

A&E/EDTU Improving Care for Patients with Lower Limb Deep Vein Thrombosis (DVT)

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Background and Aims

Patients with lower limb DVT are at risk of having the clots being dislodged to the heart or lungs causing a medical emergency.

Prior to commencing this EDTU DVT protocol, A&E patients suspected of having lower limb DVT were admitted to the wards to undergo ultrasound of their lower limb to confirm the diagnosis. Patients would typically wait 2-3 days for an ultrasound to be carried out. Anti-coagulation treatment may only be started once the diagnosis of DVT is confirmed.

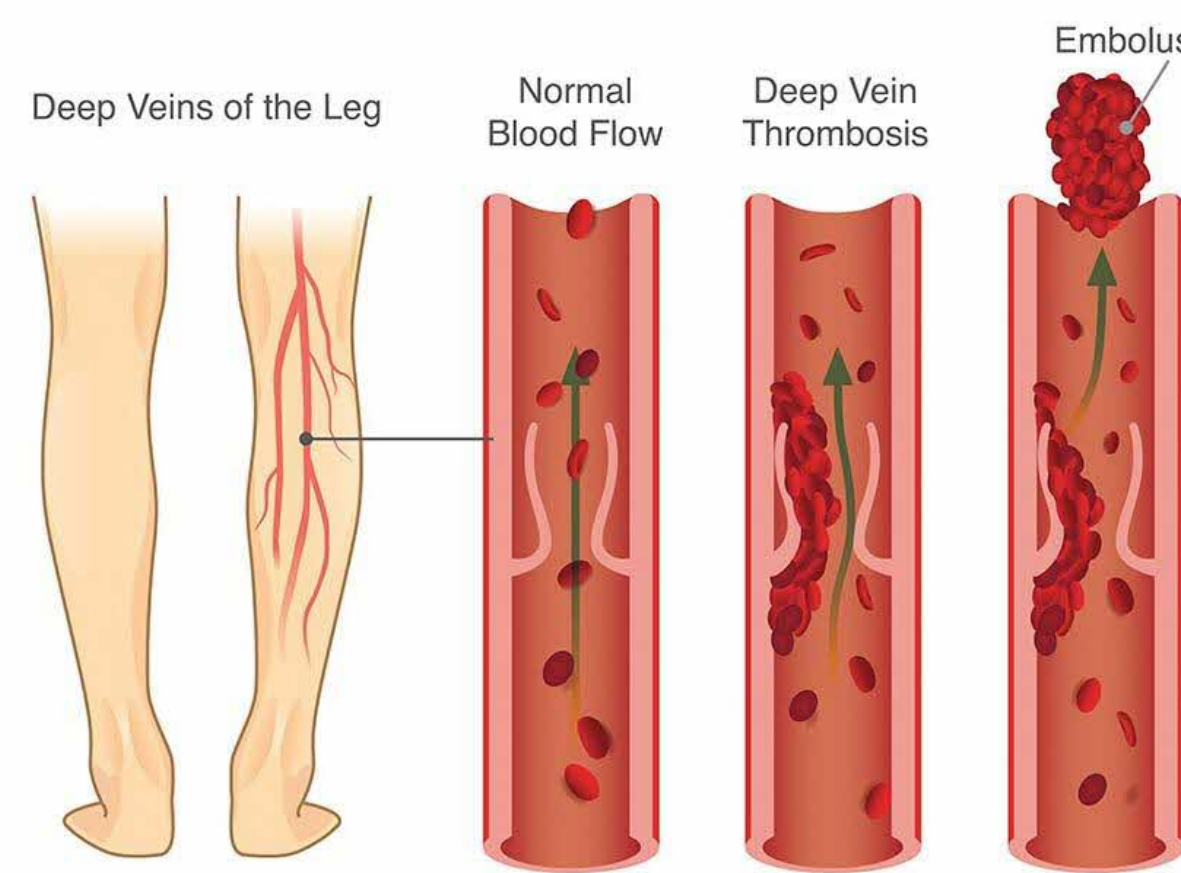


Diagram 1: Illustration of DVT and clot dislodging.

With the new EDTU DVT pathway starting January 2022, these patients will be able to undergo ultrasound of their lower limb to confirm the diagnosis within 24 hours, effectively commencing their treatment earlier and reducing ward admission and/or inpatient length of stay.

The aims of this protocol are thus to:

- (1) Ward admission rates of A&E patients suspected of having lower limb DVT by 50%
- (2) Inpatient length of stay by 50%

Interventions/ Implementations

Inclusion criteria

- (1) Haemodynamically stable,
- (2) an isolated lower limb DVT,
- (3) no signs or symptoms to suggest complication of pulmonary embolism,
- (4) able to ambulate, and
- (5) patient agreeable for outpatient care after management in EDTU

Exclusion criteria

- (1) <21 or >75 years old,
- (2) significant renal impairment (eGFR < 30ml/min),
- (3) weight <40kg or >120kg,
- (4) concomitant cancer,
- (5) pregnant, post-partum or lactating patients,
- (6) proximal femoral DVT,
- (7) actively bleeding or at high risk of bleeding,
- (8) already on anti-coagulation treatment,
- (9) multiple or significant co-morbidities,
- (10) poor social support at home.

Ultrasound (US) Outcomes

- | | | |
|---|---|---|
| DVT excluded
(US negative) | ➔ | Other cause(s) of symptoms to be sought with necessary follow-up |
| DVT suspected
(US negative, D-dimer positive) | ➔ | Discharged with follow-up at General Medicine clinic in 1 week with a potential repeat of US |
| DVT confirmed
(US positive) | ➔ | <ul style="list-style-type: none"> • Patient is started on treatment • Medical counselling by Pharmacist on new anti-coagulants • Discharged with Venous Thrombo-Embolism (VTE) clinic follow-up within 7 days |

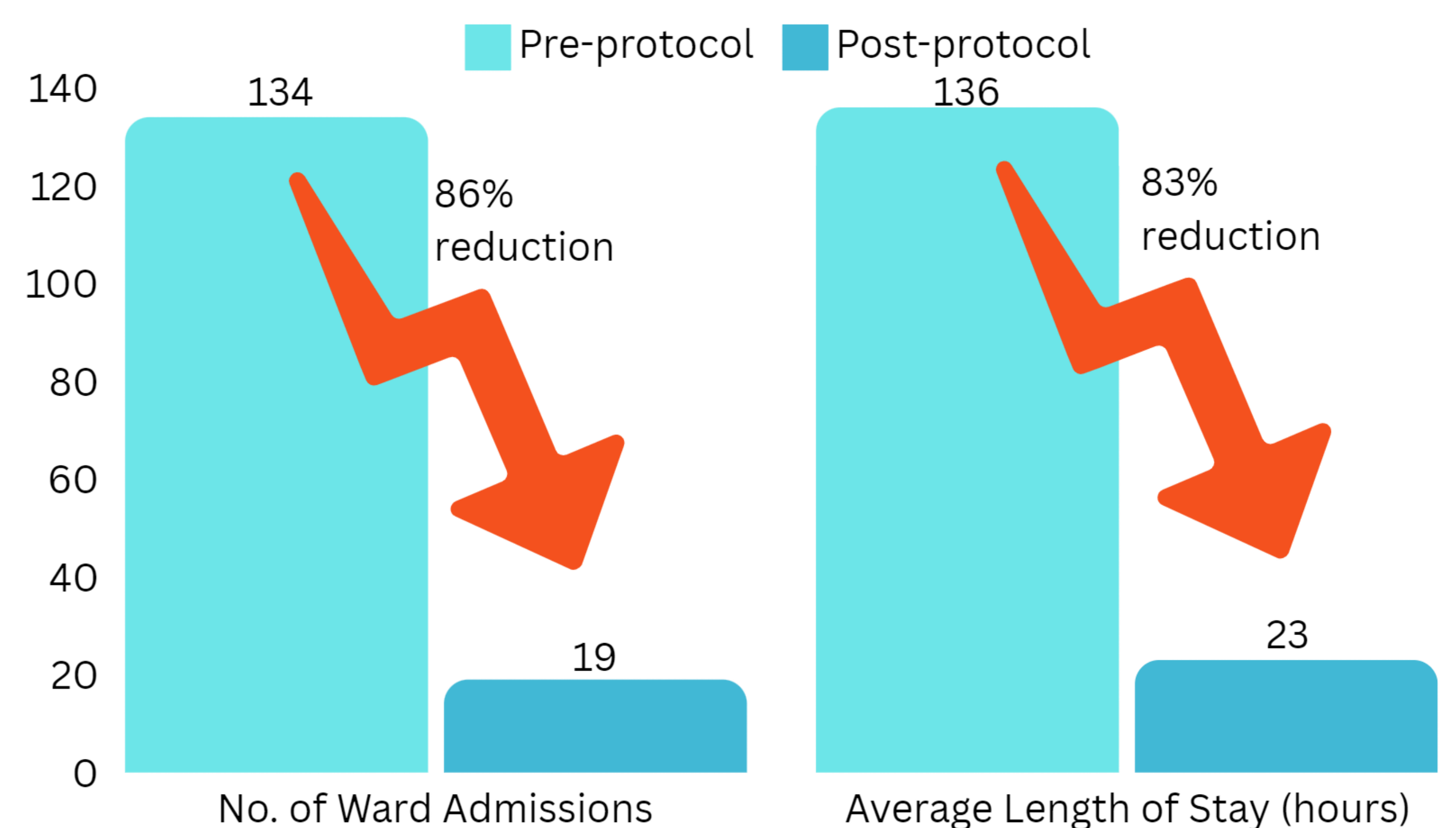
EDTU Discharge Criteria

- (1) Haemodynamically stable,
- (2) A confirmed diagnosis, and
- (3) Clear, documented management and follow-up planned

Onward 2026

- Right siting resources to right patients
- Regular staff training to ensure quality of care and safety of patients
- Reduced ward admissions and length of stay
- Regular audits carried out for compliance and improvement
- Earlier diagnosis and management helped improve patient's quality of care
- Regular feedback and review with staff to ensure smooth process flow





Results & Outcomes



* Based on January 2022 to September 2024 data

In the post-protocol cohort, while 8 patients had re-presented to A&E within a month of their discharge from EDTU, none of these patients were diagnosed with a complication related to the DVT.

Conclusion

-  **86% reduction in** Patients admitted to ward
-  **651.67** Bed day savings
-  **83% reduction in** Average length of stay
-  **\$1,303,340** Bed day cost savings
- ✓ Faster diagnosis and starting of treatment for the patient, thus improving patient quality of care and safety.
- ✓ Reduction of overall hospital bill for patients with the reduced length of stay.
- ✓ Consistent and safe standard of care by medical staff with EDTU protocol in place.

Team Members

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