An EPIC Switch: Observations and Opportunities After Go-Live

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Introduction

At 9 AM on November 2, 2017, life at VUMC was forever changed by the transition from a locally-developed electronic health record to a commercially-available product.

Preparation for this change, which was brought about in reaction to the discontinuing of another vendor product at VUMC, took more than 2 years and affected more than 17,000 employees of our Medical Center. The scale of our go live is depicted in Fig. 1, below.

As is the case with “big bang” go lives worldwide, the months following this event have been challenging to all involved, as we align business processes and data reporting requirements with the realities of an EHR developed to support more industry standard workflows. In a previous manuscript about our go live, we erroneously noted that we had entered our optimization phase. In fact, we had just ended

our go-live phase at that time and were entering the stabilization phase [1].

Following the advice of more than 50 CIOs we consulted from across the country, VUMC began the hard work of restructuring our homegrown processes and the initially released version of our new EHR, while simultaneously engaging in the evolution of our governance process, communication structure, and training model. This work required unexpected, intense effort from end-users, managers, and administrators throughout our campus, leading to a new cadence of change. This work also has resulted in a series of observations and opportunities that we think will be of value to other organizations undergoing this sort of transformation—whether it be the response to new paradigms for health information

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creation, information retrieval, changing roles in a healthcare environment, or the types of changes likely to be catalyzed by advances in data science and cyberphysical systems.

Key observations and opportunities

Customer problem tickets provide themes, but not a roadmap for stabilization

Despite years of preparation for a major system change, it is commonplace for thousands of small issues to arise after the system is in production. Typically, these issues are related to hardware issues (printers, bar code scanners) or security settings. Our go live was no exception. Within 1 day of going live we had over 5000 customer problem tickets (tickets), and averaged 75 tickets/100 users per day for the first 7 weekdays. Although the themes of our tickets were as expected, there was little correlation, in some cases, between the number of tickets about a particular issue and the actual number of people affected by that issue. We found that tickets shined a light on locations experiencing challenges, as well as on system behaviors. In some cases, the tickets were self-explanatory (e.g., “we are experiencing slowness getting labels to print for patient labs”) while in other cases, the tickets provided minimal useful information (e.g., “I cannot find the order set I saw during training.”) In some cases, the root cause of the problem was difficult to determine, as Epic parlance was unfamiliar to VUMC analysts, the customer support desk, and our users.

After approximately 3 months post go live, despite significant efforts to close all problem tickets, we found ourselves with approximately 4000 tickets unresolved. We observed expressions of distress with some comments suggesting learned helplessness and, despite considerable commitment of personnel and resources, some perception that leadership was not adequately reacting to provider challenges. In response to these challenges, and based on advice from other institutions, we developed a team to round on inpatient and ambulatory sites, to verify and solve problems related to these themes. While the team support approach (which is quite similar to strategies used at other medical centers) is still in its infancy, we are optimistic that it will both disclose specific problems and lead to generalized solutions that extend beyond individual sites of care.

Ignore traditional silos and ensure collaboration

In many cases, analyzing the root cause of many of the tickets revealed that more complex issues were creating the problems for users. To tackle these larger issues, we create “SWAT (Special Weapons And Tactics)” teams, comprised of representatives from IT, business operations and clinical care. This

triad of representation allowed for faster root cause analysis, expedited problem-solving, and more creative applications of solutions.

As the go-live period wound down, we realized that many of the issues for which we had allocated SWAT team resources were going to require additional effort to solve. We formed an oversight group that bridged the immediacy of the go-live Command Center approach with the governance structure necessary for long-term maintenance and optimization.

The SWAT teams evolved into a more traditional workgroups, each tasked with addressing one of the remaining top priorities from go live. To further expand on collaboration, the workgroups solicited input and participation from groups that had been traditionally “silo-ed” at Vanderbilt (e.g., patient access; adult, pediatric and behavioral health hospitals and clinics; revenue cycle; nursing; providers; etc.). This approach was essential to fostering buy-in and creating proposed solutions.

These workgroups reported regularly to the oversight group, and applied project management principles to reaching milestones. Over the course of several weeks, these workgroups identified new problems such as inconsistencies with clinic check-in and challenges with the hospital discharge process. While some of these were remediated, others were more complex and required revisions of workflows, modifications of our EHR, and in some cases, making targeted changes to our clinical practice structure to support the new process.

Just-in-time support strategies are essential

Within days of go live, we were able to determine which customers were challenged by problems with the EHR, and which were in need of additional training. Although we had anticipated needing refresher training after go-live, we needed to develop models to support both ambulatory practices (where training had to be brought to sites of care) and more conventional in-classroom training.

Training after go live used a number of strategies:

- We created “TIP” sheets outlining solutions to problems, or notifying users about changes since their training
- We used software loaded on our clinical workstations to watch and walk customers through problems they were experiencing
- We used our emergency notification system to summarize institution-wide work arounds and changes
- We used a mobile app developed at VUMC, called Hubbl (<https://news.vanderbilt.edu/2017/02/23/new-hubbl-app-eases-enterprise-task-management/>), to target problem solutions and change notification to appropriate groups of users.

Hubbl was an app (and web site) we developed to support the go live process, which was made available to everyone beginning 10 months before we completed go live. By encouraging early installation of this app, we were able to leverage its notification services to provide alerts, support the submission of customer problem tickets, and communicate to our clinical or administrative staff in a “just-in-time” fashion.

Operational readiness should begin when the first business decision is made

As Leo Tolstoy famously wrote, “Everyone thinks of changing the world, but no one thinks of changing himself.” As a part of designing the new EHR, we encountered various requests to hardwire small changes in our workflow that made it difficult to ignore approved standards and policies. Although these changes were universally endorsed by leadership, and despite affirmation that we were prepared to manage these changes beginning more than 11 months before go live, organizational change management, more than technical change management, became the main focus of our leadership throughout stabilization.

We found that one of the best ways to address the organizational impact of small changes was through table-top run throughs of workflows where we had our highest level of concern for challenges at go live (e.g., blood administration, lab, emergency care.) We also encouraged EHR personalization to customize information flow at the individual level and “road-testing” the system in a non-production version of the system. We observed a clear distinction in productivity and

satisfaction between groups who were able to complete this set of exercises before go live and groups who were not.

Conclusions

Constant attention to problem themes identified by customers, ongoing collaboration among teams, rapid response to training and support needs, and executive-led organizational change management have been the focus of VUMC at this phase of our EHR go live transition. We continue to struggle in some clinical settings but are receiving feedback through our site visits that we are using to identify the cause of these struggles.

The stabilization of an EHR requires enormous focus and discipline. Core principles of stabilization appear to be abstraction of individual problems into organizational thematic issues, use of collaborative/interdisciplinary teams to solve problems, creative and timely support strategies, and early and universal attention to change management.

References

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