DATA MANAGEMENT

Data Integrity: The Cornerstone Of Any Quality HTM Program

Alan Gresch

In 2001, the Institute of Medicine's Committee on Quality of Health Care in America endorsed "evidence-based, patient-centered, healthcare delivery" as essential to the quality of healthcare.[1] Billions of dollars have been invested over the past decade in data collection, warehousing, and sharing of data in healthcare as the main path to reducing costs and improving outcomes. The same concepts apply to optimizing healthcare technology management (HTM). Data-driven decisions will bring the same benefits and aid HTM leaders in identifying best practices and achieving optimum performance.

In this article, I will focus on data integrity, which is what I consider the absolute cornerstone of any quality HTM program—or any business, for that matter.

I have been in three different roles in the past five years, and clean data has been a critical issue in all three:

- As corporate director of clinical engineering (CE) for a large integrated delivery network (IDN), having solid data was paramount to the success of our department and provided a vehicle for us to bring a greater level of value to our organization in increased productivity, optimum equipment uptime, capital planning, and asset utilization.
- While I was associate vice president of a capital equipment services department for another IDN, data cleanup in CE was one of the first issues tackled and provided the foundation for a comprehensive capital planning program. Additionally, we created a savings tracking system and associated policy working in collaboration with the system's controller/AVP of finance to effectively track and report capital savings and cost avoidances back to executive leadership.
- In my current role as vice president of capital technology management at Alpha Source, Inc., having clean data is what allows my company's customers to quickly and effectively locate and cross reference parts. It is also the vehicle for us to interface with electronic data integration (EDI) solutions and effectively manage our inventory.

We've come a long way from the days where the biggest concern in managing our data was doing enough to pass a Joint Commission survey. Healthcare organizations today need much, much more from their HTM departments, and it will be impossible to deliver solutions to meet those needs without meaningful, accurate data.

This commitment to data integrity began in my early days of HTM leadership. Clinical department managers were asking for

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About the Author

Alan Gresch is vice president of capital technology management at Alpha Source, Inc. E-mail: al.gresch@alphasource.com

inventory reports at budget time in order to plan their capital requests for the year. Imagine the myriad of issues I ran into when trying to generate meaningful reports when there were three or more different entries for the same manufacturer, six different versions of the same device model, etc. If you didn't have standards established for data entry and device nomenclature, good luck! Now, imagine being in a situation where you are bringing together more than a dozen different CE departments into one centralized database. It was at that time that we made an uncompromising commitment to data integrity. We had several goals that could not be completed without a high degree of data integrity: 1) completing a five-year plan that included such initiatives as a web-based asset management system for finance and administration that delivered cost of ownership, depreciation, and service history data, 2) developing a capital planning tool and end-of-life equipment disposition program, and 3) creating the ability to monitor, benchmark, and report cost effectiveness to executive leadership. Here is a plan for getting your data clean and keeping it clean.

Helpful Resources

The Data Integrity Policy, Data Integrity Acknowledgement Form, and Data Integrity Annual Competency powerpoint presentation can be accessed on the AAMI website, **www.aami.org.**

1. Create a Data Integrity Policy

Creating a data integrity policy was the first step. We knew there was no point in cleaning up our data if there wasn't some mechanism in place to keep it clean. This was a very laborious but necessary process. At a very basic level, we developed standards for how data was to be entered into the database, including rules around capital letters, spaces, etc. We also adopted Universal Medical Device Nomenclature System (UMDNS) as our standard nomenclature platform. The final version of our policy covered every single aspect of data that went into our database, the rules around that particular piece of data, and the responsibilities of every person who would have occasion to create, edit, or review those pieces of data. The policy covered management of accounts, work centers, codes, control records, device categories, facilities, models, parts, procedures, and schedules. It addressed system security, sources, templates, workers, and all aspects of work order creation, editing, closing, reopening, and voiding. This process also involved setting up appropriate security levels and rights that spanned from "view-only" access so people couldn't access and make changes to anything, to "system administrator" access, where a select few individuals had full rights to make changes. One additional component outlined expectations on documenting all work and parts usage and costs with acceptable parameters for completing that documentation. As the program progressed and work request status was made available to customers, we eventually made the requirements for real-time documentation mandatory.

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2. Train Staff

The second step was to train staff on the policy. We did several rounds of initial training and incorporated this policy as a key component of our onboarding policy. As changes were made, updates were published on our internal website, and notices were e-mailed to staff. Once a year we presented a refresher at quarterly staff meetings.

3. Create Accountability

The third step was to clarify with our team how serious we were about compliance to the policy. The first part of this step was to have every tech sign off on an acknowledgment statement that verified they had read and understood the expectations of the policy, as well as the consequences for non-compliance. I recall telling more than one individual that I considered compliance a condition of employment. I could not allow anyone's careless or lackadaisical documentation habits to put the department or any of our staff's employment at risk. The second part was to incorporate a data integrity component to every staff member's annual performance review.

4. Audit Your Data on an Ongoing Basis

The last step was to develop an auditing process to confirm compliance and ensure

ongoing data integrity. This was a supervisor responsibility, and scheduled audit completions were a part of their performance metrics.

I know this seems like an incredible amount of work, but here were just some of the benefits it brought:

- 100% confidence in the information contained in any report we generated. Imagine the damage to your credibility when errors are discovered
- The ability to justify and defend with data everything we did, including staff additions and equipment decisions
- Learning the true costs of service, because we knew all the service and parts information was being captured
- A mechanism to track parts quality and rate part vendors through DOA, on-time delivery and repeat failure statistics
- The ability to create accurate and meaningful internal benchmarks of equipment failure rates and tech-to-tech comparisons
- The ability to develop PM intervals that incorporated comprehensive failure rate statistics in addition to risk factors. This resulted in reduced required PM hours on a 62,000 device inventory by almost 6,000 hours annually (that's 3 FTEs!) without compromising safety or quality
- Establishing a foundation to utilize true business intelligence to improve and optimize processes

The ability to complete the aforementioned initiatives in our five-year business plan and establish a strong foundation for identifying opportunities for ongoing process improvement brought immense value to our organization.

Worth the investment? I think the results speak for themselves. ■

Reference

1. **Institute of Medicine (US) Committee on Quality of Health Care in America.** Crossing the Quality Chasm: A New Health System For The 21st Century. Washington, DC: National Academy Press; 2001.