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The impact of bad data: Integrating clinical outcomes in performance measurement

Clinical impacts of bad data

For patients

- Delays in timely care
- Negative bedside experience
- Extended, cancelled or rescheduled surgeries
- Extended hospital stays
- Readmissions
- Death

For clinicians

- Extended time away from patient
- Wasted time and effort
- Increased stress and frustration
- Poor nurse morale
- Lower quality of care
- Disgruntled surgeons

For the health system

- Wasteful purchases
- Increased costs
- Litigation, lawsuits
- Negative public perception
- Lost revenue

When supply chain leaders integrate clinicians into decision-making, and supply data into their clinical and financial information systems, the door opens to a higher level of performance measurement and efficiency. Care providers can make more richly informed decisions when systems let them monitor the true impact of product selection and use on the quality and cost of care. But before shared supply data can be valuable throughout the system, it must be accurate.

Bad product data—incomplete, inconsistent, inaccurate, invalid, out of date—permeates all of health care. Even with increased access to artificial intelligence and machine learning, errors are inevitable when humans are involved. And the negative impact is far reaching.

At the micro level, poor data integrity leads to hundreds of small inconveniences. However, the broader ramifications that critically impact care delivery are much greater—for the health of patients, the effectiveness of clinicians, and the success of the organization as a whole.

By leveraging the expertise and experience of clinical professionals, here are a few examples of how flawed supply data compromises clinical quality.

When data falls short

Scenario 1: A surgeon requests an implant for an upcoming procedure. The administration approves procurement, and a supply chain staff member orders two for expedited delivery (cardinal rule: never order only one in case it gets dropped). The surgeon and O.R. team were notified that the implant will arrive in time for the surgery.

The day prior to the procedure, the implant arrives and is checked into the system. When the supply chain staff deliver it to the O.R. it's determined the implant is the wrong size. The product number was 1234 5, but the item master listed as 1234-5—two completely different products.

The return and reorder would take days. Due to a product-number data-entry error the surgery is delayed, the surgeon is frustrated, and the patient is angry and disappointed.

Scenario 2: When a supplier recalled its skin-surface cleaning products—heavily used and preferred by the hospital's nursing staff—there was no cross reference to comparable products in the member's materials management information system (MMIS). That meant the supply chain staff had to spend hours sourcing alternatives.

The substitute they found produced excessive suds and had to be manually moistened with an additive—a solution that was unsatisfactory, time consuming and inefficient. The situation was far from ideal—and could have been avoided if the MMIS contained accurate substitution data and/or a secondary distributor agreement in the case of a product recall or removal from market.

Scenario 3: Immediately following cardiac bypass surgery, the cardiac surgeon and ICU nurse needed to place an intra-aortic balloon pump (IABP) catheter in a patient. The inventory system showed that the correct IABP catheter size was in stock.

Staff spent critical minutes searching for the catheter—which the MMIS showed was in stock—only to discover that the inventory data was wrong, and the correct size was unavailable. The incorrect, false-positive inventory data made the post-operative procedure impossible, resulting in no catheter placement and a fatal outcome (sentinel event).

A drag on clinician satisfaction and performance

In addition to its direct negative impact on patient care, inaccurate product information compromises clinical results in an insidiously indirect way: by undermining nurse and physician job satisfaction.

Since its introduction in 2008, the Institute for Healthcare Improvement's Triple Aim—enhancing patient experience, improving population health and reducing costs—has been a pole star for health systems striving to optimize performance.[1] In recent years, numerous bodies have added a fourth aim: improving the work life and satisfaction of providers themselves.[2]

Physicians, nurses and other members of the health care teams reported widespread burnout and dissatisfaction with their jobs. This negativity does more than reduce providers' quality of life—it impedes their ability to deliver excellent, efficient care. The result: lower patient satisfaction, reduced health outcomes and higher costs.

Bad product data makes care providers' jobs frustrating and inefficient—especially for nurses. Every minute spent searching for supplies and equipment is a minute away from the patient's bedside.

A hospital supply chain survey reports, clinicians said they spent more than twice the time they'd like on supply chain related tasks—increasing their stress and reducing time for direct patient care. Some other findings from the survey, which included clinicians and supply chain decision-makers, are:

- **Missing supplies**. 74% of front-line providers said looking for supplies that should be at hand, but aren't, has the most negative impact on their workplace productivity. 84% of department managers agreed.
- **Procedures impaired**. 66% of respondents recalled a time when a physician didn't have the necessary supplies during a procedure.
- **Manual tasks**. Nearly half (46%) of front-line providers said manually counting and tracking supplies has a "very" or "somewhat" negative impact on their workplace productivity.
- **Utilization**. 70% of respondents said waste and overutilization of supplies is a significant or somewhat significant problem within the organization.[3]

While there are many drivers of clinician job dissatisfaction, supply-related frustrations rank among the strongest. And unhappy nurses and physicians undercut a health system's ability to deliver high-quality care that pleases patients.

Using data from the American Nurses Association's National Database of Nursing Quality Indicators, researchers discovered that a 25% increase in nurse job enjoyment over a two-year span was linked with an overall increase in quality of care between 5% and 20%.[4] Another study showed that patients are about 2% less likely to recommend a hospital to friends and family for every 10% of nurses reporting dissatisfaction with their jobs.[5]

The way forward: integrated data from and for clinicians

Clinical-supply integration (CSI) is an ongoing, interdisciplinary strategy that reduces unnecessary variation, lowers costs and optimizes utilization to improve care delivery and financial performance. Real progress in CSI is built on data—data from clinicians that supports product and process standardization and data for clinicians that enhances their care and makes their jobs easier.

Like any other strategic asset, the data optimization investment must be made to save lives, minimize cost and drive efficiency.

In the past, MMISs operated independently—disconnected from broader, deeper data and unable to produce integrated, analytical insights. Today's challenges demand an interconnected data ecosystem that supports better decisions and shared accountability. See Figure 1.

Materials management, clinical and financial information systems must all share the same source of truth for product data. Every detail must be uniform and accurate before product records flow into the electronic medical record, bedside delivery systems, charge master and financial systems. If the data is wrong, errors once confined to the MMIS can propagate across the entire organization.

The underlying source must be a comprehensive, optimized item master from a trusted partner that's actively updated, purged and deduplicated (Figure 2).

Figure 1. Enterprise data ecosystem—past and present

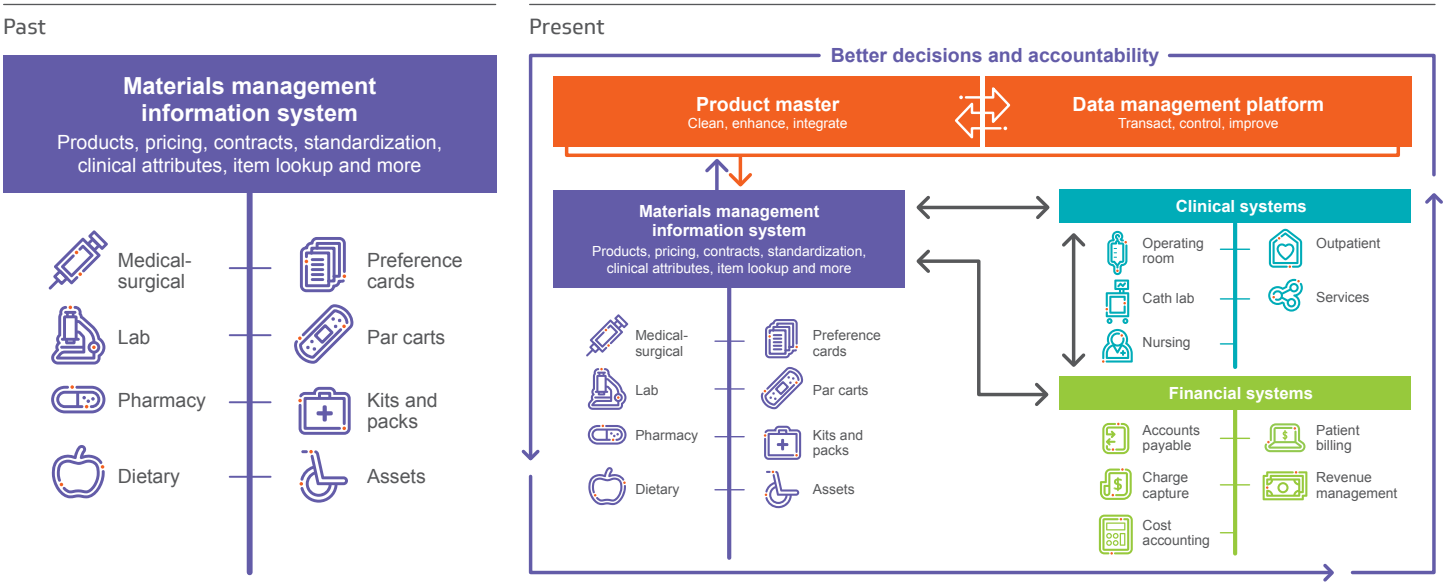
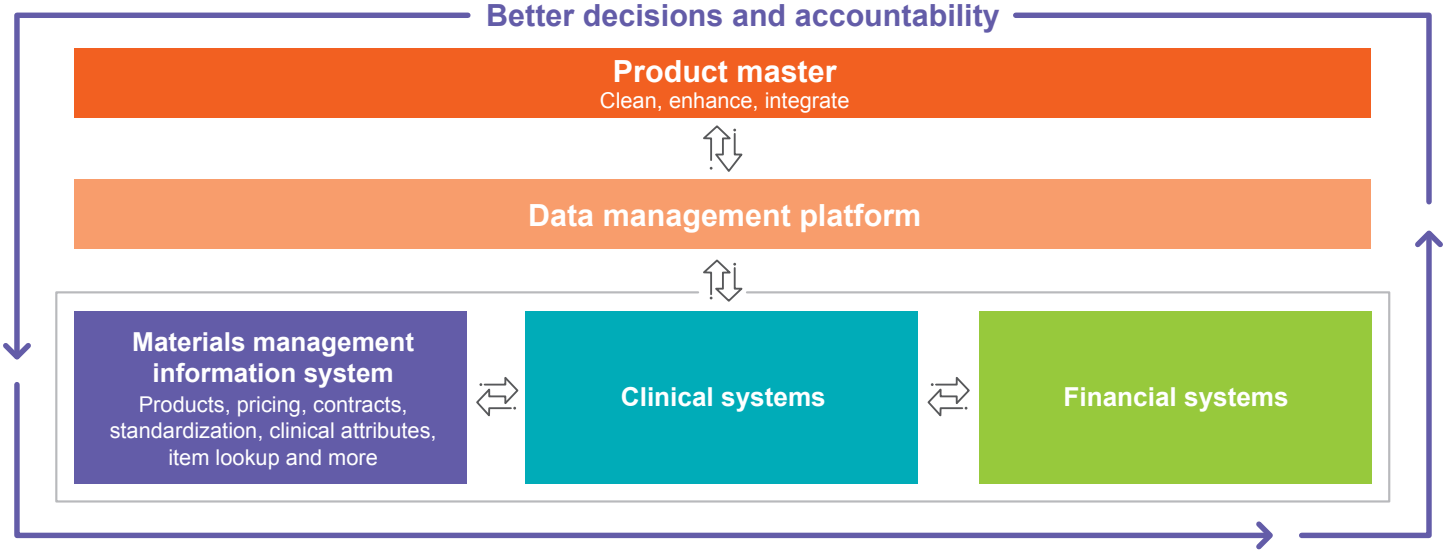


Figure 2. Optimized product master



Organizations often attempt to cobble together product information on their own—from internet searches, industry databases and other sources. But data from multiple sources is often contradictory or duplicated. The key is a partner who resolves source and accuracy issues and delivers clean, problem-free data.

Since sharing accurate product data across supply, finance and clinical systems is critical to achieving next-level performance, finding a trusted source of truth is the fundamental first step. Given the breadth and depth of current data, it is vital for health systems to maintain the level of accuracy required for real-time analysis and course correction. For sustainable improvements in clinical and patient outcomes, a reputable partner with enterprise data expertise—one that delivers sterling data optimization and understands the demands of clinical supply integration—will be a game-changer for health care organizations. Like any other strategic asset, the investment must be made to save lives, minimize cost and drive efficiency.

Sources

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