Non-Oncology Infusion in an Electronic Health Record

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Introduction/Background
This project was designed to bring ambulatory non-oncology infusion practices associated with multiple hospitals away from differing electronic and paper systems onto one enterprise-wide vendor electronic health record (EHR). Integrating non-oncology infusion practices into an EHR presents unique challenges. EHRs tend to be set up for ambulatory, oncology, or inpatient modules, but infusion centers are a unique hybrid of each of these modules. For example, they require an inpatient type medication administration record (MAR), but are considered non-hospital locations. In addition to the technical uniqueness of non-oncology infusion, implementing an infusion process into an EHR is challenging because infusions are inherently risky and often involve medications used for chemotherapy.[1,2]

Methods
Ordering providers, practice managers, and nurses were interviewed to determine infusion workflows. Questions for practices included what medications are infused, what medications are administered along with the primary infusion, how are patients scheduled, how are prior authorizations obtained, who obtains the prior authorizations, how should patient monitoring be documented, will medications be supplied by and verified by a central hospital pharmacy, and who will administer infusions. Infusion medications and their associated orders were placed into therapy plans. A restricted access website was utilized for stakeholders to comment on the contents of each therapy plan. A clinical content governing body helped to mediate differences in stakeholder opinions. Workflows were designed for providers to order plans both inside and outside of scheduled appointments, since treatments typically recur on specific intervals, and infusion nursing obtained its own workflow due to unique monitoring and documentation needs.

Results
Prior to go-live, considerable workflow variation was found between infusion centers and ambulatory practices and among different ambulatory practices, as well. There were differences in opinion over therapy plan, activity menu, and monitoring flowsheet contents. After the first go-live, merging plans, expiring plans, outside ordering providers, and whether or not a provider should manually enter a new weight prior to ordering an infusion medication, were some of the initial incidents. In addition to these issues, there were scope creep concerns. Ambulatory departments were uncovered that gave a small number of medications that required an inpatient MAR and an infusion-like setup, without actually administering infusions.

Discussion/Conclusion
Application coordinators responsible for preparing an organization for the integration of non-oncology infusion workflows into the EHR should have a tightly defined project scope and be cross-trained in at least ambulatory and oncology modules of the EHR. The questions outlined in the methods section represent a strong starting point and should be utilized. Prior to go-live, the team should determine if any infusion practice is receiving orders from providers outside of the healthcare organization. If these outside provides will not be accessing the new EHR, a workflow involving order transcription may be proposed. Given the risky nature of infusion medication, a physician, nurse, and pharmacist should verify medication order details and therapy plan contents. When multiple practices or centers will need to agree on process and contents, it is imperative to have a governing process in place.

References
1. Thompson, NE. Chemotherapy and biotherapy drugs for autoimmune disease. American Nurse Today, 2013; 22-27
2. Gerhart, D, O'Shea, K, Muller, S. Advancing medication infusion safety through the clinical integration of technology. Hospital Practice, 2013; 41:4; 26-29