Advanced Practice Quality Improvement: Beyond the Radiology Department

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Substantial opportunity exists for radiologists to lead practice quality improvement initiatives that extend beyond the boundaries of the radiology department, especially regarding the appropriate, evidence-based utilization of radiological services by clinical colleagues. Radiologists are uniquely positioned to lead these types of interdisciplinary quality projects. An example of one such project is reviewed, with a reflection on lessons learned; specific, practical recommendations derived from past efforts are made.

Key Words: Leadership, quality management, practice quality improvement

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INTRODUCTION

Radiologists are uniquely positioned to lead multidisciplinary quality improvement projects involving medical imaging, especially those that apply evidence-based guidelines to influence clinician behavior toward more optimal and rational utilization of imaging services. Such interdisciplinary quality projects (ie, those that involve radiology but extend beyond the radiology department) are a natural extension of quality improvement work done entirely within the radiology department, such as practice quality improvement (PQI) projects focused on improving the quality of radiological care provided and/or the efficiency of radiology departmental operations. The same altruistic motivations that impel quality improvement efforts *within* the radiology department also spur extended efforts to reach *beyond* the boundaries of the radiology suite, outward toward the larger organization, which can often produce an even greater beneficial impact on patient care.

The economic reasons for radiologists to take up this charge are compelling. The prevailing health care delivery model in the United States appears poised to move toward an integrated health-system approach, one that increasingly decouples payment for imaging services from the volume of studies performed and instead links payment to the "value added" by radiologist efforts. In addition, the burden of demonstrating this added value would be placed squarely on the provider, and the radiology department would be increasingly viewed as a "cost center" rather than an independent source of (volume-based) revenue. This business model potentially represents a sea change for radiology, and yet a great many unanswered questions remain about how such a change might unfold over time and what factors might best assure that radiologists have a strong position at the negotiating table.

Although radiologists' expertise clearly provides significant value in support of patient management on a day-to-day basis, less clear is the extent to which the radiologist's "read," long the fundamental unit of radiology clinical service, will become commoditized (and thus monetarily devalued). Given this possibility, an argument can be made that radiologists should seize high-visibility opportunities to demonstrate the value they uniquely add to clinical care beyond image interpretation and rapid report turnaround times.

The area of quality and safety provides just such an opportunity for radiologists. By initiating and providing leadership to multidisciplinary quality improvement teams and programs, radiologists can: (1) build key relationships and alliances within the larger organization; (2) increase the visibility of the specialty; (3) expand their role on the clinical care team; and (4) substantiate their value to the clinical enterprise in a quantifiable way. As both under- and over-utilization of imaging detract from value in measurable ways, a strong business case can be made at the system-wide level for this type of quality improvement effort [1].

Carrying out a PQI project that extends beyond radiology requires a mental shift, moving the economic and operational center-of-reference away from the pecuniary interests of one department (eg, to grow or at least maintain high volumes of imaging studies and maximize reimbursement) to instead embrace the point

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of view that radiology is one of several (vital) parts of a larger system working as a unit toward the larger, common goals of providing health care that is: (1) *safe,* avoiding injury to the patients as they are being helped; (2) *effective,* providing services based on scientific knowledge to those likely to benefit; (3) *timely,* reducing waits and harmful delays; (4) *efficient,* avoiding waste, including waste of ideas and energy; (5) *patient-centered*; and (6) *equitable,* ie, the so-called "Six Aims" delineated by the Institute of Medicine in 2001 [2].

This article describes just such a multidepartmental PQI project, initiated and led by radiologists and carried out by an interdisciplinary team at the Penn State Milton S. Hershey Medical Center over the past 3 years. The overarching goal of this project was to optimize the utilization of CT scans for pulmonary embolism (PE-CT) throughout the enterprise, guided by established evidence-based utilization guidelines. From this experience and what has been learned from it thus far, some overarching principles can be inferred, which can inform similar endeavors.

A PQI CASE REPORT

The Perceived Quality Issue and Overarching Project Goal

At the outset, the project was motivated by a general consensus that PE-CT was being overutilized in the emergency department, while being underutilized on inpatient units. The goal was to move the institution as a whole toward a more consistent, evidence-based, and optimized level of utilization across all departmental and care-unit boundaries, substantially reducing or eliminating the prevailing variability in utilization, and increasing conformance with published evidence-based clinical guidelines.

Building a Team

For a project of the magnitude envisioned to succeed, it must involve top leadership in the organization and have substantial representation of all stakeholders. Teams should not be overly large (lest they lose the ability to act decisively) nor so small or limited that key areas of expertise are lacking. In our case, the stakeholders clearly included the radiology department, the emergency department, and the department of internal medicine, all of whom would be directly affected by any proposed intervention.

The radiology department's Director of Quality and Safety (author M. Bruno) and another senior radiology faculty member, the Chief of Thoracic Imaging and Radiology Vice Chair for Clinical Affairs, initiated the project together and reached out to the Vice Chair for Quality Improvement for the Emergency Department. As the likely strategies for intervention required IT services, a physician leader from the IT department was also recruited for the team from the outset. The corresponding clinical quality leader for the department of medicine was recruited next. The new team of 5 then met with the overall Institutional Chief Quality Officer, who himself was invited to join the effort, which he did with enthusiasm, lending immediate institutional support and credibility to the effort.

Additional team members were subsequently recruited, from both the department of medicine and the emergency department, including the program director of the combined medicine/pediatrics residency program. The final recruits to the team were the Emeritus Chief Information Officer for the Hershey Medical Center, who provided additional representation and insight from the IT department, and a PhD scientist from the Division of Outcomes Research and Quality of the Department of Public Health Sciences, who brought expertise in development of decision-support tools and data analysis. In the end, the team consisted of 10 people, mostly physicians, all of whom were enthusiastically committed to the project. Additionally, the institutional quality department, under the auspices of the Chief Quality Officer, provided administrative staff support, financial, and other resources to the effort.

Creating a Consensus

The first item on the agenda for the new team was to develop a consensus on the goal(s) of the project. The first several team meetings were devoted to the development of an interdepartmental/interdivisional consensus regarding use of PE-CT and what evidence should guide the selection of patients to receive a PE-CT at the Hershey Medical Center. It was the team's view that an institution-wide consensus document would be needed to achieve the goal of eliminating variation in PE-CT utilization across all disciplines within our institution. The negotiation was slow, laborious, and time-consuming, and often tense, requiring literally hundreds of person-hours taken away from revenue-generating clinical work (the cost of which was borne by our respective departments). Ultimately, however, this effort led to the drafting of a 3-page consensus document that the entire team could agree on, based on the results of the Christopher Study and relying heavily upon the Wells criteria for optimal patient selection [3].

The first and second authors of the consensus document were the radiologists on the team; all of the clinical stakeholders signed on as coauthors. Each member then presented the consensus document to their respective faculties, which led to further debate before the consensus was ultimately ratified by the full faculties of the department of medicine, the emergency department, and the department of radiology, all of whom agreed to adhere to the consensus guidelines. The medical staff office subsequently distributed the final document via e-mail to the entire medical staff.

Developing—and Negotiating—a Strategy

Once a consensus had been reached on *what* we wanted to have happen, the negotiations next turned to hashing out the details on *how* to proceed. This process began