



## Meaningful Use Case Study

Texas Health Resources - [2011 Stories of Success case study selection](#)  
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### Stage One Meaningful Use Goal

Venous thromboembolism (VTE) is the most common preventable cause of hospital death, according to the Agency for Healthcare Research and Quality. Clinical trials provide irrefutable evidence that thromboprophylaxis reduces VTE. The Joint Commission has developed VTE prophylaxis measures. Preventing VTE is a quality measure for meaningful use.

Texas Health Resources aimed to develop a standardized approach to preventing hospital-acquired VTE by identifying patients at risk and applying appropriate intervention strategies from national guidelines and evidence-based practices. To achieve this goal, Texas Health implemented health care IT and clinical decision support tools such as order sets, best practice advisories and a VTE risk-assessment calculator.

### Clinical Decision Support Definition

Interactive computer programs with medical knowledge and patient-specific information designed to help clinicians make diagnostic and treatment decisions.

### Meaningful Use Core Objective and Measure: Clinical Decision Support

Objective: Implement one clinical decision support rule relevant to specialty or high-clinical priority along with the ability to track compliance with that rule. Measure: Implement one clinical decision support rule.

### Organizational Background

Texas Health Resources includes 12 wholly owned acute-care hospitals, one transitional care hospital and more than 4,100 licensed hospital beds. Texas Health employs more than 20,500 people and more than 5,500 physicians have active staff privileges. Annually, the system has more than 1.3 million inpatient and outpatient visits, including 24,000 deliveries and 557,785 emergency visits.

### Lessons Learned—Successful Strategies

#### *Address lack of standardization*

Texas Health leadership addressed the overall lack of standardization by aligning project goals with national and organizational priorities and by involving appropriate bodies and stakeholders to achieve system level consensus regarding standardization details. Achieving this consensus required clear, concise communication and education to busy caregivers and providing them access to drill-down data.

#### *Embed VTE prophylaxis evidence and measures into CPOE order sets*

Texas Health enjoyed over 50 percent computerized provider order entry (CPOE) utilization, with greater than 50 percent (currently 77 percent) of CPOE orders entered via order sets. To

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capitalize on this strength, Texas Health embedded VTE prophylaxis evidence and measures into CPOE order sets. A VTE prophylaxis pilot was conducted for specific post-operative CPOE order sets that mandated selection of VTE prophylaxis or reason not ordered. The outcome was favorable, with 100-percent compliance when pilot order sets were used. To mitigate the risk of decreased order set use, the system phased in mandatory selection for appropriate order sets.

### ***Establish best practice advisories***

Texas Health established physician and nurse best practice advisories (BPA) for ordering VTE prophylaxis. For patients at least 18 years of age and hospitalized for 18 hours or longer (with certain contraindicated patients excluded), the BPAs fire every four hours until the physician orders VTE prophylaxis or documents why not. Nurses receive BPAs every four hours until they contact a physician.

### ***Develop risk-assessment tool***

A Modified Caprini VTE Risk Assessment Tool was adopted and converted to an electronic patient-specific risk calculator accessible from within the patient context of the EHR. This intervention provides recommended VTE prophylaxis based on the patient's risk score.

### ***Analyze outcomes***

Texas Health's Process Improvement Committee played an important role in analyzing outcomes, which were determined by the pulmonary emboli/deep vein thrombosis rate. Process analysis is conducted through a review of the number of advisories, the clinician's response to advisories, and the timely and appropriate use of VTE prophylaxis. The analysis is enhanced when administrative (charge) data is converted to clinical EHR data.

### ***Communication and testing important***

A respected expert, nationally known in the field, presented clinical education followed by e-learning modules. Further technical instruction was available through tip sheets and "Care-Tube" online demo videos. Chief quality officers were available to answer questions regarding clinical issues, and information systems staff members were involved in technical issues. Despite these endeavors, some caregivers voiced concern regarding lack of communication and input opportunity following the release of the BPAs. Pushback was countered with quick responses from leadership and modifications when appropriate.

Complete and detailed testing prior to the release of interventions is required. Successful testing determines the level of intended functionality and assures that the intervention involves the right information, person, format, channel and time.

### **Results**

The decreasing trend of VTE correlates with health care IT interventions—embedding VTE prophylaxis orders and evidence into order sets, the VTE risk assessment and suggested prophylaxis calculator and physician and nurse BPAs. Each prevented VTE event represents an improved outcome and significant cost savings.

### **Next Steps**

Work is ongoing to enhance the analysis of risk calculator use. An ICU pilot analyzing timely and appropriate VTE prophylaxis has served as a model for expansion. A strategy for

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presenting and seeking input from potentially resistant medical staff departments is an opportunity. Clinical “talking points” will be developed to provide a consistent approach to questions.

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