Prevention of Venous Thromboembolism

Summary This Policy Directive was revised to refine the requirements for Venous Thromboembolism (VTE) risk assessments in Emergency Departments to align with the state-based risk assessment tool, updated guidance on who can complete the VTE risk assessments (medical team and/or suitable trained staff involved in the patient's care), and revises the requirements for VTE risk reassessments in medically stable patients.

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Policy Directive

Prevention of Venous Thromboembolism

Policy Statement

NSW Health aims to embed comprehensive systems for clinicians to effectively manage venous thromboembolism (VTE) risk, ensure relevant patients receive appropriate VTE risk assessments, prescribe suitable prophylaxis, provide ongoing monitoring, and participate in their local Public Health Organisation's VTE prevention program.

Summary of Policy Requirements

All NSW Public Health Organisations (PHOs) are to have a strategy to embed systems to support clinicians to assess and manage VTE risks in patients. This is to ensure NSW public hospitals and health services comply with the actions provided in the Prevention of Venous Thromboembolism Framework.

As part of a continuous improvement strategy to reduce VTE related harm, the implementation of systems for conducting VTE risk assessments across different patient groups is essential. This enables identified at-risk patients to receive appropriate VTE prophylaxis tailored to their risk level and clinical condition. Decision support tools must be readily available across all PHOs to guide healthcare providers in prescribing the most suitable prophylactic measures.

All PHOs are to establish strategies for regular monitoring of VTE prevention indicators. This ongoing monitoring is crucial for identifying areas of improvement and ensuring continuous enhancement of VTE prevention practices. Furthermore, there should be a systematic approach to communicating findings from these reviews across the organisation, facilitating learning and best practice dissemination.

Revision History

Version	Approved By	Amendment Notes
PD2024_045 December-2024	Deputy Secretary, System Sustainability and Performance	This revision refines the requirements for VTE prevention in Emergency Departments, completion of VTE risk assessments by the medical team and/or suitable trained staff involved in the patient's care, and revised requirements to VTE reassessments for medically stable patients.
PD2019_057 November-2019	Deputy Secretary, People, Culture and Governance	This revision removes reference to the NHMRC Clinical Practice Guideline for the Prevention of VTE in Patients Admitted to Australian Hospitals (2009) and replaces PD2014_032.
PD2014_032 September-2014	Deputy Secretary, Governance, Workforce and Corporate	This policy includes statements on VTE management of high-risk patient groups and replaces PD2010_077.
PD2010_077 December-2010	Deputy Director-General Health System Quality Performance and Innovation	New policy replacing GL2008_014.
GL2008_014 September-2008	Director-General	New guideline.

Contents

1. Background

Venous thromboembolism (VTE) is a significant preventable adverse event for hospitalised patients. The VTE incidence rate has been shown to be approximately 100 times greater in hospital admissions compared to post-discharge [1]. Serious adverse outcomes resulting from VTE may occur, including an increased risk of recurrent thrombosis, morbidity from post-thrombotic syndrome or death.

Effective prevention of VTE is achieved through assessment of risk factors and the provision of appropriate prophylaxis.

1.1. About this document

This Policy Directive describes the system processes required to be embedded into standard workflow and clinical practice, to reduce a patient's risk of developing VTE.

These include:

- identifying patients who should be assessed for VTE risk
- assessing VTE risk
- prescribing appropriate prophylaxis
- reassessing VTE risk during care
- engaging patients, family and/or carers
- monitoring performance and practice, to assess compliance and facilitate continuous improvement.

This Policy Directive requires:

- All Public Health Organisations (PHOs) to have a strategy to embed systems to support clinicians to assess and manage VTE risk in patients.

  The Prevention of Venous Thromboembolism Framework (Appendix 9.1) provides a summary of the required actions for NSW public hospitals.

- Attending Medical Officers (AMOs), authorised prescribers, or other suitably trained staff (specifically trained in VTE risk assessments) to review all patients requiring a VTE risk assessment. Based on this assessment, and in alignment with evidence-based guideline, a system must be in place to ensure an authorised prescriber then prescribes appropriate prophylaxis where required.

  The VTE risk assessment outcome must be noted in the patient health care record or other approved form, and the rationale behind the decision to prescribe or withhold prophylaxis should also be noted.

- Nursing staff, midwives, pharmacists, and other relevant allied health staff to be aware of a patient's VTE risk and assist in ensuring the strategies for prevention are implemented.

To support the implementation of this Policy Directive, the Clinical Excellence Commission (CEC) in partnership with the Venous Thromboembolism Expert Advisory Group, has developed three NSW VTE risk assessment tools (targeted at the patient groups who are at an increased risk of developing hospital-associated VTEs) to support clinicians to undertake VTE risk assessments:

- NSW Adult Venous Thromboembolism Risk Assessment Tool
- NSW Emergency Department Adult Venous Thromboembolism Risk Assessment Tool
- NSW Maternal Venous Thromboembolism Risk Assessment Tool.

The CEC will continue to work with PHOs to facilitate VTE prevention strategies across NSW public hospitals.

1.2. Key definitions

Anticoagulant	Any agent used to prevent the formation of blood clots. These include oral agents, such as apixaban, dabigatran, rivaroxaban and warfarin and others which are injected into the vein or under the skin, such as unfractionated heparin and low molecular weight heparin for example, enoxaparin sodium.
Attending Medical Officer (AMO)	The Attending Medical Officer (AMO) is the senior medical practitioner who has primary responsibility for the patient during admission. This AMO is a consultant who may be a visiting medical officer or a staff specialist.
Australian Commission on Safety and Quality in Health Care (ACSQHC)	The Australian Commission on Safety and Quality in Health Care is a government agency that leads and coordinates national improvements in safety and quality in health care across Australia.

Authorised prescriber	A person approved by the facility to prescribe medications, but only in accordance with any practice conditions imposed by the person's place of employment and the endorsements, notations, and conditions on the person's health practitioner registration, these include: • Medical practitioner • Nurse practitioner • Endorsed midwife • Podiatrist • Dentist • Midwife practitioner • Optometrist. *Note:* For this Policy Directive, 'authorised prescriber' does not relate to a medical practitioner approved under the *Therapeutic Goods Act 1989* (Commonwealth) to prescribe a Special Access Scheme medication or to prescribe Pharmaceutical Benefits Scheme medications under the *National Health Act 1953* (Commonwealth).
Deep Vein Thrombosis (DVT)	A blood clot that may occur in the "deep veins" in the legs, thighs, or pelvis. ***Asymptomatic deep vein thrombosis*** is defined as painless DVT detected only by ultrasound, or ascending venography and is often confined to the distal veins. ***Symptomatic deep vein thrombosis*** results from occlusion of a major leg vein and results in leg pain or swelling. It requires specific investigation and treatment which may require a patient to be admitted to a hospital or may delay discharge for hospitalised patients.

Family of Measures	There are 3 types of measures. **Outcome measures:** • Directly aligned to the aim statement or the overall outcome you are trying to achieve. • Defines how the overall process or system is performing and the impact on the customers/patients. **Process measures:** • Logically linked to achieve the intended outcome or aim. • Serve to answer process questions, for example, are the parts and/or steps in the system performing as planned? **Balancing measures:** • Determines whether changes designed to improve one part of the system are causing new problems in another part of the system. • Looks at the system from different directions or dimensions.
Mechanical prophylaxis	VTE prophylaxis in the form of a graduated compression stockings, anti-embolic stockings, intermittent pneumatic compression and/or foot impulse devices.
Must	Indicates a mandatory action requiring compliance.
Postpartum period	Period beginning immediately after the birth of a child and extending to 6 weeks post-birth.
Prescriber	A health professional legally entitled to prescribe medicines according to the *Poisons and Therapeutic Goods Act 1966* (NSW) and Regulation.
Pulmonary embolism (PE)	A blood clot that breaks off from the deep veins and travels through the bloodstream to block the pulmonary arteries (arteries in the lung). Most deaths arising from deep vein thrombosis are caused by pulmonary emboli *(plural = pulmonary emboli).*
Public Health Organisation (PHO)	Under the *Health Services Act 1997* (NSW), a local health district, statutory health corporation or affiliated health organisation in respect of its recognised establishments and recognised services.

Quality Audit Reporting System (QARS)	The QARS was developed by the CEC to provide local health districts (LHDs) and specialty health networks (SHNs), and their facilities with a tool to conduct quality audits to provide evidence for the accreditation process, evaluate performance and initiate relevant action plans. The QARS allows evaluation at LHD/SHN, facility or ward levels. Benchmarking against the NSW average and peer groups is also available.
Quality Improvement Data System (QIDS)	A system that takes data and presents in charts for quality improvement. It was designed for unit level managers and clinicians to have easy access to information to improve their services.
Shared decision-making	A consultation process in which a clinician and a patient, family and/or carers jointly participate in making a health decision, having discussed the options and their benefits and harms, and having considered the patient's values, preferences, and circumstances.
Should	Indicates a recommended action that is best followed unless there are sound reasons for taking a different course of action.
Significantly reduced mobility relative to normal state	Refers to patients: • who are bedbound, or likely to spend a substantial proportion of the day in bed or in a chair due to the clinical condition for which they are being treated • unable to walk unaided due to injury such as severe lower leg injury (for example, fracture, dislocation or complete tendon rupture) • requiring rigid immobilisation, or non-weight bearing status. The change in mobility should be assessed in relation to the patient's normal state of functioning.
Suitably trained	A registered health care professional who, within their scope of practice, can perform and complete a VTE risk assessment or has otherwise completed locally endorsed education and training.

Transfer of care	Involves transferring professional responsibility and accountability for the care of a patient to another person or professional or a combination of professionals. It includes discharge from an acute inpatient setting to the community setting, sub-acute care, or non-acute care. It can also include transfer between hospitals, or transfer between attending teams and/or units within a hospital.
Thromboprophylaxis	Measures taken to assist in reduction of the risk of thrombosis.
Venous Thromboembolism (VTE)	The blocking of a blood vessel by a blood clot. Includes both deep vein thrombosis and pulmonary embolism.
VTE risk outcome	The decision reached after a risk assessment is carried out to evaluate the likelihood of a patient developing a VTE due to existing risk factors. The patient's risk outcome can fall under one of 3 categories: • **Lower risk:** Patient has a lower risk of developing a VTE and requires no pharmacological or mechanical prophylaxis. • **Moderate risk:** Patient is at risk of developing a VTE and requires treatment with pharmacological prophylaxis (where no contraindications exist) OR mechanical prophylaxis should be used (unless contraindicated) where pharmacological therapy is contraindicated. • **Higher risk:** Patient is at a relatively higher risk of developing a VTE and requires combination treatment (where no contraindications exist) with both pharmacological AND mechanical prophylaxis.

1.3. Related documents

This Policy Directive is to be read in conjunction with the following NSW Health policies and other related documents.

Table 1: Related NSW Health Policies

Policy number	Policy title
PD2024_006	*High-Risk Medicines Management*
PD2019_020	*Clinical Handover*
PD2020_047	*Incident Management*

Table 2: Other related documents

Organisation	Document title
Australian Commission on Safety and Quality in Health Care	*National Safety and Quality Health Service Medication Safety Standard*
Australian Commission on Safety and Quality in Health Care	*Venous Thromboembolism Prevention Clinical Care Standard*

2. Venous Thromboembolism Prevention

2.1. Identifying patients for VTE risk assessment

All public health organisations (PHOs) must have systems in place to support suitably trained staff to assess and manage venous thromboembolism (VTE) risk in patients. The following patient groups must be identified and undergo a VTE risk assessment.

2.1.1. Patients in the Emergency Department

Patients over 16 years old who are being discharged from the emergency department with a lower limb injury (including requirement for interventions such as leg casts or braces), have significantly reduced mobility relative to normal state, or patient-related VTE risk factors, must undergo a VTE risk assessment.

If required, an emergency department clinician is to prescribe appropriate prophylaxis prior to the patient leaving the emergency department.

2.1.2. Admitted patients

All patients over 16 years old admitted to a NSW public hospital or health service are to undergo a VTE risk assessment within 24 hours of admission and, if appropriate, be prescribed prophylaxis.

This includes patients admitted to an inpatient ward, or a unit (such as a mental health unit) or sub-acute facility (such as rehabilitation).

There is growing evidence to suggest that antipsychotic medicines increase VTE risk; therefore, patients admitted to a mental health facility, are to undergo a VTE risk assessment. This patient group is particularly at risk of VTE occurrence as a sudden reduction in mobility can occur.

Palliative care patients are to undergo VTE risk assessment. The decision to use VTE prophylaxis should be aligned with the goals of care and where possible occur in discussion with the patient, family and/or carers.

2.1.3. Pregnancy and postpartum women

All pregnant and postpartum women are to undergo VTE risk assessment:

- during the first comprehensive antenatal assessment (inpatient or outpatient)
- within 24 hours of admission for a pregnancy or non-pregnancy related complaint
- during postpartum care, within 2 hours of birth (vaginal or caesarean section).

2.1.4. Planned admission and day surgery

Patients undergoing planned surgical and invasive interventions and/or imaging-guided invasive interventions are required to be assessed by a medical officer to determine the risks and benefits of stopping pre-existing, established anticoagulation or anti-platelet therapy before discontinuing/withholding these therapies.

Prophylaxis should be considered for day surgery patients based on evidence in situations of significantly reduced mobility relative to normal state, prolonged and/or general anaesthesia and for patients demonstrating one or more other VTE risk factors.

Day surgery or procedure patients who receive only local anaesthesia without any reduction in mobility relative to normal state, do not require routine VTE risk assessment, unless otherwise clinically appropriate. See Clinical Excellence Commission (CEC) *Guidelines on Periprocedural Management of Anticoagulant and Antiplatelet Agents*.

3. VTE risk assessment

Systems introduced by public health organisations (PHOs) must support clinicians to complete a VTE risk assessment for the identified patient groups. The risk assessment must ensure the following principles are applied:

1. Assessment of VTE risk and allocation of each patient into a risk category.
2. Identification of contraindications and other conditions to consider if prescribing pharmacological prophylaxis.
3. Identification of contraindications and other conditions to consider if prescribing mechanical prophylaxis.
4. Prescription of appropriate prophylaxis (if required).
5. Consideration to the duration of prophylaxis required.
6. Reassessment of VTE risk at a minimum of every 7 days for acute and medically unstable patients or regularly as clinically appropriate.

The following VTE risk assessment tools are available to support clinicians to undertake VTE risk assessments:

- NSW Adult Venous Thromboembolism Risk Assessment Tool
- NSW Emergency Department Adult Venous Thromboembolism Risk Assessment Tool
- NSW Maternal Venous Thromboembolism Risk Assessment Tool

3.1. Assessing VTE risk in Emergency Department patients

Systems introduced by PHOs must support attending medical officers (AMOs), or other suitably trained staff, to complete VTE risk assessments for all patients over 16 years old discharged from the emergency department with an injury of the lower limb requiring temporary lower limb immobilisation.

A NSW **Emergency Department Adult Venous Thromboembolism Risk Assessment Tool** has been developed to support implementation. Electronic and paper versions are available.

3.2. Assessing VTE risk in admitted patients

Systems introduced by PHOs must support AMOs or other suitably trained staff to complete a VTE risk assessment within 24 hours for all patients over 16 years old admitted to NSW public hospitals.

A NSW **Adult Venous Thromboembolism Risk Assessment Tool** has been developed for use with admitted patients. Electronic and paper versions of the tool are available to support implementation.

3.3. Assessing VTE risk in pregnancy and postpartum women

Systems introduced by PHOs must support midwives and medical officers to complete a VTE risk assessment. Where a midwife completes the assessment, systems need to ensure that the outcome of the assessment is referred to the AMO (or delegate).

Any standard risk assessment tool used within the PHO must identify all pregnant and postpartum women at risk of VTE. These women should then be referred to an obstetrics consultant/team for risk assessment and decision to commence pharmacological and/or mechanical prophylaxis.

A dedicated obstetric VTE risk assessment tool must be used to assess pregnant and postpartum women in an obstetrics setting. It should identify risk factors, contraindications and evidence-based treatment options that are unique to this target group.

A NSW **Maternal Venous Thromboembolism Risk Assessment Tool** has been developed. Electronic and paper versions are available to support implementation.

3.4. Documenting VTE risk

Systems introduced by PHOs must support clinicians to document:

- that a risk assessment has been completed
- the outcome of the risk assessment.

Documentation may be completed within:

- the electronic medical record
- the dedicated VTE section of the acute *National Inpatient Medication Chart (NIMC)* (not included on the long-stay version)
- the patient's health care record
- an approved risk assessment tool
- the pregnancy handheld record
- other locally approved forms, such as patient care plans.

3.5. Additional VTE prevention strategies

Irrespective of a patient's VTE risk assessment outcome, the following prevention strategies should be considered and promoted:

- Patients remain adequately hydrated (unless contraindicated due to their clinical condition, for example, fluid restriction due to chronic heart failure) and must be encouraged to mobilise as soon as possible and to continue being mobile post discharge [2].
- A plan for early mobilisation should be developed by a multidisciplinary team with the patient, family and/or carer.

4. Prescribing and administration of appropriate VTE prophylaxis

If pharmacological and/or mechanical prophylaxis is required and appropriate, prophylaxis must be prescribed by an authorised prescriber and administered as early as possible during the patient's admission or as scheduled after the commencement of care and risk assessment is carried out.

The choice of pharmacological and mechanical prophylaxis must be informed by evidence. Public health organisations (PHOs) must ensure that systems provide clinicians with access to current evidenced-based guidelines, locally endorsed clinical specialty protocols, and reference to medications available on the NSW Medicines Formulary.

Pharmacological prophylaxis is in the form of an anticoagulant and must be managed in accordance with the NSW Health Policy Directive *High-Risk Medicines Management* (PD2024_006).

The standardised risk assessment tool will provide clinical decision support for AMOs or other authorised prescribers when prescribing prophylaxis.

This Policy Directive should be read in conjunction with clinical guidelines on VTE prophylaxis and the NSW Medicines Formulary. These clinical guidelines include (but not limited to):

- Australian Therapeutic Guidelines, Venous Thromboembolism (VTE) prophylaxis, June 2023.
- *Venous Thromboembolism Prevention Clinical Care Standard*, Australian Commission on Safety and Quality in Health Care, Jan 2020.
- *Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism*, NICE guideline [NG89], 13 Aug 2019.
- *Venous thromboembolism (VTE) Prophylaxis*, BMJ Best Practice, Oct 2024.
- *Antithrombotic Therapy for VTE Disease*, 9th Ed (2021): American College of Chest Physicians (ACCP) Evidence-Based Clinical Practice Guidelines.
- *Prevention and management of venous thromboembolism*, International Consensus Statement, International Angiology, Feb 2024.
- *Venous thromboembolism in the context of pregnancy*, American Society of Haematology (ASH) 2018 guidelines for management of venous thromboembolism, Nov 2018.

- *Prevention of venous thromboembolism in surgical hospitalized patients*, American Society of Haematology (ASH) 2019 guidelines for management of venous thromboembolism, Dec 2019.
- *Prophylaxis for hospitalized and nonhospitalized medical patients*, American Society of Haematology (ASH) 2018 guidelines for management of venous thromboembolism, Nov 2018.

4.1. Prescribing of VTE prophylaxis

Attending medical officers (AMOs) or other authorised prescribers are to prescribe pharmacological and/or mechanical prophylaxis as per local protocol. Where available, prescribing via an electronic VTE order set is encouraged and to be promoted by PHOs.

The regular *NIMC (acute)*, contains a dedicated VTE section. Where this chart is used, the AMOs or other authorised prescribers must prescribe pharmacological and/or mechanical prophylaxis within the dedicated section. Prescribing outside of this section may lead to duplication of orders and risk of patient harm.

Where other charts without this section are in use, such as the long-stay medication chart, prescribing must be completed within the regular sections of the medication chart.

Checks associated with mechanical prophylaxis (for example, skin check and correct size stocking) must also be documented at least twice daily (12 hours apart) by nursing and midwifery staff. Checks must be documented on the NIMC (acute) or in an electronic medical record, where mechanical prophylaxis has been prescribed.

For pregnant women, prescribed prophylaxis is also to be noted on the pregnancy handheld record, and electronic antenatal record where in use.

4.2. Contraindications and other considerations with VTE prophylaxis

The risk of bleeding is a significant complication of pharmacological prophylaxis, particularly in surgical patients. The decision to commence pharmacological prophylaxis should be made after considering the benefits of treatment, for example, reducing VTE risk against the risk associated with treatment (bleeding and other contraindications).

To support clinicians with selecting the most appropriate prophylaxis for their patients, the standardised risk assessment tool promotes consideration of absolute or relative contraindications to pharmacological prophylaxis before a patient is prescribed therapy.

Where an absolute contraindication exists (such as inherited bleeding disorders, active bleeding), the use of pharmacological prophylaxis should be avoided due to life-threatening risk, while relative contraindications require caution to be exercised and the benefits of therapy to be weighed against the risk.

Where pharmacological prophylaxis is contraindicated, mechanical prophylaxis remains an option and should be considered, as indicated, until the patient is mobile.

Prescribers are to refer to the current Product Information or local protocol to select a safe dose of the desired medication for individual patients. Some anticoagulants are contraindicated or may require a reduction in dose, for example, those with renal impairment.

Prescribers must take care to select the dose recommended for prophylaxis and not the dose recommended for therapeutic anticoagulation.

In certain clinical scenarios where there is limited evidence and guidance available, careful consideration of individual patient risks and specialist advice may be required. This includes the following scenarios:

- periprocedural management of anticoagulants
- cessation of oestrogen-containing oral contraceptives or hormone replacement therapy, if clinically appropriate
- selecting an appropriate dose for extremes of total body weight (< 50 kg or > 120 kg or body mass index ≥ 35 kg/m^2).

Anaesthesia and VTE

Clinicians are advised to follow the advice provided in Section 5.9 of the *Acute Pain Management: scientific evidence guidelines produced by the Australian and New Zealand College of Anaesthetists and Faculty of Pain Management (2020)* [2].

For a practical guide on how to appropriately manage pregnant women receiving pharmacological prophylaxis requiring anaesthesia, clinicians may refer to the published consensus statement by the Society for Obstetric Anaesthesia and Perinatology (SOAP) [3].

5. Partnering with patients

Systems introduced by public health organisations (PHOs) must support clinicians to partner with patients, family and/or carers in managing their risks and to have an active role in preventing VTE. Systems are to be in place for clinicians to provide patients with information about VTE to enable shared decision making regarding their VTE prevention plan.

Patients, carers and their families should be informed about:

- what VTE is
- signs and symptoms of VTE
- risk factors specific to the patient's condition
- effective interventions to reduce the risk of developing VTE such as the importance of adequate hydration and plans for early mobilisation
- any pharmacological and/or mechanical prophylaxis they are receiving
- VTE prevention discharge plans (where required).

Written information should accompany any counselling points. Patient information highlighting the risk of developing a VTE in hospital must be available, and patient leaflets summarising key points should be provided. Resources are available at:

- CEC webpage Venous Thromboembolism (VTE) Prevention contains information for admitted patients, ED patients with lower leg injury, and for women who are pregnant or post-partum.
- Australian Commission on Safety and Quality in Health Care (ACSQHC) website.

Professional Health Care Interpreters are to be utilised for patients and/or carers who are not fluent in English or who have hearing or visual impairments.

5.1. Documenting patient education

When a treatment decision is made, clinicians should document that the patient has received an explanation of risks and benefits of prophylaxis, including the provision of additional information regarding VTE prevention. This should be recorded in the patient's health care record and/or other approved form or tool.

6. Reassessing VTE risk for admitted patients

Systems are to be in place for clinicians to undertake a reassessment of patient's VTE and bleeding risks:

- regularly as clinically appropriate, at a minimum of every 7 days for acute and medically unstable patients
- when clinical condition changes (such as unplanned surgery, changes in mobility)
- at transfer of care [4] or at discharge.

Reassessment is required to:

- reassess a patient's VTE risk following 7 days in hospital
- ensure that appropriate methods of VTE prophylaxis are used
- ensure that VTE prophylaxis is being used correctly
- identify adverse events resulting from VTE prophylaxis or its absence.

6.1. Reassessing VTE risk at discharge and continuity of care

Systems are to be in place to enable clinicians to reassess patients identified at risk at the point of discharge. Consideration should be made regarding the need for extended prophylaxis.

Attending medical officers (AMOs) or authorised prescribers are to ensure the development of a prospective action plan for patients requiring continuation of pharmacological and/or mechanical prophylaxis on transfer home or to another health care provider. The plan is to be communicated in a timely manner to the patient's primary health care provider, explained to the patient/carer/family, and included in the discharge summary. This is particularly important when patients are transferred into the community or to a residential aged care facility.

Clinicians must comply with key principles for transition of care and clinical handover with

particular focus on VTE prophylaxis. This should occur at all transition points including transfer home or to another care service. Key principles are outlined in the ACSQHC *Venous Thromboembolism Prevention Clinical Care Standard* and the NSW Health Policy Directive *Clinical Handover* (PD2019_020).

On transfer to home or another care service:

- Arrange for continued supply of prophylactic medication to ensure uninterrupted treatment.
- Ensure that a referral to another health care provider is arranged, with assurances for follow-up and ongoing supply as needed.
- The patient is informed of the reason for ongoing treatment and the anticipated duration of the treatment.
- Ensure patients receive education on treatment as needed.
- Encourage mobilisation (unless instructions for mobility restriction are in place).

7. Monitoring performance and practice

Public health organisations (PHOs) must have a monitoring and evaluation program that includes regular review of VTE prevention indicators to monitor performance, assess the effectiveness of VTE prevention strategies and assist with identifying areas that may require focused attention.

PHOs are required to regularly report on VTE prevention indicators to local governing quality committees and other relevant state committees.

As a minimum, the following indicators are required to be included in the monitoring and evaluation framework:

Indicator	Type of measure	Suggested data sources
1. Rate of hospital acquired VTE events where prophylaxis was not prescribed appropriate to the level of risk in accordance with guidelines or local protocols. Numerator = hospital acquired VTE events where appropriate prophylaxis was not prescribed. Denominator = all hospital acquired VTE events.	Outcome	• Clinical audit • Non-Fatal VTE Incident Management Tool • Incident investigations such as Serious Incident Review (SIR)
2. Hospital acquired VTE (rate per 10,000 episodes of care/admitted patient service events).	Outcome	• Quality Improvement Data System (QIDS)

Indicator	Type of measure	Suggested data sources
3. Rate of documented VTE risk assessment completion within 24 hours for all adult inpatient admissions.	Process	• Clinical audit (Quality Audit Reporting System [QARS] question ID 7110) • VTE prevention eMR solution dashboard
4. Rate of documented VTE risk assessment completion on the first comprehensive antenatal assessment (for maternity patients).	Process	• Clinical audit • eMaternity
5. Rate of documented VTE risk assessment completion during postpartum care, within 2 hours of birth (vaginal or caesarean section) (for maternity patients).	Process	• Clinical audit
6. Rate of documented VTE risk assessment completion for adult patients discharged from emergency department (ED) with lower limb injury requiring temporary lower limb immobilisation.	Process	• Clinical audit
7. Rate of VTE prophylaxis appropriate to the level of risk in accordance with guidelines or local protocols.	Process	• Clinical audit (QARS question ID 7115) • VTE prevention eMR solution dashboard
8. Rate of patients discharged from hospital requiring VTE prophylaxis with a documented plan for prescribed medicine(s), dose and expected duration of treatment.	Process	• Clinical audit

7.1. Clinical audit

Regular clinical auditing is required to capture the necessary data to inform PHOs on VTE prevention indicators including process measures relating to compliance with risk assessment completion and the prescription of appropriate prophylaxis.

To monitor performance for assurance, PHOs must review VTE indicator data from regular clinical auditing. Clinical audits must occur at least annually.

As well as providing assurance for local VTE prevention performance, data collection by clinical auditing and feedback play an important role in driving improvement.

Measurements for improvement should be repeated frequently for trending changes over time.

A simple VTE Prevention questionnaire is available within Quality Audit Reporting System (QARS) to assist PHOs to conduct clinical audits to capture data on VTE process measures and assessing compliance with this Policy Directive. The questionnaire can be modified by

adding or removing questions to suit local needs. However, the following questions must be included in any locally adapted QARS questionnaires:

- Rate of documented VTE risk assessment completion within 24 hours for all adult inpatient admissions (question ID 7110).
- Rate of of VTE prophylaxis appropriate to the level of risk in accordance with guidelines or local protocols (question ID 7115).

See the CEC website Improving VTE Prevention processes for further information.

The following audit tools and metrics are also available to assist with review of clinical processes and outcome. These include:

- National Quality Use of Medicines Indicators
- NIMC (acute) VTE Prophylaxis Section Audit and Reporting Tool
- VTE event rates using ACSQHC's Hospital Acquired Complication (HAC) specifications.
- National Surgical Quality Improvement Program (NSQIP). Hospitals participating in the Agency for Clinical Innovation's NSQIP Collaborative may have access to data presenting performance against VTE metrics relating to preventable surgical complications.

7.2. Incident reporting

All patients who present on admission with a VTE resulting from a previous known hospitalisation (within 90 days of discharge) or who develop a VTE during hospitalisation must have the incident documented in the patient's health care record and recorded in the incident monitoring system (ims+).

Any significant unexpected change in a patient's condition relating to VTE prophylaxis including thromboembolism and bleeding, must be considered an adverse event and recorded in the incident monitoring system with the appropriate level of investigation initiated as per NSW Health Policy Directive *Incident Management* (PD2020_047).

7.3. Feedback to clinical staff

The PHO's VTE prevention monitoring and evaluation program must include a system of communicating VTE prophylaxis indicator data to clinicians in a timely manner to enable practice and quality improvement.

Hospital acquired VTE incidents are to be reviewed with other clinical indicators and included as part of the existing hospital morbidity and mortality review process. Apart from PHO's Safety and Quality Committees, Morbidity and Mortality meetings should be considered as a forum to present data on VTE indicators.

7.4. Staff education

Clinical staff must be provided with education on VTE prevention strategies.

Training resources include:

- CEC webpage Educating staff and patients
- My Health Learning modules on VTE prevention
- ACSQHC webpage Venous thromboembolism (VTE) prophylaxis section of hospital medication charts for NIMC (acute) VTE Prophylaxis section
- ACSQHC webpage Hospital-Acquired Complication - 7. Venous Thromboembolism fact sheet
- ACSQHC webpage for the Venous Thromboembolism Prevention Clinical Care Standard and implementation resources (including clinician fact sheet).

8. References

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9. Appendices

9.1. Framework for the Prevention of Venous Thromboembolism

This Framework was developed to guide Local Health Districts (LHDs), Specialty Health Networks (SHNs) and health services in the implementation of this Policy Directive.

The	What this means for patients	Actions required by NSW Health services
Identify patients 	• Patients with a potential to be at risk of VTE are identified	1.1 All patients admitted to a ward or unit will undergo VTE risk assessment. 1.2 All patients discharged home from the Emergency Department, who, as a result of an injury of the lower limb, have significantly reduced mobility relative to normal state or have patient-related VTE risk factors will undergo VTE risk assessment. 1.3 All pregnant and postpartum women will undergo appropriate VTE risk assessment during the first comprehensive antenatal assessment, within 24 hours of any antenatal admission (including non-pregnancy related complaints), and during postpartum care, within 2 hours of a birth (vaginal or caesarean section).
Assess and document VTE risk 	• VTE assessment is promptly completed • Risk vs benefit of treatment is considered • The outcome of the assessment is clearly documented and easily accessible by health care providers	2.1 VTE risk assessments are completed within 24 hours of patient admission. 2.2 A standardised, approved risk assessment tool should be made available to all clinical staff. 2.3 The risk assessment tool enables clinicians to weigh the risk of clotting against the risk of bleeding. 2.4 Outcome of the risk assessment is clearly documented in an approved record, e.g.: i) electronic medical record ii) National Inpatient Medication Chart (NIMC) iii) patient health care record iv) approved risk assessment tool v) pregnancy handheld record vi) other locally approved form.
Prescribe appropriate prophylaxis 	• Treatment is based on the best clinical knowledge and evidence • Prophylaxis is clearly documented and easily accessible by health care providers	3.1 Clinical decision support is available for all clinicians and encourages review of risk vs. benefit of prophylactic treatment. 3.2 Clinical decision support is based on evidence-based guidelines. 3.3 Access to a range of antithrombotic agents is available on the formulary. 3.4 Where the regular NIMC is used, prescribing of both pharmacological and mechanical prophylaxis is completed in the dedicated VTE section.
Engage the patient 	• Decisions actively involve patients, family and/or carers • Patients, family and/or carers are aware of risks and symptoms of VTE	4.1 Patients, family and/or carers are informed of VTE risks and treatment options. 4.2 Patients/carers are involved in treatment plans. 4.3 A standardised patient information leaflet is available for clinicians to provide to patients.
Reassess 	• Patients are regularly assessed for VTE throughout admission • Prevention of VTE continues after discharge if required	5.1 VTE risk is reassessed regularly (at least every 7 days) OR as clinical condition changes OR at transfer of care. 5.2 Clinicians are prompted at discharge to assess the need of ongoing prophylaxis.
Monitor practice 	• Hospitals monitor performance and strive to improve processes • Health professionals are updated and aware of requirements	6.1 Rates of risk assessment completion are audited periodically (at least annually, or more frequently if compliance is poor). 6.2 Rate of provision of appropriate prophylaxis are audited periodically. 6.3 Results of audit and review are reported back to clinicians to drive change. 6.4 Clinicians are educated on the need for VTE prevention measures.