

The Role of Clinical Informatics in Improving the Assessment of Venous Thromboembolism Risk and Prophylaxis

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St. Michael's

Inspired Care.
Inspiring Science.

BACKGROUND

- There is significant morbidity and mortality associated with hospital acquired venous thromboembolism (VTE), which is preventable
- Documentation of VTE risk assessment is a Required Organizational Practice (ROP) by Accreditation Canada
- A VTE Quality Initiative working group was formed to address gaps in clinical assessment and appropriate treatment

DEVELOPMENT/IMPLEMENTATION

- A VTE guideline was developed and approved by the SMH Pharmacy and Therapeutics Committee
- A corporate wide VTE paper order set was developed and implemented
- Computerized Provider Order Entry (CPOE) implementation began in March 2010
- An electronic order set was developed which included documentation of assessment in addition to order for pharmacological and non-pharmacological therapy

CLINICAL INFORMATICS PDSA INTERVENTIONS

Intervention A:

- Plan:** Found several low performing services missing the VTE section
- Do:** Add VTE Section to all Admission Order Sets
- Study:** Change in assessment rate post addition
- Act:** Not at goal – identify next step

Intervention B:

- Plan:** Found that VTE section collapsed in order sets for low performing services
- Do:** Expand VTE section to prompt utilization of order set
- Study:** Change in assessment rate post expanding VTE section
- Act:** Not at goal – identify next step

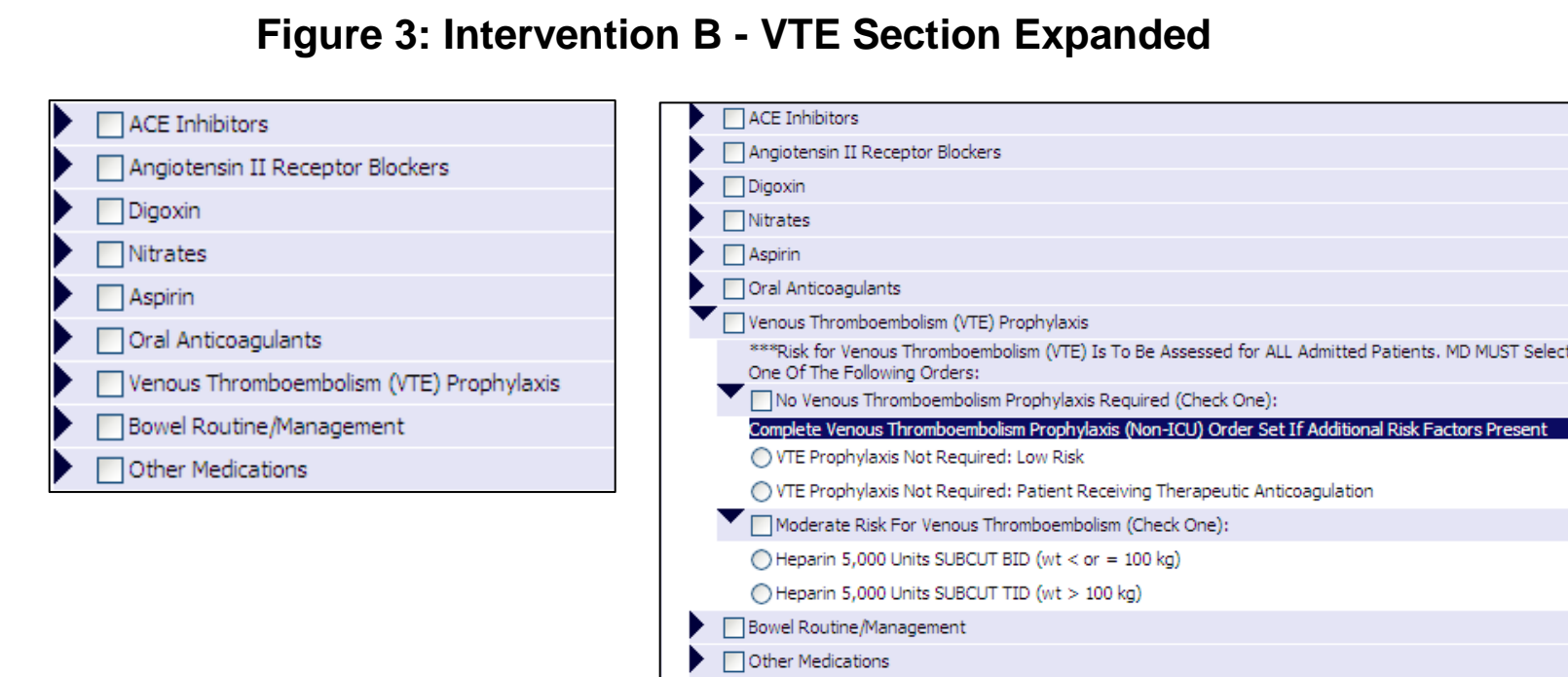


Figure 3: Intervention B - VTE Section Expanded

Intervention C:

- Plan:** Many patients admitted not using admission order sets
- Do:** Add VTE order set to stand alone "Admit, Discharge, Transfer (ADT)" section
- Study:** Change in assessment rate for those admitted without an order set
- Act:** Will assess with next quarter's data

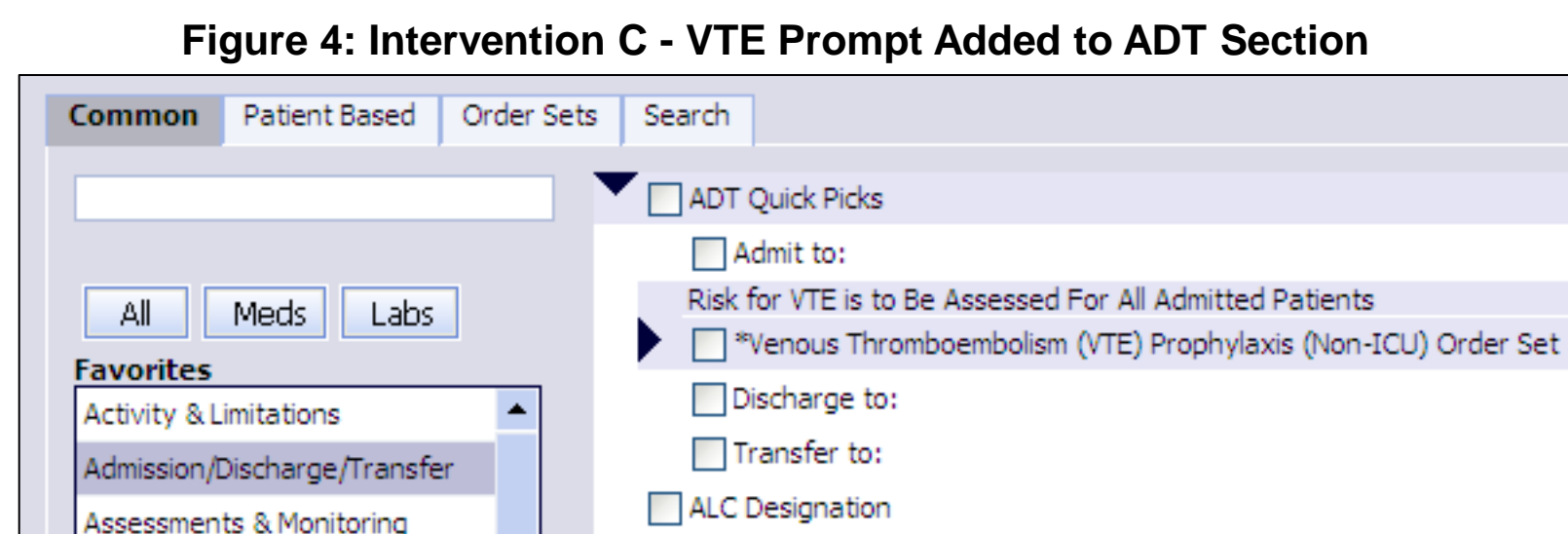
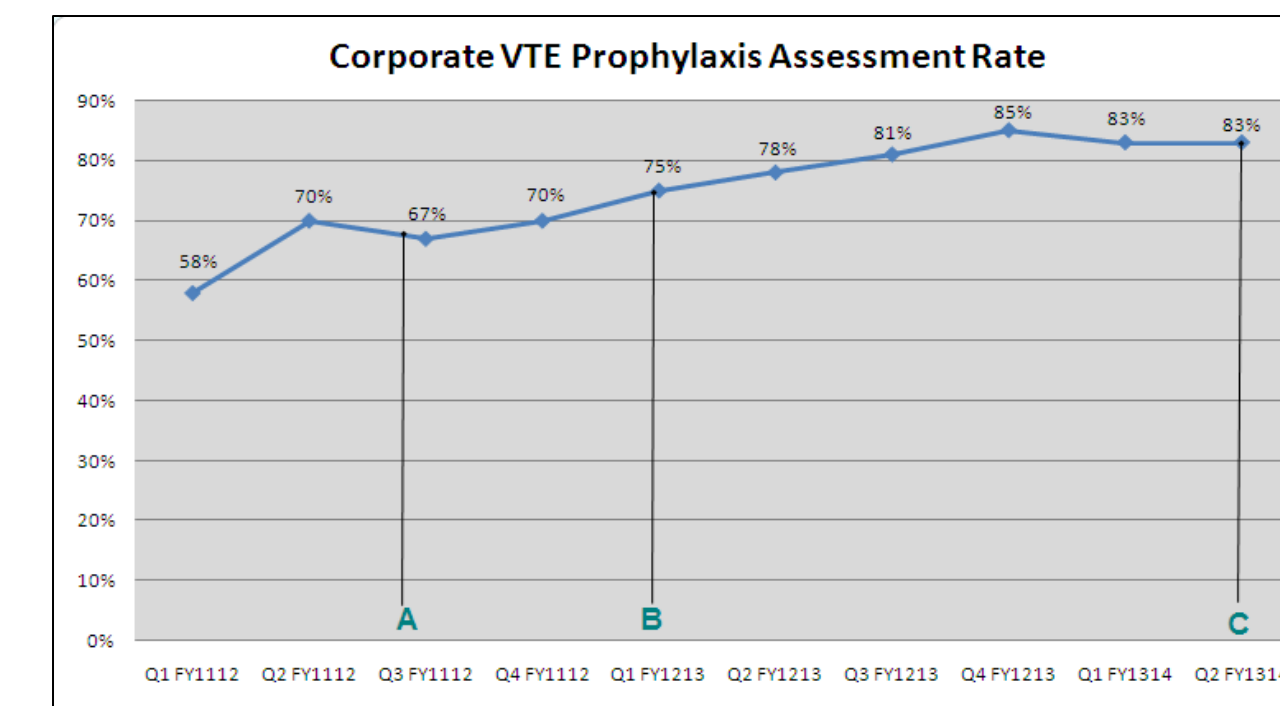
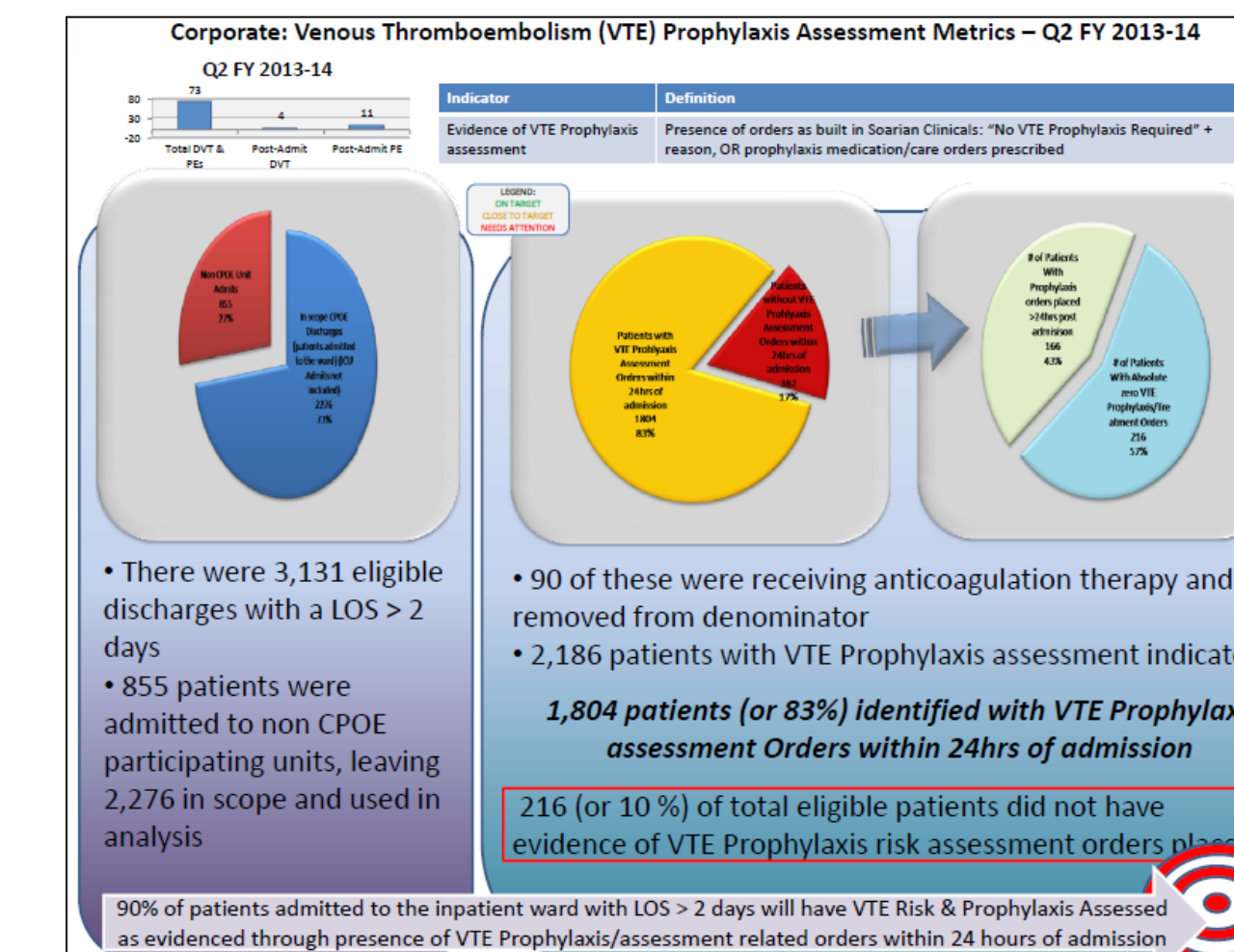
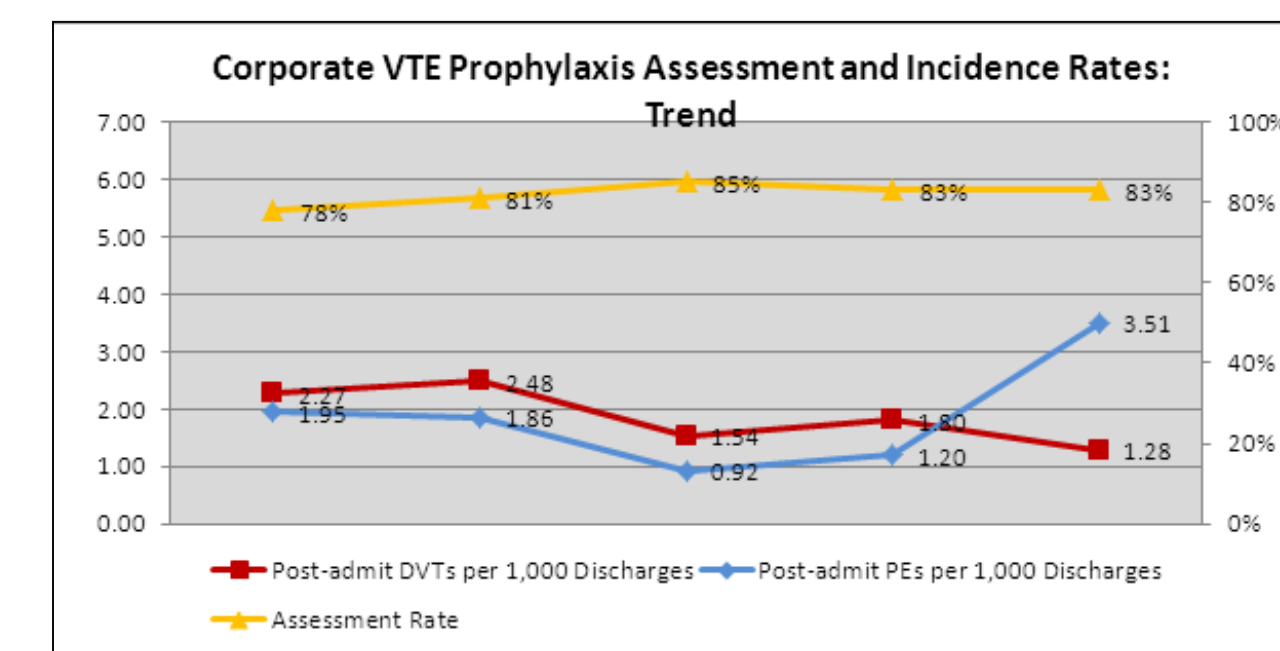


Figure 4: Intervention C - VTE Prompt Added to ADT Section

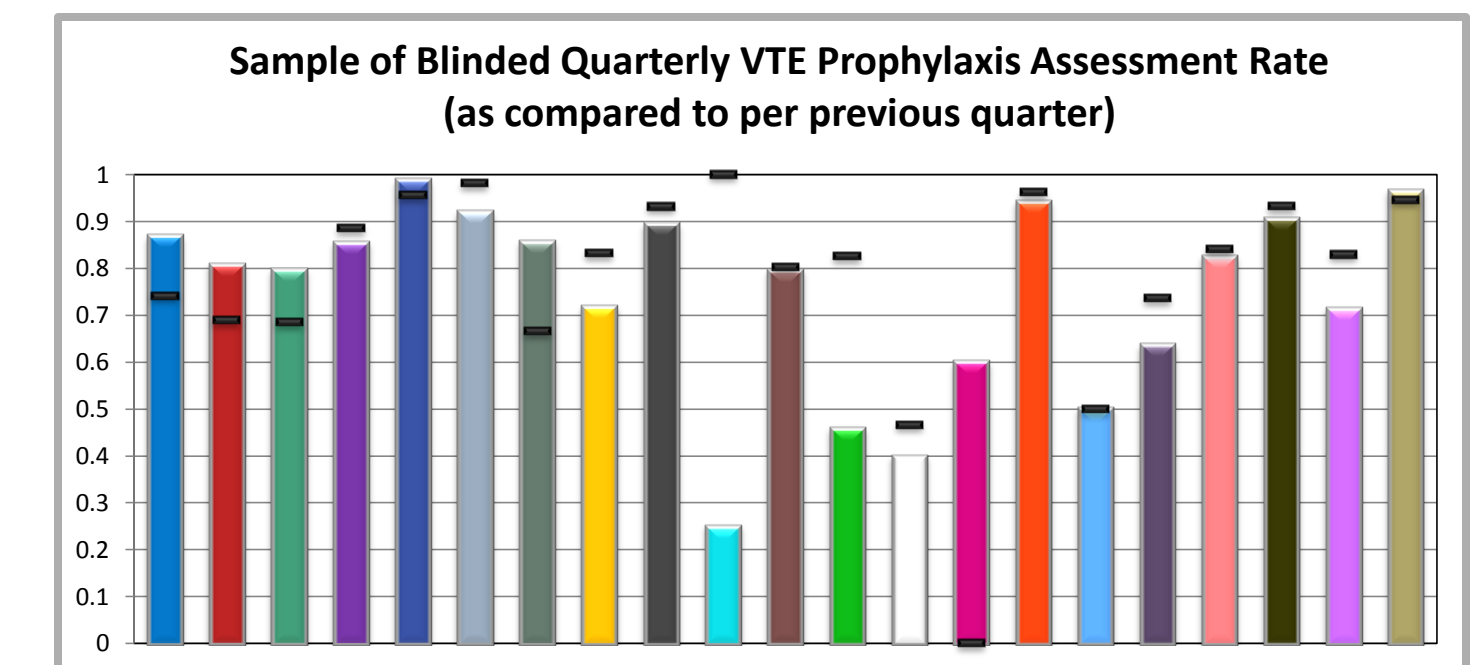
RESULTS



CORPORATELY DISTRIBUTED DATA



CORPORATELY DISTRIBUTED DATA



NEXT STEPS

- Ongoing Plan-Do-Study-Act (PDSA) cycles – forcing assessment
- Critical Care areas – going live with CPOE Spring 2014
- Assessment of appropriateness of prophylaxis by algorithms in the order sets
- Analysis of appropriateness of pharmacological and non-pharmacological by service

Service	Eligible Pts	24 hr Prophylaxis Assessment Rate	% of Pt without evidence of Assessment during hospitalization	% of Prophylaxis via TED/Compression Device	% of VTE Prophylaxis not required; low risk	% of VTE Prophylaxis not required; patient receiving anticoag therapy	24 hr Prophylaxis Assessment Rate Q1 FY 2013-14	
Service A	144	87%	10%	50%	0%	3%	74%	
Service B	94	81%	1%	84%	0%	7%	69%	
Service C	69	80%	14%	76%	0%	20%	4%	68%
Service D	674	85%	11%	76%	3%	14%	7%	89%
Service E	62	99%	1%	99%	0%	1%	0%	96%
Service F	114	92%	4%	98%	0%	0%	2%	96%
Service G	7	86%	14%	83%	17%	0%	0%	67%
Service H	32	72%	19%	96%	0%	4%	0%	83%
Service I	76	89%	9%	78%	6%	9%	7%	93%
Service J	4	25%	50%	0%	100%	0%	0%	100%
Service K	88	80%	10%	84%	3%	4%	9%	80%
Service L	24	46%	54%	91%	9%	0%	0%	83%
Service M	185	40%	16%	23%	54%	19%	0%	47%
Service N	5	60%	40%	0%	0%	100%	0%	0%
Service O	351	94%	3%	94%	1%	4%	1%	96%
Service P	2	50%	50%	0%	0%	100%	0%	50%
Service Q	11	64%	36%	0%	29%	7%	0%	74%
Service R	63	83%	14%	83%	0%	69%	6%	84%
Service S	53	91%	2%	92%	4%	4%	0%	93%
Service T	49	71%	27%	86%	0%	11%	3%	83%
Service U	98	97%	0%	89%	0%	4%	7%	95%

Metric Development

- Clinical informatics, with their understanding of ordering routine and availability of data created indicators/metric
- The metric was refined with input from clinicians to ensure validity in our clinical context

Final metric:

- Percentage of patients with evidence of assessment within 24 hours of admission
 - length of stay (LOS) > 2 days
 - no ICU stay
 - admitted to a unit with CPOE
- Metrics were reported to clinical services and administration on a quarterly basis

ROLE OF CLINICAL INFORMATICS

- Data + Interpretation = Informed Decisions
- Informed Decisions x Appropriate Action = Positive Outcomes
- Better Outcomes = Improved Patient Care
- Improving Patient Care with this formula = Clinical Informatics at its Best

ACKNOWLEDGEMENTS

- SMH Clinical Informatics Leadership & team, SMH Decision Support