Clinical Practice Guideline	**Venous Thromboembolism Prevention In Antenatal and Postnatal Care**
Peninsula Care Goal	**Safe/Effective**

Target Audience
Frankston Hospital – All nursing/midwifery, medical and pharmacy staff

Purpose
This guideline has been developed to provide recommendations on venous thromboembolism (VTE) prophylaxis in women who are pregnant or within 6 weeks post-partum.

Definitions
Antenatal = During pregnancy, before delivery
EHR = Electronic Health Record (Cerner™)
LMWH = Low Molecular Weight Heparin
Postnatal = Within 6 weeks after delivery
VTE = Venous Thromboembolism consisting of pulmonary embolism and deep vein thrombosis

Guideline

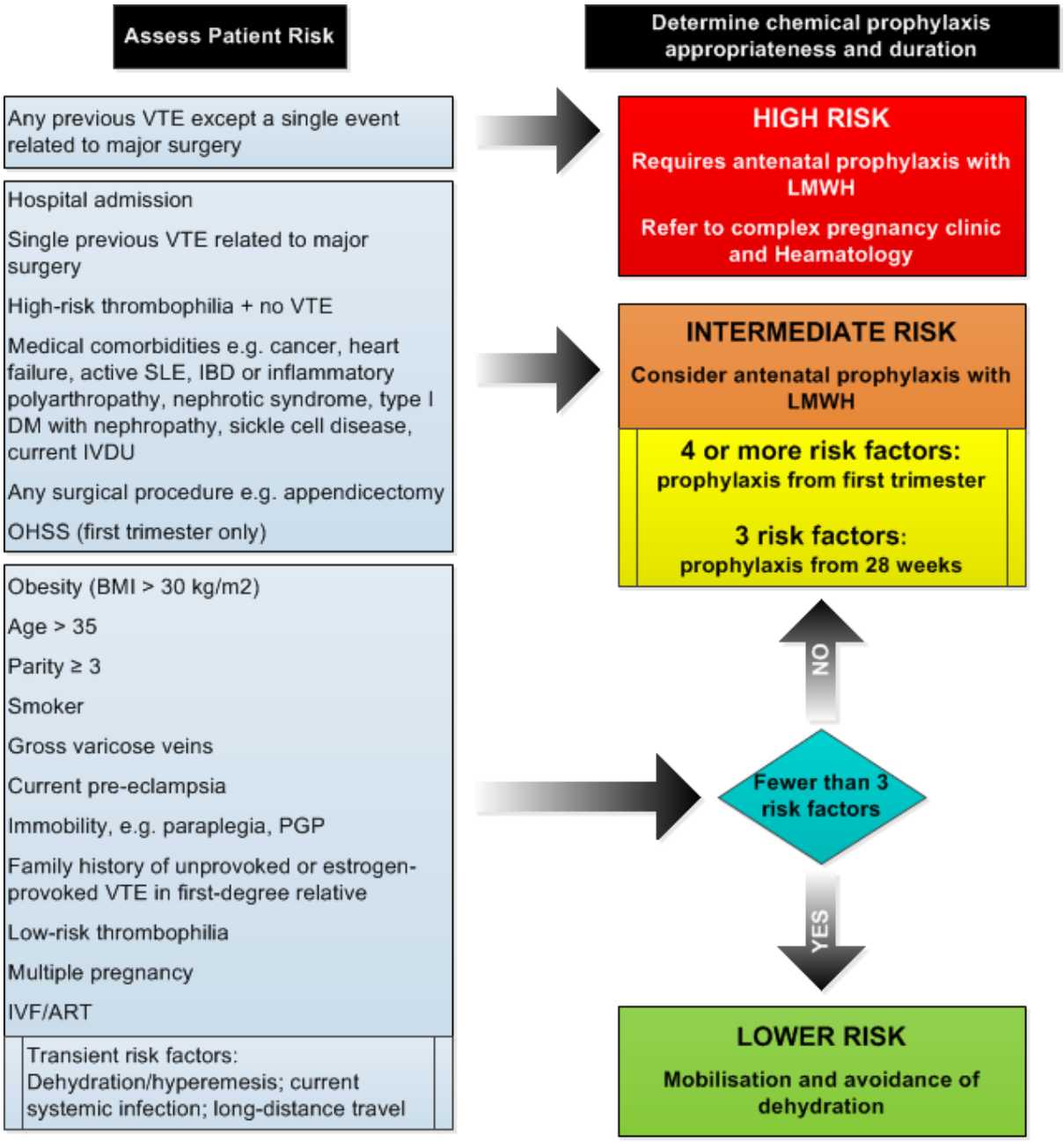
Introduction
The risk of VTE in pregnant women is 4- to 5-times greater than the risk in nonpregnant women (incidence of VTE of 1 or 2 per 1000 pregnancies).[1]

Hospitalisation during pregnancy is associated with an 18-fold increased risk of VTE.[12] The risk is even higher if delivery is by caesarean section, especially emergency caesarean section.[2] VTE is a leading cause of maternal deaths in the developed world and the second most common cause of direct maternal death in Australia.[3]

VTE Risk Assessment

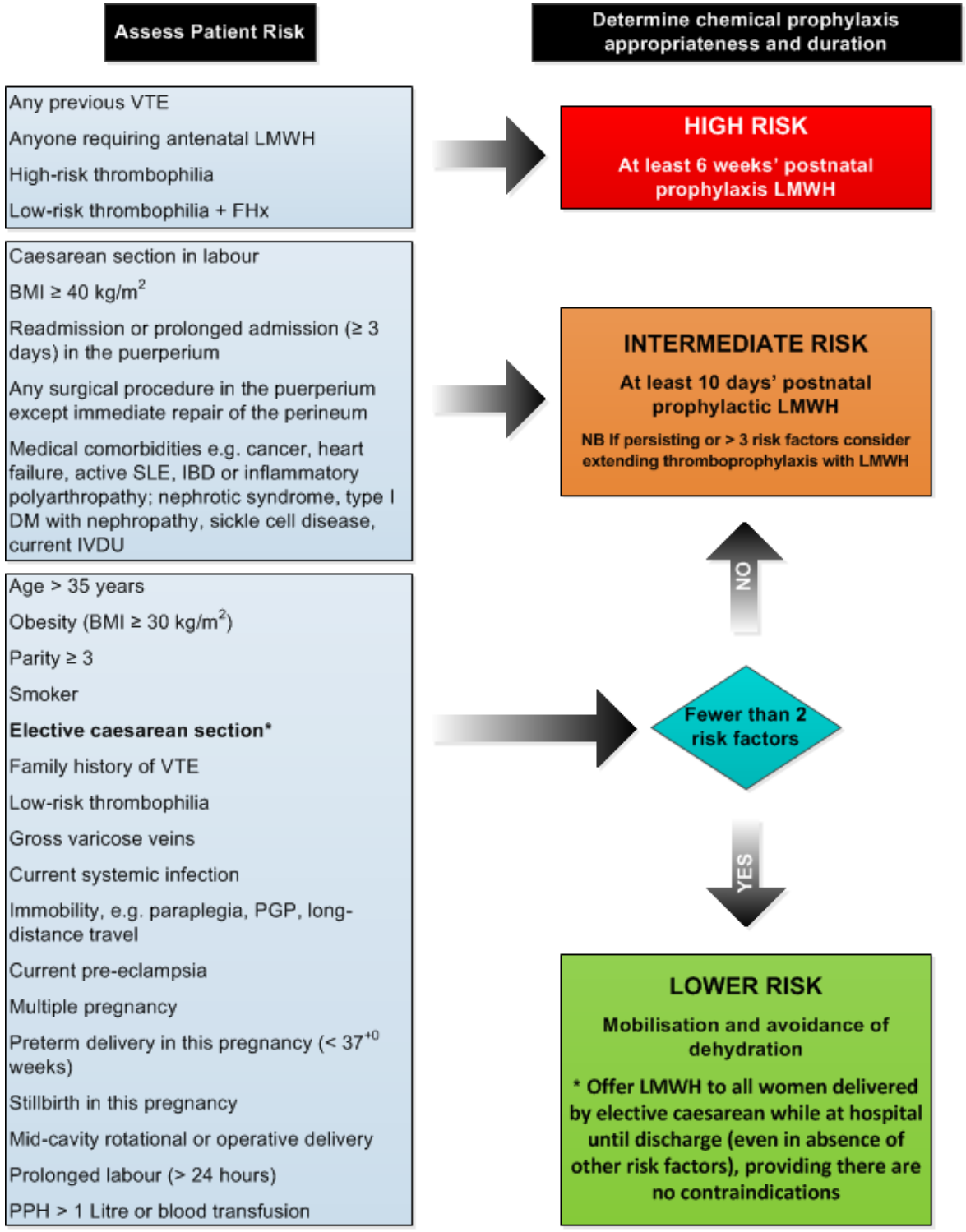
- Women admitted to hospital that are pregnant or have given birth within the previous six weeks should be considered for pharmacological and/or mechanical VTE prophylaxis after risk assessment has been performed.
- **For antenatal patients, refer to Figure 1 to assess VTE risk and need for VTE prophylaxis.**
- **For women who have given birth within 6 weeks (postnatal), refer to Figure 2 to assess VTE risk and need for VTE prophylaxis.**
- Document VTE risk assessment on the EHR using the '***VTE Risk Assessment' orderable, part of the VTE prophylaxis powerplan (see Appendix 1 for EHR downtime procedures)
- Risk factors and management for women at risk of VTE should be documented in the Birth Outcomes System (BOS).
- Women with a previous thrombosis or a thrombophilia should have an antenatal, intrapartum and postpartum plan discussed with a haematologist. This plan should be documented in the Birth Outcomes System (BOS).
- **All women delivered by elective caesarean should be offered pharmacological VTE prophylaxis (enoxaparin) until discharge, providing there are no contraindications.** Refer to Peninsula Health VTE Prevention Guideline for a full list of contraindications/precautions.
- For women who fall outside of these guidelines and those not considered high risk patients but may require pharmacological VTE prophylaxis, consult the obstetrician and haematologist and other relevant specialities.

Figure 1: Antenatal VTE risk assessment and chemical prophylaxis recommendations[2]
[adapted from Appendix I Green-top Guidelines No. 37a Royal College of Obstetricians and Gynaecologist 2015]



APL = antiphospholipid antibodies (lupus anticoagulant, anticardiolipin antibodies, β_2-glycoprotein 1 antibodies); ART = assisted reproductive technology; BMI based on booking weight; DM = diabetes mellitus; FHx = family history; gross varicose veins = symptomatic, above knee or associated with phlebitis/oedema/skin changes; high-risk thrombophilia = antithrombin deficiency, protein C or S deficiency, compound or homozygous for low-risk thrombophilias; IBD = inflammatory bowel disease; immobility = ≥ 3 days; IVDU = intravenous drug user; IVF = in vitro fertilisation; LMWH = low-molecular-weight heparin; long-distance travel = > 4 hours; low-risk thrombophilia = heterozygous for factor V Leiden or prothrombin G20210A mutations; OHSS = ovarian hyperstimulation syndrome; PGP = pelvic girdle pain with reduced mobility; PPH = postpartum haemorrhage; thrombophilia = inherited or acquired; VTE = venous thromboembolism.

Figure 2: Postnatal VTE risk assessment and chemical prophylaxis recommendations[2]
[adapted from Appendix I Green-top Guidelines No. 37a Royal College of Obstetricians and Gynaecologist 2015]



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VTE Prophylaxis

- Subcutaneous enoxaparin is the pharmacological agent of choice for chemoprophylaxis in pregnancy and childbirth (Consult Haematology if allergy/adverse reactions exist with heparin/LMWH).
- All pharmacological prophylaxis should be stopped 12 hours before anticipated delivery.[2]
- If required, enoxaparin should begin as soon as possible after delivery provided there is no postpartum haemorrhage and regional anaesthesia has not been used.[2]
- Excessive blood loss (more than 1000 mL) is a risk factor for development of VTE. Although anticoagulant prophylaxis should be withheld during a postpartum haemorrhage, consider starting VTE prophylaxis, if indicated, as soon as the haemorrhage is controlled.[1]
- Mechanical prophylaxis can be used alone in women who have contraindications to pharmacological prophylaxis[2], refer to Peninsula Health VTE Prevention Guideline for a full list of contraindications/precautions.
- Extended duration of enoxaparin subcutaneous injections post-discharge can be arranged through Domiciliary Midwife Care (for limited additional doses), maternity HITH, through the GP, or by training the woman or a carer to administer the treatment. See section on VTE care plan on discharge.

Recommended antenatal and postnatal prophylactic doses of subcutaneous enoxaparin* [adapted from Appendix I Green-top Guidelines No. 37a Royal College of Obstetricians and Gynaecologist 2015]

Weight	Subcutaneous enoxaparin dose
< 50kg	20mg daily
50–90kg	40mg daily
91–130kg	60mg daily
131–170kg	80mg daily
> 170kg	0.6mg/kg/day; consult Haematology
*Doses are for normal renal function; dose reduction is required in women with renal impairment (creatinine clearance < 30mL/min)	

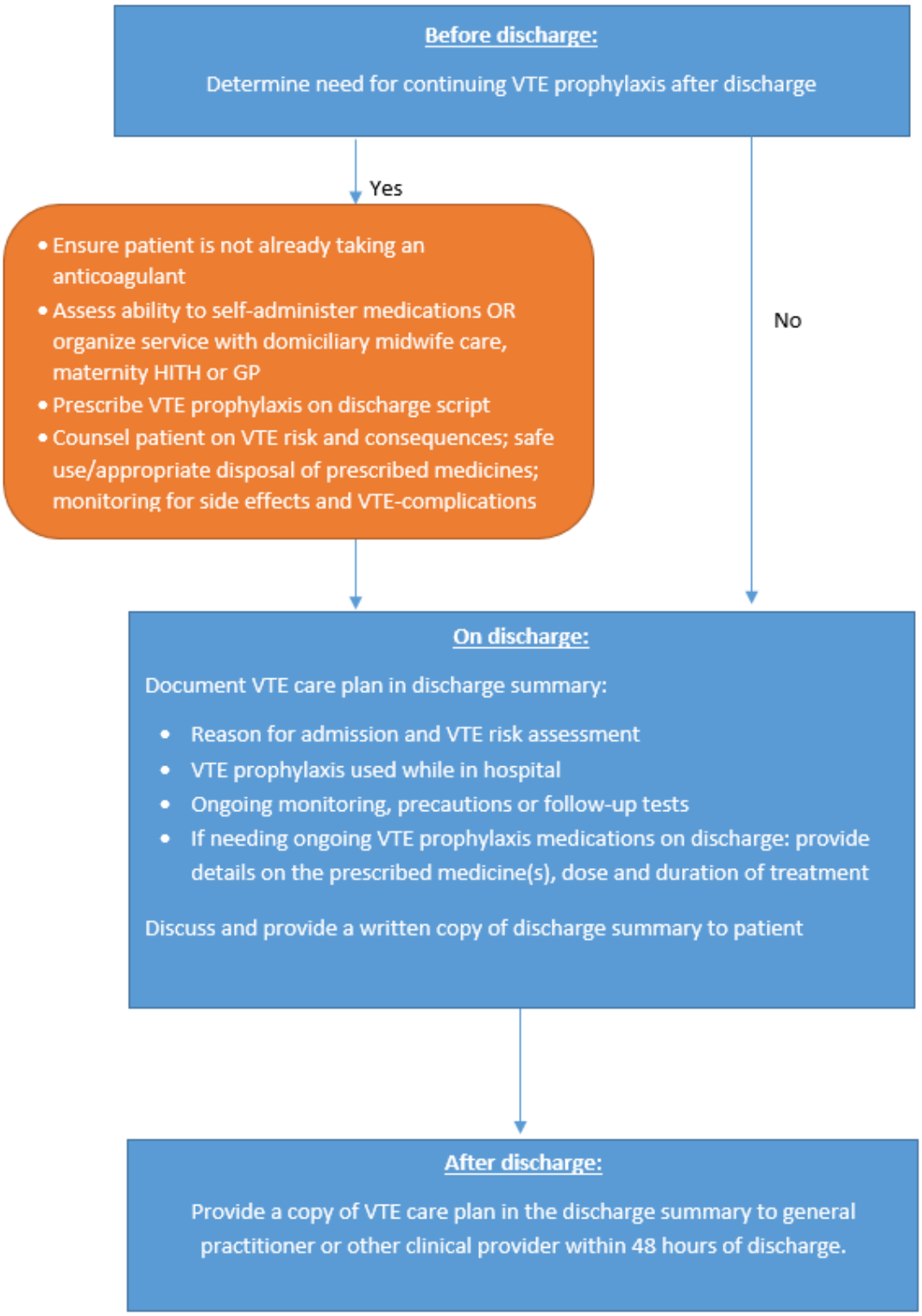
EHR enoxaparin prophylaxis once daily orders are set for the standard administration time of 1800 at acute sites and 1600 for subacute sites. Adjust dosing times only if clinically required.

Communication with patient/family

Involve patients in developing VTE prevention plan and provide information on:

- Different types of VTE prevention methods
- Risk and benefits and correct use of VTE prevention agents
- Monitoring and precautions required
- Report symptoms of blood clots such as pain, swelling, tenderness in the leg or unexpected shortness of breath or chest pain or bleeding occur

VTE care plan on discharge



Key Aligned Documents

- VTE prevention guideline

- Thromboprophylaxis in Patients Leaving the Emergency Department with Immobilised Lower Limb Injury guideline
- Non- Vitamin K Oral Anticoagulants (NOAC, DOAC, RIVAROXABAN, DABIGATRAN, APIXABAN)
- Guidelines for Anticoagulation Using Warfarin
- Administration of Prothrombinex – VF (Warfarin Reversal)
- Perioperative Antithrombotic Management in surgical and invasive procedures
- Hand Hygiene & Aseptic Technique
- Medication Management
- Pre-Operative/Medical Interventions: Patient Safety Checking Procedure

Evaluation

Feedback systems such as incident reports, complaints, performance indicators and specific audits will be used to facilitate evaluation of compliance. The document will be subject to regular revision and relevant VHIMS/RiskMan Reports will be reviewed.

References

1. eTG complete by Therapeutic Guideline. VTE prophylaxis during pregnancy and the postpartum period. [Last updated Aug 2020; cited Feb 2021]. Available from: https://tgldcdp.tg.org.au.acs.hcn.com.au/viewTopic?topicfile=venous-thromboembolism-prevention&guidelineName=Cardiovascular#toc_d1e690
2. Nelson-Piercy C, MacCallum P, Mackillop L. Reducing the risk of venous thromboembolism during pregnancy and the puerperium. RCOG Green-top Guidelines No. 37a. Royal College of Obstetricians and Gynaecologist. 2015
3. McLintock C, Brighton T, Chunilal S, Dekker G, McDonnell N, McRae S, et al. Recommendations for the prevention of pregnancy associated venous thromboembolism. Aust N Z J Obstet Gynaecol. 2012; 52(1):3-13

Keywords

Thromboprophylaxis, chemoprophylaxis, antepartum, postpartum, puerperium, clexane

Appendix 1 EHR downtime procedure for documenting VTE risk assessment

Document management	Position
Executive Sponsor:	Executive Director of Frankston Hospital
Document Owner:	Director of Women Health Unit
Document Author	Director of Women Health Unit, Pharmacy
Approved by:	Drugs and Therapeutic Committee
Date Approved:	12/2023
Date created/revised in archived system:	5/2021, 19/12/2023

Appendix 1 EHR downtime procedure for documenting VTE risk assessment

Use the National Inpatient Medication Chart (provided in the downtime boxes) dedicated VTE risk assessment section: