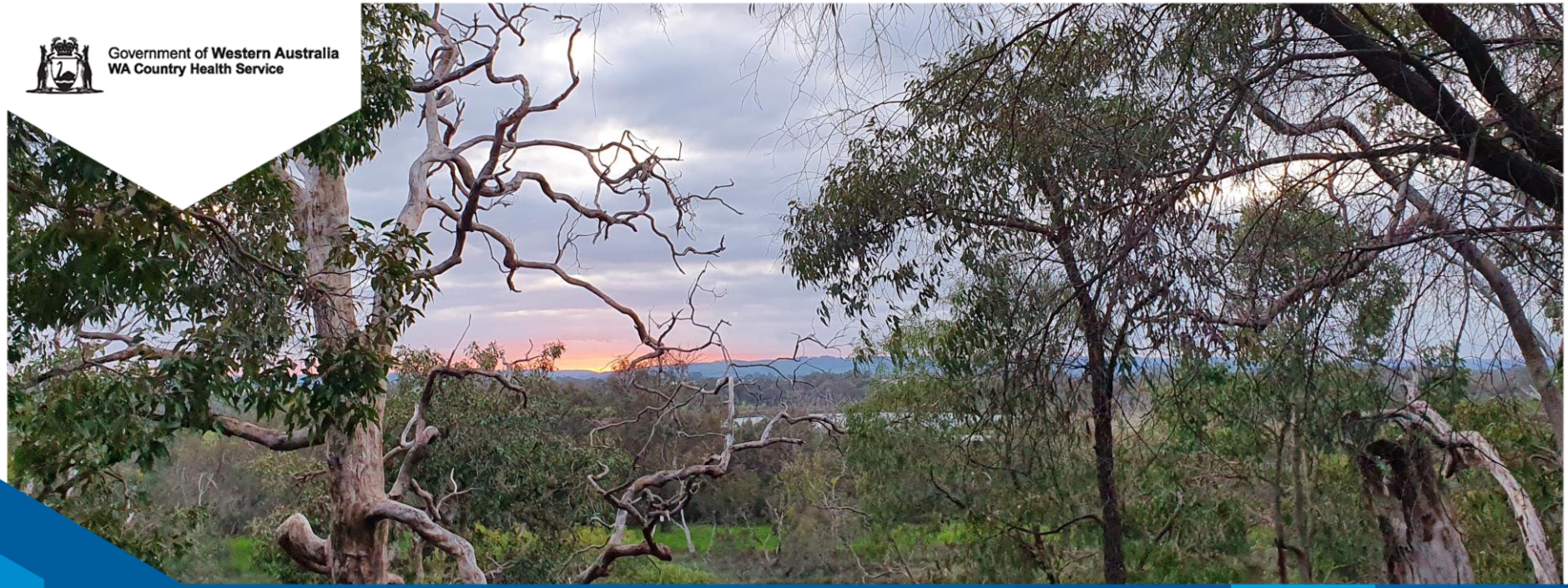
Government of Western Australia
WA Country Health Service



RAMP VTE

Risk AssessMent and Prophylaxis of Venous Thromboembolism

Dr Xavier Cornwall

16 November 2024

Acknowledgement of Country

I would like to begin by acknowledging the Traditional Custodians on the land in which we meet today, the Whadjuk Noongar People.

I would also like to acknowledge the Traditional Custodians of the land on which this project was performed and authored, the Wardandi Noongar People.

I would like to pay my respects to Elders past, present and emerging.

Introduction

- Venous Thromboembolism (VTE) remains a significant problem in Australia
- VTE risk assessments are generally poorly documented across the country
- VTE prophylaxis is variably prescribed across multiple jurisdictions
- Bunbury Hospital had 16 Healthcare Associated Complications (HACs) related to VTE in 2023, which placed Bunbury just outside the highest quartile for VTE per 10000 cases for that year

At Bunbury Hospital

- Historically Risk Assessment has been done poorly
- VTE prophylaxis rates have been variable
- There has been a general trend toward incremental improvement in both risk assessment and prophylaxis rates
- Assessments always been prospective
- Bunbury Hospital has not reviewed the appropriateness of the prophylaxis prescribed.

Define

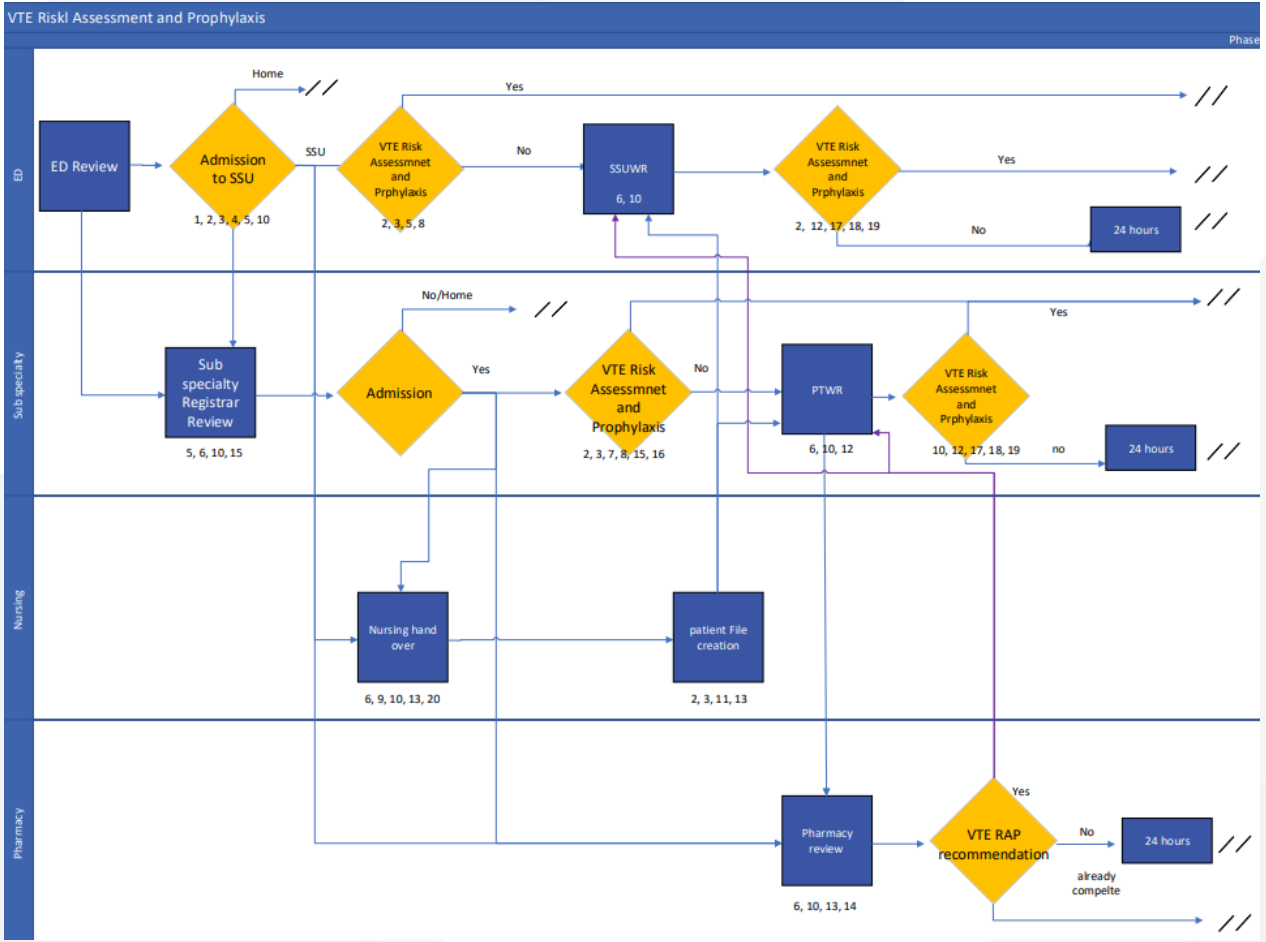
Objectives

- Explore the rates of VTE risk assessment and its appropriateness for inpatients at Bunbury Hospital.
- Review the current rate of VTE prophylaxis prescription and its appropriateness.
- Understand barriers to the successful completion of the above and generate enduring and inclusive measures to improve the above issues thereby increasing patient safety.

Definition and Scope

- The defined scope of this project was to look at the first 24 hours of admission.
- Whether patients had a complete Risk Assessment with in 24 hours of admission.
- Whether patients were prescribed prophylaxis with in 24 hours of admission.
- Assess the appropriateness of any prophylaxis prescribed.

Process Map


VTE Riskl Assessment and Prophylaxis
Phase
ED
Sub specialty
Nursing
Pharmacy
ED Review
Admission to SSU
1, 2, 3, 4, 5, 10
Home
SSU
VTE Risk Assessmnet and Prphylaxis
2, 3, 5, 8
Yes
No
SSUWR
6, 10
VTE Risk Assessmnet and Prphylaxis
2, 12, 17, 18, 19
Yes
No
24 hours
Sub specialty Registrar Review
5, 6, 10, 15
No/Home
Admission
Yes
VTE Risk Assessmnet and Prophylaxis
2, 3, 7, 8, 15, 16
No
PTWR
6, 10, 12
Yes
VTE Risk Assessmnet and Prphylaxis
10, 12, 17, 18, 19
no
24 hours
Nursing hand over
6, 9, 10, 13, 20
patient File creation
2, 3, 11, 13
Pharmacy review
6, 10, 13, 14
Yes
VTE RAP recommendation
No
24 hours
already compelte

Measure

RAMP VTE Audit

- Approval was attained from WACHS HREC prior to data collection
- The audit was conducted retrospectively to reduce the risk of Hawthorne Effect on Clinician Behavior
- The data was taken from the 12 weeks prior to the project's commencement on the 12 of June 2024
- A re audit of a random 5-10% of patients will be repeated after 12 weeks as a test of internal validity.

RAMP VTE Audit

- The data was captured by a single collector using clinically coded data points for each deidentified patient and variable entered into Microsoft Excel. A separate excel spread sheet was utilized to generate a register of patients with a corresponding unique random 8-10 number identifier.
- Total number of cases was set at 32 for smaller or virtual wards or 64 for larger wards.
- Patient were ordered by ward of admission, total number of admission to the ward divided by 32 or 64 and the resultant number was used for the selection of cases by ward in descending order of admission date

RAMP VTE Audit

- Question 1: was the completion of a risk assessment on the NIMC with 24 hours of admission
- Question 2: was VTE prophylaxis prescribed within 24 hours of admission.
- Question 3: was the prescription of any chemoprophylaxis given correct for weight and eGFR
- Question 4: were contraindications to VTE chemoprophylaxis represented in the Risk Assessment
- Question 5: were contraindications to VTE mechanical prophylaxis represented in the Risk Assessment

RAMP VTE Audit

- Other corollary data that was collected to further inform solution generation included:
  - Department of admission
  - Ward of admission
  - Documentation of risk assessment elsewhere
  - Review by pharmacy with in 24 hours
  - Pharmacy recommendation for VTE risk assessment
  - Number of risk factors for VTE

VTE risk assessment

Item	Description	Number (%)
1	Complete VTE Risk Assessments within 24 hours	11 (3.7%)
2	Partially complete VTE Risk Assessments within 24 hours	26 (8.7%)
3	Complete VTE Risk Assessments outside 24 hours/untimed	25 (3.0%)
4	Partially complete VTE Risk Assessments outside 24 hours/untimed	32 (10.8%)
5	No risk assessment	219 (73.7%)

VTE Prophylaxis

Item	Description	Number (%)
1	Anticoagulated and excluded	55 (18.5%)
2	Total Prophylaxis	196 (80.5%)
3	Chemoprophylaxis only	135 (55.7%)
4	Mechanical prophylaxis only	15 (6.2%)
5	Both Chemical and Mechanical prophylaxis	45 (18.5%)
5	No Prophylaxis	47 (19.5%)

Analyse

VTE risk assessment

Item	Description	Number (%)
1	Correct VTE Risk Assessments < 24 hours	7 (2.3%)
2	Correct VTE risk assessment any time	15 (5.1%)
2	Incorrect risk assessments for chemoprophylaxis	11 (3.4%)
3	Incorrect risk assessments for mechanical prophylaxis	0 (0%)

VTE Chemo-Prophylaxis

Item	Description	Number (%)
1	Correct Prophylaxis Dose	74 (41.1%)
2	Potentially incorrect prophylaxis dose	71 (39.4%)
3	Insufficient data	35 (19.4%)

VTE Chemo-Prophylaxis

Item	Description	Number (%)
1	eGFR under 30	4 (5.6%)
2	Weight under 50Kg	5 (7.0%)
3	Weight over 120Kg	9 (12.7%)
4	BMI > 30	45 (63.3%)
5	BMI > 35	17 (23.9%)

Root cause analysis

- Cause analysis was undertaken in a 3-step process, begging in initially with a brief review by the project team.
- The second step was small group feedback from affected departments
- The final stage was a root cause analysis session with stakeholders

CAUSES

Risk Assessment Completion	Correct Dosing
Training and awareness	Training and awareness
Systems	Systems
Workload and workflow	Workload and workflow
Service issues	Equipment
Roles and responsibilities	Patient factors

Improve

Solution Generation

- Solution generation occurred immediately following the root cause analysis session with stakeholders
- This was done due to stakeholder availability in the period around school holidays

Solutions - Whole Picture

1. Training and awareness
    a. JMO teaching, IMG prescribing sessions
    b. Departmental risk assessment and prescription expectations and orientation

Solutions – Whole Picture

2. Systems

a. Aggregation of feedback seeking to improve the WACHS VTE guideline
   i. Compilation via the Consultation feed back Log
   ii. Provision of feedback to Author (chief pharmacist) and WACHS policies

b. Cross departmental HAC themed education for Medical Staff
   i. Identification of most important HACS
   ii. Link to JMO training roster
   iii. Revisited annually or biannually through reg teaching and Morbidity and Mortality meetings

c. Admission proformas
   i. Liaise with departments and registrars
   ii. Departmental handbook for new rotates

Solutions – Whole Picture

3. Doctor Workload and Workflow

a. Coordinator triage system
    i. currently using text systems on medical wards
    ii. Additional hospital wide notification system through patient files
b. Limitation of write up room/prescribing interruptions
c. Requires its own project due to the long standing, complex and multifactorial nature of the problem.

Solutions – Risk Assessment

1. Roles and responsibilities
    a. Approach per department to be identified and handed over between terms

Solutions – Dosing

1. Patient Factors (Nursing Workload and Workflow)
    a. Identification of the accepted location for weight:
        i. NIMC for single weight, fluid balance chart for daily weights
    b. Done at admission to ward
    c. Advertise the above via toolboxes and Grad Nurse Training
    d. Requires its own quality improvement project.

Other solutions

1. Measure and Remeasure

a. Re audit

i. Continued Biennial medication safety audit
ii. Project to repeat RAMP VTE Audit in November 2024
iii. DDMS and relevant staff to consider adding the RAMP VTE to its measurement tools

b. Further research

i. Analysis of ED presentations/USS studies related to VTE, and comparison for recent admission
ii. Identification of an interested RMOs or Registrars

Other solutions

2. Systems changes

a. Recommendations for the project to be repeated at other sites
    a. To consider if global changes to the NIMC risk assessment tool are required
    b. To consider if electronic prescription would improve practice at across WA DoH

3. Patient education

a. Improve compliance with the provision of patient education bed cards
    a. Encouraging patients to enquire about their care relating to the standards

Outcomes achieved

- IMG prescription work shops have continued, adjusted for the VTE information
- VTE risk assessment and prophylaxis education for nursing staff ran on the 20 August 2024
- A JMO VTE workshop was trialed on the 4th of September with positive feedback.
- Departmental orientation documents for 2 departments have been updated.
- Admission proformas for 2 departments have been created with at least 1 more to follow

Control

Control measures

- IMG prescription work shops have now been included in the MEU document repository and MER handover document.
- HAC reminders have been linked to multiple education rosters including JMO education roster, ICU education roster and the General Medicine Registrar training roster.
- The ICU and General Surgical Orientation documents have all been updated for the last change of term to include departmental expectations on VTE

Re-measure

- The continued measurement of VTE runs in Bunbury through the biennial medication safety audit.
- The introduction of an offset repeat of the RAMP VTE audit will give greater data regarding clinician practice
  - The DDMS is considering multiple small audits across multiple departments on an annual basis

Strengths and Limitations

- This project had the following strengths:
  - Good executive engagement and leadership in all phases
  - Robust audit tool providing new information regarding prescriber habits
  - Consultation at multiple levels of medical hierarchy for solutions
  - Multiple novel clinician lead solutions
  - Good consultant, AT, JMO, stream director engagement in many of the proposed solutions

Strengths and Limitations

- This project had the following weaknesses:
  - Mixed clinician engagement in the define and analyse phase
  - Audit tool not full optimised ahead of data collection to assess patients not requiring prophylaxis
  - Lack of an endorsed standardized risk assessment benchmark to draw the conclusions against regarding risk
  - Multiple gold standard solutions requiring DoH level systemic change
  - Several solutions requiring further exploratory projects of their own

Acknowledgements

- Firstly, I must thank my project team: Dr Sanjay Paida and Jo Moore
- I would like to acknowledge my active and engaged stakeholders
  - Stream Directors: Dr Katy Templeman, John Brearley and Dr Jacinta Cover
  - Specialist consultants: Dr Esther Knight-Terlouw, Dr Renesh Nair, Dr Tapas Chakraborty
  - Multiple Registrars from multiple disciplines
  - Nursing team: Ceri Elliot, Jenny Obyrne, Mia Wunnenberg
  - Other key members: Piari Skeers, Janet Robins, Naomi Lillywhite, Lyndell Wren and Carol Reid
- Many thanks too Chelsea Evans Kerry-Lee Jacobsen for their training and support
- Finally, thanks to the Bunbury and Central WACHS MEU for housing me and providing invaluable assistance is the running of sessions, assisting in the implementation of solutions and as a sounding board.

Thank you for Listening

Questions?