

Testimony to Quality Measures Workgroup
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Paul Wallace MD Kaiser Permanente

Kaiser Permanente (KP) is the largest not-for-profit integrated health care delivery system in the United States, with 8.6 million members in eight regions. The KP Medical Care program includes the Kaiser Foundation Health Plans, Inc. (KFHP), which provide insurance coverage; Kaiser Foundation Hospitals, which owns and operates hospitals; and eight regional, multispecialty Permanente Medical Groups (PMGs), which exclusively contract to provide medical services to KFHP members. In 2010, KP completed implementation of KP HealthConnect[®] (from Epic Systems), a comprehensive electronic health record (EHR) system that securely connects all members' medical records across both ambulatory and inpatient settings; integrates billing, scheduling, and registration; and provides members access to personal health records on the organization's Web-based member portal, kp.org.

Relevance to “meaningful use”

As a fully integrated health care system, serving both the payer (health plan) and provider (hospitals and medical groups) functions within a single system that aligns incentives for quality and cost, KP is an exception in the U.S. health care industry. Because of its relatively unique approach to care delivery and payment, as well as its comprehensive EHR system, KP's perspective and experience can aid implementation of the federal “meaningful use” program to promote adoption of health information technology (HIT). In KP's model, the medical groups have incentives to accept full accountability to KFHP for the cost and quality of care. This relationship mirrors the payer-provider relationships assumed in the context of “meaningful use” of EHRs.

The development and sustainability of the relationship between KP's payers and providers has always depended upon a common mission and an organizational strategy focused on quality and efficiency. The shared commitment to that strategy has been the single most important driver of the organization's long and complex efforts to develop common EHR systems.

EHR as catalyst for quality overhaul

As much as quality improvement at KP has depended on implementation of the EHR, the ability to harvest value from the EHR has relied on reengineering the organization's quality and service agenda to leverage the benefits of the EHR. A key aspect of this process included a multiyear, total system quality assessment launched by the program's quality committee to strengthen system wide quality performance goals, build a robust quality infrastructure, and create clear lines of accountability at all levels of the organization, leading to an ongoing accountability shift from "We believe we deliver the highest quality care," to "the numbers tell the story."

In the early phases of EHR deployment, delivery system performance improvement initiatives had to be continuously balanced with the demands of establishing the EHR, as adaptation to and confidence in use of the technology was gained by physicians and staff. While clinical process and workflow redesign and innovation continued during implementation, the ability to pursue even wider improvement is now being realized after a full and safe implementation.

Harvesting value

We found it useful to consider three types of value from our EHR implementation and to set expectations and priorities accordingly: immediate, day-one value; midterm

value requiring policies, actions, and leadership; and longterm transformation of care, requiring greater investments and outstanding leadership.

Examples of immediate benefits include such things as improved patient safety through 24/7 access to comprehensive, legible medical records and elimination of duplicate lab tests. Examples of longer-term value include such patient safety benefits as drug-drug interaction alerts, innovations and new capabilities in population care, and sophisticated tools to enhance clinical decision making. Longterm, transformative benefits include such things as new models of Web-enabled care that can supplement face-to-face office visits; patient-centric, customized care that is responsive to specific health conditions and personal preferences; common, systemwide metrics that support identification and dissemination of best practices; and vast new research capabilities.

In leveraging these higher-level benefits, KP has relied on both new and old approaches to promote information sharing and improved knowledge management. A key tool is the KP HealthConnect SmartBook for Value Realization and Optimization (or “Smart Book”) -- an online, searchable collection of information on demonstrated best practices for quality, cost management, revenue enhancement, and other KP HealthConnect-related benefits. In addition, KP sponsors numerous internal webinars and virtual HIT user conferences to share best practices, and we reach out to both internal and external audiences through peer reviewed journal publication of rigorous evaluation reports on the impact of our HIT systems.

One of the most valuable tools for driving change and value realization is our periodic “Core Value Metrics” report, based on analyzing and interpreting the impact of EHR data on care delivery. An example of how this kind of tracking can drive

improvement is the “After Visit Summary” (AVS) function in KP HealthConnect, which produces a summary of medical information and latest visit instructions and is given in paper form to the patient at the end of each visit plus made available in a secure online format. Polling data found that use of the AVS correlated strongly with both patient adherence to treatment plans and patient satisfaction. By tracking its usage and sharing evidence of its impact in SmartBook, physicians’ use of AVS increased by 30% to 40% across the entire organization, reaching 90% in several regions.

Using data to drive change

In most health care organizations, performance measurement has been determined and limited by the data on hand; in the claims-based systems of most health plans, those available data focused on billable transactions. Thus, clinical data for health quality tracking and performance measurement unrelated billing for services was not well supported.

KP, as a prepaid and fully capitated organization, historically has not generated medical claims, at least not until the recent adaptation to new insurance, payment, and network designs. KP generally regards claims data as a secondary source, preferring other “administrative” sources, such as membership, finance systems, hospital management, scheduling, etc., as well as clinical data. We have found that KP HealthConnect not only expands the capture of “non-transactional” events and information, including patient-generated information, it also captures transactional information more efficiently and completely, adding multiple dimensions to transaction-based data, including clinical results (e.g., lab and other test results) as well as expanded demographic and other data.

The great abundance of data provided by an EHR presents significant challenges in terms of storage capacity, development of common data definitions and data formats, the consistency of data collection methods, data flow paths, etc. Recognizing the impact of these challenges on the goal of harvesting value from EHR data is crucial. At KP, most of these challenges were addressed through an intensely collaborative process in the pre-implementation design phase. We found that in determining how data is collected (coded vs. not coded) and stored, it was essential to begin with the critical questions of clinical decision makers and then develop the data linkages, as opposed to allowing the data on hand to drive the design.

The technical barriers to data collection and extraction can be daunting. For instance, not all data in an EHR is discrete and well-defined. Certain information, like progress notes, cannot be captured as structured data. Also, because EHRs are designed to support clinical care, workflows and the data reflecting those workflows can vary significantly, limiting the ability to reliably extract data. Ideally, the elements supporting an e-measure should be a natural artifact of the clinical workflow and represent a relatively standard element of documentation.

KP created a wholly new performance dashboard that integrates a broad range of whole-system measures on clinical quality, delivery system satisfaction, patient safety, risk management, equitability of care, and resource stewardship into a single, comprehensive view that could be easily understood by both operations leaders and those with governance oversight. Known as the “Big Q,” the new dashboard presents these whole-system measures with full transparency of performance and comparison to external benchmarks. The result has proven to be a powerful catalyst for change, tapping

into a drive to achieve the highest results and the will to constantly improve. The dashboard, by broadly communicating progress in making needed performance improvements every quarter, also supported KP in meeting its three-year goal to provide prevention and chronic condition care at the 90th %ile of performance nationally . By the end of the 2009 performance year, KP regions ranked number one for 15 HEDIS quality of care measures and were among the top 10 plans on almost two dozen HEDIS measures overall.

While KP HealthConnect has been indispensable in achieving these results, it is clear that meaningful use of the EHR to achieve quality improvement depends on many other factors besides performance metrics. Reporting databases, for instance, require initial and ongoing investment above and beyond EHR implementation. And a well-planned change management process to address the cultural changes that inevitably follow EHR implementation is at least as challenging as the technical components.

Select examples of EHR-enabled quality improvement

Hypertension control: In 2002, a year before the start of KP HealthConnect deployment, six of eight KP regions were in the bottom 25 per cent of commercial plans nationwide in meeting the HEDIS metric of BP < 140/90. In the 2009 reporting year, five KP regions were above the 90th percentile, including the two largest regions, which ranked #2 and #3 nationally. A comparable improvement occurred with Medicare populations. A critical factor in this very rapid improvement was the ability to measure and communicate the level of BP control frequently, serially, and broken down by practice units. The availability of BP values captured in the course of routine care for the population enabled this frequent and repeated measurement.

Sepsis identification and treatment: Sepsis in hospitalized patients admitted through emergency services is a leading cause of hospital mortality, even though these individuals represent only a small proportion of overall admissions. KP's northern California region piloted a program using evidence-based KP HealthConnect order sets to implement rapid recognition of this virulent bloodstream infection and initiate early, goal-directed therapy. These interventions have led to reductions in sepsis mortality rates for the entire region by 40% in 2009. Important program elements include KP HealthConnect flowsheets and tools that enhance the accuracy of data captured, through standard documentation practices. An automated abstraction tool extracted data from the EHR for analysis and feedback, specifically to identify higher risk populations for aggressive treatment and monitoring.

Panel Support Tool: To help close the gap between recommendations for evidence-based care and delivery, physicians in KP's Northwest and Hawaii regions collaborated to develop an electronic Panel Support Tool (PST) that integrates closely with KP HealthConnect. The PST combines clinical decision support functions, disease registries with immediate data availability, and continuous performance feedback. A Web-based application, PST leverages immediately available and complete patient information from the EHR to allow primary care teams to rapidly examine all care recommendations for individual patients, defined groups of patients (e.g., those with diabetes), or an entire panel. A dynamic report flags "gaps" between 32 evidence-based care recommendations and delivered care, then calculates a monthly care performance percentage for each provider team. PST use in KP's Northwest region resulted in an increase in overall care

performance (the number of completed care recommendations divided by the number of indications for care) from 72.9% (an already high baseline) to 80%.

Patient engagement via secure patient-physician email: There have been multiple pilots in the direct capture and use of coded patient generated data, such as within a Health Risk Assessment, into the EHR and its associated data bases; however the dominant application of KP HealthConnect to directly interact with patients has been the broad implementation of KP's Web-based patient portal at kp.org, including the capability to support secure eMail messaging between patients and their clinician. The impact of patients' use of the secure email function has been gauged by measuring the impact on certain HEDIS effectiveness of care measures, specifically for patients with diabetes, hypertension, or both. A study of 35,423 adult patients with those conditions in KP's Southern California region compared the rates at which nine HEDIS measures were met two months after patients began using secure email with providers. We observed a 2.0 - 6.5 percentage point improvement on all nine measures. The proportion of patients whose measures improved ranged from 4% to 11%. While it is not clear how patient-physician email improves care, based on these measures, we hypothesize that it can improve care continuity, patient-physician connectedness, and patient self-management.

In conclusion, our experience with KP HealthConnect and performance improvement suggests two important requirements, each served by the EHR. As KP's president and CEO, George Halvorson, has put it: "Learning one: Have all of the information all of the time. Learning two: Make the right thing easy to do." Measurement, after all, is the critical link between knowing the right things and doing something about it.