Pregnancy**			
	1. Should be only used only if potential benefit outweighs the potential risk to the fetus. 2. It should not be used extensively in large amounts or prolonged periods in pregnant women.			
	Breastfeeding			
	1. Should be used cautiously in nursing mothers. If used by nursing mothers, should not be used on the chest area to avoid accidental contamination of the child.			
	Elderly			
	1. Used cautiously in elderly.			
	Paediatric			
	1. Avoid prolonged use over large areas; may result in salicylism. 2. Limit application area in children <12 years of age. 3. Use caution in children with varicella or influenza.			
	Fasting			
	To refer to the latest advisory by religious authority			

	Others			
	NA			
Side Effects and their Management*	Side Effects: 1. Contact dermatitis or skin irritation; flushing, unusually warm skin, burning sensation, pruritus and stinging of skin. 2. Skin ulceration 3. Excessive drying and peeling of skin Management: 1. Do not use large amounts or longer than directed. 2. If irritation or sensitisation develops, seek medical advice.			
Storage*	1. Keep the tube tightly closed. 2. Store below 30C. 3. Protect from heat, moisture and light.			
Others	1. Apply carefully onto warts (affected area) and not the surroundings. 2. Avoid using an open wound or broken area. 3. Prolonged use or application to large areas (risk for salicylism). 4. Concurrent drug therapy issues: a) Do not combine use of topical salicylic acid with use of other salicylates or drugs that can increase salicylate serum concentrations; systemic absorption following topical use may occur and lead to toxicity.			
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References:

1. Formulari Ubat KKM (FUKKM). (2024). (Version 241030.001). Retrieved from https://i.pharmacy.gov.my/fukkm/1260, https://i.pharmacy.gov.my/fukkm/1261, https://i.pharmacy.gov.my/fukkm/1262
2. Menter, A. (2009), Salicylic acid: Drug information. UpToDate. Retrieved from https://www.uptodate.com/contents/topical-salicylic-acid-drug-information?search=salicylic%20acid&source=panel_search_result&selectedTitle=1%7E72&usage_type=panel&kp_tab=drug_general&display_rank=1#F219767

Selective Norepinephrine Reuptake Inhibitor (SNRI)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Serotonin Norepinephrine Reuptake Inhibitor (SNRI)** Duloxetine Venlafaxine Desvenlafaxine			
Indications and Dosage	1. **Duloxetine:** a. Major Depressive Disorder, Diabetic peripheral neuropathic pain:Initial: 60 mg once daily up to a maximum dose of 120mg/day (in divided doses) b. Generalised Anxiety Disorder Initial: 30 mg once daily up to a usual recommended dose of 60 mg/day **2. Venlafaxine:** a. Major Depressive Disorder, Generalised Anxiety Disorder, Social Anxiety Disorder: Initial:75mg OD, may gradually increase based on response and tolerability to a maximum 225 mg/day (severe depression, max: 375mg/day) b. Panic Disorder: Initial: 37.5mg/day, may gradually increase based on response and tolerability to a maximum 225mg/day **3. Desvenlafaxine:** a. Major Depressive Disorder Recommended: 50mg once daily. The maximum dose should not exceed 200 mg/day. Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**1. Duloxetine Delayed Release Capsule:** Must be swallowed whole with fluid and not divided, crushed, chewed. Can be taken with or without food **2. Venlafaxine Extended-Release Capsule:** It is recommended that venlafaxine extended-release capsules can be taken with food. Capsule must be swallowed whole with fluid and not divided, crushed, chewed or dissolved or it may be administered by carefully opening the capsule and sprinkling the entire contents on a spoonful of applesauce. This drug/food mixture should be swallowed immediately without chewing and followed with a glass of water to ensure complete swallowing of the pellets. 3. **Desvenlafaxine Extended-Release Capsule:** Must be swallowed whole with fluid and not divided, crushed, chewed. Can be taken with or without food **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Risk of treatment to the child must be weighed against the risk			

	of no treatment to the mother and child. Inform your doctor if you are planning for pregnancy or become pregnant while taking antidepressants.			
	Breastfeeding			
	In general, a relative infant dose (RID) below 10% of the average maternal level of an antidepressant is considered safe. Reported RID 1. Duloxetine: 0.14 - 0.82% 2. Venlafaxine: 3.20 - 8.10% Only administer Desvenlafaxine to breastfeeding women if the expected benefits outweigh any possible risk			
	Elderly			
	Beers Criteria: 1) SNRI may exacerbate or cause SIADH or hyponatremia; monitor sodium level closely when starting or changing dosages in older adults. 2) Avoid SNRI in patients with a history of fall or fracture; unless safer alternatives are not available. SNRI may increase fall risk. 3) Avoid concomitant use of 3 or more CNS-active agents 4) **Duloxetine:** Avoid in elderly with CrCl less than 30ml/min due to increased GI adverse effect. STOPP/Start Criteria: 1) **Avoid** Serotonin/noradrenaline reuptake inhibitors (SNRI's e.g., venlafaxine, duloxetine) and severe hypertension i.e., systolic blood pressure > 180 mmHg +/- diastolic blood pressure > 105 mmHg (likely to make hypertension worse).			
	Pediatrics			
	Safety and efficacy in pediatrics patients have not been established.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Renal Impairment			
	Duloxetine: eGFR > 30ml/min : there is no dosage adjustment eGFR 30mL/min or less: avoid use **Venlafaxine**: eGFR 30 – 89 mL/min: decrease total daily dose by 25% t0 50% eGFR 30mL/min or less: reduce total daily dose by 50% or more **Desvenlafaxine:** eGFR 30mL/min or less: 25mg daily			

	Hepatic Impairment			
	Duloxetine: Avoid use **Venlafaxine**: Decrease total daily dose by 50% **Desvenlafaxine**: No adjustment			
Side Effects and their Management*	1. Hypertension: Check blood pressure before initiating the treatment and regularly monitor during treatment. (more common with venlafaxine & desvenlafaxine) 2. Anticholinergic: a. Blurred vision(more common with desvenlafaxine & venlafaxine), constipation, urinary retention and dry mouth b. Constipation can be managed by physical activity, fluid and fibre intake or laxatives. 3. Neurologic a. Anxiety: Contact your prescriber if intolerable b. Headache, dizziness, fatigue, weakness, insomnia, agitation, nervousness, restlessness. May require dosage adjustment. Inform prescriber at next appointment c. Sedation: Avoid activity requiring mental alertness or coordination. Do not drink alcohol during treatment with this medicine as it might increase the sedative effect. Do not drive or work with tools or machinery if affected. Inform prescriber at next appointment. 4. Gastrointestinal: a. Nausea & vomiting: consider taking doses with food b. Heartburn, anorexia(more common with desvenlafaxine & venlafaxine), diarrhea, abdominal discomfort such as gastric or bloatedness c. Weight Gain: advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise. 5. Sexual Dysfunction: Decrease libido, delayed ejaculation, anorganism and erectile dysfunction a. Inform prescriber at next appointment 6. Hyponatremia and SIADH: Rare but potentially fatal side effects a. Signs and Symptoms: headache, difficulty concentrating, memory changes, confusion, weakness and unsteadiness on your feet. In severe or more sudden cases, symptoms can include: hallucinations (seeing or hearing things that are not real), fainting, seizures and coma b. Contact your prescriber and restrict water intake 7. Sweating (more common with desvenlafaxine & venlafaxine) 8. Liver failure with or without jaundice Most side effects are immediate but often go away with time.			

	It may take a few weeks before you feel any improvement. Therefore, do not change the dose of the medicine or stop taking the medicine without consulting your doctor first. Instruct patient to immediately report worsening depression, suicidal ideation, especially at initiation of therapy (children and adolescents are at higher risk for these effects during the first few months of therapy).			
Storage*	Store below 30'c. Protect from light and moisture.			
Others	**1. Significant Pharmacodynamic Interactions** a. Risk of life-threatening Serotonin syndrome when SSRIs co-prescribed with serotonergic drugs. (e.g. tramadol, ondansetron, sumatriptan, MAOI) **Signs and Symptoms** i. Mild: Insomnia, anxiety, nausea, diarrhea, hypertension, tachycardia, hyper-reflexia ii. Moderate:Agitation, myoclonus, tremor, mydriasis, flushing, diaphoresis, low fever (<38.5°C) iii. Severe: Severe hyperthermia, confusion,rigidity, respiratory failure, coma, death **Management:** Seek immediate medical attention if you experience any of the symptoms mentioned above. b. Increase risk of upper GI bleeding if SSRIs are used together with Aspirin and NSAID due to inhibition of platelet aggregation. Watch out for black or tarry stools, easily bleeding gums or spontaneous bruises c. Risk of hyponatremia especially if SSRIs are used with drugs such as diuretics. **2. Discontinuation Syndrome** a. SSRIs should not be stopped abruptly as this may cause discontinuation/ withdrawal symptoms. The symptoms are usually mild and selflimiting (e.g. include flu-like symptoms, insomnia, nausea, imbalance, sensory disturbances and hyperarousal), but can occasionally be severe and prolonged. b. The patients must inform prescribers if they wish to change or stop medications			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

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Selective Serotonin Reuptake Inhibitors (SSRIs) / Multimodal Serotonin Modulator

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Selective Serotonin Reuptake Inhibitors (SSRIs)** Fluoxetine Sertraline Fluvoxamine Escitalopram **Multimodal serotonin modulator** Vortioxetine			
Indications and Dosage	**1. Escitalopram :** a. Major depression, Social anxiety disorder (social phobia), Obsessive-compulsive disorder (OCD), Generalised Anxiety Disorder (GAD): Adult Initial 10mg/day, may gradually increase based on response and tolerability to a maximum dose of 20mg/day b. Treatment of panic disorder with or without Agoraphobia: Adult Initial: 5mg/day, may gradually increase based on response and tolerability to a maximum dose of 20mg/day **2. Fluvoxamine** a. Depression: Adult Initial: 50 - 100 mg daily in the evening, increased if necessary to 300 mg daily b. Obsessive Compulsive Disorder: Adult: 50mg per day for 3 – 4 days, increase gradually up to a maximum of 300 mg/day c. Doses over 150 mg should be given in 2 -3 divided doses **3. Fluoxetine** a. Depression, Obsessive-compulsive disorder: Adult Initial 20mg/day may gradually increase based on response and tolerability to a maximum dose of 80 mg/day **4. Sertraline** a. Major depression, obsessive-compulsive disorder (OCD) Initial 50mg/day may gradually increase based on response and tolerability to a maximum dose of 200mg/day b. Panic disorder, Social anxiety disorder (social phobia), Post-traumatic stress disorder Initial 25mg/day then after one week, the dose should be increased to 50 mg/day. Thereafter, may gradually increase based on response and tolerability to a maximum dose of 200mg/day **5. Vortioxetine** a. Major depression			

	Adult Initial:10mg/day may gradually increase based on response and tolerability to a maximum dose of 20mg/day Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor.**			
Method of Administration*	**General Instructions**: 1. Must be swallowed whole with water, and must not be chewed or crushed. **Specific Instructions**: 1. Fluoxetine should be taken in the morning due to its activating properties. 2. Fluvoxamine is preferably taken in the evening as it tends to be sedative. Doses > 150 mg to be taken at divided dose with higher dose taken at evening. 3. Sertraline and Escitalopram, generally not sedating, can be taken once daily either morning or night. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Most SSRIs including Escitalopram, Fluoxetine, Fluvoxamine and Sertraline (except for Paroxetine Category D) are classified as **Category C** by FDA Pregnancy Risk Category. Risk of treatment to the child must be weighed against the risk of no treatment to the mother and child. Inform your doctor if you are planning for pregnancy or become pregnant while taking antidepressants.			
	Breastfeeding			
	In general, a relative infant dose (RID) below 10% of the average maternal level of an antidepressant is considered safe. Reported RID 1. Escitalopram: 4.50 - 6.40% 2. Fluoxetine: 2.40 - 6.80% 3. Fluvoxamine: 0.20 - 0.62% 4. Sertraline: 0.50 - 3.70%			
	Elderly			
	Dosing in elderly: 1. Escitalopram: Starting dose 5 mg/day. Maximum 10 mg/day. Risk of dose related increase in QTc prolongation. 2. Fluoxetine: Lower initial dose and/or longer dosing interval recommended. 3. Sertraline: No dose adjustment required. Beers Criteria: 1) SSRI may exacerbate or cause SIADH or hyponatremia; monitor sodium level closely when starting or changing dosages in older adults. 2) Avoid SSRI in patients with a history of fall or fracture; unless safer alternatives are not available. Avoid concomitant use of 3 or more CNS-active agents as may increase risk of fall.			

	3) Avoid SSRI if used together with warfarin. SSRI may increase the risk of bleeding. Caution if used together with other class of drugs that may induce bleeding (e.g. NSAIDS, antiplatelet) STOPP/Start Criteria: 1) Selective serotonin reuptake inhibitors (SSRIs) in combination with Vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitor with a previous history of major haemorrhage (increased risk of bleeding due to antiplatelet effects of SSRIs). 2) Selective serotonin re-uptake inhibitors (SSRI's) with current or recent significant hyponatraemia i.e., serum Na+ < 130 mmol/l (risk of exacerbating or precipitating hyponatraemia). 3) Selective serotonin re-uptake inhibitors (SSRI's) with current or recent significant bleeding (risk of exacerbation or recurrence of bleeding due to antiplatelet effects of SSRI's).			
	Paediatric			
	1) The safety and efficacy of Fluoxetine younger than 6 years of age have not been established. 2) The safety and efficacy of Fluvoxamine in pediatric patients younger than 8 years of age have not been established except for the treatment of OCD. 3) The safety and efficacy of Sertraline in pediatric patients younger than 6 years of age have not been established except for the treatment of OCD. 4) The safety and efficacy of Vortioxetine in pediatric patients have not been established.			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Renal Impairment			
	1. Dose adjustments may be required in pre-existing or newly developed renal or hepatic impairment. Please contact your prescriber. 2. Escitalopram, Fluvoxamine, Vortioxetine: No dosing adjustment required. 3. Fluoxetine: Max daily dose 20 mg (ESRD) 4. Sertraline: Starting dose 25 mg. Maximum 150 mg/day (ESRD)			
	Hepatic Impairment			
	1. Dose adjustments may be required in pre-existing or newly developed renal or hepatic impairment. Please contact your prescriber. 2. Escitalopram: Maximum recommended dose 10 mg/day 3. Fluoxetine: Liver impairment can affect the elimination of fluoxetine. 4. Fluvoxamine: It may be appropriate to modify the initial dose and the subsequent dose titration for these patient groups. 5. Sertraline: Use in moderate (Child-Pugh score 7 to 10)			

	or severe hepatic impairment (Child-Pugh score 10-15) is not recommended. 6. Vortioxetine: No dosing adjustment required.			
Side Effects and their Management*	1. Neurologic a. Anxiety: Contact your prescriber if intolerable b. Headache, dizziness, fatigue, weakness, insomnia (more common with fluoxetine), agitation, nervousness, restlessness. May require dosage adjustment. Inform prescriber at next appointment c. Sedation: Avoid activity requiring mental alertness or coordination. Do not drink alcohol during treatment with this medicine as it might increase the sedative effect. Do not drive or work with tools or machinery if affected. Inform prescriber at next appointment. 2. Gastrointestinal: a. Nausea & vomiting: consider taking doses with food (more common with Sertaline) b. Heartburn, anorexia, diarrhea, abdominal discomfort such as gastric or bloatedness c. Weight Gain: advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise. 3. Sexual Dysfunction: Decrease libido, delayed ejaculation, anorgasmia and erectile dysfunction a. Inform prescriber at next appointment 4. Anticholinergic: a. Constipation can be managed by physical activity, fluid and fibre intake or laxatives. 5. Hyponatremia and SIADH: Rare but potentially fatal side effects a. Signs and Symptoms: headache, difficulty concentrating, memory changes, confusion, weakness and unsteadiness on your feet. In severe or more sudden cases, symptoms can include: hallucinations (seeing or hearing things that are not real), fainting, seizures and coma b. Contact your prescriber and restrict water intake 6. QTc Prolongation a. Escitalopram associated with higher risk of QTc prolongation (dose related) 7. Hyperhidrosis: abnormally excessive sweating that's not necessarily related to heat or exercise (common in Vortioxetine) a. Inform your prescriber at next appointment Most side effects are immediate but often go away with time. It may take a few weeks before you feel any improvement. Therefore, do not change the dose of the medicine or stop taking the medicine without consulting your doctor first. Instruct patient to immediately report worsening depression, suicidal ideation, especially at initiation of therapy (children and			

<table>
<tr><td></td><td>adolescents are at higher risk for these effects during the first few months of therapy).</td><td></td><td></td><td></td></tr>
<tr><td>Storage*</td><td>Store at a temperature below 30°C.</td><td></td><td></td><td></td></tr>
<tr><td>Others</td><td>
1. Possible Drug Interactions
a. Cytochrome P450 Interaction with SSRIs
<table>
<tr><th>Isoform</th><th>Drugs</th><th>Degree of Inhibition</th><th>Clinical Relevance</th></tr>
<tr><td>1A2</td><td>Fluvoxamine</td><td>Potent</td><td>Avoid or use caution with Clozapine, Warfarin and Methylxanthines.</td></tr>
<tr><td>2C19</td><td>Fluoxetine
Fluvoxamine</td><td>Moderate</td><td>Caution with concomitant warfarin due to increased risk of bleeding. Use with caution with medication metabolised by CYP2C19 (e.g Diazepam, Phenytoin).</td></tr>
<tr><td>2D6</td><td>Fluoxetine

Escitalopram
Sertraline</td><td>Potent

Weak-Moderate
Weak-Moderate (> 150 mg/day)</td><td>Avoid or use with caution with medications solely metabolised by CYP2D6 (e.g Metoprolol).

Avoid coadministration of potent CYP2D6 inhibitors with Tamoxifen or use cautiously as the efficacy of Tamoxifen may be reduced.</td></tr>
<tr><td>3A4</td><td>Fluvoxamine</td><td>Weak-Moderate</td><td>Avoid or use with caution with medication metabolised by CYP3A4 (e.g Simvastatin, other HMG-CoA reductase inhibitors).</td></tr>
</table>
2. Significant Pharmacodynamic Interactions
a. Risk of life-threatening Serotonin syndrome when SSRIs co-prescribed with serotonergic drugs. (e.g. tramadol, ondansetron, sumatriptan, MAOI)
Signs and Symptoms
i. Mild: Insomnia, anxiety, nausea, diarrhea, hypertension, tachycardia, hyper-reflexia
ii. Moderate:Agitation, myoclonus, tremor, mydriasis, flushing, diaphoresis, low fever (<38.5°C)
iii. Severe: Severe hyperthermia, confusion,rigidity, respiratory failure, coma, death
Management:
Seek immediate medical attention if you experience any of the symptoms mentioned above.
b. Increase risk of upper GI bleeding if SSRIs are used together with Aspirin and NSAID due to inhibition of platelet aggregation. Watch out for black or tarry stools, easily bleeding gums or spontaneous bruises
c. Risk of hyponatremia especially if SSRIs are used with drugs such as diuretics.

3. Discontinuation Syndrome
a. SSRIs should not be stopped abruptly as this may cause discontinuation/ withdrawal symptoms. The symptoms are usually mild and selflimiting (e.g. include flu-like
</td><td></td><td></td><td></td></tr>
</table>

	symptoms, insomnia, nausea, imbalance, sensory disturbances and hyperarousal), but can occasionally be severe and prolonged. b. The patients must inform prescribers if they wish to change or stop medications			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

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Sevelamer

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Drugs for treatment of hyperkalemia and hyperphosphatemia Sevelamer			
Indications and Dosage	Control of hyperphosphataemia in adult patients receiving haemodialysis and peritoneal dialysis. a. Starting dose is one or two 800mg tablets three times per day with meals.Adjust by one tablet per meal in two weeks interval as needed to obtain serum phosphorus target (1.13 to 1.78mmol/L). **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	To swallow whole **WITH** meals. **DO NOT** crush, chew or break. **Missed dose management:** If a dose is missed, it should be skipped. Do not double the dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Sevelamer is not absorbed systemically, therefore fetal risk is minimal. But may reduce maternal absorption of folic acid and fat soluble vitamins.			
	Breastfeeding			
	Sevelamer is not absorbed systemically therefore it is not expected to cause exposure to a breastfeeding infant.			
	Elderly			
	1. Dose selection for elderly patients should be cautious, usually starting at the lower end of the dosing range. 2. Swallowing difficulties (dysphagia): May benefit from alternative formulations.			
	Paediatric			
	Not recommended to be used in children that are below 6 years of age, have a BSA below 0.75 m2 , or that have mild hyperphosphatemia.			
	Fasting			
	1. Adjust the timing of administration according to the fasting schedule during Ramadhan; to take during Sahur and Iftar. 2. If more than two doses have been prescribed, consult with your healthcare provider to adjust your phosphate binder administration.			
	Others			

	No dosage adjustment provided in the manufacturer's labelling			
Side Effects and their Management*	**Serious adverse events:** Cases of dysphagia and esophageal tablet retention have been reported in association with use of the tablet formulation of Sevelamer, some requiring hospitalization and intervention. Cases of bowel obstruction and perforation have also been reported with Sevelamer use. Constipation may be a preceding symptom. **Others:** Endocrine & metabolic: Metabolic acidosis Gastrointestinal: Abdominal pain, constipation, flatulence, peritonitis Dermatologic: Pruritus, skin rash			
Storage*	1. Store at room temperature. 2. Store in a dry place and protect from moisture. 3. Keep out of reach of children.			
Others	**Precautions:** 1. Use with caution in patients with GI motility disorder **Contraindications:** 1. Patients with hypophosphatemia, patients with GI disorders including dysphagia, swallowing disorders, severe GI motility disorders (including severe constipation) or major gastrointestinal surgery, patients hypersensitive to sevelamer or one of the other ingredients in the product. **Drug- drug interactions:** 1. Ciprofloxacin: Decrease bioavailability of ciprofloxacin by ~50% when taken simultaneously. Take ciprofloxacin at least 2 hours before or 6 hours after sevelamer. 2. Immunosuppressants: Reduce concentrations of cyclosporin, mycophenolate mofetil and tacrolimus. These drugs should be taken at least 1 hour before or 3 hours after sevelamer. 3. Levothyroxine: May increase thyroid stimulating hormone (TSH) levels when taken together with levothyroxine. Separate administration of sevelamer and levothyroxine by at least 4 hours.			
Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered. **Remarks:** **Reviewed by: Name & Signature** **Date:**				

***Mandatory for validation / peer review**

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Sodium-Glucose Cotransporter 2 (SGLT2) Inhibitor (SGLT2-i)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antidiabetic agent, Sodium-Glucose Cotransporter 2 (SGLT2) Inhibitor			
Indications and Dosage	1. Add-on combination therapy in combination with other glucose-lowering medicinal products including insulin, to improve glycaemic control in adult patients with type 2 diabetes mellitus when these, together with diet and exercise, do not provide adequate glycaemic control. *Dapagliflozin: 10mg once daily* *Empagliflozin: 10mg once daily (starting dose), 25mg once daily (maximum dose)* 2. To reduce the risk of hospitalization for heart failure in adults with type 2 diabetes mellitus and established cardiovascular disease (CVD). *Dapagliflozin: 10mg once daily* *Empagliflozin: 10mg once daily (starting dose), 25mg once daily (maximum dose)* 3. To reduce the risk of cardiovascular death and hospitalization for heart failure in adults with heart failure (NYHA class II - IV) with reduced ejection fraction. *Dapagliflozin: 10mg once daily* *Empagliflozin: 10mg once daily* *4.* For cardiorenal protection in adult patients with chronic kidney disease, with or without Type 2 Diabetes Mellitus, with eGFR≥25mL/min/1.73m2 and urine albumin creatinine ratio (UACR) ≥200-5,000mg/m2 (or the equivalent in uPRC/u-dipstick) receiving stable treatment with ACEi or ARB (unless they are contraindicated or not tolerated). *Dapagliflozin: 10mg once daily*			
Method of Administration*	**Administration** 1. Swallow the tablet whole with water. 2. Do not chew, crush or split the tablet (no data available on enteral feeding). 3. Take the tablet with or without food. 4. Take it once a day, in the morning. **Missed dose management:** 1. Take a missed dose as soon as you remember it. 2. If it is close to the time for your next dose (<12 hours until the next dose), skip the missed dose and take the next dose at the usual time. 3. Do not take a double dose to make up for a forgotten dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special	**Pregnancy**			

Consideration	1. Pregnancy Category: C (should be avoided especially during 2nd or 3rd trimester of pregnancy) 2. To discontinue medications once pregnancy is detected as a precautionary measure. Animal studies have shown adverse effects on postnatal development.			
	Breastfeeding			
	Should not be used while breastfeeding due to insufficient data on the excretion of SGLT2-i into human breast milk.			
	Elderly			
	MALPIP 1. Higher incidence of volume depletion-related adverse reactions (hypotension., acute kidney injury). To assess volume status and blood pressure before initiating treatment. Beers Criteria 1. Use with caution. Monitor patient for urogenital infection and ketoacidosis (increased risk of urogenital infections and euglycaemic diabetic ketoacidosis in elderly).			
	Paediatric			
	1. Empagliflozin can be used in children aged 10 years and older for the treatment of type 2 diabetes. No data are available in children below 10 years of age. Not recommended for children and adolescents under 18 years of age for the treatment of heart failure or for the treatment of chronic kidney disease, because it has not been studied in these patients. 2. Dapagliflozin is not to be used in children and adolescents under 18 years of age.			
	Fasting			
	1. No dosage adjustment is needed during fasting 2. Advisable to be taken after iftar. 3. Ensure good hydration is maintained **To refer to the latest advisory by religious authority**			
	Others			
	1. Liver impairment a. No dosage adjustment is required. b. Severe: no data (Dapagliflozin) 2. Renal impairment a. More likely to experience hypotension. b. Higher risk for acute kidney injury. c. Increased risk of urinary tract infection. d. Contraindicated use in ESRF and dialysis patients. 3. SGLT2 -inhibitor should not be used in Type 1 Diabetes Mellitus. 4. Use with caution in patients who may be at higher risk of DKA (i.e very low carbohydrate diet, patients with conditions that restricted food intake, severe dehydration, or conditions that increased insulin requirements due to acute medical illness, surgery or alcohol abuse). If DKA is suspected, discontinue use of SGLT2 -inhibitor			

Side Effects and their Management*	1. Polyuria, dehydration and hypotension - The degree of polyuria is typically higher in people with more marked hyperglycaemia. - Management: a. Maintain adequate hydration (mindful of any fluid restrictions required for renal disease or heart failure) b. For elderly patients or those on other antihypertensives, blood pressure should be reassessed one to two weeks after SGLT2 inhibitor commencement 2. Urinary tract infections - Mostly mild to moderate - Occurs more frequently in female patients - Symptoms : a. Burning or pain during urination b. Frequent urination c. Strong-smelling urine d. Fever, nausea & vomiting - General advice to reduce the likelihood of urinary tract infections: a. Maintain good genital hygiene. b. Wash genital area from front to back and wipe genital organs with clean clothes c. Do not hold urine. 3. Genital mycotic infections - Mostly mild to moderate - Symptoms: a. Swelling in the genital area b. Pain/ itchiness in the genital area c. Foul-smelling vaginal or penile discharge - General advice to reduce the likelihood of genital infections: a. Clean the private part thoroughly following urination, defecation or sexual intercourse. b. Wash the genital area from front to back and wipe genital organs with clean clothes. c. Change sanitary pads or adult diapers frequently. d. Seek medical attention if there are symptoms of urogenital infection 4. Diabetic ketoacidosis (DKA) / Euglycemic ketoacidosis - This can occur due to dehydration - Signs and symptoms: a. Unusual fatigue b. Nausea, vomit c. Frequent urination d. Fruity smelling breath e. Shortness of breath - General advice: a. Temporarily stop taking SGLT2-i when unwell (vomit/diarrhoea/fever) or when unable to eat/drink as usual. Resume taking SGLT2-i once able to eat/drink as usual. b. Interruption of treatment should be considered in patients who are hospitalized for major surgical procedures, serious infections or acute serious medical illness. c. Drink plenty of fluid to avoid dehydration.			
Storage*	Store at room temperature (<30ºC) in a dry place.			
Others	1. Use with caution in patients with an elevated risk of volume depletion i.e marked hyperglycaemia, impaired renal function, elderly patients and concomitant use of			

	volume-depleting medications (e.g. diuretics, ACE-inhibitors) as risk of dehydration and hypotension may increase. 2. Risk of hypoglycaemia in patients taking concurrent insulin or insulin secretagogues. 3. Concomitant use of an SGLT2 inhibitor with lithium may decrease serum lithium concentrations. Monitor serum lithium concentration more frequently during SGLT2 inhibitor initiation and dosage changes. 4. The tablets contain lactose. Patients with rare hereditary problems of galactose intolerance, Lapp lactase deficiency or glucose-galactose malabsorption should not take the medications. 5. Patients on SGLT2 inhibitors will test positive for glucose in their urine. 6. Patients who present with pain or tenderness, erythema, or swelling in the genital or perineal area, with or without fever or malaise, should be evaluated for necrotizing fasciitis. If suspected, SGLT2 inhibitor should be discontinued and prompt treatment should be instituted			

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Remarks:

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Sodium Valproate

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Mood Stabiliser			
Indications and Dosage	1. Treatment and prevention of mania associated with bipolar disorders a. Initial dose: Fixed dose method: 500 - 1000mg/day in divided doses. Loading dose method 20mg-30mg/kg in divided doses (Therapeutic range in mania 50 -125 mg/L) b. Usual maintenance dose range: 1g/day - 2.5g/day (suggested max; 3g/day; Therapeutic range 50 -100 mg/L) 2. Epilepsy a. Initially 15mg/kg then increased by 5-10 mg/kg at weekly intervals until seizures are controlled. Max 60 mg/kg daily administered in divided doses if total daily dose exceeds 250 mg			
Method of Administration*	1. Sodium valproate enteric coated 200mg and and Epilim Chrono Controlled Release 500mg a. Tablets should be swallowed whole.Do not crush or chew the tablets. b. Tablets are hygroscopic. The tablet should not be removed from the foil or container until immediately before they are taken. c. Epilim EC tablet should be taken in divided doses. d. Epilim Chrono can be taken once or twice daily 2. Missed dose management: If you forget to take a dose, take it as soon as you remember. Do not take two doses at once. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Valproate can be harmful to unborn children when taken by a woman during pregnancy. 2. Men and women taking Valproate should practise effective contraception methods. 3. Talk to your doctor immediately if you plan to have a baby or become pregnant while taking this medication. 4. Patient card for sodium valproate may be issued to patient as educational material			
	Breastfeeding			
	1. Valproate is present in breast milk & is considered compatible with breastfeeding. However, the potential benefits of breastfeeding should be weighed against the potential risk of adverse effects occurring in the			

	infant. 2. If medication is continued, infants exposed to valproate via breast milk should be monitored for sign of liver damage, including jaundice and unusual bruising or bleeding			
	Elderly			
	1. Start at a reduced dose and titrate slowly. 2. Lower initial and maintenance doses (eg, administration 50%-60% of usual doses) are recommended due to decreased elimination and increased incidences of somnolence in elderly 3. Monitor closely for adverse events (sedation, dehydration, decreased nutritional intake) 4. Use is associated with fall risk. To advise on fall precautions. Beers criteria: 1. Avoid use in elderly with history of falls or fractures (unless used for seizure or mood disorders) and unless safer alternatives are not available, syncope , impaired psychomotor function, or ataxia may occur 2. Avoid concomitant use of 3 or more CNS active agents in any combination due to increased risk of falls.			
	Paediatric			
	1. The safety and efficacy of Sodium Valproate for the treatment of manic episodes in bipolar disorder has not been established in patients aged less than 18 years (product leaflet).			
	Fasting			
	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Renal Impairment			
	1. CrCl >10ml/min: No dosage adjustment 2. CrCl <10ml/min: No specific dosage adjustment necessary. Free valproate clearance reduces to ~ 30%. Closely monitor clinical response and tolerability in addition to TDM level when appropriate			
	Hepatic Impairment			
	1. Child-Turcotte-Pugh class A: Lowest dose possible, gradually adjust dose to reach desired clinical effect. 2. Child-Turcotte-Pugh class B & C: Contraindicated			
Side Effects and their Management*	1. Weight gain: Advise on nutritional counselling (avoid low-volume, high-calorie foods) and emphasize need for physical exercise. 2. Gastrointestinal a. Nausea, vomiting, gingival hyperplasia, stomatitis, upper abdominal pain upper, diarrhoea frequently occur in some patients at the start of treatment, but they usually disappear after a few days without discontinuing the treatment b. Taking with or after food may minimise the GI upset			

	3. Hepato-biliary disorders a. Liver injury, severe liver damage, including hepatic failure sometimes resulting in death, has been reported. b. Symptoms may include but are not limited to jaundice, abdominal pain, lethargy. Immediately contact your prescriber. 4. Nervous system disorders a. Tremor, somnolence, sedation and dizziness b. Occurs early in treatment and is usually transient, wears off over time c. May require dosage adjustment. Inform your prescriber at next appointment 5. Blood and lymphatic disorders a. Anaemia and thrombocytopenia: Spontaneous bruising or bleeding, blood in stools or black tarry stools. Immediately contact your prescriber.			
Storage*	Store at a temperature below 30°C, protect from light and moisture.			
Others	**1. Contraception** a. Concomitants of oestrogen-containing products, including oestrogen-containing hormonal contraceptives, may potentially result in decreased valproate efficacy. **2. Drug-drug interaction** Advise patients always let healthcare providers know about all the medications they are taking, including over-the-counter drugs and supplements a. Valproate may potentiate the effect of other psychotropics such as neuroleptics, MAO inhibitors, antidepressants and benzodiazepines; therefore, clinical monitoring is advised and dosage should be adjusted when appropriate b. Clinical toxicity has been reported when valproate was co-administered with carbamazepine as valproate may potentiate toxic effect of carbamazepine c. Epilim reduces the metabolism of lamotrigine and increases the lamotrigine mean half-life by nearly two-fold. This interaction may lead to increased lamotrigine toxicity, in particular serious skin rashes d. Valproic acid may decrease the olanzapine plasma concentration e. Carbapenem antibiotics such as imipenem, panipenem and meropenem: Decreases in blood levels of valproic acid f. Rifampicin may decrease the valproic acid blood levels resulting in a lack of therapeutic effect 3. Blood levels can be drawn to make sure that the drug levels are in the right range to get the most benefit with the least side effects. Encourage patients to learn their own blood levels. 4. Monitoring parameters: a. Serum level of valproate b. Liver function test c. Blood count with platelets			

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Remarks:

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Spironolactone

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction or sequence.* • *Please tick (✔) **No** for incorrect instruction or sequence.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antagonists of Mineralocorticoid Receptors: Potassium-sparing Diuretic; Aldosterone antagonist			
Indications and Dosage	Key Monitoring Before Starting Therapy 1. **Serum Potassium**: <5 mmol/L 2. **eGFR**: >30 mL/min/1.73 m² **If Issues Arise:** **Hyperkalemia or Kidney Function Decline**: ● Reduce dose or switch to every-other-day dosing. ● Discontinue if serum potassium >5.5 mmol/L despite adjustments. ● Investigate other causes before stopping permanently **Hypertension** ● 25-100mg/day (once daily or split into two doses) ● Doses greater than 100mg/day do not provide additional reduction in blood pressure **Heart Failure with Preserved Ejection Fraction (HFpEF)** Dosing: ● Initial: 12.5 mg once daily ● Adjustments: Double dose every 2–4 weeks if stable, up to 50 mg/day Conservative Approach: ● Start or increase dose only if potassium ≤4.7 mmol/L **Heart Failure with Reduced Ejection Fraction (HFrEF)** Dosing: ● Tablet: 12.5–25 mg once daily. Max: 50 mg/day (can divide into 1–2 doses) Titration: ● Increase dose every 4 weeks if stable Post-Myocardial Infarction (MI) with Reduced Ejection Fraction (Off-label) Dosing: ● Tablet: 12.5–25 mg once daily. Max: 50 mg/day **Note:** Regularly monitor serum potassium and kidney function during treatment.			
Method of Administration*	**Tablet:** Take with or without food, but stay consistent with how you take it.			
Special Considerations	**Pregnancy**	.		
	Spironolactone crosses the placenta and may cause feminization of a male fetus. High doses later in pregnancy may restrict fetal growth. Chronic hypertension during pregnancy increases risks for both mother and baby, including birth defects, low birth weight, and delivery complications. Spironolactone is not recommended for			

	treating hypertension or heart failure in pregnancy. Patients with primary aldosteronism (PA) should stop spironolactone before conception or during the first trimester. Alternative treatments are recommended if PA remains uncontrolled. Potassium-sparing diuretics like spironolactone have been used in rare cases to treat conditions like Gitelman syndrome during pregnancy			
	Breastfeeding			
	Spironolactone's active metabolite, canrenone, is present in breast milk but at very low levels (~0.2% of the maternal dose). Spironolactone is generally considered safe for breastfeeding. However, the decision should weigh the benefits of breastfeeding against potential infant exposure and the mother's need for treatment.			
	Elderly			
	STOPP/START Criteria: 1. Avoid spironolactone if eGFR < 30 ml/min/1.73m2 (risk of dangerous hyperkalaemia). 2. Avoid spironolactone with concurrent potassium conserving drugs (e.g., ACEI's, ARB's, amiloride, triamterene) without monitoring of serum potassium (risk of dangerous hyperkalaemia i.e., > 6.0 mmol/l – serum K should be monitored regularly, i.e., at least every 6 months)			
	Paediatric			
	Paediatric dosing is based on experience with tablets and extemporaneously compounded suspension.			
	Fasting			
	NA			
	Others			
	<u>Kidney Impairment (Adults)</u> **General Guidance:** ● Use with caution and monitor potassium closely. ● Consider low-potassium diets or other interventions (e.g., loop diuretics, sodium bicarbonate) to manage risks. **Heart Failure:** ● eGFR >50 mL/min: No dosage adjustment needed. ● eGFR 30–50 mL/min: Start with 12.5 mg daily or every other day. Increase gradually up to 25 mg/day if potassium remains <5 mEq/L. ● eGFR <30 mL/min: Not recommended. **<u>Liver Impairment (Adults)</u>** **General Guidance:** ● No dosage adjustment needed for liver cirrhosis (Child-Turcotte-Pugh Class A to C), but monitor closely due to slower drug elimination in liver impairment. ● Careful dose titration is necessary, especially in patients with ascites and cirrhosis, as aldosterone levels may be elevated.			

Side Effects and their Management*	Adverse Reactions to Spironolactone: Key Considerations 1. Gynecomastia (Breast Enlargement) a. Description: May affect one or both breasts, usually reversible upon stopping the medication. b. Mechanism: Related to decreased androgen activity and increased estrogen effects. c. Onset: Delayed; occurs after 1–12+ months of therapy. d. Risk Factors: e. Higher doses (≥150 mg/day) f. Longer treatment duration g. Alternative: Consider switching to eplerenone (lower risk of gynecomastia). 2. Hyperkalemia (High Potassium Levels) a. Description: Can lead to serious complications, including hospitalization or death. b. Mechanism: Inhibits aldosterone, reducing potassium excretion. c. Onset: Intermediate; typically within 4 weeks of starting or adjusting the dose. d. Risk Factors: e. Kidney impairment f. Older age g. Excessive potassium intake (supplements, salt substitutes) h. Concurrent use of medications that increase potassium (e.g., ACE inhibitors, ARBs, NSAIDs) i. Heart failure, especially with diabetes or higher baseline potassium levels			
Storage*	1. Store below 30°c. Keep away from children. 2. Protect from moisture and light			
Others	1. **Interactions Increasing Risk of Hyperkalemia** – **Avoid Combination**: Potassium salts, other potassium-sparing diuretics (e.g., eplerenone), Tacrolimus and Cyclosporine,Drospirenone-containing products, Drospirenone-containing products. 2. **Interactions Requiring Therapy Monitoring**: ACE Inhibitors/ARBs, NSAIDs (e.g., ibuprofen), Digoxin and other cardiac glycosides, Lithium, CYP3A4/CYP2C8 Substrates, Trimethoprim, Ciprofloxacin 3. **Interactions Enhancing Hypotensive Effects** – **Use Caution**: Antihypertensive agents (e.g., ACE inhibitors, ARBs, beta-blockers), Alpha-blockers (e.g., prazosin, terazosin), Phosphodiesterase-5 inhibitors (e.g., sildenafil), Opioids and barbiturates 4. **Interactions That May Reduce Therapeutic Effect of Spironolactone**: Aspirin and NSAIDs,Amphetamines and methylphenidate, Fludrocortisone 5. Food increases spironolactone's bioavailability by 90-95%, enhancing its absorption			

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Statin

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antihyperlipidemic (HMG – COA reductase inhibitor)			
Indications and Dosage	• Simvastatin **Indication:** 1. Hypercholesterolaemia 2. Prevention of cardiovascular disease **Dosage:** 10 - 40 mg once daily. Maximum: 80 mg daily • Atorvastatin **Indication:** 1. Hypercholesterolaemia 2. Prevention of cardiovascular disease **Dosage:** 10 mg once daily. Maximum: 80 mg daily • Pravastatin **Indication:** Hypercholesterolaemia and coronary heart disease intolerant or not responsive to other forms of therapy. In health clinics, Pravastatin is restricted to HIV patients on HAART. **Dosage:** 10 - 20 mg once daily. Maximum: 40 mg daily. • Rosuvastatin: **Indication:** Dyslipidaemia not responsive to atorvastatin 40mg or equivalent doses of other statins **Dosage:** Initially 5-10 mg once daily (5mg in patients with pre-disposing factors to myopathy), increased if necessary at intervals of at least 4 weeks to 20 mg once daily, increased after further 4 weeks to 40 mg daily ONLY in severe hypercholesterolemia with high cardiovascular risk. *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Simvastatin: Take in the evening. 2. Atorvastatin: Any time of the day with or without food. 3. Pravastatin: a. Any time of the day with or without food b. To take at least 1 hour before or 4 hours after bile acid sequestrant. 4. Rosuvastatin: a. Any time of the day with or without food b. Administer at least 2 hours before antacid containing both aluminium and magnesium **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	Avoid, can cause fetal harm			

	Breastfeeding			
	Avoid breastfeeding.			
	Elderly			
	STOPP/START Criteria: Avoid using statins for primary cardiovascular prevention in persons aged ≥ 85 and established frailty with expected life expectancy likely less than 3 years (lack of evidence of efficacy).			
	Paediatric			
	Safety and effectiveness in children below 10 years old have not been established except for Rosuvastatin can be used in children 7 years and above as well as Pravastatin in children 8 years and above.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Renal impairment			
	1. **Simvastatin** a. Mild to moderate : No dose adjustment b. Severe (CrCl < 30ml/min), dosage above 10mg/day should be carefully considered c. 2. **Atorvastatin:** No dosage adjustment a. 3. **Pravastatin:** No dosage adjustment 4. **Rosuvastatin** - Mild to moderate: No dosage adjustment - Severe (CrCl < 30ml/min) 5-10mg OD			
	Hepatic impairment			
	Dosing in hepatic impairment differs according to statin type.			
Side Effects and their Management*	**1. Elevated serum transaminases and hepatoxicity** a. Patients who developed elevated transaminase levels should be monitored until abnormality resolves. b. Withdrawal of treatment is recommended if there is persistent increase in serum transaminases more than 3 times upper limit of normal. **2. Muscle- related effect (myalgia, myopathy, rhabdomyolysis)** a. Patient should be advised of myopathy risk, and rhabdomyolysis and to report any unexplained muscle pain, tenderness, or weakness b. Discontinued immediately in patients with rhabdomyolysis **3. Gastrointestinal (constipation, nausea, dyspepsia, diarrhea)**			
Storage*	Store at room temperature			

Others	1. Avoid grapefruit juice. 2. Use of gemfibrozil should be avoided in combination with pravastatin or simvastatin. 3. Patients on higher doses of atorvastatin may be at increased risk of digoxin toxicity; close monitoring of digoxin toxicity is recommended. 4. Strong CYP3A4 inhibitors are contraindicated with use of simvastatin.			

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Sulphur in calamine/ petrolatum

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Parasiticidal			
Indications and Dosage	1. 1st line treatment of scabies for infants <2months old 2. 2nd line treatment of scabies for infants <2yo and pregnant woman **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Rinse off after 24 hours and then reapply every day for the next 3 days (with a bath taken in between each application). 2. Treat the whole body including the face (avoid eyes and mouth). **Missed dose management**: If a dose is missed, use it as soon as possible. If it is almost time for the next dose, use only that dose. Do not use double or extra doses. **Do not stop your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Safe for pregnant women.			
	Breastfeeding			
	Safe for breastfeeding women.			
	Elderly			
	None specifically to the product.			
	Paediatric			
	Safe for infants.			
	Fasting			
	N/A			
	Others			
	N/A			
Side Effects and their Management*	Skin Irritation.			
Storage*	1. Store at room temperature below 25C. 2. Discard any unused medicine after the expired date.			

Others	1. Patients with scabies and their close physical contacts, even without symptoms, should receive treatment at the same time. 2. Wash clothing and bedding in hot water or by dry cleaning. Clothing that cannot be washed may be stored in a sealed plastic bag for three days. 3. If the treatment is applied by someone without scabies, this person should wear medical gloves during application. 4. After completion of treatment, patients should use fresh, clean bedding and clothing. 5. To prevent re-infestation, put freshly washed or dry-cleaned clothing and change bedding.			

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Remarks:

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References:

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2. Ismail, H.I.H.M., Ibrahim, H.M., Ng, H.P., Kesihatan, M.K. and Thomas, T. (2019) Paediatric Protocols for Malaysian Hospitals. 4th Edition, Ministry of Health, Putrajaya.

Tacrolimus

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Calcineurin inhibitors			
Indications and Dosage	1. Primary immunosuppression in liver and kidney allograft recipients 2. Liver and kidney allograft rejection resistant to conventional immunosuppressive agents. Available in two formulations: i) Tacrolimus immediate release (IR) - Prograf ® ii) Tacrolimus prolonged release (PR) - Advagraf ® ● Both are in capsule form available in three strength: 0.5mg, 1mg and 5mg ● Both are **NOT** interchangeable. : (WARNING: These two formulations are at risk of medication errors) Dose is adjusted based on therapeutic drug monitoring. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Tacrolimus IR: To be swallowed whole twice daily, 12 hours apart. 2. Tacrolimus PR: To be swallowed whole once daily in the morning. 3. Both must be taken at the same time every day on an empty stomach (1 hour before or 2 hours after a meal) for the best absorption. 4. Do not chew, crush or open the capsule. 5. Capsules should be taken immediately following removal from the blister. 6. To ensure the accuracy of tacrolimus levels, it is important to take the tacrolimus after the blood is drawn for therapeutic drug monitoring. **Missed dose management:** 1. If an immediate release tacrolimus dose is missed, patients should take it as soon as possible, ideally within four hours. 2. If a prolonged-release tacrolimus dose is missed, the patient should take it as soon as possible within 14-15 hours. 3. Do not double a dose under any circumstances **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Tacrolimus can cross the placenta, causing risks to infants, including prematurity, birth defects, low birth weight, and fetal distress.It may still be used in pregnant women if there are no safer options available and if the benefits outweigh the potential risks to the fetus. 2. To inform specialist if you want to get pregnant /			

	pregnant			
	Breastfeeding			
	Excreted into breast milk, and breastfeeding is not recommended.			
	Elderly			
	Dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range.			
	Paediatric			
	Younger children generally require higher maintenance doses on a mg/kg basis than older children, adolescents, or adults.			
	Fasting			
	1. Transplant patients should consult with transplant specialists to assess their conditions and determine whether fasting is safe for them. 2. If fasting is permissible,tacrolimus can be taken on an empty stomach during Sahur and Iftar. It's important to stay hydrated throughout the night. If you miss a dose during Sahur, you must break your fast that day to take the missed dose.			
	Others			
	Severe liver impairment (Child-Pugh class C): Lower initial doses may be required (due to reduced clearance and increased half-life).			
Side Effects and their Management*	1. Mild tremor is common. 2. Increased risk of infection. Seek healthcare advice if have any symptoms of infections such as fever, chills, or flu-like symptoms. 3. Metabolic abnormalities: diabetes mellitus, hyperlipidaemia, hyperkalaemia, hypomagnesemia 4. Hypertension 5. Nephrotoxicity 6. Increased risk of squamous cell skin cancer, therefore exposure to sunlight and UV light should be limited by wearing clothing and using a broad-spectrum with a sun protection factor (SPF) of 30 or higher are recommended when performing outdoor activities.			
Storage*	1. Store at room temperature. 2. **Prograf ®** : After opening the outer aluminium wrapper containing the blisters inside the box, the capsules remain stable for 3 months. 3. **Advagraf ®**:After opening the outer aluminium wrapper containing the blisters inside the box, the capsules remain stable for 1 year. 4. The capsules should remain in the blister when kept in the pillbox.			
Others	1. Avoid live and live-attenuated vaccination. 2. Inhibitors or inducers of CYP3A4 should only be co-administered with tacrolimus after consulting a transplant specialist, due to the potential for drug interactions resulting in rejection or toxicity. 3. Concomitant use with strong CYP3A4 inhibitors such as ritonavir, ketoconazole, itraconazole, voriconazole,			

	clarithromycin may increase tacrolimus level and the risk of serious adverse reactions (e.g. nephrotoxicity, neurotoxicity, QT prolongation). Dose adjustment needs to be based upon the individual situation upon treatment initiation and discontinuation by the transplant specialist. 4. Concomitant use with strong CYP3A4 inducers such as rifampicin, phenytoin, carbamazepine may decrease tacrolimus level, potentially increasing the risk of rejection. Dose adjustment needs to be based upon the individual situation upon treatment initiation and discontinuation by the transplant specialist. 5. Avoid the fruit and juice of grapefruit, pomelo and pomegranate as it may increase the tacrolimus level.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 1, 2025.
2. Astellas Ireland Co., Ltd (2024). Product information leaflet: Prograf. Retrieved from Quest 3+ Product Search on January 1, 2025.
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Tar, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antipsoriatics for topical use			
Indications and Dosage	1. Eczema and Psoriasis 2. Seborrheic Dermatitis Dosage: Apply sparingly to the affected area as required or as directed by your pharmacist or doctor.			
Method of Administration*	1. Coal tar and salicylic acid shampoo (Sebitar shampoo) a. Use it 2-3 times a week. b. Wet hair, apply to the affected area & massage well. c. Apply for 5 minutes then wash off. d. Do not scratch the scalp as it will worsen the psoriasis. 2. Liquor Picis Carbonis 3% or 6% in Ung Emulsificans a. Start with coal tar in vaseline 1% and slowly titrate to higher strength if needed. b. Test dose: To apply onto the affected area (small amount). If a patient experienced irritation with LPC, please ask the patient to see a doctor immediately. c. Usually apply at night due to the unpleasant smell. 3. Coal tar solution 20% a. 1 cap (15 ml) added to 10L of water in a pail. b. Soak diluted solution for 20 minutes. c. Do not rinse again with tap water. 4. Ung Cocois Co a. Separate hair-Part your hair to expose the scalp for easy application. b. Apply directly to scalp areas where raised plaques are noticeable. c. Preferably to be applied at night. d. Use a towel or shower cap to wrap the scalp. e. Cover the pillow with a towel to prevent stains. f. Shampoo off the next morning. g. Apply on the scalp, wash off after 1 hour (for Cera scalp only) **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Short-term use of topical coal tar is probably safe in the second and third trimester of pregnancy. 2. As a precaution, coal tar is often avoided in the first trimester of pregnancy.			
	Breastfeeding			
	Do not apply to the breast and areas of skin that the infant may come in contact with or suck on. Extreme care should be taken to avoid contact with the mother's skin during treatment or a safer alternative should be chosen.			

	Elderly			
	NA			
	Paediatric			
	1. Safety and efficacy of tar preparations are established in pediatric patients. Follow the specific instructed duration and need for different potencies. 2. Safety and efficacy of topical salicylic acid preparations in pediatric patients below the age of 2 years have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	1. May cause staining, skin irritation, photosensitivity or folliculitis. 2. Avoid applying to open wounds.			
Storage*	1. Keep the jar tightly closed. 2. Store below **30°C** 3. Protect from heat, moisture, and light. 4. Do not freeze. 5. Keep out of reach of children.			
Others	1. For topical use only. 2. Avoid contact with eyes. 3. Avoid inflamed or broken skin. 4. Do not apply on body-folds, genital or rectal areas. 5. Avoid exposure to sunlight for at least 24 hours. 6. Keep away from fire/flame (coal tar is flammable).			

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References:

1. Ego Pharm PTY LTD. (2018). Product information leaflet: Sebitar Scalp cleansing treatment. Retrieved from Quest 3+ Product Search on January 20, 2025.
2. Coal Tar 20% Solution. (2024). MimsGateway. Retrieved January 20, 2025, from https://online1.mimsgateway.com.my/
3. Sebitar. (2024). MimsGateway. Retrieved January 20, 2025, from https://online1.mimsgateway.com.my/
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Tenofovir Alafenamide

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiretroviral: Reverse Transcriptase Inhibitor, Nucleotide (NRTI)			
Indications and Dosage	1. Indicated for the treatment of Chronic Hepatitis B in adults and adolescents (aged 12 years and older with body weight at least 35kg). a. One tablet once daily **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. May be administered orally with food. 2. If a patient vomits within 1 hour of taking Tenofovir Alafenamide, the patient should take another tablet. **Missed dose management** 1. Patients should take Tenofovir Alafenamide as soon as possible, provided that less than 18 hours have passed from the time it is usually taken. 2. If more than 18 hours have passed, the patient should not take the missed dose and simply resumes the normal dosing schedule. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. There is no or limited data from use of Tenofovir Alafenamide in pregnant women. However, a large amount of data on pregnant women indicates no malformative nor fetal/neonatal toxicity associated with the use of Tenofovir disoproxil fumarate. 2. The use of Tenofovir Alafenamide may be considered during pregnancy, if necessary.			
	Breastfeeding			
	Tenofovir Alafenamide is present in breast milk following administration of Tenofovir Alafenamide.Risk to the breastfed child cannot be excluded; therefore, Tenofovir Alafenamide should not be used during breastfeeding.			
	Elderly			
	No dose adjustment is required.			
	Paediatric			
	No safety and efficacy data available in children younger than 12 years of age or weighing < 35 kg.			
	Fasting			
	To be discussed with infectious disease consultant			
	Others			

	1. Renal adjustment: No dose adjustment of Tenofovir Alafenamide is required in adults or adolescents with estimated creatinine clearance (CrCl) > 15mL/min or in patients with CrCl < 15mL/min who are receiving hemodialysis (Tenofovir Alafenamide should be administered after completion of hemodialysis treatment). The use of Tenofovir Alafenamide is not recommended in patients with CrCl < 15mL/min who are not receiving hemodialysis. 2. Hepatic impairment: Mild impairment (Child-Pugh A): No dose adjustment of Tenofovir Alafenamide is required. Decompensated cirrhosis (Child-Pugh B or C): Use is not recommended.			
Side Effects and their Management*	The most frequently reported adverse reactions were headache, nausea and fatigue.			
Storage*	Store in a dry place below 30 C. Store in the original container.			
Others	1. Co-administration medicinal products that are P-gp inducers (e.g., rifampicin, rifabutin, carbamazepine, phenobarbital or St. John's wort) and Inhibitors (e.g. itraconazole and ketoconazole) may affect plasma concentrations of Tenofovir Alafenamide. 2. For patients with Hepatitis B and HIV co-infection, HIV antibody testing should be offered to all HIV-infected patients whose HIV status is unknown before initiating therapy with Tenofovir Alafenamide. 3. Exacerbation of hepatitis flares while on treatment are relatively common and characterized by transient increases in serum alanine aminotransferase (ALT). Abrupt discontinuation of the antiviral is not recommended.Patients with cirrhosis may be at a higher risk for hepatic decompensation therefore should be monitored closely during therapy. 4. Flares after treatment discontinuation has been reported and usually associated with rising of HBV DNA levels in plasma. Majority are self-limited but severe exacerbations; including fatal outcomes, may occur after the discontinuation of treatment for hepatitis B. Therefore hepatic function should be monitored for at least 6 months after treatment discontinuation.			

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Remarks:

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***Mandatory for validation / peer review**

References:

1. MyTaff 25mg Tenofovir Alafenamide Tablet. (n.d.). Product insert.
2. Tenofovir Alafenamide. (n.d.). In UpToDate. Retrieved October 28, 2024
3. Panel on Antiretroviral Guidelines for Adults and Adolescents. (n.d.). Guidelines for the use of antiretroviral agents in adults and adolescents with HIV. Department of Health and Human Services. Retrieved January 20, 2025, from https://clinicalinfo.hiv.gov/en/guidelines/adult-and-adolescent-arv

Tenofovir Disoproxil Fumarate (TDF)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Nucleotide reverse transcriptase inhibitors			
Indications and Dosage	1. Use as first line monotherapy for chronic hepatitis B or as a rescue therapy for patients with drug resistance hepatitis B virus (according to resistant profile or treatment guidelines). Dosage: 300mg once daily 2. Treatment of HIV-1 infected adults in combination with other antiretroviral agents. Dosage: 300mg once daily plus other antiretrovirals 3. For antenatal patients only with chronic Hepatitis B with HBeAg reactive or HBV DNA more than 200,000 or deranged LFT. Dosage: 300mg once daily from 28 weeks of gestation and continue till 4 weeks postpartum *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. Can be taken orally with or without food. 2. Must be taken at the same time every day as instructed for it to be effective. 3. Continue taking this medicine as prescribed, even if you feel better. This medication does not cure hepatitis B; it helps to suppress the virus and prevent relapse. 4. For patients with swallowing difficulties, the tablet can be crushed and dispersed in water. 5. **DO NOT RUN OUT OF MEDICATION**. Refill the prescription before it finishes. **Missed dose management** 1. If you miss a dose and it is less than 12 hours past your usual time, take the missed dose as soon as possible, then take the next dose at the usual time. 2. If more than 12 hours have passed since your missed dose, skip the missed dose and take your next dose at the usual time. 3. DO NOT take double doses to make up for the missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Preferred choice due to a better resistance profile and more extensive safety data. 2. Available data suggests that it does not increase risk of major birth defects in first trimester pregnancy and no adverse pregnancy related outcomes during third trimester. 3. Preferred antiviral for hepatitis B e antigen-positive mothers or viral load >200,000 IU/ml (antiviral prophylaxis)			

	Breastfeeding			
	1. Breastfeeding is not contraindicated. 2. It is unknown if TDF affects lactation or has effects on breastfed children.			
	Elderly			
	Decreased bone mineral density, effects on long-term bone health and future fracture risk. Consider monitoring bone density in patients with history of pathologic fractures or with other risk factors for bone loss or osteoporosis.			
	Paediatric			
	For children ≥ 2 years weighing ≥10kg			
	Fasting			
	To take once daily during *Sahur* or *Iftar*.			
	Renal impairment			
	1. CrCl ≥ 50 mL/min: No dosage adjustment required 2. CrCl 30 - 49 mL/min: 300mg every 48 hours 3. CrCL 10 - 29 mL/min: 300mg every 72 - 96 hours 4. CrCl <10 mL/min: Has not been studied. If alternative therapy is not available, may consider 300mg every 7 days. 5. Hemodialysis: 300mg every 7 days. When a scheduled dose falls on hemodialysis day, TDF should be taken after hemodialysis.			
Side Effects and their Management*	1. Side effects may include rash, diarrhea, nausea, dizziness, headache, fatigue and fever. 2. Advise patients to report symptoms of lactic acidosis (nausea, vomiting, abdominal pain, tachypnea) and liver problems (dark urine, light-coloured stools, or yellow skin or eyes). 3. Advise patients to report any bone problems such as bone pain. Take calcium and vitamin D as instructed by prescribers.			
Storage*	1. Store below 30°C. 2. Keep medication in its original container, tightly sealed to protect from moisture and light. 3. Keep out of reach and sight of children.			
Others	1. Advise patients against sudden discontinuation of TDF due to potential exacerbation of hepatitis B. 2. Advise patients to practise safe sex and ensure to take proper precautions to avoid transmission. This drug does not prevent disease transmission. ***Vomiting management*** 1. If vomiting occurs within 1 hour of dosing, an additional tablet should be taken. 2. If vomiting occurs more than 1 hour after dosing, no additional dose is needed.			

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References:

1. Formulari Ubat KKM. (2025, January 1). Accessed on January 20, 2025.
2. Tenofovir disoproxil fumarate. (2024). MimsGateway. Retrieved January 20, 2025, from https://online1.mimsgateway.com.my/
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Tenofovir Disoproxil Fumarate / Emtricitabine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiretroviral - Nucleotide/nucleoside reverse transcriptase inhibitors (NRTIs)			
Indications and Dosage	1. HIV-1 Treatment (in combination with other antiretroviral agents) a. One tablet orally once daily 2. In combination with safer sex practices for pre-exposure prophylaxis (PrEP) to reduce the risk of HIV-1 infection in adults at increased risk. a. Daily PrEP: One tablet orally once daily b. Event driven PrEP *(only for cisgender men, trans and gender diverse people assigned male at birth who are not taking exogenous estradiol-based hormones)* : 2 loading tablets 2-24 hours before sex, followed by 1 tablet 24 hours later and 1 tablet 48 hours later.			
Method of Administration	1. It can be taken with or without food. Missed dose management 1. For HIV-1 treatment and daily PrEP, to take as soon as remember, however if gap is more than 12 hours, to skip and continue with regular dosing schedule 2. Event driven PrEP: to contact prescriber as post exposure prophylaxis (PEP) may be needed **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Safe to be used in pregnancy.			
	Breastfeeding			
	1. Excreted in breast milk, insufficient information in newborn/infants. 2. It is recommended that HIV infected women do not breastfeed their infants under any circumstances to avoid transmission to the infant.			
	Elderly			
	Use in caution in elderly as they are more likely to have decreased renal function.			
	Paediatric			
	Not recommended to be used for the paediatric population below 35kg.			
	Renal impairment			

	1. Monitoring of renal function required. 2. Dosage adjustment required for CrCl below 50ml/min: *a. 30-49 ml/min: 1 tab EOD* *b. <30 ml/min : not recommended*			
Side Effects and their Management	1. **Renal toxicity:** Monitor kidney function; dose adjustments may be needed. Prevention: drink at least 1.5–2 litres of non-caffeinated fluid per day (preferably water & no requirement of fluid restriction). 2. **Bone Density Loss**: Consider calcium and vitamin D supplementation and regular bone health monitoring. 3. **Others (headache, nausea, diarrhoea, or abdominal pain)**: may require symptomatic treatment.			
Storage	1. Do not store above 30°C. 2. Protect from light.			
Others	1. To watch out for hepatic flares when discontinued in patients with HBV co-infection. 2. Avoid protein supplements. 3. Avoid in patients with chronic kidney disease and progressively declining renal function.			

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References:

1. Malaysian Consensus Guideline on Antiretroviral Therapy. (2022). Malaysian Consensus Guideline on Antiretroviral Therapy.
2. Ricovir-EM 200mg/300mg Tablet. (n.d.). Product insert.
3. Panel on Antiretroviral Therapy and Medical Management of Children Living with HIV. (2024). Guidelines for the use of antiretroviral agents in pediatric HIV infection. Department of Health and Human Services. Retrieved October 28, 2024, from https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv

Ticagrelor

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiplatelet-Non thienopyridine P2Y12 Antagonist			
Indications and Dosage	Co-administration with aspirin (ASA), for the prevention of atherothrombotic events: 1. Second line treatment for patients readmitted to hospital with recurrent atherothrombotic event failing treatment with clopidogrel. 2. STEMI patients going for invasive PCI 3. NSTEMI/UA patients with intermediate to high risk TIMI score. 4. Other complicated ACS cases treated either medically or invasively via PCI or CABG(risk of Stent thrombosis,3VD etc.) Dosage : Initially, 180mg as a single dose followed by 90mg bd with maintenance dose of ASA 75-150mg daily.			
Method of Administration*	1. Take with or without food. 2. Tablet can be crushed and mixed with half a glass of water and drank immediately. 3. Can be administered via a nasogastric tube.It is important to flush the nasogastric tube through with water after administration of the mixture. **Missed dose management**: If you forget or miss a dose, skip the missed dose and take your next dose at the usual time. Do not take two doses at once to make up for the missed dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	There is no or limited amount of data from the use of ticagrelor in pregnant women.Studies in animals have shown reproductive toxicity.Therefore it is not recommended during pregnancy.			
	Breastfeeding			
	Available pharmacodynamic/toxicological data in animals have shown excretion of ticagrelor and its active metabolites in milk.A risk to newborns/infants cannot be excluded. Drugs should be given only if the potential benefit justifies the potential risk to the newborn/infants.			
	Elderly			
	Beers Criteria: 1. Use with caution, particularly in adults 75 years old and older. Increase the risk of major bleeding in older adults compared with Clopidogrel, especially among those 75 years old and older. However, this risk may be offset by cardiovascular benefits in select patients.			

	Paediatric			
	The safety and efficacy of ticagrelor in children below the age of 18 in the approved adult indication has not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	1. No dosage adjustment is necessary for patients with renal impairment. 2. Contraindicated in patients with severe renal impairments.There is limited experience with ticagrelor in patients with moderate hepatic impairment therefore caution is advised.			
Side Effects and their Management*	1. Most common: bleeding and dyspnoea. 2. Dizziness and confusion have been reported.Therefore, patients who experience these symptoms should be cautious while driving or using machines. 3. Hyperuricemia.			
Storage*	Do not store above 30ºC			
Others	1. If a patient is to undergo elective surgery,ticagrelor should be discontinued 5 days prior to surgery. 2. Ticagrelor should be used with caution in patients with a history of asthma and/or COPD. 3. Caution is advised in patients with history of hyperuricaemia or gouty arthritis. 4. Ticagrelor is primarily a CYP3A4 substrate and a mild inhibitor of CYP3A4.Co-administration with strong CYP3A4 inhibitors such as Ketoconazole,Clarithromycin,Ritonavir,Atazanavir will increase Ticagrelor plasma level.			

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Remarks:

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***Mandatory for validation / peer review**

References:

1. Astra Zeneca, Ticagrelor (Brilinta) Product Leaflet.Revised: June 2022
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Ticlopidine

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antiplatelet.			
Indications and Dosage	1. Prevention of thrombotic stroke for patients who are sensitive /intolerant to Acetylsalicylic Acid 2. Maintenance of coronary bypass surgery or angioplasty 3. Maintenance of patency of access in patients on chronic Dose : Ticlopidine 250mg twice daily			
Method of Administration*	To be taken with food. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	There are no controlled studies in pregnancy. Animal reproduction studies have not shown teratogenic effects.			
	Breastfeeding			
	It is not known if ticlopidine is excreted in breast milk. Due to the potential for serious adverse reactions in the nursing infant, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of treatment to the mother.			
	Elderly			
	STOPP/START Criteria: 1. Avoid ticlopidine in any circumstances (clopidogrel and prasugrel have similar efficacy, stronger evidence and fewer side-effects).			
	Paediatric			
	No data on paediatric use.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	1. Renal impairment - Dose adjustment not necessary 2. Liver impairment - Use with caution. Contraindicated in severe liver impairment			

Side Effects and their Management*	Seek medical attention if you have signs/symptoms as below after initiation : 1. Fever, chills, sore throat or other sign of infection 2. Bruising, purpura 3. Prolonged/ abnormal bleeding, dark stool 4. Yellow eyes/skin, dark urine, light coloured stool 5. Fatigue, shortness of breath 6. Rash			
Storage*	Keep out of reach of children, Store in dry places below 30°C. Protect from light.			
Others	**Special Precautions** 1. Consider discontinuation of therapy 10-14 days prior to elective surgery if antiplatelet effect is not desirable. 2. Used with caution in individuals who are at increased risk of bleeding, individuals with impaired liver function and should be discontinued if inflammation of the liver or yellowing of skin develops. **Monitoring** 1. Due to heightened risk of hematological complications, patients should have their white blood cell count, differential and platelet count monitored at baseline prior to, biweekly after initiation until the end of 3rd month therapy. 2. Discontinuation is recommended should neutropenia/ thrombocytopenia occur. Monitoring should still be performed 2 weeks after discontinuation. 3. Perform liver function test for the first 4 months if liver impairment is suspected. **Drug-drug interaction** 1. Increased risk of bleeding with anticoagulants, other antiplatelet agents (e.g. aspirin), thrombolytic agents, SSRIs, pentoxifylline, NSAIDs. 2. Increased serum concentration of carbamazepine, phenytoin, theophylline, ketamine. 3. Decreased serum concentration with antacids. Reduced clearance with cimetidine. 4. Decreased serum concentration of digoxin and ciclosporin. 5. May increase the plasma half-life of CYP450 substrates (e.g. phenazone). **Drug-food interaction** 1. May increase bioavailability with food			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Shah, J., Teitelbaum, P., Molony, B., Gabuzda, T., & Massey, I. (1991). Single and multiple dose pharmacokinetics of ticlopidine in young and elderly subjects. British journal of clinical pharmacology, 32(6), 761–764.
2. Ticlopidine. (2024). MimsGateway. Retrieved January 20, 2025, from https://online1.mimsgateway.com.my/
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Tretinoin, Topical

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Acne product; Vitamin A derivative			
Indications and Dosage	1. Treatment of **Acne Vulgaris and recalcitrant cases of acne** in which comedones,papules and pustules predominate. Apply **once daily** to the affected area at bedtime.			
Method of Administration*	*1.* Wash face with a gentle, non-medicated cleanser and allow the face to dry thoroughly. *2.* Apply a thin layer to the entire face or other affected area at night. *3.* Wash well in the morning. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. **Tretinoin cream/gel** is contraindicated during pregnancy and in women planning to become pregnant. *2.* Pregnancy should be avoided during treatment and for at least 4 weeks after discontinuing the use of **tretinoin**.			
	Breastfeeding			
	1. Contraindicated to be used during breastfeeding.			
	Elderly			
	1. No elderly-specific problems have been documented to date.			
	Paediatric			
	1. The safety and efficacy of topical Tretinoin for selected conditions, in paediatric patients below 9 years old have not been established. Precautions do apply.			
	Fasting			
	1. **To refer to the latest advisory by religious authority**			
Side Effects and their Management*	1. Erythema 2. Scaling 3. Dryness 4. Pruritus 5. Burning sensation 6. Photosensitivity 7. Skin peeling			

Storage*	1. Keep the container tightly closed. 2. Store at room temperature. 3. Protect from light, heat and moisture. 4. Keep medicine out of reach of children.			
Others	1. After applying the medication, a mild sensation of warmth, slight redness, and a burning feeling may occur. 2. Some redness and skin peeling may occur in the days following application but should subside with time. 3. Protect the face from direct sunlight. Wear sunscreen. 4. Excessive sun exposure, including sunlamps, should be avoided while using the preparation. 5. Particular caution is needed when using products containing sulfur, resorcinol, or salicylic acid, as they may cause peeling or irritation when combined with **tretinoin**. 6. Prolonged or repeated use may lead to hypersensitivity. Excessive application should be avoided. If hypersensitivity symptoms occur, discontinue use and consult your physician. 7. Do not use the cream if the skin is weeping or severely inflamed. 8. Avoid contact with the eyes, mouth, and other mucous membranes. 9. For external use only. 10. Dispose of any remaining product in the tube after completing your course of treatment or once the product has expired.			

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References :

1. Formulari Ubat Kementerian Kesihatan Malaysia Bil 2/2024.
2. Y.S.P Industries (M) SDN BHD.(March 2022). Tretinon Cream 0.05% Product Leaflet.

Trihexyphenidyl (benzhexol)

Name :		**Unit :**		
*Please tick (✔) **Yes** for correct instruction.* *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Antimuscarinic agents**			
Indications and Dosage	1. Symptomatic treatment of paralysis agitans and of parkinsonism, arteriosclerotic, idiopathic, or post-encephalitic origin, spasmodic torticollis, facial spasms and other dyskinesia: Initially 1-2 mg daily. May gradually increase to 6-10mg daily according to response. 2. Alleviate extrapyramidal syndrome induced by phenothiazine derivatives or reserpine: From 5-15 mg daily in 3-4 divided doses Or **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	1. May be taken with or without food. 2. Take before meals if dry mouth occurs, after meals if drooling/ nausea occurs. 3. Take at the same time each day. 4. Missed dose: take as soon as you remember. If it is close to the time for your next dose, skip the missed dose and go back to your normal time. Do not take 2 doses at the same time or extra doses. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Benzhexol should not be used during pregnancy unless clearly necessary. Inform your prescriber if you are planning for pregnancy or become pregnant while taking this medication.			
	Breastfeeding			
	Benzhexol should not be used during breastfeeding.			
	Elderly			
	Beer Criteria : Avoid. Strong anticholinergic activity. Not recommended for prevention or treatment of extrapyramidal symptoms due to antipsychotics; more effective agents available for treatment of Parkinson disease.			
	Paediatric			
	Safety and efficacy in paediatric patients have not been established.			
	Fasting			

	Administer during *Sahur* or after *Iftar.* **To refer to the latest advisory by religious authority**			
	Renal Impairment			
	Use with caution			
	Hepatic Impairment			
	Use with caution			
Side Effects and their Management*	1. Anticholinergic a. Blurred vision, constipation, urinary retention and dry mouth b. Constipation can be managed by physical activity, fluid and fibre intake or laxatives. c. Increased ocular pressure: Change in eyesight, eye pain, or severe eye irritation. Immediately contact your prescriber 2. Cardiovascular a. May cause rapid, slow or irregular heart beats 3. Neurologic a. Memory problems or loss, confusion, hallucination (seeing or hearing things that is not there), agitation, change in behavior, dizziness, nervousness 4. Other potentially concerning side effects a. GI s/e such as nausea & vomiting b. Unexplained fever or not sweating during activities or in warm temperatures c. Sensitivity to light			
Storage*	Store at a temperature below 30°C.			
Other	Used with caution in patients with arteriosclerosis, history of drug idiosyncrasy, CV disease, glaucoma, GI obstruction, prostatic hyperplasia and /or urinary stricture. Not intended for treatment of tardive dyskinesia			

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References :

1. Pharmaniaga (2024). Product Information Leaflet: Benzhexol. Retrieved from Quest 3+ Search on January 21, 2025
2. UpToDate, Inc. (2024). Trihexyphenidyl: Drug information (Version 3.68.3) [Mobile application]. UpToDate, Inc.
3. Formulari Ubat KKM. (2025, January 1). Accessed on January 20, 2025.
4. Stahl, S. M. (2017). Stahl's Essential Psychopharmacology Prescriber's Guide. In Australian Prescriber (6th ed., Issue 1). Cambridge university press. https://doi.org/10.18773/austprescr.2016.001
5. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. (2023). American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. Journal of the American Geriatrics Society, 71(7), 2052-2081.

Trimetazidine/Trimetazidine Modified Release (MR)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antianginal drug, MOA: 3-Ketoacyl CoA thiolase [KAT] inhibitor			
Indications and Dosage	Prophylactic treatment of episodes of angina pectoris 1. **Trimetazidine 20mg tds** 20mg 3 times daily 2. **Trimetazidine MR 35mg bd** 35mg twice daily in the morning and evening with meals			
Method of Administration*	1. To be taken with food. 2. For MR preparation, swallow whole. Do not split, crush. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. No data available. Avoid use during pregnancy.			
	Breastfeeding			
	1. Not recommended.			
	Elderly			
	Product Leaflet: Elderly patients may have increased trimetazidine exposure due to age-related decrease in renal function. Dose titration in elderly patients should be exercised with caution.			
	Paediatric			
	1. No data available.			
	Fasting			
	1. To refer to the latest advisory by religious authority			
	Others (*eg. hepatic impairment, renal impairment which will be relevant to the patient)*			
	Renal impairment 1. CrCl< 30ml/min: contraindicated 2. CrCl 30-60 ml/min: Require dose adjustment to Trimetazidine 20mg bd OR Trimetazidine MR 35mg om			
Side Effects and	1. New-onset or worsening of parkinsonian symptoms			

their Management*	(e.g. akinesia, hypertonia, tremor). Close monitoring in elderly and patients with renal impairment. 2. Drowsiness and dizziness. If affected, do not drive or operate machinery. 3. May cause headache; gastrointestinal disorders ie abdominal pain, diarrhea, dyspepsia, nausea, vomiting; rash, pruritus, urticarial; asthenia.			
Storage*	1. Store below 30ºC. Keep out reach of children.			
Others	NA			

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References:

1. Trimetazidine. (2024). MimsGateway. Retrieved January 21, 2025, from https://online1.mimsgateway.com.my/
2. Medreich Limited (Unit 3). (2022). Product information leaflet: Trime MR (Trimetazidine Dihydrochloride MR Tablets 35mg. Retrieved from Quest 3+ Product Search on January 21, 2025.
3. Duopharm(M) Sdn Bhd. (2015). Product Information leaflet: Metazine. Retrieved January 21, 2025. from file:///C:/Users/asetbpf05/Downloads/Metazine%20Tablet%20(Trimetazidine)%20Duopharma%20(M)%20Sdn.%20Bhd.%2021Apr2015%20BM.pdf

Verapamil

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antianginal; Calcium Channel Blocker, Nondihydropyridine Antihypertensive; antiarrhythmic agent			
Indications and Dosage	1. **Supraventricular arrhythmias (SVT) prophylaxis:** 120mg -480mg in 2-3 divided dose 2. **Angina:** 80mg-120mg 3 times daily 3. **Hypertension:** Initially 240mg daily in 2-3 divided dose Maximum : 480mg daily 4. **Supraventricular tachycardia:** Initially 5-10 mg via slow iv over at least 2 minutes.The dose can be repeated 10mg 30 minutes after the first dose if the initial response is not adequate.			
Method of Administration*	1. Should be taken with food 2. Should not be taken with grapefruit juice **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Limited data. Drugs should be given only if the potential benefit justifies the potential risk to the foetus.			
	Breastfeeding			
	1. Limited Human Data—Probably Compatible			
	Elderly			
	STOPP/START Criteria: 1. Avoid Verapamil with NYHA Class III or IV heart failure (may worsen heart failure with reduced ejection fraction i.e., HFREF). 2. Avoid beta-blocker in combination with verapamil (risk of heart block). 3. Avoid verapamil with bradycardia (< 50/min), type II heart block or complete heart block (risk of complete heart block, asystole) 4. Avoid apixaban, dabigatran, edoxaban, rivaroxaban and P-glycoprotein (P-gp) drug efflux pump inhibitors and verapamil (increased risk of bleeding) 5. Avoid acetylcholinesterase inhibitors with concurrent treatment with verapamil (risk of cardiac conduction failure, syncope and injury). 6. Avoid verapamil with chronic constipation where non-constipating alternatives are available (risk of exacerbation of constipation).			
	Paediatric			

	1. *Antihypertensive* *≤2 yr* 20 mg 2-3 times daily; *>2 yr* 40-120 mg 2-3 times daily, depending on age and response. *2. Supraventricular arrhythmias:* *a.* ORAL: *≤2 yr* 20 mg 2-3 times daily *>2 yr* 40-120 mg 2-3 times daily, depending on age and response. b. IV: *≤1 years* 0.1-0.2 mg/kg *1-15 years* 0.1-0.3 mg/kg (Max: 5 mg). All doses to be given over at least 2 minutes, repeat after 30 min if needed.			
	Fasting			
	1. To refer to the latest advisory by religious authority			
	Others (*eg. hepatic impairment, renal impairment which will be relevant to the patient)*			
	1. Renal impairment: No dosage adjustment. Not removed by hemo- or peritoneal dialysis; supplemental dose is not necessary 2. Liver impairment: Oral: In cirrhosis, reduce dose to 20% of normal and monitor ECG. IV: In cirrhosis, reduce dose to 50% of normal and monitor ECG.			
Side Effects and their Management*	- Common side effect : AV block, bradycardia, worsening heart failure, transient asystole, hypotension, dizziness, flushing, fatigue, headache, dyspnoea, peripheral oedema, constipation, nausea, abnormal liver function, skin reactions, gingival hyperplasia, extrapyramidal symptoms. - Rarely, gynaecomastia. - Potentially Fatal: **H**epatotoxicity.			
Storage*	1. Store below 30^0C, protect from light.			
Others	*Precautions* 1. Use with caution in patients in acute stage of myocardial infarction, hepatic impairment, bradycardia or 1st degree AV block, attenuated neuromuscular transmission. *Monitoring parameters* 1. Blood pressure, ECG, heart rate, liver function test (ALT) *Significant drug-drug interactions* 1. Ivabradine: Concomitant use is contraindicated due to additional heart lowering effect of verapamil to Ivabradine 2. Beta blockers & antiarrhythmic agent: May lead to additive cardiovascular effects such as AV block,bradycardia,hypotension,heart failure. 3. Lithium: Concomitant use may enhanced neurotoxicity 4. Atorvastatin : May increase risk of myopathy and rhabdomyolysis			

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References:

1. MEDOCHEMIE LTD. (2021). Product Information Leaflet: Akilen. Retrieved January 21, 2025. from https://medicinesauthority.gov.mt/file.ashx?f=3585B7F7E76D20642D14A8183D5BF1F8BCC2EA01CADBD15C
2. Verapamil. (2024). MimsGateway. Retrieved January 21, 2025, from https://online1.mimsgateway.com.my/
3. Somogyi, A., Albrecht, M., Kliems, G., Schäfer, K., & Eichelbaum, M. (1981). Pharmacokinetics, bioavailability and ECG response of verapamil in patients with liver cirrhosis. British journal of clinical pharmacology, 12(1), 51–60. https://doi.org/10.1111/j.1365-2125.1981.tb01854.x
4. O'Mahony, D., Cherubini, A., Guiteras, A. R., Denkinger, M., Beuscart, J. B., Onder, G., ... & Curtin, D. (2023). STOPP/START criteria for potentially inappropriate prescribing in older people: version 3. European geriatric medicine, 14(4), 625-632.

Vitamin D Analogues

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antipsoriatics for topical use; Vitamin D Analogues			
Indications and Dosage	Indication: 1. Psoriasis vulgaris 2. Resistant plaque psoriasis **<u>Calcipotriol 50mcg/g Ointment:</u>** ADULT: Apply to the affected skin lesions twice daily. Maintenance therapy may be achieved with less frequent application. The weekly dose should not exceed 100g. CHILD over 6 years: apply twice daily. 6-12 years maximum 50gm weekly, over 12 years maximum 75gm weekly The dosing is individualized according to product insert / protocol. **<u>Calcipotriol Hydrate 50 mcg/g & Betamethasone Dipropionate 0.5 mg/g Ointment:</u>** Apply once daily up to 4 weeks with maximum weekly dose of 100g and maximum treatment area 30% of body surface. **<u>Calcipotriol Monohydrate 50 mcg/g & Betamethasone Dipropionate 0.5 mg/g Gel:</u>** Should be applied to affected areas once daily. The recommended treatment period is 4 weeks for scalp areas and 8 weeks for non-scalp areas. The body surface area treated with calcipotriol containing products should not exceed 30% and maximum dose should not exceed 15g or 100g/ week. **<u>Calcipotriol Monohydrate 50mcg/g & Betamethasone Dipropionate 0.5mg/g Cutaneous Foam:</u>** Apply once daily up to 4 weeks with maximum daily dose of 15g and maximum treatment area 30% of body surface. *Or* **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**<u>Calcipotriol ointment:</u>** • Should be applied to the affected area. • Use as directed by your doctor or pharmacist **<u>Calcipotriol + Betamethasone Ointment:</u>** • Should be applied to the affected area. In order to achieve optimal effect, it is not recommended to take a shower or bath immediately after application. Once daily application (usually at night) **<u>Calcipotriol + Betamethasone Gel:</u>** 1. Use only for scalp psoriasis and do not use it on skin which does not have psoriasis. 2. Washing your hair before application of Xamiol is not necessary.			

	3. Shake the bottle before use and remove the cap. 4. Before applying Xamiol to the scalp, comb the hair to remove any loose scales. Apply Xamiol to the affected area with your fingertips, and rub it in gently. 5. Do not bandage, tightly cover or wrap the treated skin area. 6. Wash your hands well after using Xamiol. This will avoid accidentally spreading the gel to other parts of your body (especially the face, mouth and eyes). 7. In order to achieve optimal effect, it is recommended that the hair is not washed immediately after application of Xamiol. Let Xamiol remain on the scalp during the night or during the day. 8. Apply a mild shampoo to the dry hair, especially to those areas where the gel was applied. 9. Leave the shampoo on the scalp for a couple of minutes before washing. 10. Then wash your hair as usual. **<u>Calcipotriol + Betamethasone cutaneous foam:</u>** • Should be applied to dry skin on the affected areas of the body. **For body psoriasis:** 1. The can should be shaken for a few seconds before use. 2. Apply the foam by holding the can at least 3 cm from the skin and spray directly onto each affected area. 3. The foam can be sprayed holding the can in any orientation except horizontally. 4. It should be sprayed directly onto each affected skin area and rubbed in gently. 5. After applying the foam, put the cap back on the can to prevent accidental spraying when not in use. 6. Wash your hands well after using (unless you are using the foam to treat your hands). This will avoid accidentally spreading the foam to other parts of your body (especially the face, mouth and eyes). 7. In order to achieve optimal effect, it is recommended that the body is not washed immediately after application. Let the foam remain on the skin during the night or during the day. 8. The treated area does not need to be covered. You may wear your usual clothes however avoid contact with fabric that is easily stained by grease (e.g.silk). **For scalp psoriasis:** 1. Comb the hair to remove any loose scales. 2. Shake the can for a few seconds before use. 3. Hold the can at least 3 cm away. Spray directly into the palm of your hand. The foam can be sprayed holding the can in any orientation except horizontally. 4. Scoop the foam onto your finger and apply it directly to the affected areas. Minimize applying into the hair to make it easier to wash it out. Gently rub the foam into the scalp. After applying the foam, put the cap on the can to prevent accidental spraying when not in use. 5. Wash your hands well after using Enstilar (unless you are using the foam to treat your hands). This will avoid accidentally spreading the foam to other parts of your body (especially the face, mouth and eyes). 6. In order to achieve optimal effect, it is recommended that the hair is not washed immediately after			

	application. Let the foam remain on the scalp during the night or during the day. 7. Apply a mild, non-medicated shampoo to the dry hair, focusing on the areas where the foam was applied. It is easier to remove Enstilar when shampoo is applied to dry hair as water dilutes the cleansing effect of the shampoo. 8. Massage the shampoo into the dry hair/scalp. Leave the shampoo on the scalp for a couple of minutes before washing. 9. Rinse thoroughly with water. 10. Repeat normal shampooing if necessary. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Limited data on humans. 2. Studies with animals show higher incidence of skeletal abnormalities. 3. Systemic absorption may occur with topical vitamin D analogues. Although the recommended topical dosage is considered safe, caution is required.			
	Breastfeeding			
	1. Calcipotriol is excreted into milk, but there is no available data on Calcipotriol. Use with caution. 2. If applied to the breasts, stop breastfeeding.			
	Elderly			
	1. Use with caution in elderly patients. Severity of skin-related adverse reactions may be increased compared to younger adults.			
	Paediatric			
	1) Safety and efficacy of topical Vitamin D analogues preparations in pediatric patients below the age of 6 years have not been established. 2) Safety and efficacy with a combination of topical steroids are established in pediatric patients. Follow the specific instructed duration, use different potencies on different areas, avoid sensitive areas and occlusion unless directed, and monitor for side effects such as skin atrophy or systemic absorption			
	Fasting			
	NA			
	Others (*eg. hepatic impairment, renal impairment which will be relevant to the patient)*			
	1.			
Side Effects and their Management	Itching, rash, thinning of the skin, skin burning			

Storage*	Keep the jar tightly closed. Store below 30°C and protect from heat, moisture, and light. Do not freeze. Keep out of reach of children. **<u>Calcipotriol + Betamethasone cutaneous foam:</u>** 1. Do not store above 25°C. 2. Extremely flammable aerosol. 3. Pressurised container: May burst if heated. Protect from sunlight. Do not expose to temperatures exceeding 50°C. 4. Do not pierce or burn, even after use. 5. Do not spray on an open flame or other ignition source. Keep away from sparks, open flames and other ignition sources. No smoking near the can.			
Others	1. Do not use more than the recommended dose because of the risk of hypercalcaemia. 2. Avoid contact w/ face, mouth & eyes. 3. Avoid excessive exposure to sunlight. 4. Avoid concurrent treatment w/ other steroids. 5. Avoid in erythrodermic and generalised pustular psoriasis.			
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References:

1. LEO Laboratotories Ltd. (2021).Product information leaflet: Enstilar® . Retrieved from Quest 3+ Product Search on January 20, 2025.
2. GENUONE Sciences Inc. (2022).Product information leaflet: CALCIBET Ointment. Retrieved from Quest 3+ Product Search on January 20, 2025.
3. LEO Laboratotories Ltd. (2019).Product information leaflet: Xamiol®. Retrieved from Product Search on January 20, 2025.
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8. Ferreira, C., Azevedo, A., Nogueira, M., & Torres, T. (2020). Management of psoriasis in pregnancy - a review of the evidence to date. Drugs in context, 9, 2019-11-6. https://doi.org/10.7573/dic.2019-11-6

Warfarin

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Anticoagulant, Vitamin K antagonist			
Indications and Dosage	Treatment and prophylaxis of thromboembolic disorders 1. Initially 2-5mg per day. 2. Maintenance dose 2-10mg daily according to the INR. 3. Dosing is individualised based on the patient's INR and according to product insert/ protocol/ guideline.			
Method of Administration*	1. To be taken with or without food, at the same time each day. **Missed dose management :** 2. If you miss a dose (within 8 hours of usual time), take it as soon as you remember. 3. If it is almost time for your next dose, wait until then to take the medicine and skip the missed dose. 4. Do not take a double dose. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	1. Warfarin crosses the placenta. It increases the risk of adverse fetal outcomes.[1] 2. Discuss with your doctor if you are planning for a pregnancy/ have become pregnant while taking warfarin.			
	Breastfeeding			
	Warfarin does not enter human milk and is compatible with breastfeeding.			
	Elderly			
	Beers Criteria: Avoid starting warfarin as initial therapy for the treatment of nonvalvular atrial fibrillation or VTE unless alternative options (i.e., DOACs) are contraindicated or there are substantial barriers to their use. Rationale: Compared with DOACs, warfarin has higher risks of major bleeding (particularly intracranial bleeding) and similar or lower effectiveness for the treatment of nonvalvular atrial fibrillation and VTE. Patients more than 60 years of age tend to require lower dosage to produce a therapeutic level of anticoagulation. (Due to changes in warfarin metabolism)			
	Paediatric			
	Initiation and follow up is carried out by pediatricians. Monitor to ensure INR is in therapeutic range.			

	Fasting			
	To be taken after breaking fast. **To refer to the latest advisory by religious authority**			
	Others			
	Renal impairment/ Hepatic impairment ● Patients may have a higher risk of bleeding and enhanced response to warfarin. Monitor to avoid over-anticoagulation.[2, 3]			
Side Effects and their Management*	1. Educate patients on symptoms of bleeding such as bruises of unknown cause, blood in urine/dark-coloured urine, black stools, gum bleeding or heavy menstrual bleeding. 2. Seek urgent medical attention if you experience symptoms as above.			
Storage*	1. Store below 30°c. Keep away from children. 2. Protect from moisture and light			
Others	**Precautions** 1. To inform healthcare professionals (dentist, surgeon, doctor, pharmacist) if you are planning for tooth extraction, or when getting consultation for medication, supplement or herbal remedies. 2. Avoid hazardous activities that could result in serious lacerations or blunt trauma. **Monitoring** 1. *INR* (International normalised ratio) measures how long it takes for your blood to clot. 2. Target therapeutic range is individualized based on the condition which you are being treated for. 3. Dose of warfarin will be adjusted based on INR. 4. It is crucial to adhere to the scheduled blood test and counselling appointment to ensure that target INR is achieved. Bring along an anticoagulant booklet and all medications during the doctor/pharmacist appointment. **Drug-drug Interaction** Consult doctor/ pharmacist before starting, stopping or changing dose of any medications/ supplements/ vitamins, regardless of whether it is a prescription or over-the-counter medication including traditional medicines/ herbal remedies. *Please refer to the Warfarin Interaction Handbook[4] for more information.			
	Drug-food interaction			
	1. Follow a healthy, well-balanced and consistent diet.			
	1. Foods high in vitamin K (such as liver, green leafy vegetables) can inhibit warfarin effect. 2. However, it is not necessary to completely avoid them. Have consistent intake of vegetables/ food with high content of high vitamin K. 3. Avoid drastic change in diet to minimize fluctuations in INR. 4. * Please refer to the Warfarin Interaction Handbook[4] for more information.			
	Lifestyle			

	Alcohol consumption, smoking and stress affect warfarin therapy. Advice to only consume small quantity of alcohol, stop smoking and manage stress well.			
	Avoid hazardous activities that could result in serious lacerations or blunt trauma.			
	Strengths/ colour of warfarin tablets			
	• 1 mg - Apo-Warfarin (pink), Maforan (white) • 2 mg - Apo-Warfarin (lavender), Maforan (orange) • 3 mg - Orfarin (blue), Maforan (dark blue) • 5 mg - Apo-Warfarin (peach), Maforan (pink) Remind the patient to double check if a new brand is dispensed. Advice not to remember the colour, remember the dose prescribed instead.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

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Zidovudine / Lamivudine

Name :				
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*				
Pharmacological Group	Antiretroviral - Nucleotide/nucleoside reverse transcriptase inhibitors (NRTIs)			
Indications and Dosage	HIV Infection in combination with other antiretroviral agents. a) Adult and adolescent weight ≥30kg: one tablet twice daily b) Children weighing between 21kg and 30kg: half tablet in the morning, one tablet in the evening c) Children weighing between 14kg and 21kg: half tablet twice daily			
Method of Administration*	1. May be taken with or without food. 2. Swallow whole. Tablet may be crushed and mixed with a small amount of semi-solid food or liquid (at least 15ml) and to be consumed immediately *Missed dose management* 1. To take medication consistently at the same time everyday. Any missed dose to be taken as soon as possible. 2. However if the gap is more than 6 hours, to skip and continue with a regular dosing schedule. Do not double the dose on the next administration time. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Patients who become pregnant while taking zidovudine/lamivudine may continue if viral suppression is effective and the regimen is well tolerated			
	Breastfeeding			
	1. Excreted in breast milk 2. It is recommended that HIV infected women do not breastfeed their infants under any circumstances to avoid transmission to infant			
	Elderly			
	No specific data are available, however special care is advised on this age group due to age is associated changes such as the decrease in renal function and alteration of haematological parameters			
	Paediatric			
	Should not be used for children weighing less than 14kg, since doses cannot be appropriately adjusted for the weight of the child.			

	Fasting			
	To be discussed with the Infectious Disease Consultant.			
	Renal impairment			
	1. Dosage adjustment is required in creatinine clearance ≤ 50ml/min: use dose-adjusted individual components or alternative antiretroviral agents 2. Lamivudine: refer to individual monograph for adjusted dose 3. Zidovudine: Not available as single pill			
Side Effects and their Management*	1. Bone marrow suppression especially anemia.Monitor haematological parameters 2. Others : Gastrointestinal intolerance, headache, insomnia (management: symptomatic treatment)			
Storage*	1. Do not store above 30°C. 2. Store in the original container			
Others	Special precaution: 1. Discontinue use if develop pancreatitis, lipoatrophy or haemoglobin drop <8g/dL or ≥25% of baseline or patient develop symptomatic anaemia and/or leukopenia. 2. Patients co-infected with hepatitis B and Hepatitis C are at increased risk of severe and fatal hepatic adverse events. Not recommended to be used in severe hepatic impairment; use an individual adjusted dose.			

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***Mandatory for validation / peer review**

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Accuhaler

Name :			**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Dry powder inhaler (DPI)				
Indications and Dosage	The indication and dosage depend on the drug content.				
Method of Administration*	**DEVICE PREPARATION**				
	Before Every Use	Make sure:			
		The Accuhaler has **not** expired.			
		The Accuhaler is **not** empty.			
		Check inside the mouthpiece of the Accuhaler and ensure it is free from foreign objects.			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Hold the outer case in one hand and place the thumb of the other hand on the thumb grip of Accuhaler to slide open the cover until a **"click"** sound is heard. ● Hold the Accuhaler horizontally; slide the lever away as far as it will go until another **"click"** sound is heard. The dose is loaded. ***Note: Do not** tip the Accuhaler upside down or shake the device after dose loading.*			
	Exhale	**Step 2** ● Sit upright or stand in an erect position. • Breathe out (exhale) slowly and fully, **away** from the Accuhaler.			
	Chin & mouth	**Step 3** ● **Slightly tilt the chin up.** ● Place the inhaler mouthpiece gently between the teeth. Ensure a **tight seal** of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes: Do not block** the opening of the mouthpiece with the tongue or teeth. The tongue should be lowered under the mouthpiece.*			
	Inhale	**Step 4** Breathe in **forcefully** and **deeply** through the mouth.			
	Hold breath	**Step 5** **Remove** the Accuhaler from the mouth, and with the lips closed, **hold the breath** for 5-10 seconds or as long as comfortable.			
	Exhale	**Step 6**			

		Breathe out (exhale) gently, **away** from the Accuhaler.			
	Close & Rinse	**Step 7** Close the device by sliding the thumb grip back to the original position until a **"click"** sound is heard. Rinse and gargle the mouth with water and **spit it out** (for a steroid-containing inhaler).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	Consider patient-related factors such as **inspiratory effort**, manual dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Some DPIs may be appropriate for older children. Refer guidelines, for example *Global Initiative for Asthma*				
	Fasting				
	To refer to the latest advisory by religious authority				
	Others				
	NA				
Side Effects and their Management*	For corticosteroid-containing inhalers, gargle the mouth with water and spit it out.				
Storage*	Refer to product inserts for complete information. In general: • Store the device in a clean, cool, and dry place at appropriate temperatures. • Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). • Keep it safely out of the reach of children.				
Others	**Cleaning***	Wipe the outside of the mouthpiece at least once a week with dry tissue or cloth. **Do not** use water or liquids.			
	Dose checking	• Contains a dose counter. • On the last five (5) doses, the numbers on the dose counter will appear in red.			

		When the counter shows 0, Accuhaler is empty and should be disposed of.			
	Expiry date	Follow the expiry date on the product.			

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References:

1. Usmani OS. (2019 Mar). Choosing the right inhaler for your asthma or COPD patient. Therapeutics and clinical risk management. 14:461-72.
2. Ohar JA, Ferguson GT, Mahler DA, Drummond MB, Dhand R, Pleasants RA, Anzueto A, Halpin DM, Price DB, Drescher GS, Hoy HM. (2022 Jan). Measuring peak inspiratory flow in patients with chronic obstructive pulmonary disease. International journal of chronic obstructive pulmonary disease. 6:79-92.
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Breezhaler

Name :			**Unit :**		
● *Please tick (✔)* ***Yes*** *for correct instruction.* ● *Please tick (✔)* ***No*** *for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Dry powder inhaler (DPI)				
Indications and Dosage	The indication and dosage depend on the drug content.				
Method of Administration*	**DEVICE PREPARATION**				
	Before Every Use	Make sure:			
		The Breezhaler capsule is **not** expired.			
		The patient has the capsules.			
		Check inside the mouthpiece of the Breezhaler and ensure it is free from foreign objects.			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Pull off the cap and tilt the mouthpiece to open the inhaler. ● Ensure the hands are dry and clean. Remove one capsule from the blister pack. ● Insert the capsule into the chamber in the middle of the Breezhaler and close the mouthpiece until a **"click"** sound is heard. ● Hold the inhaler upright and pierce the capsule by firmly pressing both side buttons at the same time. Pierce the capsule only **ONCE.** ● Release the side buttons of the Breezhaler. ***Notes: Do not*** *tip the Breezhaler upside down or shake the device after dose loading.* ***Do not block*** *the air vents.*			
	Exhale	**Step 2** ● Sit upright or stand in an erect position. ● Breathe out (exhale) slowly and fully, **away** from the Breezhaler.			
	Chin & mouth	**Step 3** ● **Slightly tilt the chin up.** ● Place the inhaler mouthpiece gently between the teeth. Ensure a tight seal of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes: Do not block*** *the opening of the mouthpiece with the tongue or teeth. The tongue should be lowered under the mouthpiece.*			
	Inhale	**Step 4**			

		Breathe in **forcefully** and **deeply** through the mouth. A whirring sound is heard during inhalation. ***Notes**: If the whirring sound is not heard, the capsule may be stuck in the capsule chamber. Loosen the capsule by gently tapping the base of the inhaler and start from step 2 again.*			
	Hold breath	**Step 5** **Remove** the Breezhaler from the mouth, and with the lips closed, **hold the breath** for 5-10 seconds or as long as comfortable.			
	Exhale	**Step 6** Breathe out (exhale) gently, **away** from the Breezhaler.			
	Repeat	**Step 7** Open the mouthpiece and inspect for any remaining powder left in the capsule. If there is so, close the mouthpiece and repeat steps 2 to 6 (**do not** pierce the capsule again). ***Note**: A good practice based on expert opinion is to perform two separate inhalations from a single capsule.*			
	Close & Rinse	**Step 8** • Remove the empty capsule and dispose appropriately. • Replace the mouthpiece with the cap after use. • Rinse and gargle the mouth with water and **spit it out** (for a steroid-containing inhaler).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	Consider patient-related factors such as **inspiratory effort**, manual dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Some DPIs may be appropriate for older children. Refer guidelines, for example *Global Initiative for Asthma*				

	Fasting				
	To refer to the latest advisory by religious authority.				
	Others				
	NA				
Side Effects and their Management*	For corticosteroid-containing inhalers, gargle the mouth with water and spit it out.				
Storage*	Refer to product inserts for complete information. In general: ● Store the device in a clean, cool, and dry place at appropriate temperatures. ● Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). ● Breezhaler capsules must always be stored in the blister card and only removed immediately before use. ● Keep it safely out of the reach of children.				
Others	**Cleaning***	Wipe the outside of the mouthpiece at least once a week with dry tissue or cloth. Do not use water or liquids.			
	Expiry date	Follow the expiry date on the product.			
	Additional notes	● Do not swallow the capsule. ● Do not use the Breezhaler capsules with any other inhaler. ● Never place the capsule into the mouthpiece of the inhaler. ● Do not press the side buttons more than once. ● Do not press the side buttons while inhaling through the mouthpiece.			

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2. Ohar JA, Ferguson GT, Mahler DA, Drummond MB, Dhand R, Pleasants RA, Anzueto A, Halpin DM, Price DB, Drescher GS, Hoy HM. (2022 Jan). Measuring peak inspiratory flow in patients with chronic obstructive pulmonary disease. International journal of chronic obstructive pulmonary disease. 6:79-92.
3. The Electronic Medicine Compendium (eMC) (Available at http://www.medicines.org.uk/emc/). Accessed on October 15, 2024.
4. Asthma UK. How to use your inhaler (Available at https://www.asthmaandlung.org.uk/living-with/inhaler-videos). Accessed on October 15, 2024.
5. Mohammad Y. (2019 Oct). How to manage asthma during Ramadan? 97(10): 1073-1076. PMID: 31691934
6. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2024. Updated May 2024. Available from: www.ginasthma.org. Accessed on January 20, 2025.

Bowel Cleansing

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Laxatives and bowel preparation agents: 1. Polyethylene Glycol/Macrogol 4000 Powder 2. Sodium picosulfate, magnesium oxide & citric acid powder 3. Monobasic Sodium Phosphate 48%, Dibasic Sodium Phosphate 18% 4. Sodium Biphosphate 16%, Sodium Phosphate 6% Rectal Solution			
Indications and Dosage	This medicine is used as part of a bowel cleansing procedure before x-ray examination, endoscopy, colonoscopy, radiological examination or colonic surgery. It works by producing bowel motions. It usually works within 30 minutes, however, it may take as long as 6 hours to produce the effect. Expect frequent liquid stools. The patient needs to stay close to a toilet until the cleansing effect is complete. Refer method of administration for dosage of each agent. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**Polyethylene Glycol/Macrogol 4000 Powder** 1. Dilute 1 sachet (3 in total) with 1 L of water (3 L in total) at the recommended timing by the physician. Volume adjustment is not needed for fluid restriction patients. 2. To improve the flavour, the solution may be chilled or lemon juice added. 3. Dosing time: a. Early morning procedure: First dose taken at 4 pm, second dose at 6 pm, and third dose at 8 pm, one day before the procedure. b. Afternoon (or later) procedure: First dose taken at 6 pm, second dose at 8 pm, one day before procedure and third dose at 6 am on the day of procedure. **Sodium picosulfate, magnesium oxide & citric acid powder** 1. Fill a mug with 150ml of cold water. Empty contents of 1 sachet in the mug. Stir until completely dissolved. 2. Following each dose, advise the patient to drink 1.5L to 2L of a variety of clear fluids over 4 hours. 3. No fluid should be taken at least 2 hours before the procedure. 4. Dosing time: a. Early morning procedure: First dose taken at 5pm and second dose at 9pm, one day before the procedure. b. Afternoon (or later) procedure: First dose taken at 7 pm, one day before procedure and second dose at 6 am on the day of procedure. **Monobasic Sodium Phosphate 48%, Dibasic Sodium Phosphate 18%** 1. Adult: 45 mL solution diluted in half glass cold water (~120 mL of cold water) for 2 doses. This should be drunk over ½ hour followed by at least 4 – 6 glasses of			

	plain water thereafter. Drink a glass of clear liquid before taking this preparation to prevent vomiting. 2. Dosing time: a. For morning appointment: First dose is given at 7 am then 2nd dose at 7 pm on the day before the procedure. b. For afternoon appointment: First dose is given at 7 pm on the day before the procedure then 2nd dose at 7 am on the day of the procedure. Timing recommendations may vary. **Sodium Biphosphate 16%, Sodium Phosphate 6% Rectal Solution (Enema)** 1. Lie on your left side with both knees bent and your arm are rest in front of you. 2. Remove protective shield from the enema tip while holding the bottle upright. 3. Gently insert enema tip into rectum with the tip pointing towards the navel. 4. Do not force enema into the rectum as this may cause injury. 5. Squeeze the bottle until nearly all liquid is expelled. It is not necessary to empty the bottle completely as it has more than the amount needed. 6. Remove enema from rectum. Maintain position until the urge to evacuate is strong (Usually 2-5 minutes). 7. Dosing regimen: Using more than 1 enema within 24 hours can be harmful. 8. The enema should be inserted 2 hours before the procedure. 9. Patients with stoma bag: 50ml to be inserted into stoma bag, another 50ml to be inserted through anal. **7 days before procedure:** 1. Stop taking iron preparation. 2. Persons taking antiplatelet agents, e.g. aspirin, ticlopidine, should discontinue them upon a prior consultation with the prescribing physician. 3. Persons taking anticoagulants, e.g. Warfarin, should consult their attending physician. It should be withheld 3 – 5 days prior to the procedure and restarted within 24 hours. 4. Continuation or re-initiation of anticoagulation should be adjusted according to the stability of the patient and estimated risks surrounding the specific intervention/ procedure performed. **Dietary and medication consideration:** ● **2 days before procedure:** 1. Eat a low residue and low fiber diet. Avoid fruits and vegetables, particularly those with fine seeds, red meat, high fibre breads or high fibre cereals. ● **1 day before procedure** 1. Milk or milk products, red/purple-coloured drink or meal, alcohol and carbonated drink should not be taken. a. No solid food after lunch. b. Drink plenty of clear water before midnight. ● **On the day of procedure** 1. Continue taking other medications as advised by the doctor a. Check on the patient's medication list that to be continued, stopped or day for reinitiating.			

	● **Clear fluid list** 1. Water, tea or coffee (no milk or non dairy creamer), sweeteners are acceptable. 2. Carbonated or non-carbonated soft drinks (not red- or purple-coloured). 3. Fruit flavoured cordial (not red- or purple-coloured). 4. Strained fruit juices without pulp. 5. Do not drink any alcoholic beverages. 6. Clear soups. 7. Strained low-sodium chicken or beef soup without solid material. **Do not stop taking your medications unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Monobasic Sodium Phosphate 48%, Dibasic Sodium Phosphate 18%: It cannot be used during pregnancy, unless its use is completely necessary and under medical monitoring. 2. Polyethylene Glycol/Macrogol 4000 Powder: Limited data is available. Should only be used when necessary. 3. Sodium Biphosphate 16%, Sodium Phosphate 6% Rectal Solution: Pregnancy category C			
	Breastfeeding			
	1. Monobasic Sodium Phosphate 48%, Dibasic Sodium Phosphate 18%: It is not known whether it enters nursing milk. Do not breastfeed from the first dose to 24 hours after the last dose. 2. Polyethylene Glycol/Macrogol 4000 Powder: Limited data is available. Should only be used when necessary.			
	Elderly			
	1. Sodium Biphosphate 16%, Sodium Phosphate 6% Rectal Solution: Risk of electrolyte disturbances (especially in patients with kidney disease or those taking diuretics). Generally not recommended in frail elderly patients. 2. Polyethylene Glycol/Macrogol 4000 Powder: Requires significant fluid intake, which may be challenging for elderly patients with heart or kidney disease. Option : split-dose regimen (half the dose the evening before, and half on the morning of the procedure)			
	Paediatric			
	1. Polyethylene Glycol/Macrogol 4000 Powder: contra-indicated (subjected to brand) 2. Sodium Biphosphate 16%, Sodium Phosphate 6% Rectal Solution: caution in children aged 2-11 3. Monobasic Sodium Phosphate 48%, Dibasic Sodium Phosphate 18%: no approved indication for paediatric			
	Fasting			
	1. To refer to the latest advisory by religious authority			
	Others			
	1. Sodium Biphosphate 16%, Sodium Phosphate 6%			

	Rectal Solution: Use in caution in patients with severe renal impairment (creatinine clearance <30mL/min) 2. May cause fluid and electrolyte disturbances due to dehydration 3. Use cautiously in people with cardiac insufficiency and those treated with diuretics, who may be at higher risk of fluid and electrolyte imbalances. 4. Polyethylene Glycol/Macrogol 4000 Powder can be used in people with fluid restriction (eg. renal failure, heart failure) with the same method of dilution.			
Side Effects and their Management*	1. Frequent bowel movement within 1 – 2 hours, stay within easy reach to the toilet. 2. Some people may encounter nausea, vomiting and bloating. **3.** It is advisable to bring a responsible adult to accompany the patient before and after the procedure.			
Storage*	Store in a cool dry place.			
Others	1. Do not take an extra dose unless directed by a health professional. 2. Monobasic Sodium Phosphate 48%, Dibasic Sodium Phosphate 18%: Concomitant use with other preparations based on sodium phosphate is not permitted. 3. Polyethylene Glycol/Macrogol 4000 Powder: Avoid intake of oral treatments before and after laxatives ingestion until medical examination is completed. For drugs with narrow therapeutic range or short half-life (eg. digoxin, antiepileptics, coumarins, immunosuppressants), efficacy might be affected.			

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Remarks:

Reviewed by: Name & Signature **Date:**

*** Mandatory for peer review/validation**

References:

1. MIMS Hong Kong. (2025). Phosphosoda. MIMS Online. https://www.mims.com/hongkong/drug/info/phosphosoda
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Combined Oral Contraceptive Pills (COCP)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Hormonal Contraception : 1. Ethinyl Estradiol 30 mcg and Levonorgestrel 150 mcg (Rigevidon) 2. Ethinyl Estradiol 30 mcg and Desogestrel 150 mcg (Marvelon) 3. Ethinyl Estradiol 20 mcg and Desogestrel 150 mcg (Mercilon) 4. Ethinyl Estradiol 20 mcg and Levonorgestrel 100 mcg (Loette) 5. Ethinyl Estradiol 20 mcg and Drospirenone 3mg (Yaz) 6. Ethinyl Estradiol 35 mcg and Cyproterone 2mg (Dianne 35)			
Indications and Dosage	**<u>Indication (1-3)</u>** Oral Contraception, Abnormal Uterine Bleeding (PCOS, Fibroid, Endometriosis) **Dosage** : 1 tablet daily as prescribed by the doctor. Duration to be taken will depend on desire of withdrawal bleed. **Cyclical (21/7 or 24/4) vs Extended (84/7) vs Continuous.** Subsequent courses of COCP can be repeated as per doctor's instructions. **<u>Indication (4-6)</u>** Oral Contraception, Abnormal Uterine Bleeding (PCOS, Fibroid, Endometriosis). Used especially in patients with PCOS androgen features **Dosage** : 1 tablet daily as prescribed by the doctor. Duration to be taken will depend on desire of withdrawal bleed. **Cyclical (21/7 or 24/4) vs Extended (84/7) vs Continuous.** Subsequent courses of COCP can be repeated as per doctor's instructions. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	**For Contraception:** Need to be taken immediately or at least within (including) D5 of menstrual cycle. If it exceeds D5 of the menstrual cycle, an additional contraception method is needed for 7 days. **For Other Indication:** Can be taken anytime once prescribed by the doctor. Must be taken at the same time every day before or after a meal. If prone to nausea, can be taken after meal **It is important to take the pills as directed because missing pills or taking them not on time make them less effective.** **Do not stop taking your medication unless advised to do so by your prescriber**			

Missed Pills Cyclical COCP (21/7) Management

1 tablet daily for 21 consecutive days, followed by a 7-days tablet (hormone) free interval

Hormone-Free Interval (HFI) is considered to start 24 hours after the last pill is taken.

INCORRECT USE OF COCP	RECOMMENDATION
LATE RESTARTING AFTER HFI	
≥ 9 days since last active pill was taken	Take the most recent missed pill as soon as possible Continue the remaining pills at the usual time Condoms should be used or sex avoided until pills have been taken for 7 consecutive days Consider follow up pregnancy test Consider EC if UPSI has taken place during or after the HFI
1 MISSED PILL (48 TO <72 HOURS SINCE LAST PILL IN CURRENT PACK WAS TAKEN)	
Week 1 1 pill missed after HFI <u>(The first pill after the HFI must have been taken correctly; if not, follow recommendation for late restarting)</u>	Take the missed pill as soon as possible Continue the remaining pills at the usual time No additional contraceptive precaution required* EC not required* * If the pack is used correctly earlier in week 1 and the 7 days prior to the HFI. If in doubt, consider additional contraceptive precaution/ EC
Week 2 or Week 3 (or subsequent consecutive weeks of continuous pill-taking) 1 pill missed after HFI	• Take the missed pill as soon as possible • Continue the remaining pills at the usual time • No additional contraceptive precaution required** EC not required** ** If the pack is used correctly in the previous 7 days. If in doubt, consider additional contraceptive precaution/ EC
2 OR MORE MISSED PILLS (≥72 HOURS SINCE LAST PILL IN CURRENT PACK WAS TAKEN)	
Week 1 2-7 pills missed after HFI <u>(The first pill after the HFI must have been taken correctly; if not, follow recommendation for</u>	• Take the most recent missed pill as soon as possible • Continue the remaining pills at the usual time • Condoms should be used or sex avoided until pills have been taken for 7 consecutive days • Consider follow up pregnancy test • Consider EC if UPSI has taken

	<table><tr><td><u>late restarting)</u></td><td>place during the HFI or week 1</td></tr><tr><td>Week 2 or Week 3 (or subsequent consecutive weeks of continuous pill-taking) 2-7 pills missed after HFI</td><td>• Take the most recent missed pill as soon as possible • Continue the remaining pills at the usual time • If 2 or more pills missed in the 7 days prior to a scheduled HFI, omit the HFI • Condoms should be used or sex avoided until pills have been taken for 7 consecutive days • EC not required** ** If the pack is used correctly in the previous 7 days. If in doubt, consider additional contraceptive precaution/ EC</td></tr><tr><td>>7 consecutive pills missed in any week of pill taking</td><td>• Manage as new start contraception • Consider immediate pregnancy test • Quick start new COCP packet (or consider other effective contraception) • Condoms should be used or sex avoided until pills have been taken for 7 consecutive days • Consider follow up pregnancy test • Consider EC</td></tr></table> ***Abbreviations:*** *COCP, combined oral contraception; EC, emergency contraception; HFI, hormone-free interval; UPSI, unprotected sexual intercourse* **Note: Always read the product information leaflet before counsel the patient. Information may differ depending on the product**			
Missed Pills Cyclical COCP (24/4) Management ***1 tablet daily for 24 consecutive days, followed by a 4-days inactive tablet (hormone- free interval)***	Missed pill management refers to hormone-containing tablets <table><tr><th>INCORRECT USE OF COCP</th><th>RECOMMENDATION</th></tr><tr><td colspan="2">< 12 Hours Late</td></tr><tr><td colspan="2">• Take the most recent missed pill as soon as possible • Continue the remaining pills at the usual time</td></tr><tr><td colspan="2">≥ 12 Hours Late</td></tr><tr><td colspan="2">• Take the most recent missed pill as soon as possible • Continue the remaining pills at the usual time • Do not miss taking the tablets for longer than 4 days (or up to 7 days for optimum contraception)</td></tr><tr><td colspan="2">Day 1 to Day 7</td></tr><tr><td colspan="2">• Take the most recent missed pill as soon as possible (this may mean take 2 tablets at the same time)</td></tr></table>			

	● Continue the remaining pills at the usual time ● Condoms should be used or sex avoided until pills have been taken for 7 consecutive days ● Consider follow up pregnancy test if UPSI has taken place in the preceding 7 days **Day 8 to Day 14** ● Take the most recent missed pill as soon as possible (this may mean take 2 tablets at the same time) ● Continue the remaining pills at the usual time ● If have taken the tablets correctly in the 7 days before the 1st missed tablet, no extra contraception is needed ● If the tablets are not taken correctly or more than 1 tablet is missed, extra contraception is advised for 7 days **Day 15 to Day 24** ● Take the most recent missed pill as soon as possible (this may mean take 2 tablets at the same time) ● Continue the remaining pills at the usual time ● Discard the 4 inactive tablet and start the next pack right away ● If the tablets are not taken correctly or more than 1 tablet is missed, extra contraception is advised for 7 days ***Abbreviations:*** *COCP, combined oral contraception; EC, emergency contraception; HFI, hormone-free interval; UPSI, unprotected sexual intercourse* **Note: Always read the product information leaflet before counsel the patient. Information may differ depending on the product**			
Special Considerations	**Pregnancy**			
	Contraindicated			
	Breastfeeding			
	Postpartum breastfeeding**:** Start after 6 months Postpartum but not breastfeeding**:** Start after Day 21 postpartum. If started beyond this, additional contraception is needed for 7 days.			
	Elderly			
	Caution in women who are above 60 years old due to stroke, cardiovascular and VTE risk			
	Paediatric			
	The safety and efficacy of COCP in children who have not achieved menarche have not been established.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	Hepatic Impairment**:** Contraindicated			

Side Effects and their Management*	Nausea, headaches, breast tenderness, diarrhoea, bloating and breakthrough bleeding. Continue taking the pills as most of these symptoms will improve with time. If any of the following symptoms occur, the drug should be stopped and urgent medical advice should be sought after: ● Severe and sudden pain in the chest ● Breathlessness ● Severe headache ● Abdominal pain ● Sudden blurred vision or loss of sight ● Unexplained tenderness or pain and swelling in one leg ● Weakness, numbness or difficulty speaking ● Change in mood or depression			
Storage*	Store in dry, cool places at room temperature. Direct sunlight and extreme temperatures may cause them to break down and become less effective			
Others	COCP increases the risk of VTE, especially during the first year of initiation. VTE risk is dependent on progestogen type and oestrogen dose. Caution should be exercised in women over 50 years of age due to the increased risks of stroke, cardiovascular events and VTE. Patients who have had bariatric surgery should be advised that the effectiveness of COCP could be reduced Patients should be informed that current use of COCP is associated with an increased risk of myocardial infarction and ischaemic stroke but these events are still extremely uncommon in COCP users. Patients should also be advised that current use of COCP is associated with a small increased risk of breast cancer which reduces with time after stopping COCP. Patients should also be advised that current use of COCP for more than 5 years is associated with a small increased risk of cervical cancer; risk reduces over time after stopping COCP and is no longer increased by about 10 years after stopping. Drug-drug interactions **(Enzyme Inducing Drugs - May reduce the effectiveness of COCP up to 28 days after stopping)** 1. Antibiotics – Rifampicin 2. Antiretrovirals – Ritonavir, Nevirapine, Darunavir, Efavirenz 3. Anticonvulsants – Carbamazepine, Phenytoin, Lamotrigine, Topiramate, Rufinamide, Oxcarbazepine 4. Antifungals – Griseofulvin, Fluconazole, Ketoconazole 5. St. John's Wort Drug-food interactions **(May cause symptoms of oestrogen excess)** 1. Grapefruit juice			

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Remarks:

Reviewed by: Name & Signature **Date:**

*** Mandatory for peer review/validation**

References:

1. Formulari Ubat KKM (FUKKM)
2. MIMS Malaysia
3. Faculty of Sexual & Reproductive Healthcare (FSRH) Guidance 2018: Drug Interactions with Hormonal Contraception
4. Faculty of Sexual & Reproductive Healthcare (FSRH) Guideline 2019: Combined Hormonal Contraception
5. Faculty of Sexual & Reproductive Healthcare (FSRH) Guideline 2017: Contraception After Pregnancy
6. Faculty of Sexual & Reproductive Healthcare (FSRH) CEU Guidance 2021: Recommended Actions after Incorrect Use of Combined Hormonal Contraception
7. U.S. Medical Eligibility Criteria for Contraceptive Use 2024 (U.S. MEC)

Ear Drops

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Antiinfective 2. Antiinflammatory 3. Cerumenolytics			
Indications and Dosage	To counsel based on specific medication's indication and dosage as prescribed by doctor			
Method of Administration*	1. Read the medication label. 2. Wash hands with soap and water. Dry them with a clean towel or tissue. 3. If the ear drops are a cloudy suspension, shake the bottle well for 10 seconds. If necessary, roll the bottle between the palms of your hands to help warm the drops to near body temperature. 4. Remove the dropper cap and look closely at the tip to make sure it is not cracked or chipped. Do not touch the tip. 5. Position the head with the affected ear facing upward. Either lie on your side or tilt the affected ear up. Pull the upper ear back and upward. Look for the ear canal to open. 6. Place the correct number of drops in the ear. 7. Keep the ear tilted up for 5-10 minutes or insert a soft cotton plug in the ear to keep the solution in the ear. 8. Use a clean tissue to absorb and wipe away any drops that spill out of the ear. 9. Repeat steps 4 till 7 on the other ear, if using ear drops on both ears,. 10. Replace cap on the bottle and screw it on securely. 11. Use the drops as directed for the length of time prescribed. Missed dose management: 1. Take as soon as you remember and do not double the dose.			
Special Considerations	**Pregnancy**			
	1. **NOT** recommended during pregnancy a. Polymyxin B Sulphate 10,000U, Neomycin Sulphate 5mg and Hydrocortisone 10mg Ear Drops 2. Used only if the benefit outweighs the risk a. Ofloxacin b. Gentamicin			
	Breastfeeding			
	1. **NOT** recommended during breastfeeding a. Polymyxin B Sulphate 10,000U, Neomycin Sulphate 5mg and Hydrocortisone 10mg Ear Drops b. Ofloxacin			
	Paediatric			
	1. Infant: try swaddling them to keep them still. 2. Toddlers: may need to be cradled with their arms and			

	legs fully restrained. 3. For children <3 year old, you will need to pull the edge of the ear downward and backward. Look for the ear canal to open.			
	Fasting			
	Refer to the latest advisory by the religious authority			
Side Effects and their Management*	1. Irritation. 2. Swelling. 3. Skin rash. 4. Unpleasant taste in your mouth. This is because the ear canal is connected to the throat and some of the liquid may drain into your mouth. Contact your healthcare provider if you think you are having a side effect of a medicine.			
Storage*	1. Keep away from the reach of children. 2. Store in a cool, dry place, away from direct heat and light. 3. For ear drops requiring storage inside the fridge, do not store at the door side and inside the freezer. 4. Discard if there is any preparation left in the container after you have finished your course of treatment. 5. Ear drops should not be used if the bottle has been open for longer than prescribed duration.			
Others	1. Do not allow the dropper tip to touch your ears, fingers or any other surface. 2. Do not poke inside your ear with a cotton bud as this can cause a perforated eardrum. 3. Do not share ear drops with anyone else. 4. If you have a ruptured eardrum, do not use drops unless your healthcare provider says to. It can allow potentially damaging chemicals into the middle ear. 5. After you have completed the course of treatment, throw away any leftover drops. 6. If unopened drops have expired, discard them at once.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for peer review/validation**

References:

1. Ministry of Health Malaysia. FUKKM list. Retrieved September 12, 2024, from https://i.pharmacy.gov.my/fukkm
2. American Academy of Paediatrician (2024). Medication administration in early education and child care settings. Retrieved September 12, 2024, from https://wcmcahs.com/wp-content/uploads/2020/07/Medication_Administration.pd
3. SingHealth. (2024). Ear Drops - Dosage and How to Use. Retrieved September 12, 2024, from https://www.singhealth.com.sg/patient-care/medicine/ear-drops
4. Drugs.com. (2024). Clotrimazole topical Pregnancy and Breastfeeding Warnings. Retrieved September 12, 2024, from https://www.drugs.com/pregnancy/clotrimazole-topical.html
5. Ildong Pharm. (2016). Effexin Otic Solution (Ofloxacin Ear drops)Ear Drop Package insert. Retrieved from https://www.pharmacompass.com/chemistry-chemical-name/effexin
6. Glenmark. (2022). Candid Ear drops(Clotrimazole)/ Ear Drop Package insert. Retrieved from https://www.1mg.com/drugs/candid-ear-drop-175798?srsltid=AfmBOoqsnHbmn3cl2gzdvRRCkDW4-JtB-BU_WtGfN8ZgbqqT2t6rlUf3&wpsrc=Google+Organic+Search

Ellipta

Name :			**Unit :**		
● *Please tick (✔)* ***Yes*** *for correct instruction.* ● *Please tick (✔)* ***No*** *for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Dry powder inhaler (DPI)				
Indications and Dosage	The indication and dosage depend on the drug content.				
Method of Administration*	**DEVICE PREPARATION**				
	Before Every Use	Make sure:			
		The Ellipta has **not** expired.			
		The Ellipta is **not** empty.			
		Check inside the mouthpiece of the Ellipta and ensure it is free from foreign objects.			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Hold the inhaler upright with the cover on the top. ● Slide the cover down until a **"click"** sound is heard. The dose is loaded. The dose counter counts down by 1 to confirm. ***Note: Do not*** *tip the Ellipta upside down or shake the device after dose loading.* ***Do not block*** *the air vents.*			
	Exhale	**Step 2** ● Sit upright or stand in an erect position. • Breathe out (exhale) slowly and fully, **away** from the Ellipta.			
	Chin & mouth	**Step 3** ● **Slightly tilt the chin up.** ● Place the inhaler mouthpiece gently between the teeth. Ensure a **tight seal** of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes: Do not block*** *the opening of the mouthpiece with the tongue or teeth. The tongue should be lowered under the mouthpiece.*			
	Inhale	**Step 4** Breathe in **forcefully** and **deeply** through the mouth.			
	Hold breath	**Step 5** **Remove** the Ellipta from the mouth, and with the lips closed, **hold the breath** for 5-10 seconds or as long as comfortable.			
	Exhale	**Step 6** Breathe out (exhale) gently, **away** from the Ellipta.			

	Close & Rinse	**Step 7** Slide the cover upwards as far as it will go to cover the mouthpiece. Rinse and gargle the mouth with water and **spit it out** (for a steroid-containing inhaler).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	Consider patient-related factors such as **inspiratory effort**, manual dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Some DPIs may be appropriate for older children. Refer guidelines, for example *Global Initiative for Asthma*				
	Fasting				
	To refer to the latest advisory by religious authority				
	Others				
	NA				
Side Effects and their Management*	For corticosteroid-containing inhalers, gargle the mouth with water and spit it out.				
Storage*	Refer to product inserts for complete information. In general: • Store the device in a clean, cool, and dry place at appropriate temperatures. • Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). • Ellipta is packed in a tray (with a desiccant sachet). Don't open the tray until ready to start using the new inhaler. • Keep it safely out of the reach of children.				
Others	**Cleaning***	Wipe the mouthpiece with a dry cloth or tissue once a week (after dose inhalation, **before** sliding back the cover). **Do not** use water or liquids.			
	Expiry date	Follow the expiry date on the product. Ellipta's in-use shelf-life is 6 weeks.			

	Dose checking	● Contains dose counter ● Half of the dose counter shows red once the inhaler has fewer than 10 doses. ● After the last dose is loaded, the dose will display the number 0. Once this dose is inhaled, the inhaler is now empty. ● Further opening of the cover will change the dose counter display to be completely red.			
	Additional notes	**Do not slide open the cover** when not taking the dose as it may cause a waste of medication			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Usmani OS. (2019 Mar). Choosing the right inhaler for your asthma or COPD patient. Therapeutics and clinical risk management. 14:461-72.
2. Ohar JA, Ferguson GT, Mahler DA, Drummond MB, Dhand R, Pleasants RA, Anzueto A, Halpin DM, Price DB, Drescher GS, Hoy HM. (2022 Jan). Measuring peak inspiratory flow in patients with chronic obstructive pulmonary disease. International journal of chronic obstructive pulmonary disease. 6:79-92.
3. The Electronic Medicine Compendium (eMC) (Available at http://www.medicines.org.uk/emc/). Accessed on October 15, 2024.
4. Asthma UK. How to use your inhaler (Available at https://www.asthmaandlung.org.uk/living-with/inhaler-videos). Accessed on October 15, 2024.
5. Mohammad Y. (2019 Oct). How to manage asthma during Ramadan? 97(10): 1073-1076. PMID: 31691934
6. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2024. Updated May 2024. Available from: www.ginasthma.org. Accessed on January 20, 2025.

Emergency Contraception

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Progestogens / Progestogens and estrogens in combination 1. Levonorgestrel 1.5mg (Escapelle) Yuzpe Method 2. Ethinyl Estradiol 30 mcg and Levonorgestrel 150 mcg (Rigevidon) 3. Ethinyl Estradiol 20 mcg and Levonorgestrel 100 mcg (Loette)			
Indications and Dosage	**Indication** Prevent pregnancy following sexual intercourse **Dosage** : Single dose immediately (Escapelle) **Dosage for Yuzpe Method*** : Rigevidon 4 tablets immediately. Repeat 12 hours later Loette 5 tablets immediately. Repeat 12 hours later *Refer **Others** Section			
Method of Administration*	Need to be taken as soon as possible within 72 hours of unprotected sex. **Note: Always read the product information leaflet before counsel the patient. Information may differ depending on the product** **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	NA			
	Breastfeeding			
	Safe to be taken			
	Elderly			
	Contraindicated in post-menopausal women			
	Paediatric			
	The safety and efficacy of these medications in children who have not achieved menarche.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			

	NA			
Side Effects and their Management*	1. Nausea, abdominal pain, headache, dizziness, breast tenderness, vomiting, diarrhoea, irregular bleeding and spotting. These symptoms will usually pass within 24 hours 2. Pills can be taken with water or milk to curb nausea 3. If the pills are vomited within 2 hours of taking the dose, repeat the dose again			
Storage	1. Store below 30ºC. 2. Protect from light and moisture.			
Others	**** Yuzpe Method - each dose containing 100 mcg of Ethinyl Estradiol and 0.5mg of Levonorgestrel (less effective method as compared to T. Levonorgestrel 1.5 mg)*** Emergency Contraception will not cause harm to the fetus if it fails to prevent pregnancy Taking extra pills does not increase effectiveness but induces side effects Expect delay of menses > 1 week Start regular contraception as soon as possible Drug-drug interactions **(may reduce the effectiveness of Emergency Contraception)** 1. Antibiotics – Rifampicin 2. Antivirals – Ritonavir, Nevirapine, Darunavir, Efavirenz 3. Anticonvulsants – Carbamazepine, Phenytoin, Lamotrigine, Topiramate, Rufinamide, Oxcarbazepine 4. Antifungals – Griseofulvin, Fluconazole, Ketoconazole 5. St. John's Wort			

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Reference:

1. Formulari Ubat KKM (FUKKM)
2. MIMS Malaysia
3. Faculty of Sexual & Reproductive Healthcare (FSRH) Guideline 2023: Emergency Contraception
4. U.S. Medical Eligibility Criteria for Contraceptive Use 2024 (U.S. MEC)
5. The American College of Obstetricians and Gynecologists (ACOG) Practice Bulletin No. 152: Emergency Contraception. Obstet Gynecol. 2015 Sep;126(3):e1-e11.

Emollient/ Moisturisers

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Emollients & Protectives** **Emollient: Fill in cracks and lines by repairing the skin barrier, helps smooth and soften skin** **Humectant: Attract and hold water in the top layer of skin. It increases water holding capacity of stratum corneum** 1. Urea cream 10% 2. Glycerin 25% - 50% in Aqueous cream **Occlusive: Repels water, also form a protective barrier to trap the moisture in the skin** 1. Aqueous cream 2. Emulsifying ointment 3. White soft paraffin + liquid paraffin 4. White/ Yellow soft paraffin			
Indications and Dosage	1. As an emollient for the symptomatic relief of dry skin conditions and as soap-substitute for skin-bathing 2. Dosage: Apply sparingly to the affected area as required or as directed by your pharmacist or doctor. 3. Moisturisers come in a range of formulations such as lotion, cream, ointment and usage depends on their own preference. Generally, moderately dry to very dry skin responds best to an ointment and mildly dry skin responds best to creams or lotions.			
Method of Administration*	**As an emollient:** • Best apply after taking a bath or showering when the skin is moist, while water is still trapped in the skin for extra hydration. • To apply emollients liberally (at least 2-4 times a day). • To apply by smoothing into the skin gently in the same direction of hair grows to avoid folliculitis **As a soap substitute:** • To use when washing, put a half to one teaspoonful in the palm of your hand and mix with a small amount of warm water. This can then be applied to wet skin and rinse off with water. • If having a bath or shower, emollients can be rubbed 'neat' directly into the skin and then rinsed off with water. • Please be careful, as it may cause the floor to be slippery and increase risk of patient fall. **Using emollients with other skin treatments:** • If you're using a steroid cream or another treatment for your skin condition, wait 20 to 30 minutes between using an emollient and using the other treatment. To counsel based on specific medication's indication and dosage as prescribed by the doctor **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	The safety of emollients during pregnancy has not been			

	established but is not considered to constitute a hazard during these periods.			
	Breastfeeding			
	The safety of emollients during lactation has not been established but is not considered to constitute a hazard during these periods.			
	Elderly			
	NA			
	Paediatric			
	Safety and efficacy of emollients for pediatric patients are established as per the indications stated.			
	Fasting			
	To refer to the latest advisory by religious authority			
	Others			
	NA			
Side Effects and their Management*	Emollients can sometimes cause a skin reaction, such as: 1. An overheating, burning sensation or stinging that does not settle after a few days of treatment – usually caused by a reaction to a certain ingredient in the emollient 2. Blocked or inflamed hair follicles (folliculitis) that may cause boils 3. Rashes on the face that can aggravate acne			
Storage*	Keep the jar tightly closed. Store below **30°C** and protect from heat, moisture, and light. Do not freeze. Keep out of reach of children.			
Others	● Never rub up and down vigorously, as this could trigger itchiness, block hair follicles and create more heat in the skin. ● It is recommended to use a spoon or spatula to scoop out ointments from tubs to avoid contamination			
Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered. **Remarks:** **Reviewed by: Name & Signature** **Date:**				

***Mandatory for validation / peer review**

References :

1. Dynapharm (M) sdn. Bhd. (2024). Product information leaflet: Dyna Aqueous cream. Retrieved from Quest 3+ Product Search on January 21, 2025.
2. National Health Service. (2023). Emollients. NHS. Retrieved January 21, 2025, from https://www.nhs.uk/conditions/emollients/
3. National Health Service. (2020). Using emollients (moisturiser) as soap substitutes. NHS. Retrieved January 21, 2025, from https://nhsdorset.nhs.uk/Downloads/aboutus/medicines-management/NHS%20Dorset%20Site/Patient%20information%20leaflet%20-%20Using%20emollients%20as%20soap%20substitutes.pdf

Eye Drops

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Anticholinergic (e.g. Atropine Sulphate 1% Eye Drops, Homatropine 2% Eye Drops) 2. Antiglaucoma (e.g. Bimatoprost 0.01% ophthalmic solution, Brimonidine Tartrate 0.15% Ophthalmic solution, Dorzolamide HCl 2% Ophthalmic Solution) 3. Antihistamine (e.g. Sodium Cromoglycate 2% Eye Drops) 4. Antiinfective (e.g. Chloramphenicol 0.5% Eye Drops, Ciprofloxacin HCl 0.3% Ophthalmic Solution, Gentamicin 0.3% Eye Drops) 5. Antiinflammatory (e.g. Dexamethasone Sodium Phosphate 0.1% Eye Drops, Prednisolone Acetate 1% ophthalmic suspension, Fluorometholone 0.1% Ophthalmic Suspension) 6. Antimuscarinic (e.g. Cyclopentolate 1% Eye Drops, Pilocarpine 1% & 2% Eye Drops) 7. Lubricating/ Moisturizing agent (e.g. Sodium Chloride 0.9% Eye Drops, Artificial tears/eye lubricant ophthalmic solution) 8. Mydriatic agent (e.g. Phenylephrine HCl 2.5% Eye Drops)			
Indications and Dosage	Counsel patients based on indication and dosage as prescribed.			
Method of Administration*	1. Read the medication label. 2. Wash hands with soap and water. Dry them with a clean towel or tissue. 3. Remove contact lenses if wearing them. 4. Wash hands with soap and water again. Dry them with a clean towel or tissue. 5. Warm the bottle by rolling between palms if the eye drop is stored in the refrigerator. 6. Gently agitate the bottle before use to make sure the drug is properly mixed. 7. Unscrew the cap of the bottle. Look closely at the tip to make sure it's not cracked or damaged. **DO NOT TOUCH THE TIP**. 8. Lie down or tilt the head back and look up at the ceiling, keeping the eyes wide open. 9. Place one or two fingers on the face and gently pull the lower eyelid down with the finger to form a pocket. 10. Hold the eye drop bottle at least 1– 2 cm above the eye with the other hand. Be careful not to let the dropper touch any surface to avoid contamination. 11. Squeeze/ drop the correct number of drops inside the lower eyelid. 12. Close the eyes slowly for approximately 1 minute to allow the medication to be absorbed. 13. To keep as much of the drop on the eye as possible, gently press a finger against the inside corner of each eye next to the nose. 14. Straighten the head and use a clean tissue to wipe away any drops that spilled out. 15. Repeat steps 8 till 14 on the other eye if need to instill eye drop in both eyes. 16. Replace cap on the bottle and screw it on securely.			

	17. If more than one eye drop at a time is prescribed, wait about 5 minutes before using the next eye drop. Repeat steps 5 till 14. 18. Order of using different types of eye drops is as below: I. aqueous based eye drops e.g. artificial tears II. suspension based eye drop e.g. antibiotic eye drops III. ointment based eye preparation 19. If using both eye drops and eye ointment, put the eye drop in at least 10 minutes before the ointment.			
Special Considerations	**Pregnancy**			
	1. Sodium Cromoglycate eye drop, use not recommended during first 3 months of pregnancy 2. Use only if the benefit outweighs the risk : ● Atropine / ● Cyclopentolate / ● Fluorometholone / ● Gentamicin / ● Homatropine / ● Latanoprost / ● Phenylephrine ● Pilocarpine / ● Tafluprost & Timolol / ● Travoprost & Timolol ● Tropicamide /			
	Breastfeeding			
	1. Long-term use might reduce milk production or milk letdown. Observe the infant for signs of decreased lactation (e.g., insatiety, poor weight gain) : atropine, cyclopentolate, tropicamide 2. Monitor the infant for signs of cholinergic excess (diarrhea, lacrimation, and excessive salivation or urination) : pilocarpine 3. Potential for serious adverse effects in nursing infants. Decision should be made whether to discontinue nursing or to discontinue drug, taking into account the importance of the drug to the mother : fluorometholone eye drop			
	Elderly			
	1. No overall differences in safety or effectiveness have not been observed between elderly and younger patients.			
	Paediatric			
	1. Precaution: safety and efficacy of most eye drops have not been demonstrated in children of the age group 2 years and below. 2. Sodium Cromoglycate eye drop use recommended for children above 4 years old onwards.			
	Fasting			
	Refer to the latest advisory by the religious authority			
	Others			

	1. Contact lenses should not be worn for the first 20 minutes following the instillation of the drops. In certain cases, you may need to stop using your contact lenses 2. To minimise the absorption of any drug into the blood stream you can apply naso-lachrymal occlusion (pressing over the tear duct to close it off) as you use the drops. 3. To avoid in G6PD Deficiency (definite risk of haemolysis) ● Chloramphenicol ● Brinzolamide ● Dorzolamide ● Ciprofloxacin ● Levofloxacin ● Ofloxacin			
Side Effects and their Management*	1. **Eye burning, irritation, stinging or itching** It should go after a few minutes as your eyes get used to the medicines. If symptoms continue, stop using the eye drop and inform the doctor. 2. **Eye redness** 3. **Blurry/ changes in vision** If vision does not go back to normal after a few minutes or slowly gets worse, stop using the eye drop and inform the doctor. 4. **Unpleasant taste in the mouth** Rinse your mouth with water or have a drink of water. Contact your healthcare provider if you think you are having a side effect of a medicine.			
Storage*	1. Keep away from reach of children 2. Store in a cool, dry place, away from direct heat and light. 3. Some eye drops, such as chloramphenicol, must be stored in a refrigerator before and after opening while others are stored in the refrigerator after opening only - it is important to read the instructions carefully. 4. For eye drops requiring storage inside the fridge, do not store at the door side and inside the freezer 5. Eye drops should not be used if the bottle has been open for longer than prescribed duration or after 4 weeks. 6. Discard if there is any preparation left in the container after you have finished your course of treatment.			
Others	1. Do not allow the dropper tip to touch your eyes, fingers or any other surface. 2. Do not share eye drops with anyone else. 3. If unopened drops have expired, discard them at once. 4. Missed dose: take as soon as you remember and **DO NOT DOUBLE** the dose.			
Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered. **Remarks:** **Reviewed by: Name & Signature** **Date:**				

*** Mandatory for peer review/validation**

References:

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Eye Ointment

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Antiinfectives 2. Antiinflammatory			
Indications and Dosage	To counsel based on specific medication's indication and dosage as prescribed by doctor			
Method of Administration*	1. Read the medication label. 2. Wash hands with soap and water. Dry them with a clean towel or tissue. 3. Remove contact lenses if wearing them. 4. Wash hands with soap and water again. Dry them with a clean towel or tissue. 5. Unscrew the cap from tube and hold the tube as if holding a pen 6. Tilt the head slightly backwards and look up, keeping the eyes wide open. 7. Using the one/two fingers of the free hand, gently pull down the lower eyelid to form a pocket. 8. Squeeze the tube to apply about 0.5 – 1 cm of ointment inside the pocket of the lower eyelid. Avoid touching the eye with the tube. 9. Remove the fingers from the face then close the eyes gently for 1 to 2 minutes to allow medication to absorb. The vision can become blurry for a few minutes as the medication is quite viscous. You should remain comfortably seated until vision is cleared. 10. Use a clean tissue to wipe away any excess ointment. Do not dab at the eye directly. 11. Repeat steps 6 till 10 on the other eye if using both eyes . 12. Replace the cap of the tube and screw it on securely. 13. If more than one eye ointment is prescribed at a time, wait about 5 minutes before using the next eye ointment. Repeat steps 5 till 12. 14. If using both eye drops and eye ointment, put the eye drop in at least 10 minutes before the ointment. Missed dose management: 1. Take as soon as you remember and do not double the dose.			
Special Considerations	**Pregnancy**			
	1. Most eye ointments are safe during pregnancy 2. **NOT** recommended during pregnancy a. Dexamathasone and Neomycin Sulphate and Polymyxin B Eye Ointment 3. Used only if the benefit outweighs the risk a. Gentamicin 0.3% Eye Ointment b. Oxytetracycline with Polymyxin B Sulphate Eye Ointment			
	Breastfeeding			
	1. Maternal use of most eye ointment presents little or no			

	risk for the nursing infant. 2. Used only if the benefit outweighs the risk for Dexamathasone and Neomycin Sulphate and Polymyxin B Eye Ointment			
	Elderly			
	1. No elderly-specific problems have been documented to date with most eye ointments.			
	Paediatric			
	1. No pediatrics-specific problems have been documented to date with most eye ointments.			
	Fasting			
	1. Refer to the latest advisory by the religious authority			
	Others			
	1. Chloramphenicol: to avoid in G6PD Deficiency (definite risk of haemolysis)			
Side Effects and their Management*	1. Eye burning, irritation, stinging or itching: It should go after a few minutes as your eyes gets used to the medicines. If symptoms continue, stop using the eye drop and inform the doctor. 2. Eye redness 3. Blurry/ changes in vision: If vision does not go back to normal after a few minutes or slowly gets worse, stop using the eye drop and inform the doctor. Contact your healthcare provider if you think you are having a side effect of a medicine.			
Storage*	1. Keep out of the reach of children. 2. Store in a cool, dry place, away from direct heat and light. 3. For eye ointment requiring storage inside the fridge, do not store at the door side and inside the freezer 4. Discard if there is any preparation left in the container after you have finished your course of treatment. Eye ointment should not be used if the tube has been open for longer than prescribed duration or after 4 weeks.			
Others	1. To prevent the spread of infection, apply ointment directly from the tube. Avoid using fingers to place ointment on your eyelid 2. Contact lenses should not be worn for the first 20 minutes following the instillation of eye ointment. In certain cases, you may need to stop using your contact lenses. 3. If you are prescribed eye drop and eye ointment together, use eye drop first			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for peer review/validation**

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Menopausal Hormone Therapy

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	**Estrogen; Progestin; Progestogen; Selective estrogen receptor modulator (SERM) :** 1. Estradiol 1mg & Estradiol 1mg with Dydrogesterone 10mg 2. Estradiol 1mg 3. Estradiol Valerate 2mg and Norgestrel 500mcg with Estradiol Valerate 2mg 4. Lactobacillus Acidophilus 100million viable cells & Estriol 0.03mg vaginal tablet 5. Tibolone 2.5mg 6. Conjugated estogens 0.3mg 7. Conjugated estrogens 0.625mg 8. Conjugated estrogens 0.625mg/g Cream			
Indications and Dosage	1. **Indication**: a. Hormone Replacement Therapy (HRT) for for women with disorders due to natural or surgically induced menopause with intact uterus **Dosage**: 1 tablet daily without pill-free days, starting with Estradiol 1mg for first 14 days, followed by Estradiol 1mg with Dydrogesterone 10mg 2. **Indication**: a. Hormone Replacement Therapy (HRT) for treatment of signs and symptoms of estrogen deficiency due to natural menopause or total hysterectomy (TAHBSO) b. Prevention of postmenopausal osteoporosis **Dosage**: 1 tablet daily continuously. Titrate dose to minimum effective dose necessary to control symptoms 3. **Indication**: a. Hormone Replacement Therapy (HRT) for treatment of signs and symptoms of estrogen deficiency due to natural menopause or hypogonadism, TAHBSO or primary ovarian failure in women with intact uterus b. Prevention of postmenopausal osteoporosis c. Control of irregular menstrual cycle d. Treatment of primary or secondary amenorrhea **Dosage**: 1 white tablet daily for 11 days followed by 1 light brown tablet for 10 days then stop for 7 days (tablet free interval before starting new pack). 4. **Indication**: a. Atrophic vaginitis due to estrogen deficiency during menopause and post-menopause, or as co-medication to systemic hormone replacement therapy b. Restoration of the Lactobacillus flora after local and/or systemic treatment with anti-infective agents or chemotherapeutic agents			

	Dosage: a. Atropic vaginitis daily for 6-12 days followed by a maintenance dose of 1 vaginal tablet for 1-2 days per week b. Restoration therapy: 1-2 vagital tableets daily for 6-12 days 5. **Indication**: a. Treatments of complaints resulting from the natural or surgical menopause & in cases at high risk for breast carcinomas where general hormone replacement therapy is contraindicated b. Prevention of osteoporosis in postmenopausal women at high risk of future fractures who are intolerant of, or contraindicated for, other medicinal products approved for the prevention of osteoporosis **Dosage**: 2.5mg daily **6. Indication:** a. Prevention of management of osteoporosis associated with estrogen deficiency b. Female hypoestrogenism c. Moderate to severe vasomotor symptoms associated with estrogen deficiency d. Atrophic vaginiti and atrophic urethritis **Dosage:** a. 0.3 - 0.625mg daily b. 0.3 - 1.25mg daily for 3 weeks, then off for 1 week c. 0.3 - 1.25mg daily d. 0.3 - 1.25mg daily **7. Indication:** a. Prevention of management of osteoporosis associated with estrogen deficiency b. Female hypoestrogenism c. Moderate to severe vasomotor symptoms associated with estrogen deficiency d. Atrophic vaginiti and atrophic urethritis **Dosage:** a. 0.3 - 0.625mg daily b. 0.3 - 1.25mg daily for 3 weeks, then off for 1 week c. 0.3 - 1.25mg daily d. 0.3 - 1.25mg daily **8. Indication:** Treatment of atrophic vaginitis, dyspareunia and kraurosis vulvae **Dosage:** a. Atrophic vaginitis and Kraurosis Vulvae: Cyclical regimen: Intravaginal 0.5g daily for 21 days then off for 7 days . Dose range between 0.5g - 2g daily between individual response b. Dyspareunia: Intravaginal i. 0.5g twice weekly continuously or cyclically for 21 days and 7 days off treatment.			
Method of Administration*	*1.* To be taken daily at the same time with or without food. *2.* Preferably to take with oily food for better absorption *3.* Take will full glass of water			

	4. Hormone medications should not be crushed and not suitable for Ryle's Tube administration *5.* For pessary preparations, kindly refer to the pessary administration method. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Consideration	1. Contraindicated in patients with a. liver diseases b. history of estrogen hormone receptor sensitive malignancies including breast cancer, ovarian cancer, and endometrial cancers. c. coronary arterial disease. d. history of thromboembolism or thrombophlebitis			
	Elderly			
	Beers Criteria: Estrogens with or without progestins (includes natural and synthetic estrogen preparations). ***Do not initiate systemic estrogen (e.g., oral tablets or transdermal patch). Consider deprescribing among older women already using this medication. Vaginal cream or vaginal tablets: acceptable to use low-dose intravaginal estrogen for management of dyspareunia, recurrent lower urinary tract infections, and other vaginal symptoms.*** Evidence of carcinogenic potential (breast and endometrium); lack of cardioprotective effect and cognitive protection in older women. **For women who start HRT at age 60 and older, the risks of HRT are greater than the benefits, as HRT is linked to a higher risk of heart disease, stroke, blood clots, and dementia**. Evidence indicates that vaginal estrogens for the treatment of vaginal dryness are safe and effective; women with a history of breast cancer who do not respond to nonhormonal therapies are advised to discuss the risks and benefits of low-dose vaginal estrogen (e.g., dosages of estradiol <25 mcg twice weekly) with their healthcare provider.			
Adverse Effects and their Management*	1. Headache or abdominal pain a. mild NSAIDS or Paracetamol may help to reduce symptoms. b. Take regular rest c. If symptoms worsen, kindly go to the clinic for treatment. 2. Unexpected vaginal bleeding a. Spotting is common especially within the first few months of starting HRT however if frequent to stop medications and seek prescriber's opinion. 3. Vaginal or urinary tract discomfort itchiness or infection a. Common while using pessaries, advice for proper toilet hygiene b. If prolonged discomfort to seek doctor's opinion 4. Shortness of breath a. Seek medical assistance 5. Swelling/ water retention a. Seek medical assistance			
Storage*	1. To store at room temperature in a cool dry place and avoid direct heat or light.			
Others	VTE risk increases with high ethinyl estradiol dose, special			

	precaution should be taken when prescribing patient to reduce risk			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for peer review/Validation**

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Nasal Douche/Irrigation

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Alkaline nasal douche			
Indications and Dosage	1. To remove nasal plug (Dosage as per prescribed)			
Method of Administration*	1. Douche solution is prepared by adding warm water if undiluted product or pre-mixed preparation is given. 2. Wash hands thoroughly with soap and water. 3. Lean over a sink at a 45-degree angle, tilting your head so one nostril is pointed toward the sink. 4. Place the tip of the device at your nostril opening and gently squeeze or pour the solution into your nose. (Remember to breathe through your mouth or hold your breath while performing the irrigation.) The solution should come out of your other nostril. 5. Blow your nose to clear out any remaining solution. 6. Repeat the procedure with the other nostril. **Missed dose management** If you forget to take a dose, take it as soon as you remember. However, if it is almost time to take the next dose, wait until then. Do not take a double dose to make up for a forgotten dose.			
Special Considerations	**Pregnancy**			
	N/A			
	Breastfeeding			
	N/A			
	Elderly			
	None specifically to alkaline nasal douche			
	Paediatric			
	Nasal douching can be performed by parents/caregivers for their children.			
	Fasting			
	Refer to latest advisory by religious authority			
	Others			
	Epistaxis, not to be used in cranial surgery or trans nasal neurosurgical procedure.			
Side Effects and their Management*	1. Stinging of the nasal passage wall may be experienced. However, this may be improved by further diluting down the douche solution with water.			

Storage*	1. Store the medicine in a dry place at room temperature, away from heat and direct light.			
Others	1. If a patient is using intranasal medication, this should be used after nasal irrigation. This is because the medication will have better distribution and efficacy. 2. Avoid breathing through the nose while performing irrigation, as this can introduce water into the ear canal potentially leading to infection. 3. A burning sensation in the nasal cavity may occur particularly if a non-buffered hyper or hypotonic irrigation solution is used. Most patients seem to adapt to this. Please refer product insert			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

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Nasal Drops

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Decongestant 1. Oxymetazoline HCL 0.01% Nasal Drops 2. Oxymetazoline HCL 0.025% (Paediatric) Nasal Drops 3. Oxymetazoline HCL 0.05% (Adult) Nasal Drops			
Indications and Dosage	Counsel patients based on the medication and indications as prescribed.			
Method of Administration*	**PRIMING** 1. Prime the nasal drops before using it for the first time. Check the dropper tip to make sure that it is not chipped or cracked. 2. Squeeze the bottle until a few drops appear from the dropper tip.			
	ADMINISTRATION 1. Blow your nose gently. 2. Wash hands thoroughly with soap and water. 3. Shake well before use. Remove cap of the bottle (for bottles with integrated dropper, draw some liquid into the dropper) 4. Tilt your head as far as possible or lie down on your back on a flat surface and hang your head over the edge. 5. Hold the bottle or dropper above your nostrils and gently squeeze the correct number of drops into the nostrils. Breath normally through your mouth while putting the drops into your nostril.(Do not touch the nose with the tip of the bottle or dropper) 6. Keep your head tilted back for two minutes to allow the drops to drain into the back of the nose. 7. Repeat steps 5 till 6 for the other nostril 8. Wipe dropper tip with dry cloth 9. Replace cap on bottle right away **ADMINISTRATION (PAEDIATRIC)** 1. Wipe your child's nose and ask them to blow it if needed. 2. Wash your hands thoroughly with soap and water. 3. Shake well before use. Remove cap of the bottle (for bottles with integrated dropper, draw some liquid into the dropper) 4. Get your child into any of these positions to give the nasal drops: : a. Tilt your child's head back b. Lay your child flat on their back c. Ask someone to hold your child in a safe position as above d. Wrap your baby or young child in a light blanket or sheet to keep their arms still. 5. Keep your child in the position for two minutes to allow the drops to drain into the back of the nose. 6. Repeat step 3 till 5 for the other nostril 7. Wipe dropper tip with dry cloth 8. Replace cap on bottle right away			

	MISSED DOSE If you forget to take a dose, take it as soon as you remember. However, if it is almost time to take the next dose, wait until then. Do not take a double dose to make up for a forgotten dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Fetal risk cannot be ruled out (oxymetazoline)			
	Breastfeeding			
	1. Infant risk cannot be ruled out (oxymetazoline) 2. Nasal Oxymetazoline has minimal systemic absorption.			
	Elderly			
	1. Caution in patients with hypertension, cardiac disease,metabolic disorder. 2. Caution in patients with narrow-angle glaucoma. 3. Has anticholinergic effects. To use short term.			
	Paediatric			
	Oxymetazoline HCL 0.01% Nasal Drops 1. Effect set in approximately 20minutes 2. Effect last around 6 to 8 hours 3. Should not be used for more than consecutive 10 days without medical supervision. A treatment-free period should precede any repeated use **Oxymetazoline HCL 0.025% (Paediatric) Nasal Drops** 1. Effect set in within few minutes 2. Effect last around 12 hours 3. Should not be used for children under 1 year old 4. Should not be used for more than consecutive 10 days without medical supervision. A treatment-free period should precede any repeated use			
	Fasting			
	Refer to the latest advisory by religious authority.			
	Others			
	NA			
Side Effects and their Management*	1. Dryness or irritation of nose/throat 2. Nose bleeds Management: 1. Rinse your mouth with water or drink water. 2. Refer to the doctor.			
Storage*	1. Store in a cool, dry and dark place. 2. Keep away from the reach of children.			
Others	1. Some nasal drops can give unpleasant taste as they drain into the back of the throat. Drink water or other liquid to clear the taste. 2. Do not use your nasal drops more often or for longer			

	than you have been told. Some nasal drops must only be used for a short period of time and will become ineffective if it is used for too long. For example: Decongestant nasal drop. 3. Not to be used longer than 7 days. Longer use may damage mucosal epithelium with inhibition of ciliary activity. 4. Throw leftover nasal drops when you have finished the course of treatment. 5. Drug interaction with Monoamine Oxidase Inhibitor. Note : Please refer to the product insert.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for peer review/validation**

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10. Oxymetazoline (Xylocon Nasal) Drops 0.05%,0.025% Product information.

Nasal Spray

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Steroid nasal spray 2. Antihistamine steroid combination nasal spray 3. Decongestant nasal spray 4. Vasopressin 5. Local Anaesthetic			
Indications and Dosage	To counsel based on specific medication's indication and dosage as prescribed by doctor			
Method of Administration*	**PRIMING** 1. Prime the nasal spray before using a nasal spray for the first time. 2. Shake well and remove the cap. 3. Pump the bottle until a uniform mist appears. Refer to the respective product leaflet for the number of sprays to be released before the nasal spray is ready for use.			
	ADMINISTRATION 1. If possible, blow your nose gently before spraying (if blocked). 2. Wash your hands thoroughly with soap and water. 3. Shake nasal spray gently. (Shake the nasal spray vigorously for preparation with thick suspension i.e. Avamys). 4. Remove cap. 5. Hold nasal spray upright, thumb beneath bottle and fingers on either side of the nozzle. (Press the button firmly all the way in with your thumb for Avamys and use two hands if you experience any difficulty pressing with one). 6. Close one nostril with your finger. Tilt your/patient head forward slightly and, keeping the bottle upright, carefully insert the nozzle into the other nostril. 7. Point the nozzle away from the centre ridge of your/patient nose (septum), towards the outside corner of your eye on the same side. 8. Breathe in gently through your nose and press the applicator/pump firmly. 9. Remove the nozzle from the nostril and breathe out gently through the mouth. 10. If the patient requires more than 1 spray in each nostril, repeat steps 5 till 8. 11. Repeat steps 5 till 8 for the other nostril. 12. Wipe the nasal applicator with a clean and dry tissue and replace the plastic cap. **ADMINISTRATION (PAEDIATRIC)** 1. Wipe your child's nose and ask them to blow it if needed. 2. Wash your hands thoroughly with soap and water. 3. Shake nasal spray gently or according to the instructions for a particular product. 4. Remove cap. 5. Hold nasal spray upright, thumb beneath bottle and fingers on either side of the nozzle. 6. Get your child into any of these positions to give the nasal sprays: a. Tilt your child's head back			

	b. Lay your child flat on their back c. Ask someone to hold your child in a safe position as above d. Wrap your baby or young child in a light blanket or sheet to keep their arms still 7. Close one nostril of your child with your finger and keep the bottle upright, carefully insert the nozzle into the other nostril. 8. Point the nozzle away from the centre ridge of your patient nose (septum), towards the outside corner of your eye on the same side. 9. Ask your child to breathe through the mouth and press the applicator/pump firmly. 10. Remove the nozzle from the nostril. 11. Keep your child in the position for two minutes to allow the medication to spread through the nose. 12. If your child requires more than 1 spray in each nostril, repeat step 3 till 11. 13. Repeat step 3 till 11 for the other nostril. 14. Wipe the nozzle with dry cloth. 15. Replace cap on bottle right away. **Missed dose management:** If you forget to take a dose, take it as soon as you remember. However, if it is almost time to take the next dose, wait until then. Do not take a double dose to make up for a forgotten dose. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	1. Fluticasone, Mometasone, Oxymetazoline: Should be used in pregnancy only if the benefits to the mother outweigh the potential risks to the mother or fetus. 2. Desmopressin: Fetal risk can not be ruled out.			
	Breastfeeding			
	1. Infant risk cannot be ruled out. 2. Lignocaine HCL 5% and Phenylephrine 5% present in milk but too small amounts to be harmful.			
	Elderly			
	Steroid nasal spray 1. Consider initiating at the low end of the dosing range.			
	Paediatric			
	Paediatric age limit for specific drug, please refer to medication product insert.			
	Fasting			
	Refer to the latest advisory by religious authority.			
	Others			
	Decongestant nasal spray: 1. Use for no longer than 7 days, to avoid rebound congestion (please refer to product insert). Desmopressin 100mcg/ml 1. Renal impairment: contraindicated CrCl<50 ml/min			
Side Effects and	1. Dryness or irritation of nose and throat			

their Management*	2. Blood-tinged mucus or phlegm 3. Nose bleeds Management: 1. Rinse mouth with water or drink water 2. Refer to a doctor.			
Storage*	1. Keep away from sunlight or heat and moisture 2. Keep away from reach of children 3. Store between 20-25°C (refer product insert)			
Others	1. Patients may find it easier if they hold the nasal spray in the hand opposite of the nostril they intend to spray, i.e. left hand with right nostril and vice versa. 2. Drug interactions between Desmopressin 100mcg/ml with corticosteroids and loop diuretics 3. Drug interactions between Oxymetazoline and Monoamine Oxidase Inhibitors and tricyclic antidepressants. 4. Food /drink should not be ingested within 2 hours of local anaesthetic use. Please refer to the product insert.			

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Remarks:

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References:

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Oral Ovulation Induction Drugs

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Letrozole 2.5mg Tablet (Aromatase Inhibitors) 2. Clomiphene Citrate 50mg Tablet (Selective Oestrogen Receptor Modulator (SERM))			
Indications and Dosage	1. Used to induce ovulation and increase the chances of pregnancy in women who do not ovulate regularly or at all, particularly those with PCOS. Dosage: Lestrozole: 2.5mg from D2- D7 of menstrual cycle continuously Clomiphene: 50mg on D5-D25 of menstruation 2. Letrozole: Hormonal therapy in breast cancer in postmenopausal women if failed /contraindicated to tamoxifen			
Method of Administration*	1. Medication should be taken whole with a full glass of water and with meals 2. Medication should be taken at the same time daily for five consecutive days. 3. Medication should not be crushed and should not be administered via Ryle's Tube 4. If missed dose, a. within 12H of expecting dosing time: : take medication as remembered and to continue same schedule the next day b. after 12H of expected dosing time: to omit the dose and continue taking the next following dose. **Do not double the dose.** *5.* **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Contraindicated in Pregnancy			
	Breastfeeding			
	Contraindicated in Breastfeeding			
	Elderly			
	No dose adjustment	1		
	Paediatric			
	No dose adjustments required			
	Fasting			
	Medication can be taken during non-fasting period, kindly ensure to take medication at the same time			
	Others			
	1. Renal and mild liver impairment: No dose adjustment is necessary			

	2. Patients with cirrhosis or severe hepatic dysfunction: **Lestrozole**: 2.5mg EOD for 5 days (not to complete whole cycle) **Clomiphene**: contraindicated			
Side Effects and their Management*	1. GI disturbance (gastritis, nausea vomiting, heartburn loss of appetite) - to take medication with meals 2. Hot flushes, headache, insomnia - suggest to take medication early morning with full glass of water and to wear thin clothes, 3. Muscle pain, mild headache - mild NSAIDS like paracetamol and ibuprofen may help to reduce pain and muscle aches - avoid driving while taking on medication. Others (advise to stop taking the medications and to go to the hospital immediately): - blurred vision - visual spots or flashes - double vision - stomach or lower stomach pain - stomach swelling - weight gain - shortness of breath			
Storage*	1. Store in a cool dry place away from direct heat, moisture and sunlight. (below 30°C)			
Others	1. Keep out of the reach of children. 2. Clomiphene should not be used more than 6 cycles to avoid risk of ovarian cancer 3. Preferably to take with high lipid food for faster absorption			
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*** Mandatory for peer review/validation**

References:

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5. Clomiphene: Uses, Dosage, Side Effects and More. MIMS https://www.mims.com/malaysia/drug/info/clomifene?mtype=generic

Pressurised Metered-dose Inhaler (pMDI)

Name :			**Unit :**		
• *Please tick (✔)* ***Yes*** *for correct instruction.* • *Please tick (✔)* ***No*** *for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Pressurised metered-dose inhaler (pMDI)				
Indications and Dosage	The indication and dosage depend on the drug content				
Method of Administration*	**DEVICE PREPARATION**				
	Before Every Use	Make sure:			
		The pMDI has **not** expired			
		The pMDI is **not** empty			
		Check inside the mouthpiece of the pMDI and ensure it is free from foreign objects.			
	Priming	Conditions in which priming is required: ● Before using pMDI for the first time. ● If pMDI has not been used for a specific period.			
		Priming steps: ● Remove the cap and hold the inhaler in an upright position. ● Shake the pMDI well. ● Press down the canister to release **1 spray** into the air. ● Repeat the above steps if needed. ***Notes:*** *The number of puffs, non-use period, and the need for shaking differ from product to product. Refer to product inserts for specific instructions*.			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** Remove the cap and hold the pMDI in an upright position. Shake the pMDI well (suspensions). ***Notes:*** *Shaking is not required for solution-based pMDIs. Refer to product inserts.*			
	Exhale	**Step 2** Sit upright or stand in an erect position. Breathe out (exhale) slowly and fully, **away** from the pMDI.			
	Chin & mouth	**Step 3** • **Slightly tilt the chin up.** • Place the inhaler mouthpiece gently between the teeth. Ensure a **tight seal** of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes:*** ***Do not block*** *the opening of the mouthpiece with the tongue or teeth. The*			

		tongue should be lowered under the mouthpiece.			
	Inhale	**Step 4** Inhale **slowly** and **deeply** through the mouth**,** pressing the canister down **ONCE** at the **start of inhalation.** Continue breathing in **slowly** and **deeply** for 4-5 seconds. ***Note: Do not** actuate the canister before starting the inhalation*			
	Hold breath	**Step 5** **Remove** the pMDI from the mouth and with the lips closed, **hold the breath** for 5-10 seconds or as long as comfortable.			
	Exhale	**Step 6** Breathe out (exhale) gently, **away** from the pMDI.			
	Repeat	**Step 7** Wait about 30 seconds to 1 minute. Repeat steps 1 to 6 if another dose is needed.			
	Close & Rinse	**Step 8** ● Replace the cap. ● Rinse and gargle the mouth with water and **spit it out** (for steroid-containing inhalers).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	1. Consider spacers or valved holding chambers 2. Consider patient-related factors such as manual dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Choose age-appropriate spacers/ valved holding chambers				
	Fasting				
	To refer to the latest advisory by religious authority				

	Others				
	NA				
Side Effects and their Management*	For corticosteroid-containing inhalers, gargle the mouth with water and spit it out.				
Storage*	Refer to product inserts for complete information. In general: ● Store the device in a clean, cool, and dry place at appropriate temperatures. ● Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). ● Keep it safely out of the reach of children.				
Others	**Cleaning***	Clean the pMDI at least once a week or whenever necessary. Cleaning steps in general (for specific details refer to product inserts): ● Remove the cap and the canister from the plastic casing. ● Rinse the plastic casing and cap under running water until no medication buildup or dirt is visible. Do not put the metal canister in water. ● Shake off to remove excess water. ● Allow it to air dry thoroughly inside and outside. ● Replace the canister inside the plastic casing and recap the mouthpiece. ***Notes**: For some pMDIs, the canister cannot be removed from the plastic casing and cannot be cleaned with water. Refer to product inserts for specific instructions.*			
	Dose checking	Check pMDI for remaining doses: ● Check the dose counter (if the pMDI has one). ● For pMDI without a dose counter, mark the date of opening on the new pMDI and keep track of the doses used. Record the doses used on a daily log.			
	Expiry date	Follow the expiry date on the product. ***Notes:** Some pMDIs have in-use shelf life. Refer to product inserts for specific instructions.*			

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***Mandatory for validation / peer review**

References:

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Progestogen-Only Pills (POP)

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Progestogen : 1. Norethisterone 0.35mg Tablet (Noriday) 2. Desogestrel 0.075mg Tablet (Cerazette) 3. Medroxyprogesterone 5mg Tablet (Provera)			
Indications and Dosage	**<u>Indication (1-2)</u>** Oral Contraception **Dosage** : 1 tablet daily as prescribed by the doctor. Duration to be taken will depend on desire of withdrawal bleed **(Cyclical vs Continuous).** Subsequent courses of POP can be repeated as per doctor's instructions. **<u>Indication (3)</u>** Abnormal Uterine Bleeding Secondary Amenorrhea **<u>Dosage</u>** : 5 to 10 mg daily for 5-10 days started anytime during cycle or on day 16-21 of menstrual cycle as prescribed by the doctor. Duration to be taken will depend on desire of withdrawal bleed **(Cyclical vs Continuous).** Subsequent courses of POP can be repeated as per doctor's instructions. **To counsel based on specific medication's indication and dosage as prescribed by the doctor**			
Method of Administration*	Must be taken at the same time every day after meal **For Contraception:** Need to be taken immediately or at least within D5 of the menstrual cycle. If it exceeds D5 of the menstrual cycle, an additional contraception method is needed for 7 days. **It is important to take the pills as directed because missing pills or taking them not on time make them less effective.** **Do not stop taking your medication unless advised to do so by your prescriber** **Missed dose management** **<u>Norethisterone 0.35mg Tablet</u>** consider missed dose if > 3 hours later than the usual dose timing **<u>Desogestrel 0.075mg Tablet</u>** consider missed dose if > 12 hours later than the usual dose timing If you missed the dose, take one pill as soon as you remember. Take the next pill at the usual time. This may mean taking 2 pills in one day. This is not harmful			

	Additional method of contraception (condoms or abstinence) is advised for the next 2 days (48 hours after the POP has been taken). **<u>Medroxyprogesterone 5mg Tablet</u>** Take it as soon as remembered within 12 hours of the missed dose. If it is more than 12 hours since your missed dose, skip the missed dose and go back to the usual dosing times. **Note: Always read the product information leaflet before counsel the patient. Information may differ depending on the product**			
Special Considerations	**Pregnancy**			
	Contraindicated			
	Breastfeeding			
	<u>Postpartum breastfeeding</u>**:** Start after 6 weeks <u>Postpartum but not breastfeeding</u>**:** Start within Day 21 postpartum. If exceeded, additional contraception methods are needed.			
	Elderly			
	Caution in women who are above 60 years old due to stroke, cardiovascular and VTE risk			
	Paediatric			
	1. The safety and efficacy of Norethisterone and Desogestrel in children who have not achieved menarche have not been established. 2. The safety and efficacy of Medroxyprogesterone in paediatric patients below age 18 have not been established.			
	Fasting **To refer to the latest advisory by religious authority**			
	Others			
	<u>Hepatic Impairment:</u> Contraindicated			
Side Effects and their Management*	Nausea, headaches, breast tenderness, diarrhoea, bloating and breakthrough bleeding. Continue taking the pills as most of these symptoms will improve with time. If any of the following symptoms occur, the drug should be stopped and urgent medical advice should be sought after: ● Severe and sudden pain in the chest ● Breathlessness ● Severe headache ● Abdominal pain ● Sudden blurred vision or loss of sight ● Unexplained tenderness or pain and swelling in one leg ● Weakness, numbness or difficulty speaking ● Change in mood or depression	a		

Storage*	Store in dry, cool places at room temperature. Direct sunlight and extreme temperatures may cause them to break down and become less effective			
Others	POP may increase the risk of VTE especially with the 3rd and 4th generation progestin (such as desogestrel and drospirenone) Caution should be exercised in women over 55 years of age due to the increased risks of stroke, cardiovascular events and VTE Drug-drug interactions **(Enzyme Inducing Drugs - May reduce the effectiveness of POP)** 1. Antibiotics – Rifampicin 2. Antiretrovirals – Ritonavir, Nevirapine, Darunavir, Efavirenz 3. Anticonvulsants – Carbamazepine, Phenytoin, Lamotrigine, Topiramate, Rufinamide, Oxcarbazepine 4. Antifungals – Griseofulvin, Fluconazole, Ketoconazole 5. St. John's Wort Drug-food interactions **(May cause symptoms of progestogen excess)** Grapefruit juice			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

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Respimat (Re-usable)

Name :			**Unit :**		
● *Please tick (✔) **Yes** for correct instruction.* ● *Please tick (✔) **No** for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Soft Mist Inhaler				
Indications and Dosage	The indication and dosage depend on the drug content.				
Method of Administration*	**DEVICE PREPARATION** ● Respimat Re-usable is available in two different packaging: a) Device Pack consist of one device and a cartridge b) Refill Pack consists of a cartridge only. ● The Respimat device is designed for use with up to 6 cartridges.				
	Before Every Use	Make sure:			
		The Respimat has **not** expired			
		The Respimat is **not** empty			
		Check inside the mouthpiece of the Respimat and ensure it is free from foreign objects.			
	Assemble	With the cap closed, press the safety catch and pull off the clear base.			
		Take the cartridge out of the box. Push the narrow end of the cartridge into the Respimat until it clicks into place. ***Note:** The cartridge should be pushed gently against a firm surface.*			
		Mark the checkbox on the inhaler's label to track the number of cartridges.			
		Replace the clear base into place until it clicks.			

	Priming	Conditions in which priming is required: ● Before using Respimat for the first time. ● If Respimat has not been used for a specific period. 1) Hold the Respimat upright with the cap closed. 2) Turn the clear base in the direction of the black ▶ ▶ arrows on the label until it "**clicks**" (half a turn). 3) Open the cap until it snaps fully open. 4) Point the Respimat towards the ground. Press the dose release button. Close the cap. 5) Perform steps 1-4 until a cloud is visible. After a cloud is visible, repeat steps 1-4, three (3) more times to ensure the inhaler is prepared for use. 6) Hold the Respimat upright with the cap closed. ***Notes:*** *If Respimat has not been used for more than* ***7 days****, release ONE (1) puff towards the ground. If Respimat has not been used for more than* ***21 days****, repeat* ***step 5.***			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Hold the Respimat upright with the cap closed. ● Turn the clear base in the direction of the black arrows ▶ ▶ on the label until it "**clicks**" (half a turn). The dose is loaded. ● Open the cap until it snaps fully open.			
	Exhale	**Step 2** ● Sit upright or stand in an erect position. ● Breathe out (exhale) slowly and fully, **away** from the Respimat.			
	Chin & mouth	**Step 3** ● **Slightly tilt the chin up.** ● Place the inhaler mouthpiece gently between the teeth. Ensure a **tight seal** of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes:*** ***Do not block*** *the opening of the mouthpiece with the tongue or teeth. The tongue should be lowered under the mouthpiece****. Do not*** *block the air vents.*			
	Inhale	**Step 4** ● Inhale **slowly** and **deeply** through the mouth, pressing the "dose release button" at the **start of inhalation.** ● Continue breathing in **slowly** and **deeply** for 4-5 seconds.			

	Hold breath	**Step 5** Remove the Respimat from the mouth, and with the lips closed **hold the breath** for 5-10 seconds or as long as comfortable.			
	Exhale	**Step 6** Breathe out (exhale) gently, **away** from the Respimat.			
	Repeat	**Step 7** Repeat steps 1 to 6 for the second dose.			
	Close	**Step 8** Close the cap of the Respimat.			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	1. Consider patient-related factors such as **manual dexterity, hand strength**, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Can be used with VHC (Aerochamber Plus Flow-Vu)				
	Fasting				
	To refer to the latest advisory by religious authority				
	Others				
	NA				
Side Effects and their Management*	Depend on the drug contents				
Others	**Cleaning***	Clean the Respimat **mouthpiece** including the **metal part** inside the mouthpiece with a damp cloth or tissue, at least once a week. ***Note:*** *Poor hygiene may cause brown discolouration on the metal part and mouthpiece*			

	Dose checking	● Contains a dose indicator. ● When the dose indicator window shows a yellow colour, there are approximately 10 puffs of medication left. ● When the dose indicator window shows a white arrow on a red background, the cartridge is empty.			
	Replacing Respimat Cartridge	● Once the cartridge is empty, turn the clear base to loosen it. The inhaler is now in a locked position. ● Pull off the cartridge from the inhaler. ● Insert a new cartridge (continue with 'Assemble' and 'Priming' steps).			
	Expiry date	● Follow the expiry date on the product. ● The cartridge has an in-use shelf life of 3 months.			

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Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Usmani OS. (2019 Mar). Choosing the right inhaler for your asthma or COPD patient. Therapeutics and clinical risk management. 14:461-72.
2. Ohar JA, Ferguson GT, Mahler DA, Drummond MB, Dhand R, Pleasants RA, Anzueto A, Halpin DM, Price DB, Drescher GS, Hoy HM. (2022 Jan). Measuring peak inspiratory flow in patients with chronic obstructive pulmonary disease. International journal of chronic obstructive pulmonary disease. 6:79-92.
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Suppositories / Enema

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	1. Laxative a. Bisacodyl suppository (5mg, 10mg) b. Glycerin 25% and Sodium Chloride 15% Enema 2. NSAIDS a. Diclofenac suppository (12.5mg, 25mg, 50mg) 3. Antipyretic a. Paracetamol suppository (125mg, 250mg) 4. Opioid a. Morphine sulphate suppository (10mg, 20mg, 30mg) 5. Antiinflammatory a. Lignocaine (Lidocaine), Aluminium Acetate, Zinc Oxide and Hydrocortisone Suppository b. Mesalazine 1g suppository c. Mesalazine 1g/100ml enema d. Mesalazine 6.67% w/w Enema e. Zinc oxide, benzyl benzoate and balsam peru suppository			
Indications and Dosage	Counsel patients based on indication and dosage as prescribed.			
Method of Administration*	**A. SUPPOSITORY** 1. A visit to the toilet is recommended before inserting a suppository. 2. Wash hands with soap and water and dry it. 3. Take out the suppositories from its storage place. (Refer to product insert for specific storage condition) 4. Remove the wrapper. 5. Do not cut the suppositories unless instructed otherwise. If you need to cut it in half, cut it length wise with a clean single edge razor blade. 6. Lubricate the tip of the suppositories with water. 7. Lie down on the side with the upper leg bent forward toward the stomach while your lower leg straightens out. 8. Insert the suppository, pointed end first with the finger about 1 inch (adult) and 1/2 inch (infant) depth. 9. Straighten both legs together and hold buttocks together for about a few seconds. 10. Remain lying down for about 15 to 20 minutes to ensure the suppository is fully absorbed. 11. Discard the wrapper and wash your hands thoroughly. **B. ENEMA** 1. The best results are achieved if the bowel is emptied before administration of enemas. 2. Preparation: i. Shake the bottle for 30 seconds. ii. Remove the protective cap of the applicator. iii. The bottle should be held at the top and the bottom. 3. The patient should lie down on his/her left side with his/her left leg stretched out and right leg bent. This makes it easier for the rectal suspension to be administered and for the enema to be effective 4. Administration of the rectal suspension:			

	i. The tip of the applicator should be inserted deep into the rectum. ii. The bottle should be tipped downwards slightly and then squeezed slowly. Maintain sufficient steady hand pressure while dispersing the bottle content iii. Once the bottle is empty, the applicator tip should be slowly withdrawn from the rectum. iv. The patient should remain lying down in this position for at least 30 minutes to allow the contents of the enema to spread throughout the rectum. v. If possible, the rectal suspension should be allowed to exert its effects all night. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	Refer to individual product information.			
	Breastfeeding			
	Refer to individual product information.			
	Elderly			
	Refer to individual product information.			
	Paediatric			
	Refer to individual product information.			
	Fasting			
	Administration of suppository or enema during fasting is deemed to invalidate the fasting.			
	Others			
	For rectal use only.			
Side Effects and their Management*	1. In general, administration of a suppository or enema may lead to painful sensations and local irritation, especially in patients with anal fissures, stomach or bowel disorders including ulcerative proctitis or Crohn's disease. 2. Suppositories or enemas should be used under medical advice or as directed by a physician. 3. Refer to individual product information for specific side effects for each medication.			
Storage*	Store suppositories and enemas in a cool, dry place and away from direct heat and light. Generally, there is no need to store in the refrigerator unless stated on drug labels. Store the medications out of reach of children to avoid accidental ingestion.			
Others	1. Do not take the suppository or enemas if allergic to any component in the medication. 2. Avoid concurrent use of NSAIDS or COX-2 (cyclo-oxgenase-2) inhibitor with diclofenac suppositories (eg Ibuprofen, Aspirin)			

	3. Refer to individual product information for contraindications and drug-drug interactions.			

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Remarks:

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References:

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Throat Spray

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Non-steroidal anti-inflammatory drug (NSAID) : Benzydamine HCl			
Indications and Dosage	Temporary relief of painful conditions of the mouth and throat including tonsillitis, sore throat, radiation mucositis, aphthous ulcers, pharyngitis, swelling, redness, inflammatory conditions, post-orosurgical and periodontal procedures. (For paediatric and otorhinolaringology use. Restrict to patients who are not able to gargle) **Adults and children over 12 years** 2-4 sprays (1-2 mg) directly onto the sore/inflamed area and swallow gently. Repeat every 1½ to 3 hours as necessary. **Children (6-12 years)** 2 sprays (1 mg) directly onto the sore/inflamed area and swallow gently. Repeat every 1½ to 3 hours as necessary. **Children under 6 years** Not recommended. Uninterrupted treatment should not exceed 7 days, unless under medical supervision.			
Method of Administration*	1. Hold the bottle in an upright position. 2. You need to prime the spray the first time you use it (max. 5 sprays). Point the spray-tube away from your face. Press down firmly until a fine spray appears from the end of the spray-tube. 3. Point the spray-tube at the affected area and press down. One press releases one actuation. 4. After spraying the desired number of actuations, wipe the end of the spray-tube with a tissue. This prevents the spray-tube becoming blocked. **Precaution :** 1. Do not push anything into the end of the spray-tube if it becomes blocked. Return the spray to the pharmacist. 2. If any spray gets in your eyes, wash them immediately with cold water.			
	MISSED DOSE If you forget to use the medication, take the next dose as soon as you remember. Do not take a double dose to make up for a dose you have missed. **Do not stop taking your medication unless advised to do so by your prescriber**			
Special Considerations	**Pregnancy**			
	The safety of benzydamine hydrochloride has not been established in pregnant patients.			

	Breastfeeding			
	It is unknown if benzydamine via throat spray is excreted in breast milk.			
	Elderly			
	None specifically to Benzydamine			
	Paediatric			
	Not recommended for children below 6 years old.			
	Fasting			
	To refer to the latest advisory by religious authority.			
	Others			
	NA			
Side Effects and their Management*	1. Oral numbness, burning or stinging, dryness or thirst, tingling, warm feeling in mouth, altered sense of taste. Seek immediate medical assistance if: 1. Severe allergic reaction (anaphylaxis) seen as swelling of throat and mouth, difficulty in swallowing or speaking, alterations in heart rate, severe asthma, collapse, and unconsciousness.			
Storage*	1. Do not store above 30°C. Do not refrigerate. Protect from light. After opening, refer to the respective product leaflet for shelf life.			
Others	Wipe the nozzle with a clean towel after application to prevent blockage.			

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Remarks:

Reviewed by: Name & Signature **Date:**

*** Mandatory for peer review/validation**

References:

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Turbuhaler

Name :			**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Dry powder inhaler (DPI)				
Indications and Dosage	The indication and dosage depend on the drug content.				
Method of Administration*	**DEVICE PREPARATION**				
	Before Every Use	Make sure:			
		The Turbuhaler has **not** expired			
		The Turbuhaler is **not** empty.			
		Check inside the mouthpiece of the Turbuhaler and ensure it is free from foreign objects.			
	Priming	Conditions in which priming is required: Before using the Turbuhaler for the **first time.**			
		Priming steps (single occasion only with the newly opened device): ● Unscrew the cover of the Turbuhaler and lift it off. ● Hold the Turbuhaler **upright** with the base grip at the bottom. ● Turn the base grip as far as it will go in one direction and then turn it back as far as it will go in the other direction. A **"click"** sound will be heard (it does not matter which way it is turned first) ● Repeat this step **one** more time to complete priming.			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Unscrew the cover of the Turbuhaler and lift it off. ● Hold the Turbuhaler **upright** with the base grip at the bottom. ● To load the Turbuhaler with a dose, turn the base grip as far as it will go in one direction. Then turn it back again as far as it will go in the opposite direction until a **"click"** sound is heard (it does not matter which way it is turned first) ***Notes:*** ***Do not*** *tip the Turbuhaler upside down or shake the device after dose loading.* **Do not** hold the mouthpiece when turning the grip. ***Do not block*** *the air vents.*			
	Exhale	**Step 2** Sit upright or stand in an erect position.			

		Breathe out (exhale) slowly and fully, **away** from the Turbuhaler.			
	Chin & mouth	**Step 3** • **Slightly tilt the chin up.** • Place the inhaler mouthpiece gently between the teeth. Ensure a **tight seal** of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes: Do not block*** *the opening of the mouthpiece with the tongue or teeth. The tongue should be lowered under the mouthpiece.*			
	Inhale	**Step 4** Breathe in **forcefully** and **deeply** through the mouth.			
	Hold breath	**Step 5** **Remove** the Turbuhaler from the mouth, and with the lips closed, **hold the breath** for 5-10 seconds or as long as comfortable.			
	Exhale	**Step 6** Breathe out (exhale) gently, **away** from the Turbuhaler.			
	Repeat	**Step 7** Repeat steps 1 to 6 if another dose is needed.			
	Close & Rinse	**Step 8** • Replace the cover tightly after use. • Rinse and gargle the mouth with water and **spit it out** (for a steroid-containing inhaler).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	Consider patient-related factors such as **inspiratory effort**, manual dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Some DPIs may be appropriate for older children. Refer guidelines, for example *Global Initiative for Asthma*				

	Fasting				
	To refer to the latest advisory by religious authority.				
	Others (*eg. hepatic impairment, renal impairment which will be relevant to the patient)*				
	NA				
Side Effects and their Management*	For corticosteroid-containing inhalers, gargle the mouth with water and spit it out.				
Storage*	Refer to product inserts for complete information. In general: • Store the device in a clean, cool, and dry place at appropriate temperatures. • Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). • Keep it safely out of the reach of children.				
Others	**Cleaning***	Wipe the outside of the mouthpiece at least once a week with dry tissue or cloth. **Do not** use water or liquids.			
	Dose checking	● Contains a dose indicator. ● The dose indicator is marked in intervals of 10 doses for Symbicort 120-dose inhalers and 15 doses for Symbicort 30-dose inhalers. ● When a red mark is first seen at the edge of the indicator window, there are approximately 20 doses left for Symbicort 120-dose inhalers and 15 doses for Symbicort 30-dose inhalers. For the last 10 doses, the background of the dose indicator is red. No more medicine is left when the "0" on the red background has reached the middle of the window. ***Notes:*** *The grip will still twist and "click" even when the Turbuhaler is empty. The sound upon shaking the Turbuhaler is produced by a drying agent,* ***not*** *the medication.*			
	Expiry date	Follow the expiry date on the product.			

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References:

1. Usmani OS. (2019 Mar). Choosing the right inhaler for your asthma or COPD patient. Therapeutics and clinical risk management. 14:461-72.
2. Ohar JA, Ferguson GT, Mahler DA, Drummond MB, Dhand R, Pleasants RA, Anzueto A, Halpin DM, Price DB, Drescher GS, Hoy HM. (2022 Jan). Measuring peak inspiratory flow in patients with chronic obstructive pulmonary disease. International journal of chronic obstructive pulmonary disease. 6:79-92.
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Vaginal Preparation/Pessary

Name :		**Unit :**		
• *Please tick (✔) **Yes** for correct instruction.* • *Please tick (✔) **No** for incorrect instruction.*		**Yes**	**No**	**Remarks**
Pharmacological Group	Antifungal a. Clotrimazole 500mg vaginal tablet Progestin a. Progesterone 100mg capsule b. Progesterone 8% Vaginal Gel Estrogens a. Conjugated Estrogen 0.625mg/g cream			
Indications and Dosage	Counsel based on indication and dosage as prescribed by the doctor.			
Method of Administration*	1. Read the product insert before counselling. Each product will have specific instructions for use. 2. The recommended time of administration is just before your bedtime. 3. Wash hands with soap and water, rinse and dry it. 4. Prepare pessary for application: a. Tablet: i. Remove the foil or plastic wrapping from the pessary. ii. Place the blunt end of the pessary into the open end of the applicator (if you have been supplied with one) iii. During pregnancy the applicator should NOT normally be used. b. Vaginal Cream: i. Firmly attach the applicator to the opening of the tube. ii. Squeeze the cream into the applicator until it reaches the level of the indicator of your dose. iii. Twist and remove the applicator. 5. Lie on your back with your knees bent and legs apart. 6. Using the applicator gently put the pessary into the vagina as far as it will comfortably go. If there is no applicator available, see point 13. 7. Holding the outer part of the applicator push the plunger in to release the pessary from the applicator. 8. Remove the applicator from the vagina. 9. Remain lying down for about 15 - 30 minutes to ensure the medication is fully absorbed. 10. Wash your hands thoroughly. 11. If the applicator is to be used again, clean it in warm soapy water, then dry and keep it in a clean place. 12. If you encounter any remaining medication that is not absorbed on the next coming morning, do not reinsert the remaining medication and wash your vagina area. You may use a sanitary pad / panty liner to prevent staining. 13. To insert without using the plastic applicator: Holding the pessary between your thumb and first two fingers, gently put the pessary, narrow end first, as high into the vagina as is comfortable. Then wash your hands. Missed dose management: 1. Use or insert the missed dose once remembered. 2. If it is almost time for the next dose, skip the missed dose and continue the regular dosing schedule. Do not			

	use a double dose. **Do not stop taking your medication unless advised to do so by your prescriber.**			
Special Considerations	**Pregnancy**			
	1. Clotrimazole vaginal tablet: Pregnancy Category B 2. Progesterone capsule: Pregnancy Category B 3. Conjugated Estrogen cream: - contraindicated in known or suspected pregnancy. - If pregnancy occurs during treatment, treatment should be withdrawn immediately.			
	Breastfeeding			
	1. Clotrimazole Vaginal Tablet: use with precautions. 2. Progesterone Vaginal Capsule: can pass into breast milk and may harm a nursing baby 3. Conjugated Estrogens Cream and Progesterone Gel ; not to be used in lactation.			
	Elderly			
	1. Vaginal Atrophy and Fragility: Postmenopausal women often have atrophic vaginal tissues due to decreased estrogen levels, increasing the risk of irritation, ulceration, or bleeding from pessary use 2. Cognitive and Physical Limitations: Elderly patients may have difficulty with self-care due to physical disabilities, arthritis, or cognitive impairments 3. Conjugated Estrogens Cream ; not to be used in elderly more than 65 years old. 4. Beers Criteria: Vaginal cream: acceptable to use low-dose intravaginal estrogen for the management of dyspareunia, recurrent lower urinary tract infections, and other vaginal symptoms.			
	Paediatric			
	1. Clotrimazole Vaginal Tablet: use with precautions in children < 16 years old (refer to individual product leaflet) 2. Conjugated Estrogens Cream and Progesterone Gel ; not to be used in children who have not achieved menarche			
	Fasting			
	1. Administration of suppository or enema during fasting is deemed to invalidate the fasting.			
	Others			
	1. Clotrimazole Vaginal Tablet: Use with cautions in patients with hepatic impairment, patients who have had >2 infections of candidal vaginitis for the past 6 months, history of STD or exposure to partner with STD, irregular or abnormal bleeding, vaginal ulcers, diarrhoea, dysuria or lower abdominal pain, fever or chills. 2. Progesterone Vaginal Capsule: Contraindicated in history of stroke or blood clot, circulation problems,			

	liver disease, breast or uterine cancer, abnormal vaginal bleeding, or recently had a tubal pregnancy or an incomplete abortion. 3. Conjugated Estrogens Cream : contraindicated in active or chronic liver dysfunction or disease			
Side Effects and their Management*	1. Vaginal skin irritation or burning, Itching or discomfort 2. Drowsiness or dizziness 3. Breast tenderness or swelling 4. Headache and nausea Other specific side effects refer to individual active ingredients.			
Storage*	1. Store at below 25°C. 2. Store in a place that is not exposed to light.			
Others	1. Some pessaries may contain ingredients that can damage latex condoms. Use an alternative method of contraception (or do not have sex) for at least five days after using pessary. 2. Do not use tampons, intravaginal douches, spermicides or other vaginal products while using this product. 3. Do not use pessary during menstruation. 4. Conjugated Estrogens Cream ; Reduced plasma conc w/ CYP3A4 inducers eg, St. John's wort prep, phenobarb, phenytoin, carbamazepine, rifampicin, dexamethasone. Increased plasma conc w/ CYP3A4 inhibitors eg, cimetidine, erythromycin, clarithromycin, ketoconazole, itraconazole, ritonavir, grapefruit juice.			

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Remarks:

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References:

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Valved Holding Chamber (VHC) with Facemask

Multiple Breath or Tidal Breathing Method

Name :			**Unit :**		
• *Please tick (✔)* ***Yes*** *for correct instruction.* • *Please tick (✔)* ***No*** *for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Valved holding chamber (VHC) with facemask (Multiple Breath or Tidal Breathing Method)				
Indications and Dosage	A medical device used with a pMDI				
Method of Administration*	**Before Every Use**	Make sure:			
		The pMDI has **not** expired			
		The pMDI is **not** empty			
		The VHC structure is intact (e.g., there is no crack), and the valve is working properly (e.g., it is not stuck or brittle).			
		Check inside the pMDI mouthpiece and VHC, ensure it is free from foreign objects.			
	Priming	Conditions in which priming is required: ● Before using pMDI for the first time. ● If pMDI has not been used for a specific period.			
		Priming steps: ● Remove the cap and hold the inhaler in an upright position. ● Shake the pMDI well. ● Press down the canister to release **1 spray** into the air. ● Repeat the above steps if needed. ***Notes****: The number of puffs, non-use period, and the need for shaking differ from product to product. Refer to product inserts for specific instructions.*			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Remove the cap and hold the pMDI in an upright position. ● Shake the pMDI well (suspensions). ● Insert pMDI upright into the back of the VHC. ***Notes****: Shaking is not required for solution-based pMDIs. Refer to product inserts.*			
	Exhale	**Step 2** ● Sit upright or stand in an erect position. ● Breathe out (exhale) slowly and fully			
	Chin & mouth	**Step 3**			

		● **Slightly tilt the chin up.** ● Apply VHC facemask to face and ensure an effective seal over **mouth and nose**.			
	Inhale	**Step 4** ● Inhale **slowly** and **deeply** through the mouth, pressing the canister down **ONCE** at the **start of inhalation**. ● Inhale and exhale **slowly** 5 times through the mouth. Remove the VHC from the mouth. ***Note**: Some HCPs may recommend the "Single Breath Method", however, this is not common*			
	Repeat	**Step 5** Wait about 30 seconds to 1 minute, repeat steps 1 to 4 if another dose is needed.			
	Close & Rinse	**Step 6** ● Remove the pMDI from the VHC. ● Recap the mouthpiece of pMDI. ● Wash the face area in contact with the facemask; rinse and gargle the mouth with water and **spit it out** (for a steroid-containing inhaler).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	1. Consider VHCs among pMDI users 2. Consider patient-related factors such as manual dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Choose age-appropriate valved holding chambers				
	Fasting				
	To refer to the latest advisory by religious authority				
	Others				
	NA				

Side Effects and their Management*	For corticosteroid-containing inhalers, gargle mouth with water and spit it out; wash the face area in contact with the facemask				
Storage*	Refer to product inserts for complete information. In general: • Store the device in a clean, cool, and dry place at appropriate temperatures. • Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). • Keep it safely out of the reach of children.				
Others	**Cleaning***	Clean spacer and pMDI at least once a week. Cleaning instructions vary between products. Refer to the product insert for specific instructions.			
	Dose checking	Check pMDI for remaining doses: ● Check the dose counter (if the pMDI has one). ● For pMDI without a dose counter, mark the date of opening on the new pMDI and keep track of the doses used. Record the doses used on a daily log.			
	Expiry date	● Replace the VHC according to the manufacturer's recommendations or sooner if damaged. ● Follow the expiry date on the pMDIs ***Notes**: Some pMDIs have in-use shelf life. Refer to product inserts for specific instructions.*			
	Additional notes	Some VHCs are equipped with alert whistles intended to indicate fast inhalation. Instruct the patient to slow breathing if a whistling sound is heard.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

Remarks:

Reviewed by: Name & Signature **Date:**

***Mandatory for validation / peer review**

References:

1. Usmani OS. (2019 Mar). Choosing the right inhaler for your asthma or COPD patient. Therapeutics and clinical risk management. 14:461-72.
2. Ohar JA, Ferguson GT, Mahler DA, Drummond MB, Dhand R, Pleasants RA, Anzueto A, Halpin DM, Price DB, Drescher GS, Hoy HM. (2022 Jan). Measuring peak inspiratory flow in patients with chronic obstructive pulmonary disease. International journal of chronic obstructive pulmonary disease. 6:79-92.
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5. Mohammad Y. (2019 Oct). How to manage asthma during Ramadan? 97(10): 1073-1076. PMID: 3169193

Valved Holding Chamber (VHC) with Mouthpiece

Single Breath Method

Name :			**Unit :**		
● *Please tick (✔)* ***Yes*** *for correct instruction.* ● *Please tick (✔)* ***No*** *for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Valved holding chamber (VHC) with mouthpiece (Single Breath Method)				
Indications and Dosage	A medical device used with a pMDI				
Method of Administration*	**Before Every Use**	Make sure:			
		The pMDI has **not** expired			
		The pMDI is **not** empty			
		The VHC structure is intact (e.g., there is no crack), and the valve is working properly (e.g., it is not stuck or brittle).			
		Check inside the pMDI mouthpiece and VHC, and ensure it is free from foreign objects.			
	Priming	Conditions in which priming is required: ● Before using pMDI for the first time. ● If pMDI has not been used for a specific period.			
		Priming steps: ● Remove the cap and hold the inhaler in an upright position. ● Shake the pMDI well. ● Press down the canister to release **1 spray** into the air. ● Repeat the above steps if needed. ***Notes****: The number of puffs, non-use period, and the need for shaking differ from product to product. Refer to product inserts for specific instructions.*			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Remove the cap and hold the pMDI in an upright position. ● Shake the pMDI well (suspensions). ● Insert pMDI upright into the back of the VHC. If the VHC has a mouthpiece cap, remove it. **Notes**: *Shaking is not required for solution-based pMDIs. Refer to product inserts.*			
	Exhale	**Step 2** ● Sit upright or stand in an erect position. ● Breathe out (exhale) slowly and fully,			

		away from the VHC.			
	Chin & mouth	**Step 3** ● **Slightly tilt the chin up.** ● Place the VHC mouthpiece gently between the teeth. Ensure **a tight seal** of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes**: **Do not block** the opening of the mouthpiece with the tongue or teeth. The tongue should be lowered under the mouthpiece.*			
	Inhale	**Step 4** ● Inhale **slowly** and **deeply** through the mouth, pressing the canister down **ONCE** at the **start of inhalation.** ● Continue breathing in **slowly** and **deeply** for 4-5 seconds.			
	Hold Breath	**Step 5** **Remove** the VHC from the mouth and with the lips closed, **hold the breath** for 5-10 seconds or as long as comfortable.			
	Exhale	**Step 6** Breathe out (exhale) gently away from the VHC.			
	Repeat	**Step 7** Wait about 30 seconds to 1 minute, repeat steps 1 to 6 if another dose is needed.			
	Close & Rinse	**Step 8** ● Remove the pMDI from the VHC. ● Recap the mouthpiece of pMDI and VHC (if the VHC has a cap) ● Rinse and gargle the mouth with water and **spit it out** (for a steroid-containing inhaler).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber.**				
Special Considerations	**Pregnancy**				
	1. NA				
	Breastfeeding				
	1. NA				
	Elderly				
	1. Consider VHCs among pMDI users 2. Consider patient-related factors such as manual				

	dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Choose age-appropriate valved holding chambers				
	Fasting				
	To refer to the latest advisory by religious authority.				
	Others				
	NA				
Side Effects and their Management*	For corticosteroid-containing inhalers, gargle the mouth with water and spit it out.				
Storage*	Refer to product inserts for complete information. In general: • Store the device in a clean, cool, and dry place at appropriate temperatures. • Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). • Keep it safely out of the reach of children.				
Others	**Cleaning***	● Clean VHC and pMDI at least once a week. Cleaning instructions vary between products. ● Refer to the product insert for specific instructions.			
	Dose checking	Check pMDI for remaining doses: ● Check the dose counter (if the pMDI has one). ● For pMDI without a dose counter, mark the date of opening on the new pMDI and keep track of the doses used. Record the doses used on a daily log.			
	Expiry date	● Replace the VHC according to the manufacturer's recommendations or sooner if damaged. ● Follow the expiry date on the pMDIs. ***Notes**: Some pMDIs have in-use shelf life. Refer to product inserts for specific instructions.*			
	Additional notes	Some VHCs are equipped with alert whistles intended to indicate fast inhalation. Instruct the patient to slow the breathing if a whistling sound is heard.			

Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered.

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4. Asthma UK. How to use your inhaler (Available at https://www.asthmaandlung.org.uk/living-with/inhaler-videos). Accessed on October 15, 2024.
5. Mohammad Y. (2019 Oct). How to manage asthma during Ramadan? 97(10): 1073-1076. PMID: 31691934

Valved Holding Chamber (VHC) with Mouthpiece

Multiple Breath or Tidal Breathing Method

Name :			**Unit :**		
● *Please tick (✔)* ***Yes*** *for correct instruction.* ● *Please tick (✔)* ***No*** *for incorrect instruction.*			**Yes**	**No**	**Remarks**
Type of Device	Valved Holding Chamber (VHC) with mouthpiece. (Multiple Breath or Tidal Breathing Method)				
Indications and Dosage	A medical device used with a pMDI				
Method of Administration*	**Before Every Use**	Make sure:			
		The pMDI has **not** expired			
		The pMDI is **not** empty			
		The VHC structure is intact (e.g., there is no crack), and the valve is working properly (e.g., it is not stuck or brittle).			
		Check inside the pMDI mouthpiece and VHC, ensure it is free from foreign objects.			
	Priming	Conditions in which priming is required: ● Before using pMDI for the first time. ● If pMDI has not been used for a specific period.			
		Priming steps: ● Remove the cap and hold the inhaler in an upright position. ● Shake the pMDI well. ● Press down the canister to release **1 spray** into the air. ● Repeat the above steps if needed. ***Notes****: The number of puffs, non-use period, and the need for shaking differ from product to product. Refer to product inserts for specific instructions.*			
	DEVICE INHALATION TECHNIQUES				
	Prepare	**Step 1** ● Remove the cap and hold the pMDI in an upright position. ● Shake the pMDI well (suspensions). ● Insert pMDI upright into the back of the VHC. If the VHC has a mouthpiece cap, remove it. ***Notes****: Shaking is not required for solution-based pMDIs. Refer to product inserts.*			
	Exhale	**Step 2** ● Sit upright or stand in an erect position ● Breathe out (exhale) slowly and fully			

	Chin & mouth	**Step 3** ● **Slightly tilt the chin up.** ● Place the VHC mouthpiece gently between the teeth. Ensure a **tight seal** of the lips around the mouthpiece. Do not bite the mouthpiece. ***Notes**: **Do not block** the opening of the mouthpiece with the tongue or teeth. The tongue should be lowered under the mouthpiece.*			
	Inhale	**Step 4** ● Inhale **slowly** and **deeply** through the mouth, pressing the canister down **ONCE** at the **start of inhalation**. ● Inhale and exhale **slowly** 5 times through the mouth. Remove the VHC from the mouth.			
	Repeat	**Step 5** Wait about 30 seconds to 1 minute, repeat steps 1 to 4 if another dose is needed.			
	Close & Rinse	**Step 6** ● Remove the pMDI from the VHC. ● Recap the mouthpiece of pMDI and VHC (if the VHC has a cap) ● Rinse and gargle the mouth with water and **spit it out** (for a steroid-containing inhaler).			
	Missed dose management : If a maintenance dose is missed, take it as soon as possible and then resume the regular schedule. However, if it is almost time for the next dose, skip the missed dose. Never take a double dose to make up for a missed maintenance dose. **Do not stop taking your medication unless advised to do so by your prescriber**				
Special Considerations	**Pregnancy**				
	NA				
	Breastfeeding				
	NA				
	Elderly				
	1. Consider VHCs among pMDI users 2. Consider patient-related factors such as manual dexterity, hand strength, tremors, vision, comorbidities, respiratory muscle strength, cognition and others.				
	Paediatric				
	Choose age-appropriate valved holding chambers				
	Fasting				
	To refer to the latest advisory by religious authority				
	Others:				

	NA				
Side Effects and their Management*	For corticosteroid-containing inhalers, gargle the mouth with water and spit it out.				
Storage*	Refer to product inserts for complete information. In general: • Store the device in a clean, cool, and dry place at appropriate temperatures. • Avoid extreme temperatures and humidity (e.g., do not store it in cars or bathrooms). • Keep it safely out of the reach of children.				
Others	**Cleaning***	Clean VHC and pMDI at least once a week. Cleaning instructions vary between products. Refer to the product insert for specific instructions.			
	Dose checking	Check pMDI for remaining doses: ● Check the dose counter (if the pMDI has one). ● For pMDI without a dose counter, mark the date of opening on the new pMDI and keep track of the doses used. Record the doses used on a daily log.			
	Additional notes	Some VHCs are equipped with alert whistles intended to indicate fast inhalation. Instruct the patient to slow the breathing if a whistling sound is heard.			
Before ending this peer review session, the reviewee should be informed of the step(s) that he/ she missed out in order to ensure all the counselling points are being covered. **Remarks:** **Reviewed by: Name & Signature** **Date:**					

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3. The Electronic Medicine Compendium (eMC) (Available at http://www.medicines.org.uk/emc/). Accessed on October 15, 2024.
4. Asthma UK. How to use your inhaler (Available at https://www.asthmaandlung.org.uk/living-with/inhaler-videos). Accessed on October 15, 2024.
5. Mohammad Y. (2019 Oct). How to manage asthma during Ramadan? 97(10): 1073-1076. PMID: 31691934