Web-Based Results Distribution: New Channels of Communication from Radiologists to Patients

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Radiologists face substantial challenges in the timely and appropriate communication of diagnostic test results. As with other systems in health care delivery, the radiology reporting system is not designed to be optimally safe, timely, and patient centered. To improve the quality of care, there must be a new commitment to organizing services around patients' needs, including the reporting of diagnostic test results directly from radiologists to patients. The rationale for this change is that if both referring physicians and patients are given imaging examination results from radiologists immediately after their interpretation, it would be less likely that important diagnostic information would be lost or overlooked. The results would be provided to all stakeholders in a more timely fashion, the potential for important information to "fall through the cracks" would be diminished, and safety would be improved. Providing these results to patients directly online would also allow radiologists to facilitate increased patient satisfaction and patient-centered care by treating patients as "co-customers" and equal partners with referring physicians with regard to access to information and shared decision making.

Key Words: Reporting, safety, patient satisfaction, continuous quality improvement

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THE PROBLEM

The Institute of Medicine's (IOM) Committee on the Quality of Health Care in America (CQHCA) was appointed to identify strategies for achieving a substantial improvement in the quality of health care delivered to Americans [1]. In its final report in 2001, the CQHCA [2] provided a narrative sample scenario to illustrate some of the serious problems facing patients and clinicians with the current system of health care. For radiologists, it demonstrates some of the problems we face in the timely and appropriate communication of diagnostic test results.

The IOM's [2] scenario describes a single mother (Ms. Martinez) who has had to move to take a new job and must change her insurance and physician. After a 2-month delay to see her new physician, Ms. Martinez is sent for a routine mammogram. An abnormality is seen on this mammogram. When Ms. Martinez is finally able after some difficulty to track down her old mammograms, she discovers that a possible abnormality was circled on a previous mammogram, though neither she nor her primary care physician was ever notified. The lesion is cancerous, and now she has lung metastases. The CQHCA commented,

> During her numerous procedures and tests, Ms. Martinez experienced many acts of consideration, empathy, and technical expertise for which she was grateful. Yet for Ms. Martinez, who had excellent health insurance and was seen by well-trained and capable clinicians, the system did not work and did not meet her needs.

Although several facets of medical care are highlighted in this IOM scenario, radiology services seem to have earned substantial criticism, largely centered on the unreliable communication of results. Are the problems experienced by the fictional Ms. Martinez inevitable, or could we do better? The IOM rightly suggested that the adverse effects in the example scenario are not due to a lack of dedication or conscientiousness on the part of the radiologist, the referring physician, or anyone else. It is a system problem. The system is not designed to be optimally safe, effective, timely, patient centered, and efficient,— and it needs to be changed.

Many patients presented with this scenario might rea-

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sonably suggest that in this day and age, it is unacceptable that the information from Ms. Martinez's first mammogram was not made available to her primary physician and her immediately. As many readers are probably aware, mammography is one area in which a reorganization of services has been recently attempted, through the Breast Imaging Reporting and Data System [3] and the Mammography Quality Standards Reauthorization Act (MQSRA) of 1998 [4]. The act's effects included the standardization of terminology in mammography reports and the reporting of mammography results directly from radiologists to patients. This policy and process change was based to a large extent on quality concerns. In the late 1980s, Robertson and Kopans [5] found that recommendations from mammography reports to referring physicians were often not acted on for months— the scenario of a failure of information "handoff" that was cited as a prime example of medical error that persists despite physician dedication to providing high-quality care [2]. As a result of a collaborative effort between various ACR committees, and with the cooperation of various other specialty societies and institutions, standardized terminology for mammography reports was subsequently developed [3]. After MQSRA in 1998, a postimplementation study suggested that patients prefer less waiting time for examination results and improved clarity of results and recommendations from radiologists on the basis of mammographic findings [6]. We still await large-scale studies of the effects of MQSRA on patient safety and outcomes.

Although the idea of reporting final imaging examination results directly from radiologists to patients has been tried in mammography because of quality concerns, the direct reporting of final results has not been tried broadly in other areas of radiology, and correlation with patient outcomes has not been systematically performed. The final report of the CQHCA [2], published in 2001, included a recommendation to all health care providers to reorganize health care processes so that, "Patients should have unfettered access to their own medical information and to clinical knowledge. Clinicians and patients should communicate effectively and share information." In most health care systems, a radiologist's final written report can take several days to get to the referring physician. Then, the physician's office staff must receive and record the report and then initiate contact with the patient to pass the results along to him or her. By this time, the patient may be anxiously awaiting the test results, but he or she is no longer in the office, having been replaced by other patients with pressing problems. For patients who prefer patient-centered care, the typical delayed and limited access to diagnostic test results so common in health care systems subverts patients' efforts to be involved in effective clinician-patient partnerships for decision making. From clinicians' perspective, the typical complex, decentralized system in which diagnostic results for a single patient are received from multiple outside sources at various times creates substantial challenges for ensuring that results are conveyed to patients and used for the most timely and appropriate care. The potential for important information to "fall through the cracks" in the typical system is significant, and the consequences can affect not only the patient-centeredness but also the safety of care.

To improve the quality of care, there must be a new commitment to organizing services around patients' needs and applying information technology to the design of care processes [1]. We believe that patients want more timely and complete access to diagnostic test results (such as online access would afford) and that such increased access would be associated with increased safety and patients' satisfaction. The rationale is that if both referring physicians and patients are given imaging examination results from radiologists immediately after their interpretation, it would be much less likely that important diagnostic information would be lost or overlooked. Beyond these important safety issues, there is evidence not only that patients desire to be more involved in medical decision making but that such involvement positively affects patients' outcomes [7-9].

THE GOALS

Providing an imaging report is one process in the series of processes of providing care to a patient. This informational report is seen as a radiologist's final step, sometimes called our "product." Clinicians value radiologists who have the desire and ability to communicate test results well. Clinicians are interested in the quality of our reports, especially their accuracy, but there is evidence that they also consider timeliness, clarity, and completeness to be very important [10]. Referring physicians have pushed for greater efficiency in reporting, and substantial improvements are being made in this area [11-14]. Historically, referring physicians and their office personnel have been the primary mechanism for providing information to patients, including radiology report results. In the process of this information transfer, they may interpret a report and the embodied information and make decisions on the basis of that information as well as information from other sources. At issue is the degree to which imaging reports could or should be transferred to patients and then synthesized with other information and patients' preferences, with or without referring physicians' assistance. The idea that patients should have direct access to their test results represents a rather radical change in the system of health care delivery in radiology, breaking with the traditional view of referring physicians