

## 2015 CDC HA-VTE PREVENTION HONORABLE MENTION



### ORGANIZATION:

Michigan Hospital Medicine Safety Consortium

### PATIENT POPULATION:

- 763,267 inpatient admissions in 2014 at 47 facilities throughout Michigan; 15,592 beds.
- 20% belong to a racial or ethnic minority.
- 9% are enrolled in Medicaid.

### BACKGROUND

The Michigan Hospital Medicine Safety Consortium (HMS) is a 47-hospital statewide, data-driven collaborative quality initiative supported by Blue Cross Blue Shield of Michigan and Blue Care Network. The goal of HMS is to improve the quality of care for hospitalized medical patients who are at risk for adverse events.

### OBJECTIVES

The objective of the HMS VTE initiative is to increase hospital performance on 3 goals: risk assessment on admission, pharmacologic prophylaxis for high-risk patients without contraindications, and mechanical prophylaxis for high-risk patients with contraindications.

### METHODS

#### Implementation of a Web-Based Data Registry

The HMS collaborative began collecting data for the VTE initiative in January 2011. Eligible patients include those admitted to a medicine service for 2 days or longer at a participating HMS hospital, with specific exclusion criteria. Each participating hospital has a trained full-time data abstractor who enters data via a standardized process into the Web-based HMS data registry. The following data are collected for each patient: demographics, admitting data, medical history, medications, physical findings, VTE risk assessment, mobility, anticoagulant use, mechanical prophylaxis use, labs, bleeding/complications, VTEs, and transfer/discharge information. Each hospital is audited on an annual basis by data quality coordinators to ensure completeness and accuracy of data abstraction.

## Assessment of Clinical Outcomes and Process Measures

The primary outcome of interest is clinically diagnosed, image-confirmed, hospital-associated VTE (HA-VTE). Patients are followed for 90 days after discharge and follow-up data are obtained via chart review, as well as a phone call to the patient. The VTE events identified solely by telephone follow-up are included if patients report a diagnosis and treatment consistent with acute VTE. The outcome of HA-VTE requires that the event must have occurred on the third day of the index hospital stay or later to be attributable to the facility.

Hospital performance for VTE prophylaxis is based on the mean rate of administration of acceptable pharmacologic prophylaxis on day 1 or 2 of hospitalization in eligible patients. Initially, the collaborative defined high risk as a Caprini score of 2 or higher. Based on collaborative data, the definition was changed to a Caprini risk score of 5 or greater is high risk, and Caprini risk scores of 0-2 are low risk. Assessment includes evaluating

appropriate pharmacologic prophylaxis in high-risk patients and avoiding unnecessary prophylaxis in low-risk patients. Member hospitals are actively working to implement risk assessment processes that recommend no prophylaxis for low-risk patients.

## Quality Improvement Strategies

Since October 2010, representatives of HMS, including a designated physician champion, clinical data abstractor (most often a nurse), and an institutional quality lead, along with representatives from the Coordinating Center (University of Michigan) have been meeting quarterly to discuss improvement efforts and to review data. This includes site visits and quantitative and qualitative evaluation. Member hospitals receive quarterly reports of their own data at the collaborative-wide meetings, and reports—updated daily—are available via the data registry. The collaborative continues to evaluate change over time, making use of longitudinal data collection. Hospitals are assessed according to performance metrics established each year, and are incentivized through the Blue Cross Blue Shield of Michigan Pay-for-Performance Program.

## RESULTS

As of September 2015, data has been entered on 112,662 hospitalized patients.

The rate of VTE risk assessment on admission for hospitalized medical patients has increased significantly from 68.2% to 95.7% from Q1 2011 to Q2 2015. The collaborative goal of 90% for risk assessment has been sustained for a year.

### VTE Prophylaxis for Patients at High Risk

- The rate of pharmacologic prophylaxis for patients at high risk of VTE has generally remained in the range of 75-80% from Q1 2013 to Q2 2015.
- The average pharmacologic prophylaxis rate in high-risk patients across all participating hospitals has increased significantly over time from 59.2% to a rate as high as 80.3%.
- Participating hospitals over time has increased significantly from 59.2% to a rate as high as 80.3%.
- The rate of mechanical prophylaxis ordered on admission for high-risk patients with contraindications to pharmacologic prophylaxis has increased significantly from 52.9% to a rate as high as 84.7%.

### Avoiding Prophylaxis in Low-Risk Patients

- The rate of pharmacologic prophylaxis given on admission for low-risk patients has decreased significantly from 51.9% (Q3 2014 ) to 46.3% (Q2 2015) ( $p < 0.05$ ).

While the collaborative has made significant gains on the performance goals, the rate of VTE has notably remained unchanged and extremely low throughout the initiative. The average rate of VTE during the index hospitalization is 0.2%. The average rate of all VTE at 90 days is 1.0%. Importantly, as hospitals have worked to reduce prophylaxis in the low-risk population, VTE rates have not been impacted and have remained low.

## CONCLUSION

Using a robust data registry, sharing and facilitating implementation of best practices, and use of financial incentives, the payer supported Michigan Hospital Medicine Safety Consortium has worked successfully with 47 diverse hospitals to improve performance on key metrics targeting HA-VTE. Based on data provided by participating hospitals, the VTE work of the HMS collaborative has impacted approximately 494,000 patients of approximately 8,600 physicians in the last year. While effectively implementing several practices recommended in national guidelines, the HMS collaborative has also used its data to better understand levels of VTE risk in medical patients in Michigan hospitals and adapt a more nuanced prophylaxis strategy that maximizes benefit and minimizes risk.