Anne Arundel Medical Center

Improving VTE Inpatient Quality Core Measures Through a Multifaceted Solutions Approach

Project Description: Venous Thromboembolism (VTE) prevention is an important component of patient care: best practices related to VTE prophylaxis have long been incorporated into Core Measures monitoring and reporting to the Centers for Medicare and Medicaid Services (CMS). While efforts have been ongoing to enhance awareness and education of these measures to medical and nursing staff, our rate of compliance for VTE prophylaxis in both the intensive care unit (ICU) and inpatient settings had been consistently below the 90th percentile. Warfarin discharge instructions compliance rate was below the 50th percentile. These metrics were identified through our hospital’s Core Measures rate report, with baseline data available from the initiation of the collection of VTE Core Measures. Our goal was to achieve > 90% on all VTE quality measures. Performance improvement graphs would be generated via our rate report to track the outcomes of our interventions each month and quarter.

Process: To develop the solution to this problem, we brought together a multi-disciplinary process improvement team, including nursing leadership, pharmacy, information services (IS), and our quality department. Interventions were based on a Plan-Do-Check-Act (PDCA) methodology, with resolve to prevent variability in performance in meeting the Core Measures.

Solution: A multifaceted solutions approach was developed to improve our compliance:

1. VTE order sets were incorporated into every admission order set. This required medical staff members to address both mechanical and pharmacological VTE prophylaxis, with a provided area to document any contraindications to therapy.
2. A VTE system list was created in our electronic medical record (EMR) for the purpose of concurrent rounding. This helped identify deficiencies in documentation and compliance in real time to the performance improvement nurse. This information is distributed to the charge nurses on each unit daily to foster performance within the given timeframe; in this manner, compliance and re-education has been brought to the bedside-- to the individual care provider and in the treatment of each individual patient.
3. Required VTE BPAs (best practice alerts)/decision support tools were added to our EMR to improve compliance through reminders when needed.
4. Pharmacy alerts were created for early identification of surgery cases to ensure timely dosing of anticoagulants.
5. Automated Warfarin and Xarelto discharge instructions were generated off the discharge medication reconciliation list. When Warfarin or Xarelto are listed as a discharge medication, instructions with all pertinent patient information are automatically dropped into the patient’s After Visit Summary (AVS) to ensure that patients are consistently getting the correct information.

The above solutions were implemented following clinical informatics bulletins and other education and communications to medical and nursing staff.
Measurable Outcomes: Use of performance improvement graphs and internal weekly spreadsheets are used to track our progress and improvement. Examples for VTE prophylaxis and Warfarin discharge instructions are shown below, with improvements noted following the above interventions:

![Line Chart](image-url)

**Line Chart**
**VTE-1: VTE Prophylaxis**

Rate

Time Period

- Jan2013
- Mar2013
- May2013
- Jul2013
- Sep2013
- Nov2013
- Jan2014
- Mar2014
- May2014

Facility Value
Sustainability: Oversight and accountability are maintained through a reporting hierarchy with stakeholder engagement. This is done via weekly feedback on failed measures that is distributed to nursing and physician leadership. Concurrent rounding also plays an important role in maintaining consistency and achievement of VTE quality compliance. This is coordinated with our Senior Director of Nursing on a daily basis to distribute the information to unit charge nurses. VTE quality measures are included as part of daily multi-disciplinary rounding.

Role of Collaboration and Leadership: A quality measures improvement group was initiated to optimize workflow and improve outcomes. This team included members from our IS department, physician leadership, pharmacy, nursing and our quality team. Through a team effort, goals were identified and implemented, including our VTE prophylaxis order sets, automated discharge instructions, pharmacy collaboration and increased use of concurrent rounding.

A composite score of all Core Measures, including VTE measures, was added to the organization’s Quality Aims metrics, reported to our hospital’s Leadership Council and Medical Executive Quality Council monthly and to our Board Quality and Patient Safety Committee on a quarterly basis for review. A physician and nurse leader have been designated as Core Measures Quality Aims leaders, who meet with performance improvement nurses monthly to review the data, evaluate current solutions, and to support further enhancements to the program.
Innovation: The ability to incorporate our EMR to automate processes, decreasing staff workload while improving patient outcomes, was the innovation to this project.

Related Tools and Resources: CMS Core Measures guidelines, Epic computer system

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