Utilizing Online Clinical Decision Support to Improve Patient Safety
Frederick Memorial Hospital

Program/Project Description.
While planning the implementation of BMV and CPOE we needed to make decisions on how to provide Clinical Decision Support. Our goal was to provide optimal patient safeguards within the limits of our system and avoid alert fatigue for the providers.

Process.
We have a Project Management Office (POM) which has set problem solving and project methodologies.

Solution.
Initial decisions have focused on providing Clinical Decision Support regarding flagging during medication ordering and processing for allergies and drug interactions. Avoiding alert fatigue molded many of our choices.
* Determine at what level to set alerts such as Severe or Moderate interactions with medications ordered
* Use a Yes/No setting or a message rule in order to make the use of the system easy for the providers while ensuring patient safety

We developed rules to alert the pharmacy, nursing, and/or the provider within their respective workflows.
* For nursing:
  ** a rule to alert the nurse in the ED to make sure that blood cultures are drawn before giving the first dose of antibiotics
  ** provide lab value pop-ups for certain medications (such as the most recent Potassium level) prior to medication administration
  ** require a co-signature for specific medications in our NICU
* For pharmacy and ordering providers:
  ** require pharmacists to enter the patient account number at "File" to verify that orders have been entered on the correct patient
  ** Look-alike, Sound-a-like warning rules for both pharmacy and providers for certain medications (such as amiloride and amloidpine)
  ** a rule to alert the pharmacist when a patient is on Coumadin and then prophylactic VTE doses of Lovenox or Arixtra are subsequently ordered
  ** a Heparin and Lovenox rule that alerts the pharmacist and provider when either drug is ordered and the patient has received the other medication within a specific time frame
  ** a rule to alert the prescriber if a Tylenol dose is > 1000mg
  ** a rule to alert pharmacist if an ordered dose is > 5 x strength of the product
  ** Peds/PedsED unit - implemented weight-based dosing, and made liquid meds that were previously ordered by ML, now to be ordered by MG

My presentation will describe the problems that came up and the rules we implemented to assist the Pharmacy, Nursing, and/or the Provider to provide improved safety to our patients.

Measurable Outcomes.
We have seen a measurable decrease in reported ADOs and ADEs following the implementation of BMV and CPOE, with some basic Clinical Decision Support in place, and a continued roll-out of the decision support within our system as we adapt to an ever changing practice and needs from our staff.

Sustainability.
Our ongoing model for CPOE support is multi-disciplinary and the team meets weekly. This group includes CPOE providers, pharmacists, IT staff, nursing, and ancillaries. Any team member can bring up scenarios for discussion and problem resolution. We address individual medication ordering issues, as well as more complex ordering processes (e.g., change in level of care).
We implement specific groups of physicians at a time. This allows for focused workflow analysis. We have seen this work successfully with OB physicians, Pediatricians and Hospitalists. This also allows nursing to more easily keep up with the changes.
Role of Collaboration and Leadership.

We have a Guidance Committee attended by nursing leaders, IT project managers, medical staff leaders, and the physician liaison that meets monthly to provide direction for and support of the hospital's goals.

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