

Vanderbilt University Medical Center

Organization Name:

Vanderbilt University Medical Center

Organization Address:

1211 Medical Center Drive
Nashville, TN 37232

Organization Contact:

Randolph A. Miller

Schema Archetype

Inpatient, Academic Medical Centers

Schema Factors

Organization Summary

Vanderbilt University Medical Center (VUMC), which includes Vanderbilt University Hospital (VUH), a 630-bed academic tertiary care teaching facility with approximately 31,000 admissions per year.

IT Environment

There are three IT systems at VUMC: WizOrder/Horizon Expert Orders (HEO); StarChart/StarPanel; and, RXStar. WizOrder is a computerized clinician order entry system continuously developed by DBMI faculty working with Informatics Center staff and trainees at Vanderbilt since 1994. StarChart is the patient record system, integrating patient data from multiple sources, including lab results, radiology reports, discharge summaries, anatomic pathology, physician notes, letters, etc. The patient record is displayed as individual reports and easy-to-read spreadsheets. StarPanel is the web version of StarChart. RxStar is a decision support system integrated with StarPanel, and contains a series of features designed to improve patient safety without compromising system speed or usability.

CDS Achievement

WizOrder is VUMC's CPOE system, which captures approximately 15,000 orders per day, with 75% of them being directly entered by physician staff. Baseline CPOE system features include: drug-allergy and drug-drug interaction checks; interventions to promote cost-effective care; more than 1,000 order sets; linked

patient-specific access to educational resources and biomedical literature; and, a programmable rules engine used to deliver Web-based decision support modules for the implementation of guidelines. Compliance with alerts and order sets is also tracked by VUMC staff.

Process management dashboards are also used to inform medical staff of the status of required activities for patients with specific problems. Physicians create activity bundles for treating certain conditions; the dashboard shows the bundled activities and their status with red, yellow, and green indicators to remind hospital staff of which activities are completed and which remain to be done.

Lessons Learned

Be sure that each type of alert fires at the appropriate time in order creation (e.g., allergy alerts once medication is selected, consequent order alerts when provider closes out and hasn't completed). Frustration with alerts to complete tasks that fire right before a provider is about to complete that task needs to be mitigated by having the alert fire if the provider closes out of orders without conducting the required or recommended orders. In addition, having alerts for medication allergies fire at the end of an order that may take a lot of time to complete are troublesome as well. CPOE systems should not ask clinicians to perform tasks that fall outside of their job responsibilities, or about which they have little knowledge. Structuring orderable items with the clinician in mind helps to overcome major barriers to adoption.

When devising your alerts, reminders, and templates for better practice guideline adherence, consider each protocol as a series of discrete medical processes constituting a treatment, their triggering conditions, and their coordination. Steps in caring for a patient rarely happen in the exact same order every time, so the CDS should reflect that and allow care to flow naturally for the provider. The system should also be demonstrated with clinicians as well as run it through simulation modeling.

The implementation of the Admission Advisor yielded a significant increase in ACS order set use. Furthermore, use of the ACS order set was associated with a significant increase in recommended early aspirin ordering and a non-significant increase in early beta-blocker ordering.

Awards, Recognitions, and Citations