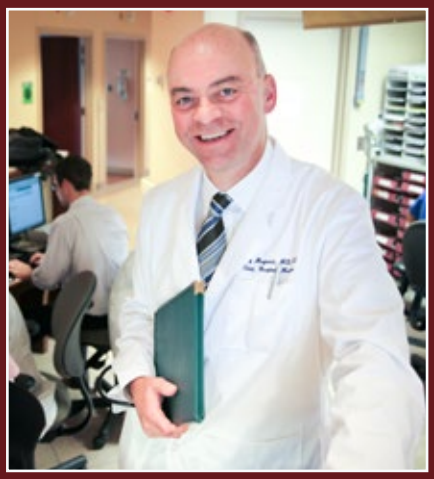
Healthcare-Associated
VTE Prevention Challenge

2015 CDC HA-VTE PREVENTION CHALLENGE CHAMPION



ORGANIZATION:

UC Health, Center for Health Quality and Innovation | California

PATIENT POPULATION:

- Multi-hospital System
- 158,781 inpatient admissions in 5 University of California facilities in 2014; 3,666 staffed beds.
- 38% belong to a racial or ethnic minority.
- 28% are enrolled in Medicaid.

BACKGROUND

The University of California has five major academic medical centers, located in Los Angeles (UCLA), Irvine (UCI), Sacramento (UC Davis, or UCD), San Diego (UCSD), and San Francisco (UCSF). Preliminary data from 2010-2011 showed that almost 700 patients/year (nearly 1%) suffered from hospital-associated venous thromboembolism (HA-VTE).

Barriers to providing optimal prophylaxis included the absence of a standardized approach to VTE risk assessment, lack of consensus on appropriate prophylaxis options for various inpatient populations, electronic health records (EHRs) from more than one vendor, decentralized control, and a relative lack of collaborative infrastructure. Poor adherence to mechanical prophylaxis and suboptimal measures to track prophylaxis and HA-VTE outcomes were also recognized barriers.

In late 2011, leaders from the five academic medical centers, supported by an internal competitive grant from the UC Office of the President and the Center for Health Quality and Innovation, formed a collaborative to address these barriers and reduce HA-VTE across the system.

OBJECTIVES

- To optimize VTE prophylaxis in adult medical and surgical inpatients by addressing the above identified barriers.
- To reduce HA-VTE across the five main UC academic medical centers by at least 20% within three years (2012-2014).

METHODS

Build Collaborative Infrastructure

Multi-professional teams were formed at each site. Monthly webinars, regular e-mail, minutes, and a project management plan with task lists were utilized for coordinated collaboration. Free software was used for sharing of tools, educational materials, measurement techniques, secure data collection and analysis for assessing DVT prophylaxis.

Include measures to assess DVT prophylaxis

Every month at each site, 30 non-critical care and 15 critical care adult inpatients underwent structured chart review via random selection of adult inpatients. VTE risk, bleeding risk, prophylaxis ordered, and appropriateness of VTE prophylaxis defined by a common standard were all assessed and recorded.

Implement Intervention Bundle

All sites were tasked with implementing a bundle of mutually reinforcing interventions. Protocols, order sets, and other interventions were not designed or implemented in an identical fashion, but common principles were utilized.

Interventions included:

- A VTE Prevention protocol that incorporated a standardized VTE risk assessment, linked to a menu of appropriate prophylaxis options for each level of risk, and provided guidance for management of patients with contraindications to pharmacologic prophylaxis. Simple risk assessment models which grouped patients into levels of risk were used. Customization for special populations (e.g. OB-GYN, Orthopedics, Neurosurgery) was encouraged. Operational definitions for bleeding risk, DVT risk, and exceptions to the protocol were explicit and allowed for delineation of appropriate vs. inappropriate prophylaxis.
- Embedding the VTE prevention protocol clinical decision support into admission, transfer, and post-operative order sets in such a way that they were “hard-wired” and difficult to bypass.
- Educational programs focused on patients and families regarding importance of DVT prevention and adherence to prophylaxis, as well as to healthcare personnel across all disciplines.
- Efforts to improve mobility and adherence to mechanical prophylaxis.
- Root-cause analyses of selected VTE cases to inform improvement strategies.
- Improved accuracy of diagnostic coding.
- Monitoring proper use of VTE prevention order sets and re-designing/clarifying.
- Audit and feedback of performance to services.
- Active surveillance of prophylaxis known as measure-vention. This monitoring entailed regular identification/measurement of patients on potentially suboptimal prophylaxis, efficient triage to determine whether the patient had true lapse in optimal care, and a concurrent intervention to call the primary team if the patient was not on appropriate prophylaxis per protocol.
- A focus on monitoring prophylaxis across the hospital stay.

RESULTS

The improvement effort targeted for all adult medical and surgical inpatients, with some exclusions resulted in the following:

- Attainment of high rates of appropriate VTE prophylaxis (82 -96% at all sites, collectively 89% by early 2014).
- Reduction of HA-VTE in 2014 by at least 20%, compared to the baseline in 2011 (0.69% vs 0.90%, RR 0.761 [CI 0.680 – 0.852]).
- Reduction of PE and DVT risk by 21% and 27%, respectively signifying 170 fewer cases of VTE per year (89 DVT, 81 PE), with estimated short-term cost savings of almost $1.9 million per year.
- Medical patients had a lower risk of VTE than surgical patients. Though, the impact of improvement efforts was not as pronounced, failing to reach statistical significance.
- Surgical improvement was robust.
- Cancer patients had much higher rates of HA-VTE than non-Cancer patients.

CONCLUSIONS

The network succeeded in reducing the risk of HA-VTE by more than 24%, by utilizing a collaborative infrastructure and a proven QI framework. Other hospitals wishing to reduce HA-VTE in a sustained and measurable fashion could follow these suggestions:

- Provide program management tools and regular webinars to keep sites on track, coordinate interventions, sustain enthusiasm, and provide a venue for sharing tools and lessons learned.
- Focus on "hard wiring" VTE risk assessment at critical junctures like admission, transfer, and perioperative periods by integrating risk assessment into orders, with a tight linkage of risk assessment to the appropriate prophylaxis options.
- Go beyond standard regulatory metrics to capture HA-VTE, and to monitor VTE prophylaxis across the hospital stay (rather than focusing only on admission or immediately post-op).
- Focus efforts especially on Cancer and Surgical populations.
- Allow for flexibility for special populations and special needs of the patient, while minimizing needless variation based on the ordering providers.
- Deploy multiple active interventions rather than relying on order sets alone.
- Use Active surveillance or "measure-vention" to correct lapses in prophylaxis in real time. The strategies are available in the newly revised AHRQ DVT Prevention guide, and have been successful in prior published efforts.