

Streamlining the Health Care Quality Measure Reporting Process

Case Studies from Three Hospitals

An Institute for Health Metrics Whitepaper

Executive Summary

Quality improvement is one of the top five most pressing issues for hospital executives today, and with good reason. The Joint Commission on Accreditation of Healthcare Organizations (Joint Commission) mandates that hospitals must report on at least four sets of health care quality measures. If hospitals cannot report on four sets of so-called “core measures”, they will be required to report on as many sets as possible, plus additional numbers of non-core measures quality indicators.

Core and non-core measures tracking is just the first step in improving quality of care. The information gathered from these activities should enable a hospital to create policy changes and implement them to improve patient outcome. Often, however, the immense effort required to extract the appropriate data for quality measures reporting exhausts hospital resources, stymieing the improvement process.

In this white paper, we will look at what options a hospital has to streamline the process of core and non-core measures data extraction and reporting. What should a hospital look for in a software solution? We will also hear from three hospitals that have successfully used the Automated Indicator Extraction System (AIES) from the Institute for Health Metrics (IHM) to cut the time and money involved in core and non-core measures data extraction and reporting. After as little as one calendar quarter of membership with IHM, these hospitals have seen real world benefits, because AIES requires no training of hospital staff, no software installation at the hospital, and no manual data entry. Working with IHM frees hospital employees to focus their time and energy on implementing quality improvement procedures instead of on the tedious task of gathering quality measures data.

Quality: A Major Concern for Hospitals

In 2001, the Institute of Medicine (IOM) published a pivotal report, *Crossing the Quality Chasm*, which revealed the poor performance of the American health care system.¹ The proposed solution was to consistently follow practices that scientific evidence has shown to result in the best patient outcomes. In 2002, the Joint Commission on Accreditation of Healthcare Organizations (now renamed “the Joint Commission”) began requiring accredited hospitals to track standard, evidence-based health care measures: the so-called “core measures”. Hospitals are required to report on four of the following core measures

¹ Committee on Quality of Health Care in America, Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. The National Academies Press, 2001.

sets: acute myocardial infarction (AMI), heart failure (HF), pneumonia (PN), Surgical Care Improvement Project (SCIP), or pregnancy and related conditions (PR).²

Despite the increased emphasis on tracking performance, however, the quality of healthcare at hospitals in America remains variable, and in some cases, even inadequate. According to the Joint Commission's report "Improving America's Hospitals: A Report on Quality and Safety"³, hospitals are currently achieving 90 percent performance or higher on only about half of the core measures tracked since 2002. In addition, the report found that there is considerable variability in the performance of hospitals by state on most core measures. That is why quality improvement is a major focus for the government, for patients, for health care providers, and for hospital executives. In fact, research from the American College of Healthcare Executives found that "quality" was the number five most pressing issue for hospital CEOs in 2006.⁴

The Roadmap to Improving Quality

Improving quality by tracking compliance with core and non-core evidence-based health care measures is a good idea in theory. The plan is that hospitals will track core measures performance over time and then use the data to take concrete actions meant to improve scores. Here is the typical roadmap for improving quality:

- **Track and report core measures data**
- **Analyze core measures data:** Where are we excelling, and where can we improve?
- **Produce a series of action points:** How can we change our procedures to improve individual core measure scores that are lagging? How can we educate our staff? How can we ensure compliance with procedures meant to improve performance?
- **Implement the action points in the hospital**
- **Follow-up:** Use most recent core measures data as a report card for progress

Thus, *tracking and reporting core measures and non-core measures data is only the first step to improving quality.*

Getting Stuck at Step One: Core Measures Tracking Exhausts Resources

² The Joint Commission. "Facts about ORYX® for Hospitals, Core Measures and Hospital Core Measures". Available at http://www.jointcommission.org/AccreditationPrograms/Hospitals/ORYX/oryx_facts.htm.

³ The Joint Commission. "Improving America's Hospitals: A Report on Quality and Safety." Available at www.jointcommissionreport.org.

⁴ The American College of Healthcare Executives. "Top Issues Confronting Hospitals: 2006". Available at <http://www.ache.org/pubs/research/ceoissues.cfm>.

While core measures tracking and reporting is only the first step on the road to better quality, the reality is that this step can exhaust hospital resources and stall further progress. In 2001, a study by the Joint Commission found that the average time spent per month on core measures activities was about 40 hours for hospitals reporting on two core measures sets.⁵ Year by year, the regulatory burden continues to grow heavier. By January 1, 2008, hospitals will be required to report on four core measures sets to meet the Joint Commission's standard. Currently, the average hospital engages one clinical full time employee per 100 beds to extract core measures data, and that need will continue to grow.

Why does core measures data tracking and reporting require so much effort? The main reason is that extracting the appropriate data from hospital records is a tedious process. Eligible patient lists for each core measure must be created. Data for each patient must be abstracted and entered into the software system for the hospital's chosen ORYX vendor in order to be submitted to the Joint Commission. Most hospitals gather all of this required data in house by manually pulling charts or by manually abstracting data from the hospital's health care information system (HCIS). About 40% of hospitals today use the Meditech HCIS, a system developed 30 years ago that was designed to track patients from admission to discharge to billing. While the Meditech system is a stable, affordable and reliable platform, it was never designed with the ability to query its databases in the manner required for easy core measure and non-core measure data abstraction.

Because simply tracking core measures data takes so much time and money, it is easy to see why there may be few resources left for data synthesis, the creation of action points, or the implementation of new procedures. It is easy to see how the quality improvement process becomes stuck at step one.

Evaluating a Product for Core Measures Data Extraction

Increasingly, hospitals are seeking a data extraction and analysis solution through independent software vendors. There are a number of software products on the market that are designed to assist with the creation of eligible patient lists and core measures reports and with data abstraction. When evaluating a product, here are some key questions to consider:

1. What software is required?
2. Does the software need to be run on-site by the quality department?
3. How much time is needed to create lists of eligible patients for core measures?
4. How many and what kind of reports are generated by the software?
5. Do reports need to be generated by manual queries, or are they automatically created by the software?

⁵ The Joint Commission. A Comprehensive Review of Development and Testing for National Implementation of Hospital Core Measures. 2001. Available at <http://www.jointcommission.org/PerformanceMeasurement/PerformanceMeasurement/default.htm>.

6. How many core and non-core measures of quality are reported?
7. Is the software user-friendly? Does it have an intuitive interface?
8. What kind of training is required, if any?
9. Are vendor staff helpful and responsive to inquiries and suggestions?
10. What is the anticipated ROI of the product?

Three Hospitals Find a Better Way

- Mercy Hospital (Portland, Maine; 230 beds)
- Fauquier Hospital (Warrenton, Virginia; 86 beds)
- Mount Sinai Hospital (Chicago, Illinois; 432 beds)

This section will outline how three hospitals successfully streamlined the entire data abstraction and reporting process by choosing the right match in data analysis solutions. These hospitals have all partnered with the Institute for Health Metrics (IHM). IHM is a non-profit organization that provides data extraction, analysis and reporting to member hospitals. With its Automated Indicator Extraction System (AIES) IHM can *extract data electronically directly from Meditech*. There is *no software installation required* and *no manual data input*. AIES extracts data from Meditech, pulls it into IHM's system and then reports back to hospitals using a **web-based interface**. Currently, AIES can produce reports on **Joint Commission/CMS core measure data** as well as **169 additional quality indicators** as recommended by Institute for Healthcare Improvement, Agency for Healthcare Research and Quality, National Quality Forum and others.

Mercy Hospital

Mercy Hospital is a 230-bed, Joint Commission-accredited hospital serving the Portland, Maine area. In 2006, Mercy Hospital reported on the AMI, HF and PN core measures sets, and in 2007 they have added SCIP.

The Challenges

Like many hospitals, Mercy Hospital's Quality and Patient Safety (QPS) Department had been abstracting core measures data by hand. Eligible core measures patients were identified by manually scouring paper charts or manually reviewing data in the hospital's Meditech system. Once patients were identified, all of the core measures questions required to submit data to the Joint Commission were then answered by hand by the QPS data abstractor. The process was tedious, frustrating, time-consuming, and costly. There were few resources available to work on any quality improvement projects outside of tracking and reporting core measures data.

The Solution

Mercy Hospital partnered with IHM in late 2006. After using AIES for a little over one quarter's worth of core measures data, the QPS Department noted a dramatic difference. The AIES system was able to automatically pull data out of Mercy Hospital's Meditech

system and quickly produce lists of eligible patients for core measures reporting. With a few clicks, the needed information for data abstraction was displayed in the AIES web-based interface. “I think it’s cut our time at least in half, if not more,” says Rhonda Lanzara-D’Alfonso of Mercy Hospital’s QPS Department. “It’s allowed us to focus on other things and to move forward on other quality improvement activities that we want to do.”

The hospital has plans to implement fully electronic record keeping within the next few years. According to Lanzara-D’Alfonso, that will only further decrease the time required for core measures reporting. “When our records are fully electronic, data for all of the core measures sets will show up in AIES, which will just make life even easier.” In addition, the department is excited about looking at the additional non-core quality measures reported in AIES.

“I think the staff at IHM are absolutely wonderful, just phenomenal. They are incredibly responsive to our needs. I can’t say enough about them!” says Lanzara-D’Alfonso.

Fauquier Hospital

Fauquier Hospital is a not-for-profit, 86-bed, acute care community hospital that is fully accredited by the Joint Commission. Located about forty miles southwest of Washington, DC, Fauquier hospital serves a primarily rural/suburban area.

The Challenges

Determining that manual data extraction was too time-consuming, the Quality and Risk Management (QI/RM) Department at Fauquier Hospital had previously contracted with a vendor of data-analysis tools in an effort to streamline the process. With this particular software product, all patient files had to be closed by medical records before patient selection could begin; therefore, the process was not begun until usually about 45 days past the end of the month for which data was being collected.

To begin the process, the department was required to manually run a software program on-site; this program was designed to pull patient data from the Meditech system in order to determine which patients were eligible for core measures reporting. The resulting file was manually checked over, converted to a format appropriate for uploading, and then uploaded to the vendor’s website. The vendor next checked the file to identify missing or incorrect demographics and returned the file to the QI/RM Department, a process that took about a week. Corrections were then entered into the data file by hand. Often more than one set of corrections was required, increasing the time spent to two or three weeks. When the vendor determined that the demographics were complete and correct, it downloaded the list of eligible core measures patients to Fauquier’s core measures software tool. From there, the QI/RM Department’s data abstractor could abstract the appropriate core measures data.

What was the problem with this system? “It took at least six or seven weeks past the end of the month, if not more, before our data abstractor could even begin the abstraction process,” says Cynthia Hobbs-Witmer, RN, Coordinator of Fauquier’s QI/RM Department. “We also had to run the vendor’s software program manually and make corrections manually.”

The Solution

Fauquier became a member of IHM in January 2007. After just the initial quarter of using the AIES system, the time required to move through each core measures cycle was shortened by a full two weeks. The key is in the way AIES extracts data from Meditech. Instead of manually running a program on-site to extract data from Meditech, converting the file to the proper format and uploading it to a vendor’s website, the QI/RM Department can concentrate on other tasks. The AIES tool automatically extracts each month’s data from Fauquier’s Meditech system 28 days past the end of that month. AIES quickly generates reports and displays them via the user-friendly, web-based interface, making it easy for the data abstractor to abstract data.

“The AIES system has helped us speed up the entire process,” says Hobbs-Witmer. “Because our abstractor is able to get the data more quickly, sometimes one month is finished before another month is even ready to be abstracted. She gets her data on time, and now she is able to assist our coding department, which is helping with efficiency.”

Moving forward, the QI/RM Department will be capitalizing on the many other quality indicators that AIES provides reports on. Already, clinical department heads at Fauquier have been looking at the data, noting the number of cases that fall within each indicator—new information that was not easily obtained before. “We’re looking forward to delving more deeply into all that IHM has to offer. They have been really great to work with!” says Hobbs-Witmer.

Mount Sinai Hospital

Mount Sinai Hospital is a 324-bed teaching, research and tertiary-care facility located in Chicago’s West Side Community. It is fully accredited by the Joint Commission.

The Challenges

Before becoming a member of IHM, the Performance Improvement (PI) Department at Mount Sinai hospital had identified two main problem areas that they hoped would be addressed by the AIES system. First, determining which patients were eligible for core measures reporting seemed to be an impossibly slow process. The PI Department had contracted with a vendor in an effort to speed up the process, but found that producing the finished list of patients for each core measure required running on-site software and took many months to complete. The vendor was falling farther behind with each month’s worth of data. This delay, in turn, meant that the data abstractor at Mount Sinai was usually working on patient files that were at least two or more months old.

The second challenge was a dependence upon the Information Systems Department at Mount Sinai to query Meditech to evaluate non-core measures quality indicators. While the IS Department was helpful, their primary responsibility is to the Finance Department. Requests for clinical information had to be queued with other requests. The turnaround time for a non-emergency query report varied from several weeks to three months. In addition, the IS Department was unable to process any query unless the data requested was coded into a field in Meditech; they were unable to search text records in Meditech. “This was extremely frustrating,” says Geoffrey Page of Mount Sinai’s PI Department. “For example, the IS Department was unable to scan through text-based discharge summaries to look for prescribed medications upon discharge.”

The Solution

The IS Department at Mount Sinai was introduced to the AIES system at a Meditech conference in 2005 and were quickly convinced that it would save time and money for the PI Department. Mount Sinai went live with AIES in early 2006. “What we noticed right away was that AIES could produce the lists of eligible patients for the core measures within 12 days past the close of a month,” says Page. “That was a huge time savings for us—going from about two months with our other vendor to only 12 days with AIES.”

In addition to the time savings, the PI Department no longer had to run any software on-site. IHM simply pulled the data needed from Mount Sinai’s Meditech system automatically.

Did the AIES system help reduce the PI Department’s dependence upon the IS Department? Indeed it did. The automatic display of non-core measures quality indicators in AIES meant instant access to data that previously had to be queried through the IS Department. Plus, AIES has the capability to perform keyword searches of text notes in Meditech, which unlocked data that was previously available only by pulling charts or reading through notes in Meditech. With the consequent reduced burden for reports, the IS Department has had more free time to help the PI Department with other quality improvement projects.

“AIES is very user-friendly,” says Page. “The data is automatically downloaded, and it literally takes just two clicks for me to access a variety of pre-processed indicator reports. Things that before we might have only been able to do a poor job on, or not have been able to do at all because of the time required, we can now do easily with AIES.”

For the future, the PI Department looks forward to moving more of their medical records into electronic format in Meditech, which will increase their ability to utilize AIES for additional core measures and non-core measures reporting. They plan to leverage more of the non-core measure indicators that AIES provides, and they have been communicating ideas for even more indicators to be included in future versions of AIES. “I can’t emphasize enough how open and responsive the IHM staff is. I’ve probably approached

them with 50 ideas, and they are always considerate of our needs. This is a good company,” says Page.

Conclusion

Quality improvement is ever-increasing in importance for hospitals today. Tracking and reporting core and non-core measures of quality as required by the Joint Commission and other organizations is the first step on the road to improving quality, but all too often hospitals become enmired and cannot move beyond the monumental effort required to extract the proper data.

When looking for a data extraction and analysis software solution, decision makers should ask if the software is:

- User-friendly
- Automatically run by the vendor off-site
- Capable of producing the reports needed
- Capable of producing results quickly

The Automated Indicator Extraction System (AIES) from the Institute for Health Metrics (IHM) meets these requirements and more. AIES automatically extracts information from the hospital Meditech system and displays reports in its user-friendly, web-based interface. No software installation is required and there is no manual data entry involved. Not only can AIES report on the Joint Commission core measures data sets, it also reports on 169 additional measures of quality.

Contact IHM today to see how AIES can help you:

- Save time in quality reporting and assurance activities
- Target provider and cases for quality improvement intervention
- Leverage the full range of clinical and administrative data to drive performance improvement
- Promote change in real-time
- Maximize your return on your Meditech HCIS investment

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