Institute Name: Department of Medicine, Al Masarra Hospital, MOH					
Document Title: Guidelines for Prevention of Venous Thromboembolism					
Approval Process					
	Name	**Designation**	**Institution**	**Date**	**Signature**
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Approved by	Dr. Bader Al Habsi	Hospital Director	Al Masarra Hospital	Jan 2023	

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Acronyms

AMRH	Al Masarra Hospital
VTE	Venous thromboembolism
DVT	Deep vein thrombosis
PE	Pulmonary embolism
GP	General practitioner
LMWH	Low molecular weight heparin
INR	international normalized ratio

Guidelines for Prevention of Venous Thromboembolism

1. Introduction:

Venous thromboembolism (VTE), defined as deep vein thrombosis, pulmonary embolism, or both, are serious medical condition, often underdiagnosed, affecting around more half a million individuals in USA alone causing considerable complications such as disability, morbidity, or mortality. These conditions are preventable and treatable upon early detection. This guideline covers assessment, treatments and interventions that can reduce the risk of venous thromboembolism (VTE) and deep vein thrombosis (DVT) in people aged 18 and over in hospital for.

2. Scope:

This guideline is intended to all doctors, nursing staff, physical therapist, pharmacist, and dietitians in Al Masarra Hospital

3. Purpose:

3.1. The purpose of this guideline is to ensure that the risks of venous thromboembolism and deep vein thrombosis are assessed at an early stage and can be prevented in most cases.

3.2. This guideline aims to help healthcare professionals identify people who are most at risk of VTE.

4. Definitions

4.1. Deep Venous Thrombosis (DVT): the presence of coagulated blood, a thrombus, most commonly involves the deep veins of the leg or arm, often resulting in potentially life-threatening emboli to the lungs or debilitating valvular dysfunction and chronic leg swelling.

4.2. Venous thromboembolism (VTE): encompasses two interrelated conditions that are part of the same spectrum, deep venous thrombosis (DVT) and pulmonary embolism (PE).

4.3.Pulmonary Embolism (PE): the obstruction of blood flow to one or more arteries of the lung by a thrombus lodged in a pulmonary vessel

5. Guideline

5.1. This guideline includes recommendations on:

5.1.1. assessing the risks of VTE and bleeding

5.1.2. reducing the risk of VTE

5.1.3. using VTE prophylaxis

5.1.4. treatment for medical patients and other patient groups

5.1.5. patient information and planning for discharge interventions for people with psychiatric illness.

5.2 Assessing the risks of VTE and bleeding

5.2.1 Assess as soon as possible after admission or by the time of first consultation with physician.

5.2.2 Regard patients as being at increased risk of VTE if they:

5.2.2.1 have had or are expected to have significantly reduced mobility for 3 days or more **OR**

5.2.2.2 Are expected to have ongoing reduced mobility relative to their normal state and have one or more of the risk factors shown in box 1 in Appendix –1

5.2.2. Assess all patients for risk of bleeding before offering pharmacological VTE prophylaxis. Do not offer pharmacological VTE prophylaxis to patients with any of the risk factors for bleeding, unless the risk of VTE outweighs the risk of bleeding.

5.2.3. Reassess patients' risks of bleeding and VTE within 24 hours of admission, at point of review and whenever the clinical situation changes.

5.2.4. Ensure that the methods of VTE prophylaxis being used are suitable

5.2.5. Ensure that VTE prophylaxis is being used correctly.

5.2.6. Identify adverse events resulting from VTE prophylaxis.

5.3 Reducing the risk of VTE

5.3.1 Do not allow patients to become dehydrated unless clinically indicated.

5.3.2 Encourage patients to mobilize as soon as possible.

5.3.3 Do not regard aspirin or other antiplatelet agents as adequate prophylaxis for VTE

5.3.4 Consider offering temporary inferior vena cava filters to patients who are at very high risk of VTE (such as patients with a previous VTE event or an active malignancy) and for whom mechanical and pharmacological VTE prophylaxis are contraindicated.

5.4. Using VTE prophylaxis

5.4.1. Base the choice of pharmacological VTE agents on local policies and individual patient factors, including certain clinical conditions (such as severe renal impairment or established renal failure) and patient preferences.

5.5. Treatment for medical patients and other patient groups

5.5.1 General medical patients. Offer pharmacological VTE prophylaxis to general medical patients assessed to be at increased risk of VTE. Choose any one of the following:

5.5.1.1. low molecular weight heparin (LMWH)

5.5.1.2. Ondaparinux sodium

5.5.1.3. unfractionated heparin (UFH) (for patients with severe renal impairment or established renal failure)

5.5.2. Start pharmacological VTE prophylaxis as soon as possible after risk assessment has been completed or within 14 hours of admission. Continue until the patient is no longer at increased risk of VTE.

5.5.3 Medical patient whom pharmacological VTE prophylaxis is contraindicated, consider offering mechanical VTE. Choose any one of the following:

5.5.3.1. anti-embolism stockings (thigh or knee length)

5.5.3.2. foot impulse devices

5.5.3.3. intermittent pneumatic compression devices (thigh or knee length).

5.6 Patient information and planning for discharge

5.6.1 Patient information. Since heparins are of animal origin, for patients who have concerns about using animal products, consider offering synthetic alternatives based on clinical judgment and after discussing their suitability, advantages and disadvantages with the patient.

5.6.2. Before starting VTE prophylaxis, offer patients and/or their families or carers verbal and written information on:

5.6.2.1. risks and possible consequences of VTE

5.6.2.2. importance of VTE prophylaxis and its possible side effects

5.6.2.3. correct use of VTE prophylaxis (for example, anti-embolism stockings, foot impulse or intermittent pneumatic compression devices).

5.6.2.4. measures to reduce the risk of VTE (such as keeping self well hydrated and, if possible, exercising and becoming more mobile).

5.6.3 Planning patient's discharge. Offer patients and/or their families or carers verbal and written information on:

5.6.3.1. the signs and symptoms of deep vein thrombosis and pulmonary embolism

5.6.3.2. the correct and recommended duration of use of VTE prophylaxis at home (if discharged with prophylaxis)

5.6.3.3. the importance of using VTE prophylaxis correctly and continuing treatment for the recommended duration (if discharged with prophylaxis)

5.6.3.4. the signs and symptoms of adverse events related to VTE prophylaxis (if discharged with prophylaxis)

5.6.3.5. the importance of seeking help and who to contact if they have any problems using the prophylaxis (if discharged with prophylaxis)

5.6.3.6. the importance of seeking medical help and who to contact if deep vein thrombosis, pulmonary embolism or other adverse events are suspected.

5.6.4. Ensure that patients who are discharged with anti-embolism stockings:

5.6.4.1. understand the benefits of wearing them

5.6.4.2. understand the need for daily hygiene removal

5.6.4.3. are able to remove and replace them, or have someone available who will be able to do this for them

5.6.4.4. know what to look for, such as skin marking, blistering or discoloration, particularly over the heels and bony prominences

5.6.4.5. Know who to contact if there is a problem.

5.6.5. Ensure that patients who are discharged with pharmacological and/or mechanical VTE prophylaxis are able to use it correctly, or have arrangements made for someone to be available who will be able to help them.

5.6.6. Notify the patient's general practitioner (GP) from local health center through Al shifa referral system if the patient has been discharged with pharmacological and/or mechanical VTE prophylaxis to be used at home.

5.7 Intervention for people with psychiatric illness

5.7.1. Assess all acute psychiatric patients to identify their risk of VTE and bleeding as soon as possible after admission to hospital or by the time of the physician review.

5.7.2. Reassess all people admitted to an acute psychiatric ward for risk of VTE and bleeding at the point of physician review or if their clinical condition changes.

5.7.3. Consider pharmacological VTE prophylaxis with LMWH for people admitted to an acute psychiatric ward whose risk of VTE outweighs their risk of bleeding. [2018]

5.7.4. Consider pharmacological VTE prophylaxis with Fondaparinux Sodium if LMWH is contraindicated for people admitted to an acute psychiatric ward whose risk of VTE outweighs their risk of bleeding. [2018]

5.7.5. Continue pharmacological VTE prophylaxis for people admitted to an acute psychiatric ward until the person is no longer at increased risk of VTE.

6. Responsibilities

6.1. Medical physician: assess patients those who are at increased risk of VTE and risk of bleeding.

6.1.1. Prescribe pharmacological VTE prophylaxis after assessment if indicated.

6.2. Psychiatrists: assess all patients on admission to identify those who are at increased risk of VTE and bleeding as soon as possible after admission and to be referred to physician if needed.

6.2.1**.** Notify the patient's GP if the patient has been discharged with pharmacological and/or mechanical VTE prophylaxis to be used at home.

6.3. Clinical pharmacist: provide/dispense VTE prophylaxis with instructions of correct usage and its possible side-effects.

6.3.1. Ensure that patients who are discharged with pharmacological and/or mechanical VTE prophylaxis are able to use it correctly, or have arrangements made for someone to be available who will be able to help them

6.4. Nursing staff: to identify patient who are at risk of VTE and refer patients accordingly.

6.4.1. Ensure to reduce risk of VTE in admitted patients through proper nursing assessment and nursing interventions.

6.5. Physical therapist: to provide preventive measures for patient identified as high risk for DVT

6.6. Dietitian: to provide a diet plan for patients who are at increased risk of VTE

7.Document History and Version Control

Document History and Version Control			
Version	**Description of Amendment**	**Author**	**Review Date**
01.	Initial Release	Dr Preeti Srivastava	2019
02.	**Modified 5.7**. (5.7.1. to 5.7.5.)	Dr Preeti Srivastava	December 2025

Written by	**Reviewed by**	**Approved by**
Dr Preeti Srivastava	Dr Honeylette Cainday	Dr. Bader Al Habsi

8. Related Documents

8.1. Appendix 1. Risk Factors for vte and bleeding

8.2. Appendix 2. Audit Tool.

8.3. Appendix 3. Document Request Form

8.4. Appendix 4. Document Validation Checklist

9. References

Title of book/journals/articles/Website	Author	Year of publication	Page
National Institue of Clinical Excellence guidelines Jan 2010,updated 2015	NICE	205	
National Institue of Clinical Excellence guidelines Mar 2018, updated Aug 2019	NICE	2018	
https://www.nice.org.uk/guidance/ng89/chapter/Recommendations#interventions-for-people-with-psychiatric-illness			
https://www.cdc.gov/ncbddd/dvt/facts.html, updated June, 2022	CDC	2022	
Venous thromboembolism: a public health concern. Am J Prev Med. 2010 Apr;38(4 Suppl):S495-501. doi: 10.1016/j.amepre.2009.12.017. PMID: 20331949.	Beckman MG, Hooper WC, Critchley SE, Ortel TL.	2010	

10. Attachments

Appendix 1. Risk factors for VTE and Bleeding

Risk factors for VTE

- Active cancer or cancer treatment
- Age over 60 years
- Critical care admission
- Dehydration
- Known thrombophilias
- Obesity (body mass index [BMI] over 30 kg/m^2)
- One or more significant medical comorbidities (for example: heart disease; metabolic, endocrine or respiratory pathologies; acute infectious diseases; inflammatory conditions)
- Personal history or first-degree relative with a history of VTE
- Use of hormone replacement therapy
- Use of oestrogen-containing contraceptive therapy
- Varicose veins with phlebitis

Risk factors for bleeding

- Active bleeding
- Acquired bleeding disorders (such as acute liver failure)
- Concurrent use of anticoagulants known to increase the risk of bleeding (such as warfarin with international normalised ratio [INR] higher than 2)
- Lumbar puncture/epidural/spinal anaesthesia expected within the next 12 hours
- Lumbar puncture/epidural/spinal anaesthesia within the previous 4 hours
- Acute stroke
- Thrombocytopenia (platelets less than $75 \times 10^9/l$)
- Uncontrolled systolic hypertension (230/120 mmHg or higher)
- Untreated inherited bleeding disorders (such as haemophilia and von Willebrand's disease)

Appendix2. Audit Tool.

Guidelines for Prevention of Venous Thromboembolism							
Department :						Date:	
S.N.	**Audit Process**	**Standard/Criteria**	**Yes**	**Partial**	**No**	**N/A**	**Comment**
1	Interview Document Review	Are all patients assessed on admission to identify who are at risk of VTE?					
2	Observation Interview	Are all patients assessed for risk of bleeding before offering pharmacologic VTE prophylaxis?					
3	Observation Interview	Is a pharmacological VTE prophylaxis not given to patients with any of the risk facors for bleeding, unless the risk of VTE outweighs the risk of bleeding?					
4	Observation Interview Document Review	Are patients reassessed for risks of bleeding and VTE within 24hrs of admission and whenever the clinical situation changes?					
5	Observation Interview	Are patients encouraged to mobilize as soon as possible?					

Appendix 3.Document Request Form

Document Request Form			
Section A: Completed by Document Requester			
1. Requester Details			
Name	Dr Preeti Srivastava	Date of Request	December 2022
Institute	Al Masarra Hospital	Mobile	
Department	General Medicine	Email	
The Purpose of Request			
☐ Develop New Document	● Modification of Document	☐ Cancelling of Document	
1. Document Information			
Document Title	**Guidelines for Prevention of Venous Thromboembolism**		
Document Code	AMRH/GM/GUD/001/Vers.02		
Section B: Completed by Document Controller			
☑ Approved	☐ Cancelled	☐ Forward To:……..	
Comment and Recommendation: proceed with the document			
Name	Kunooz Al Balushi	Date	December, 2022
Signature	for Kunooz	Stamp	

Appendix 4. Document Validation Checklist

Document Validation Checklist

Document Title: Guidelines for Prevention of Venous Thromboembolism		**Document Code:** AMRH/GM/GUD/001/Vers.02			
No	Criteria	**Meets the Criteria**			**Comments**
		Yes	**No**	**N/A**	
1.	**Approved format used**				
1.1	Clear title – Clear Applicability	✓			
1.2	Index number stated	✓			
1.3	Header/ Footer complete	✓			
1.4	Accurate page numbering	✓			
1.5	Involved departments contributed	✓			
1.6	Involved personnel signature /approval	✓			
1.7	Clear Stamp	✓			
2.	**Document Content**				
2.1	Clear purpose and scope	✓			
2.2	Clear definitions	✓			
2.3	Clear policy statements (if any)			✓	
3.	**Well defined procedures and steps**				
3.1	Procedures in orderly manner	✓			
3.2	Procedure define personnel to carry out step	✓			
3.3	Procedures define the use of relevant forms			✓	
3.4	Procedures to define flowchart			✓	
3.5	Responsibilities are clearly defined	✓			
3.6	Necessary forms and equipment are listed	✓			
3.7	Forms are numbered	✓			
3.8	References are clearly stated				
4.	**General Criteria**				
4.1	Policy is adherent to MOH rules and regulations	√			
4.2	Policy within hospital/department scope	√			
4.3	Relevant policies are reviewed	✓			
4.4	Items numbering is well outlined	✓			
4.5	Used of approved font type and size	✓			
4.6	Language is clear, understood and well structured	√			
Recommendations ..... For implementation ..✓..... More revision ..... To be cancelled					
Reviewed by: .....Kunooz Balushi..... for Kunooz ✓ **Reviewed by:** Maria Claudia Fajard-Bala					

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