Successful HIT Requires Inter-Team Communication

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EXECUTIVE SUMMARY

When compared to traditional medical centers, academic medical centers have additional complexity caused by tension between clinical research and patient care, which adds structural and organization differences within the organization. Many academic medical centers have a separate physician practice plan and hospital organization. Usually this means the medical school and its faculty are responsible for outpatient practices, and a separate hospital organization performs the daily management and sustainability of the affiliated academic hospitals. With separate governing and executive bodies, information technology (IT) has additional challenges not found in community hospital settings where one, unified entity exists. Two different financial entities for one unified care delivery model results in differences in technology used at both entities. The hospital organization might use one e-mail system, while the medical school might use another. Though one might argue e-mail system differences are inconsequential, the opposite is true. Different e-mail systems result in meeting cancellations not flowing to the other system, the possibility of an incomplete address book, and security problems. These shortcomings result in user frustration because of inconsistent user experience and inefficient communication between parties. It is important to minimize such frustrations and inefficiencies for user adoption to be successful. Electronic medical records (EMRs) have similar problems. Due to differences in legal and financial responsibilities, the hospital and physician practice plan may have separate EMRs for the inpatient and outpatient experience respectively. This can not only create an incomplete user experience, but also cause interoperability problems. Therefore, whenever the system is changed for enhancement or to fix bugs, careful consideration must be taken to reduce unnecessary user angst.

Keywords: *Academic Hospitals, Communication, Electronic Medical Records (EMRs), Information Technology (IT), Medical School*

ORGANIZATION BACKGROUND

This case occurs at a highly ranked academic medical center, nationally known for the specialized care they provide patients. A separate, multiple-hospital organization owns and operates the hospitals where the medical school faculty teach and practice medicine. The hospital organization employs the nurses and other ancillary staff necessary for the hospitals' existences. Additionally, the hospital organization owns community hospitals and outpatient clinics where the academic physicians do not practice. The medical school owns a physician practice plan that not only supplies physicians to the academic hospitals but also runs the

outpatient clinics where patients are seen in post-discharge. Unified information technology is the dream of the clinical staff. The two organizations have separate user directories, no single sign-on for user authentication, different e-mail systems, and a different EMR for many different aspects of a patient's care. At the hospitals, there is separate disparate EMR for acute inpatient, anesthesia, surgery, and emergency. The ancillary systems for the transport team, pharmacy, and laboratory are also disparate. The hospital organization has a separate EMR for community outpatient clinics, while the medical school has a separate EMR for academic outpatient clinic care. If patients receive care in the community and academic settings they will have separate, disparate charts in these settings. All these heterogeneous systems feed a clinical repository, which contains reports from the different EMRs from a variety of vendors. Additional discrete data supplements these reports for labs and medications within the clinical data repository. Any user at either institution can log into the clinical data repository in view-only mode.

It is not uncommon for the medical school and the hospital organization of an academic medical center to have separate installations of even the same EMR vendor's application, which sometimes have interoperability problems. Such an infrastructure occurs from each organization existing as a separate legal and financial entity, and not every hospital patient becomes a physician practice outpatient. This infrastructure arose from the hospital organization's best-of-breed approach to EMRs at a time when no single vendor existed for all parts of clinical care. Though this method has its shortcomings, each system was chosen because it fit with the workflow for the users it serves. Any impediment on interoperability must always be carefully considered by the organization to assess its potential impact (Monkman & Kushniruk, 2013; Lupino, 2013).

Setting the Stage

At this academic medical center there is a separate EMR for the inpatient and the outpatient record. There are separate directory trees for user authentication; moreover, the medical school has multiple trees, depending on the department the user originates from. More importantly, there are separate methods of accessing the inpatient EMR depending on the user's department and organization. These different architectures include:

1. The user logs into a computer (Figure 1) on clinical floors within the hospital. Internally known as "fat-clients", these computers have the EMR application directly installed on them. Anytime these devices require an update, a push must be sent to all of these devices.

If any of the installs fail, the desktop support department must manually find the machine and install the update.

2. The user logs into a virtual desktop computer (Figure 2) on clinical floors within

Figure 1. Each computer has its own install of the EHR