



Talking Points to Attract Administration Support for Venous Thromboembolism Prevention Programs

Hospitalized patients are at high risk for venous thromboembolism (VTE).

- Over two million Americans suffer from VTE each year, with over half of all patients developing their VTE in the hospital or in the thirty days post hospitalization. In a large registry trial capturing over 5,451 patients at 183 sites over a six-month period, 50% (2,726) developed their VTE during hospitalization.
- Most hospitalized patients have at least one risk factor for VTE.
- Every year, 23 million people undergo surgery in the United States, of which a significant number are considered high or highest risk for development of VTE.
- Without the benefit of VTE prophylaxis, the incidence of proximal deep venous thrombosis (DVT) and clinical pulmonary embolism (PE) in the majority of surgical patients is unacceptably high. Up to 20% of surgical patients in the highest risk category - for example those undergoing hip or knee arthroplasty, or hip fracture surgery develop proximal deep venous thrombosis (DVT). Proximal DVT is the most dangerous and frequently leads to PE without anticoagulation prophylaxis.
- The medical patient is also at high risk; in a typical hospital it is estimated that less than 5% of medical patients could be considered at low risk by most VTE risk stratification methods.
- Medical patients probably account for more than half of all hospital-acquired VTE events. In the DVT Free registry study, half the inpatients who suffered from VTE were non-surgical and had no surgical procedures in the preceding 3 months.
- Without prophylaxis the range of DVT risk is between 10-26% in general medical patients, 17-34% in patients with myocardial infarction, 20-40% in patients with congestive heart failure, 11-75% in patients with stroke, and 25-42% in general medical intensive care patients.
- A 400 bed hospital with an average prevalence of VTE prophylaxis can expect that 200 patients will suffer from hospital-acquired VTE each year, around half of which are potentially preventable (estimates derived from DVT Free Registry and as yet unpublished UCSD experience).

Venous thromboembolism leads to substantial inpatient costs, morbidity, and mortality

- 1 in 10 of the > 2 million Americans developing DVT goes on to die from pulmonary embolism (PE).
- These 200,000 patient deaths represent more annual deaths than those from breast cancer, AIDS, and traffic accidents combined.
- Many of these VTE deaths contribute to hospital mortality.
- Pulmonary embolism is the most common preventable cause of death in the hospital; an estimated 10% of inpatient deaths are secondary to PE. Patients who survive the initial diagnosis of PE face a mortality rate of 17.5% at 90 days.
- Not only do patients with VTE suffer a 30% cumulative risk for recurrence, they are also at risk for the potentially disabling post-thrombotic syndrome.
- While many VTE are clinically silent, symptoms of hospital-acquired VTE often require ongoing therapy and represent a significant morbidity.
- The incremental length of stay and costs of treating a case of a preventable VTE event are substantial. AHRQ HCUP estimates of incremental inpatient cost is \$10,000 per DVT and \$20,000 per PE.



Effective, safe, and cost effective measures to prevent hospital-acquired VTE exist.

- Pharmacologic prophylaxis reduces the incidence of asymptomatic and symptomatic DVT and PE by 50-65%.
- Prevention of DVT also prevents PE and fatalities from PE.
- Cost effectiveness of VTE prophylaxis has been repeatedly demonstrated.
- The chief concern of prophylaxis is bleeding, but bleeding risk secondary to pharmacologic prophylaxis is a rare event, based on abundant data from meta-analyses and placebo controlled randomized controlled trials.
- Overwhelming evidence reveals that pharmacologic VTE prophylaxis not only prevents adverse patient outcomes, it is also cost effective.

Gap between current practice and optimal practice is very large.

The high prevalence of hospital-acquired VTE is largely due to the under-utilization of simple, cost effective prophylactic measures. Of the 2,726 patients who had their DVT diagnosed while hospitalized in the DVT Free registry, only 1,147 (42%) received prophylaxis within the 30 days before diagnosis.

Several prominent organization acknowledge the magnitude of this “implementation gap” the AHRQ report, *Making Healthcare Safer*, cited the provision of appropriate VTE prophylaxis as the paramount effective strategy to improve patient safety.

Leapfrog:

PE is “the most common preventable cause of hospital death in the United States”

Agency for Healthcare Research and Quality (AHRQ):

Thromboprophylaxis is the number 1 patient safety practice to prioritize among the nearly 70 practices reviewed.

American Public Health Association (APHA):

“The disconnect between evidence and execution as it relates to DVT prevention amounts to a public health crisis.”

The current reality in American hospitals is thus arrestingly sub-standard, especially considering what could be accomplished with simple, safe, and effective prophylaxis for the at-risk inpatient.

Incorporate local data if you have it, re: prevalence of adequate VTE prophylaxis, number of different order sets, and anecdotes.

VTE Prevention is increasingly incorporated into public reporting, guidelines, regulatory agency, and national quality initiative priorities.

- TJC is currently piloting measures of VTE prophylaxis, incidence of hospital-acquired VTE, and VTE diagnosis / treatment.
- Surgical Care Improvement Project (SCIP)
- Leapfrog
- AHRQ



Reliably preventing VTE in the hospital is inherently complex (more education alone won't get the job done)

- VTE risk and bleeding risks vary within patient populations.
- The risk of VTE and the risk of bleeding may change for an individual patient several times as they progress through their hospital stay.
- Medication changes, weight, age, renal function, and recent or impending invasive interventions may all influence decisions about the best VTE prevention options.
- Transitions across care providers and locations leads to multiple opportunities for breakdown in the delivery of optimal VTE prophylaxis.
- Thoughtful, evidence-based protocols, multidisciplinary system changes, and comprehensive educational efforts are required to achieve optimal VTE prophylaxis in the complex hospital setting.

What is needed to close the gap – essential elements for effective and safe prevention of VTE in the hospital

Educational and awareness efforts alone have proven inadequate in increasing appropriate use of VTE prophylaxis. Similarly, order sets and critical pathways not supported by a healthy quality improvement framework are unlikely to succeed. Process re-design and continuous attention must include two essential elements:

- 1) performance of a VTE risk assessment for every patient on admission and regularly throughout hospitalization
- 2) selection of appropriate prophylaxis by linking the VTE risk to a corresponding menu of proven options

VTE prevention programs can be cost effective

- Achieving optimal prevention of hospital-acquired VTE requires incremental monitoring, educational efforts, systems change, and coordination of the services of many hospital divisions, all of which may incur incremental costs.
- This incremental expense can be cost effective in a variety of settings.
- Costs of VTE prevention initiatives can demonstrate a good ROI via:
 - Improved LOS, readmission rates, morbidity, and mortality.
 - Improved documentation of patient acuity and related payment for acuity.
 - Income generated via incremental physician and allied health professional billing.
- We would like to explore ways to build in and demonstrate ROI with the hospital administration.

A roadmap is in place

- Extensive guidance is available from the literature and consensus conferences.
- The Society of Hospital Medicine has produced a comprehensive guide to effective implementation of VTE prevention programs, utilizing a proven performance improvement framework, first-hand experience, and the collective wisdom from several institutions addressing VTE prevention. The guide includes practical information on:
 - Organizing and managing a multidisciplinary steering committee, reporting into the medical center administration.
 - Practical methods to assess institutional performance in VTE prophylaxis and identifying and tracking patients with hospital-acquired VTE.
 - Constructing an institutional VTE risk assessment model, and integrating it into work flow and order sets.
 - Methods to bolster chances of success by integration of high reliability design features and attention to effective implementation techniques



Summary – Push for support

- Hospital-acquired VTE is an important entity. Effective, safe, and evidence-based measures to prevent hospital-acquired VTE are currently underutilized at our medical center, resulting in needless mortality and morbidity.
- We have personnel who are ready to aggressively address this and have a number of great guides to help us achieve our goals.
- Administrative support for an empowered multidisciplinary steering committee is needed.
- Institutional prioritization and the will to standardize and improve systems in the face of substantial cultural and complex barriers is an absolute necessity to achieve breakthrough levels of improvement.
- Improved data collection and reporting, incremental monitoring, creation of metrics, and improved documentation are necessary.
- More specifically, what we need:

Depending on how advanced or ambitious the effort, it may be important to lay out a business plan, including specific aim, timeline, personnel, FTE support, and other resources required.