White Paper

Medication Management: The Road to Enterprise Transformation

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IN THIS WHITE PAPER

This white paper describes the requirement to move medication management from silos and department-level deployment to an enterprise deployment. It also explores the drivers of enterprise deployment, the challenges of transformation from the department level to the enterprise level, and the benefits that accrue through enterprise deployment. This white paper leaves readers with parting thoughts that provide advice on how to make the transition from hardware-based systems to enterprisewide systems.

SITUATION OVERVIEW

Drivers of Transformation from the Department Level to Enterprise Medication Management Technology

Hospital consolidation and digital transformation require application rationalization and an enterprise-level approach. Marketplace consolidation will continue, as will the ever-changing requirements of new reimbursement and care models for healthcare organizations. Department-level applications cannot keep up with these demands. Enterprise-level systems improve operational efficiency because of the centralized control of data and the standardization of policy and procedure, processes, and hardware and software management. Department-level applications breed inconsistency and typically require more resources to manage the technology. Centralization of data to manage processes and evaluate quality and cost is essential. Centralized data provides the opportunity to develop best practices and identify areas of improvement across all entities in an enterprise.

In the case of medication management, the primary concerns are patient safety and tamperproof dispensing. Medication errors in hospitals can impede good outcomes or, worse, can cause death. The Centers for Medicare and Medicaid Services (CMS) commissioned the Institute of Medicine (IOM) to identify and prevent medication errors. The Committee on Identifying and Preventing Medication Errors conducted a significant literature review on medication errors and produced a report. Five of the studies reviewed in the literature indicate that the rate of administration errors per 100 doses ranged
from 2.4% to 11.1% in the inpatient hospital setting. In addition, medication errors were addressed as a significant issue in the 1999 IOM study To Err Is Human: Building a Safer Health System.

Hospitals continue to strive to interoperate among their heterogeneous technology portfolios; with enterprise systems, these same hospitals would be able to leverage their existing IT assets. Of particular benefit is the ability to keep data from a medication management system synchronized with the electronic health record (EHR), further reducing medication errors.

With medications representing the third-largest expense for hospitals, it is critical to tightly standardize and manage the formulary to ensure the highest quality of medications at the best cost. The shift toward an enterprise medication management system is also driven by the need for supply chain management that both manages drug availability and balances inventory with demand. Furthermore, automation of the enterprise medication management system reduces waste. Medication management systems that tie the software with the medication-dispensing station correctly dispense medication for the right patient and further reduce the unnecessary expense of incorrectly selected medications that must be discarded.

Increased external scrutiny from regulatory and accrediting bodies and purchasers drives the need to demonstrate high quality, especially when it comes to patient safety. With hospitals directly contracting with employers, the need to standardize medication practices with benchmarking to mitigate risk for potential medication errors becomes more critical. This can be accomplished only by an enterprise system.

**Challenges of Transformation from the Department Level to Enterprise Medication Management Technology**

Among the greatest challenges of transformation is the resistance to change. Moving to an enterprise deployment of medication management will be recognized by a department as a loss of autonomy, and it is. While the installation of the enterprise system will take work and users will have to be trained on the new application, a period of change management will occur. It is critical to evaluate existing process steps to ensure their efficiency and ability to fit into the existing workflow of floor nurses and pharmacy technicians. New workflows may be required as the pharmacy responsible for supplying the appropriate medication to the floors will likely have to make changes in its processes.

Whenever new software and hardware are introduced, it is critical to balance the learning curve while remaining productive. One of the greatest complaints of physicians when they began using EHRs was that they lost productivity. Senior management must recognize this as inevitable and should rely on the vendor of the enterprise medication management solution to mitigate loss in productivity by introducing best practices.

Budget constraints created by multiple hospital IT priorities and dwindling margins cannot be ignored. Many hospitals are still recovering from the costs associated with EHR deployment, the adoption of ICD-10, changes to revenue cycle management, transformation to value-based healthcare, and transformation to the 3rd Platform (cloud, mobile, social, and big data and analytics). In addition to dealing with budget challenges for the technology itself, hospitals need to consider balancing local and central staff resources so as to not add significant head count.

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1 Philip Aspden, Julie Wolcott, J. Lyle Bootman, and Linda R. Cronenwett (Editors), Preventing Medication Errors: Quality Chasm Series, Institute of Medicine, Committee on Identifying and Preventing Medication Errors, 2007, pg. 109
2 To Err Is Human: Building a Safer Health System, Institute of Medicine, 1999
Benefits of Transforming from the Department Level to Enterprise Medication Management Technology

The ability to centralize domain expertise, manage a single instance of software, provide centralized implementation support, and troubleshoot and resolve hardware issues more efficiently (as all users have the same hardware) improves operational efficiency. If hospitals are to survive changes in reimbursement models, addressing operational efficiency is critical. Hospitals have reported that moving to an enterprise medication management system has reduced time to complete tasks in several areas (source: BD CareFusion):

- Device maintenance: More than 75%
- Formulary management: 50-74%
- Username and password management: More than 75%
- Discrepancy checking: 25-49%
- Out-date checking: 11-24%

One example of improving operational efficiency is the ability of clinicians to practice at the top of their license. For example, instead of managing technology within the pharmacy, pharmacists can round with care teams to support discharge medication management, potentially helping reduce readmissions and improve outcomes.

Strategy for medication management such as formulary standardization can be managed at the enterprise level, while individual departments can establish process and workflow based on their local environment. The enterprise can document and distribute best practices for medication management, and it can convene peer conferences to share learnings from the field. It is also possible to centralize role-based access and, when tied to an Active Directory, identify misalignment of roles and remove or change the status of a staff member based on departure or changes in roles. It requires the enterprise to determine which roles have access to which medications and what functionality.

Documenting medication-dispensing key indicators (e.g., medications where and when needed) drives safety to reduce medication errors, identifies opportunities for improvement, and satisfies internal and external stakeholders. Enterprise medication management technology can improve patient and employee safety by including features such as medication labeling with the name and dosage, the use of dispensing cabinets with drawers that open automatically based on patient identification and orders, and duplicate name alerts. These features allow for enhanced security of controlled substances, less risk of diversion, and better transparency and visibility into the environment.

Enterprise medication management technology provides the ability to leverage existing IT assets to create a closed loop from ordering (supply chain) to dispensing and documentation: Order entry talks to the medication management system that bidirectionally talks to the EHR.
PARTING THOUGHTS

Healthcare organizations that determine that enterprise medication management is part of their transformation must make a commitment, at the highest level of the organization, to evangelize the benefits of enterprise deployment and accept and help resolve challenges as they occur. Expect resistance from department staff; be prepared to address the concerns of department staff constructively, and make every effort to "win them over." Provide well-trained staff to assist with local implementations along with vendor resources. With every step of the transformation, articulate the value being received at the department level to help the clinical team eliminate medication errors, reduce readmissions, and save and improve patients' lives.

Early on, be sure to negotiate what medication functions, permissions, and decisions will be conducted at the enterprise level and what responsibilities remain at the facility or department level. Be inclusive in the planning process, and be respectful of local input. Facilitate collaboration across facilities and departments as another example of value.

Work only with vendors that demonstrate a solution-oriented partnership approach. In the ever-changing and demanding healthcare environment, flexibility is critical to success. Use vendor-supplied resources where appropriate, and acknowledge and take advantage of their operational and clinical expertise and experience.
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