

## BACKGROUND

- Venous Thromboembolism (VTE) is a significant cause of morbidity and mortality despite being largely preventable.
- All patients admitted to a NSW public hospital must be assessed and managed for risk of VTE by a medical officer within 24 hours of admission.
- Internationally, electronic solutions have been effective in improving VTE prevention processes and reducing rates of hospital-associated VTE.
- In the absence of a system-wide electronic solution, as part of the VTE Prevention Program, the NSW Clinical Excellence Commission (CEC) in collaboration with eHealth NSW developed an adult inpatient electronic VTE risk assessment tool (e-RAT) in the electronic medical record (eMR) based on the paper version.

## AIM

To pilot and conduct a two-phased evaluation of the e-RAT prior to state-wide release.

## METHOD

**Phase 1:** Testing on nine patient scenarios in a controlled environment to evaluate user acceptance and assessment outcomes.

**Phase 2:** The e-RAT was piloted in a metropolitan teaching hospital for 11-months and its impact on risk assessment completion rates and appropriate VTE prophylaxis prescribing were monitored. A local multidisciplinary quality improvement project was undertaken to understand integration into workflow, and identify barriers and solutions to improving uptake (Figure 1).

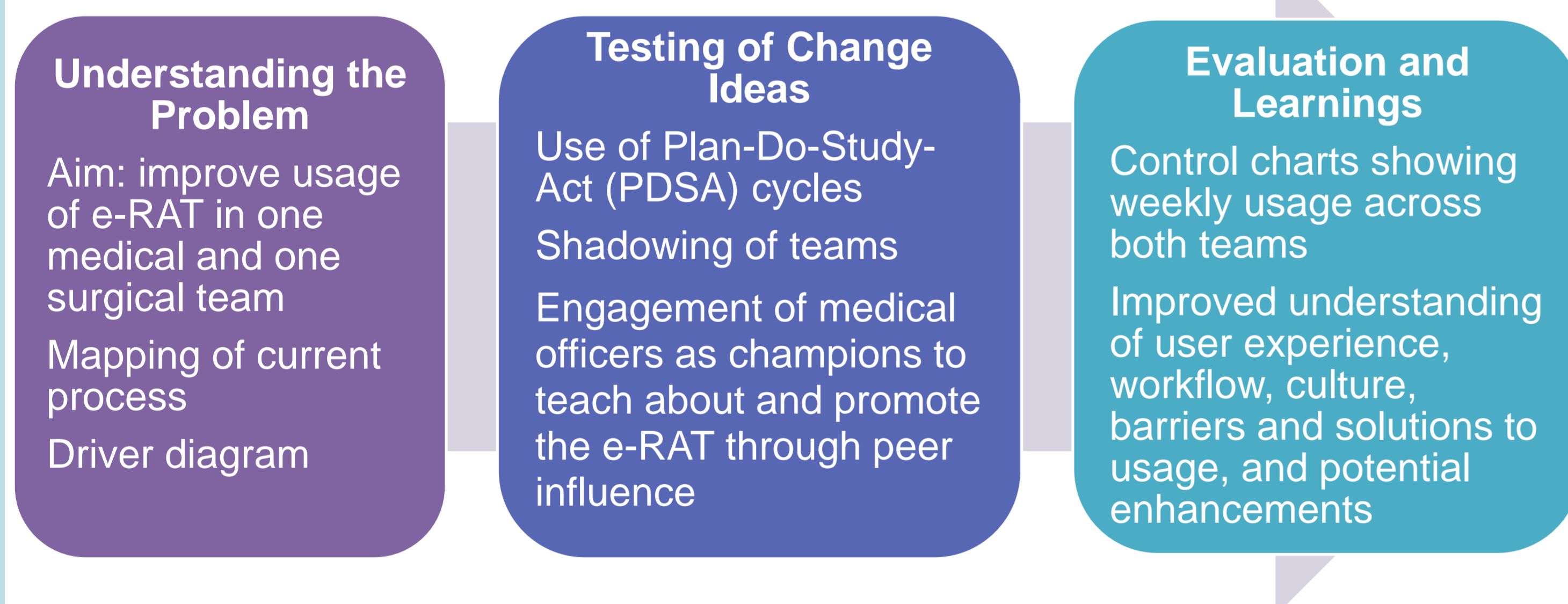


Figure 1. Overview of quality improvement project undertaken during the live pilot.

## RESULTS

### Phase 1:

- 80% of users found the e-RAT easy to use and useful for assessing and managing VTE risk.
- A number of usability issues such as the lack of reference text recognition were identified.
- 26 out of 27 (96%) risk assessment outcomes and 18 out of 27 (67%) treatment outcomes correlated with 'Gold Standard' (Figure 2).

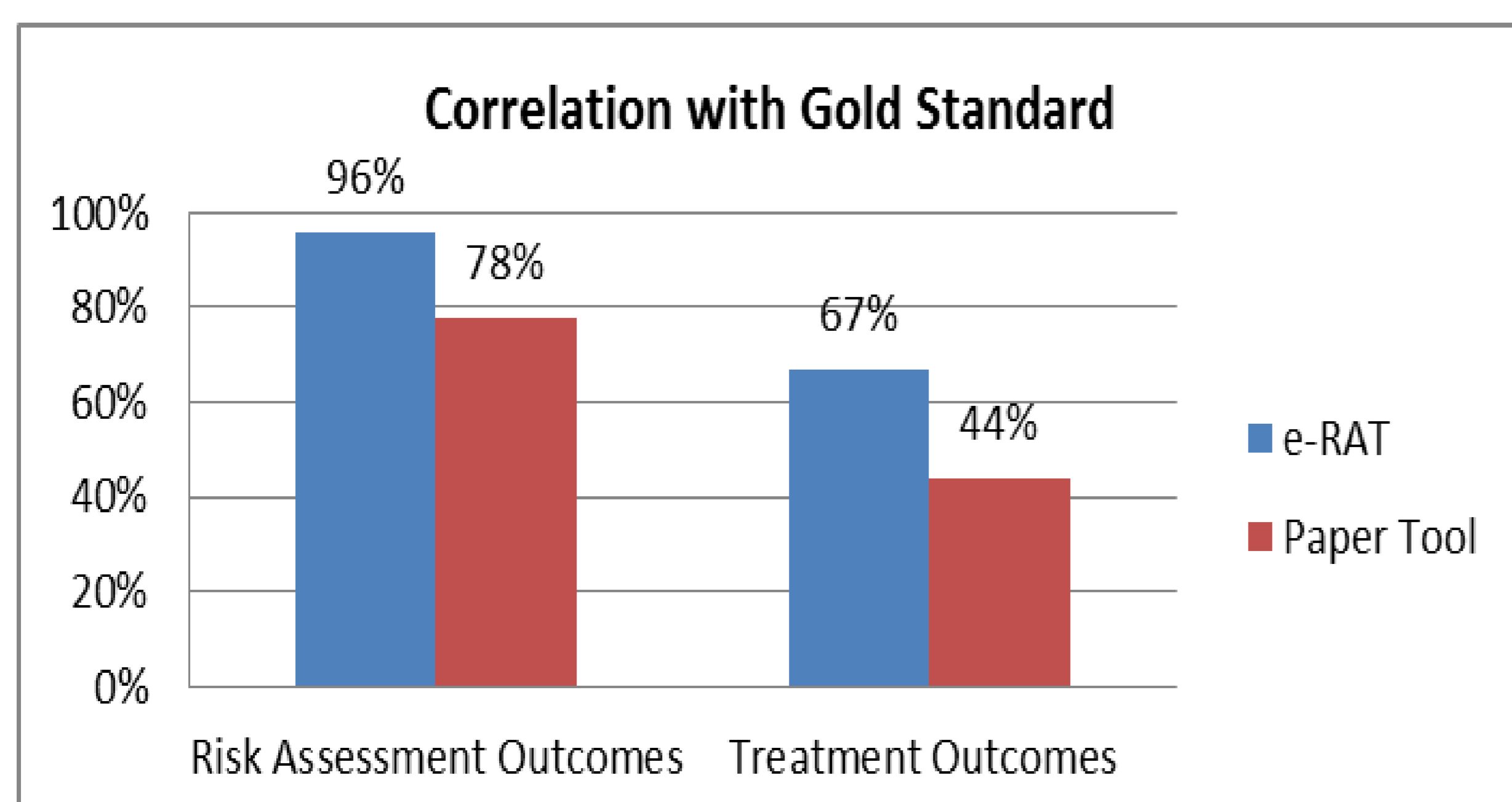


Figure 2. Correlation of risk assessment and treatment outcomes with Gold Standard for both the e-RAT and paper version.

- Average time taken to complete an assessment using the e-RAT decreased from 7.8min to 3.5min after the completion of four assessments (n=27; range, 2 min - 12 min) (Figure 3).

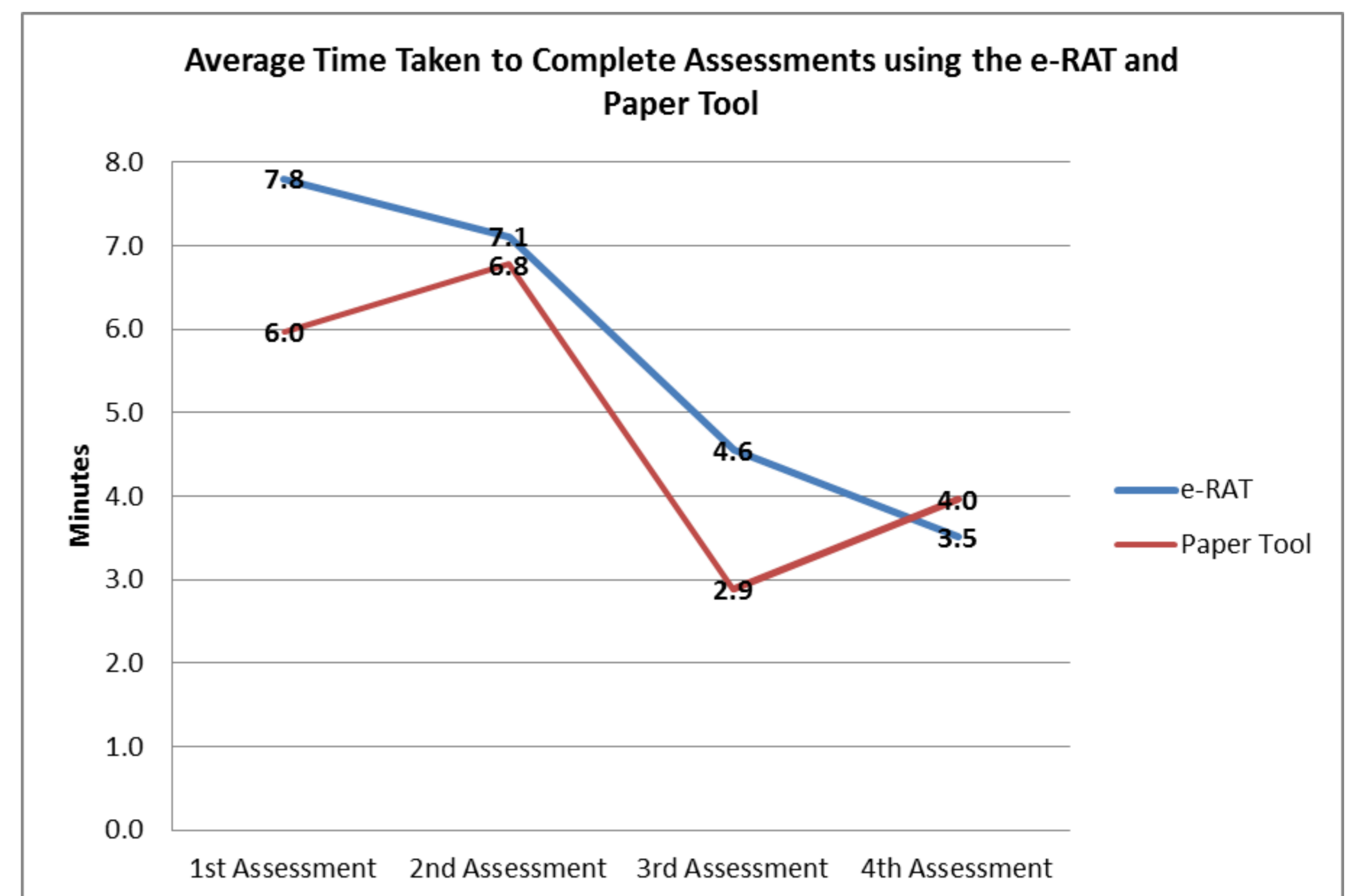


Figure 3. Average time taken to complete each assessment using the e-RAT and paper version of the tool.

### Phase 2:

- There was limited use of the e-RAT during the live pilot.
- When the e-RAT was used, 76% of prophylaxis prescribing was appropriate (Figure 4).

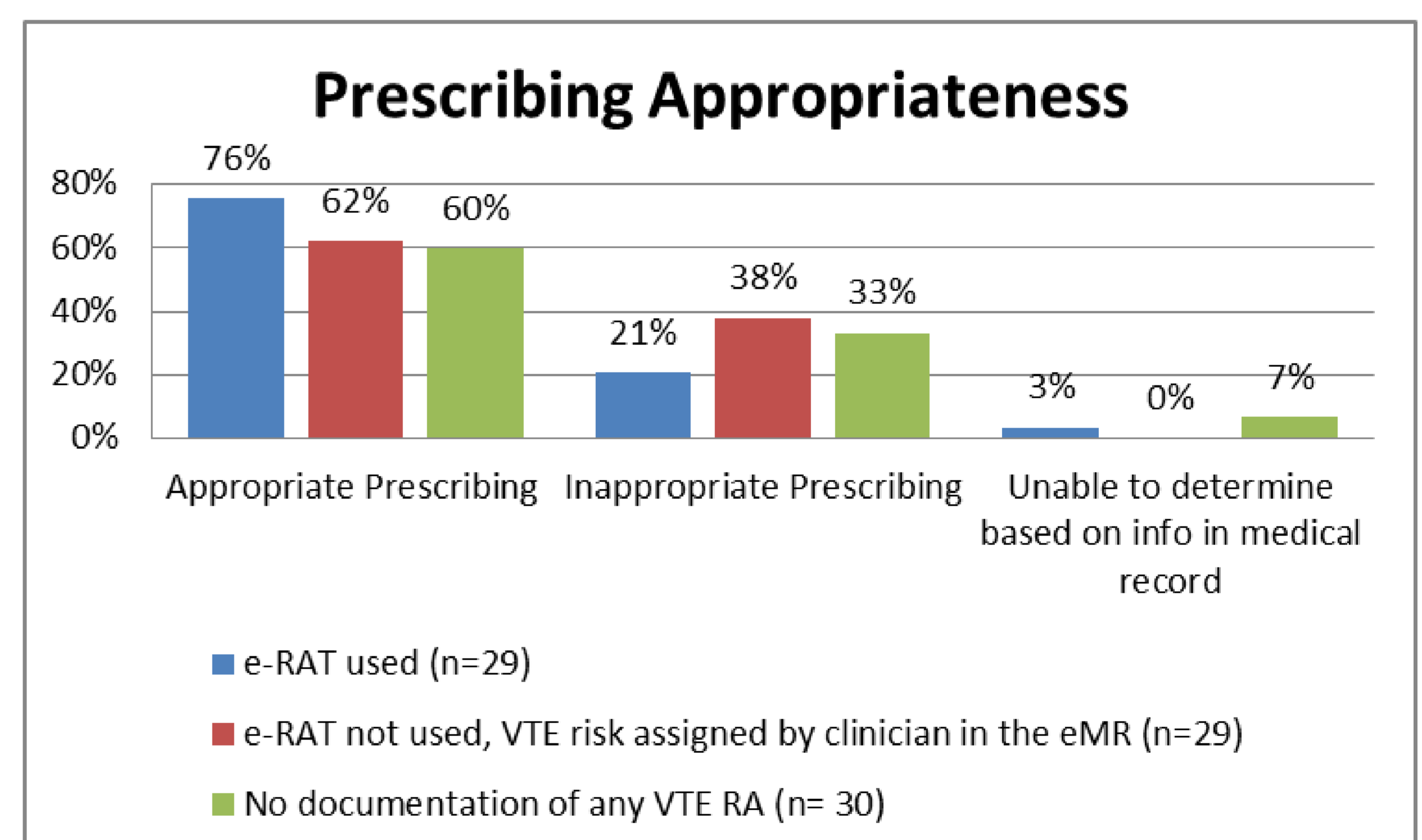


Figure 4. Comparison of prescribing appropriateness across three patient groups.

### Key Learnings:

- Greater understanding of implementation, change management and training requirements.
- Greater appreciation of the role of improvement science in spreading change (e.g. utilisation of PDSA cycles to test changes, stakeholder engagement).
- Identification of barriers to usage and strategies for improving uptake.
- Greater insight into the culture around VTE risk assessment and the perceived value of the e-RAT as a clinical decision support tool.
- Identification of opportunities for improving the e-RAT's usability, visibility in the eMR and integration into workflow.

## CONCLUSION

- The e-RAT demonstrates potential in supporting VTE prevention.
- It has been enhanced and released state-wide based on findings from this evaluation.
- Future work is required to explore active prompting mechanisms in the eMR and integration with electronic prescribing.

### Acknowledgements:

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