Communication of Actionable Information

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Many health care stakeholders consider the radiologist's central role to be that of creating timely, meaningful, and actionable reports. Attaining this goal is a complex process, requiring an operational workflow that is high-quality, safe, and efficient, which enables the radiologist to synthesize all relevant clinical information into a concise and precisely structured document. The radiologist's role, however, should not stop there. A report creates little value until it is delivered, read, and correctly understood by all appropriate stakeholders (not just referring physicians but increasingly patients, too). Only then can information be used to have an impact on patient outcomes.

This series has used the concept of the imaging value chain to help radiologists understand the nature of their business, evaluate gaps in their workflow, and identify best-practice solutions to deliver appropriateness, quality, safety, efficiency, and patient satisfaction—the 5 pillars of Imaging 3.0. This segment focuses on the final link in that chain, and one that is perhaps the weakest: effective communication of actionable information.

THE PROBLEM

Rapidly evolving knowledge and innovations, the advent of precision and personalized medicine, health care reform, and frequently changing provider delivery systems and organizational structures have all contributed to a relentless increase in the complexity of providing medical care. The imaging arena is often at the nexus of these changes, harboring some of the most innovative medical technologies that often yield precise diagnoses within in a matter of minutes. Imaging's ever-increasing value has had a direct and positive impact on patient outcomes and is a key reason that it is central to medical care—and that radiology departments are so busy.

The increased value of imaging also means that referrers and patients are now rightly expecting rapid communication and report delivery, which presents challenges for ever-busy radiologists. Provider consolidations are requiring radiology groups to manage interactions with a variety of hospitals and clinics, sometimes from different organizations with different physician groups, practices, information systems, and workflows. Increasingly, radiologists use teleradiology to cover these facilities—either entirely or to maximize interpretation by offsite subspecialists—by moving images within their group during the day and/or outsourcing off-hours coverage. Given that referrers can review images almost instantaneously, radiologists sometimes struggle to communicate interpretations in a similarly timely manner. Despite these hurdles, report delivery systems and workflows, for both routine and critical findings, must be rapid, seamless, transparent, and auditable.

THE SOLUTION

Effective and efficient report communication begins with streamlined operations that expedite patient access and report interpretation. The report lexicon, format, and structure are critical for conveying pertinent and actionable information as succinctly and meaningfully as possible. These report aspects have all been topics of previous articles in this series. Assuming these have all been adjusted for maximal effectiveness, the actionable information must then be communicated to caregivers as effectively and efficiently as possible. Sometimes, as in the case of critical findings (eg, tension pneumothorax or ectopic pregnancy), this communication must occur within moments of image review. Yet, a surprising number of departments still lack policies and procedures on what constitutes a critical finding and how such findings are to be communicated. Even when policies and workflows are in place, many departments are unable or unwilling to implement closed-loop communication protocols and audit the process.

Many resources are available to guide radiologists on how actionable findings ideally should be communicated. A recent publication from the ACR provides a framework for policies and operations [1]. Category-1 findings require communication within minutes, usually by direct verbal communication, with documentation of the time, date, and individual to whom the information was relayed. Category-2 findings require communication within hours for conditions that may require specific medical or surgical treatment but are less urgent than Category 1 (eg, unexpected intestinal obstruction or abscess). Although Category 3 applies to findings that may only require communication within a matter of days, rather than hours or minutes (eg, suspected malignancy or incidental findings requiring further work-up), radiologists should always strive to make reports promptly available. Most referring physicians, and increasingly patients, would prefer—and often expect—reports on the same day as imaging. Ultimately, reports should be available when needed

by the referring clinician. Because radiologists usually do not know that timeframe in advance, all reports should be completed as rapidly as possible without compromising their quality or the interpretation of other more urgent studies.

Fortunately, information systems have dramatically transformed the imaging workflow. The advent of integrated voice recognition systems has simplified rapid report delivery. Referring physicians, irrespective of location, can now review reports and images on their desktop/laptop computers and even smart phones. Electronic text and e-mail alerts can now inform referrers about reports containing unexpected or important findings (eg, new metastatic disease). These same electronic tools can confirm whether referrers have reviewed such reports, and if they have not, close the communication loop by assigning dedicated individuals to locate and contact referrers and deliver the key information.

This process becomes challenging, however, when radiologists report for other organizations or when host organizations do not have fully integrated and functional electronic medical records (EMRs) and communication systems. This scenario often leaves radiologists to report nonroutine findings on an ad hoc basis through referring physicians' cell phones or personal e-mails. Such inefficiencies mean that some actionable findings are communicated ineffectively, which in turn can adversely affect patient outcomes. Radiologists should thus be strong advocates for standardized integrated electronic solutions that facilitate seamless communication with all referrers.

Teleradiology services, particularly those from remote companies, are rarely integrated with hospital EMRs and electronic communication systems. Many still rely on fax communication with reports that are then manually scanned into hospital EMRs. Such inefficient mechanisms impede effective and timely communication. Accordingly, these entities often rely heavily on direct verbal communication or complex closed-loop systems to ensure adequate report delivery. This situation is further complicated by the fact that many teleradiology companies provide only preliminary reports because of regulatory and billing mandates. These reports may be incomplete owing to lack of relevant clinical information or insufficient prior images and consequently may be suboptimal. Caregivers are thus often required to make clinical decisions based on information that may change, sometimes substantially, once a different radiologist issues the final report. When such changes occur, they should be communicated to the referring physician expeditiously—and that communication itself should be documented.

Even academic medical centers are not immune to this dynamic. At many, the usual reporting workflow requires residents and fellows to generate an initial report, which resides in the EMR, marked as preliminary, until it is reviewed, edited, and approved by a staff radiologist. Ideally, this approval process is performed within minutes or at most a few hours, but it can introduce variable amounts of delay. The longer the gap, the more likely direct communication will be necessary to close communication loops. Accordingly, many academic centers have now instituted policies requiring staff radiologists to finalize preliminary reports within a few hours.

Other strategies to ensure adequate and expedited communication depend on the nature of the individual clinical service. Many departments now embed radiologists in or near emergency departments to facilitate both around-the-clock report turnaround and direct physician-to-physician communication. Similarly, an increasing number of multidisciplinary clinics are embracing the use of on-site radiologists to facilitate real-time information exchange between caregiver teams. From a radiologist's perspective, these processes may seem inefficient, but such models must be pursued to promote greater radiologist visibility, clinical interactivity, collegiality, and ultimately better patient outcomes.

Finally, given increasing imperatives for patients to have direct access to their medical records, many organizations now offer electronic patient portals, which include radiology reports and sometimes images. Although some physicians may have reservations about such initiatives, such tools must be embraced. In an era of personalized medicine, they facilitate an increasingly active patient role in medical decision making for their own health, and therefore cannot be dismissed.

Such information transparency means that radiologists must recognize that patients and their families may be critical of even minor report errors. Many of these errors are likely to be related to speech recognition software, and radiologists must therefore be vigilant when editing reports. Some radiologists are beginning to embrace such transparency initiatives, and to offer forums for patients to discuss their report findings, either in person or electronically. Although such services are not currently reimbursable (this situation may change as payment models move away from volume to value), they present opportunities for radiologists to enhance their value in overall care delivery.

In summary, radiologists need to remember that they serve primarily in an information business and recognize that value will be created only when actionable reports are delivered and communicated to relevant stakeholders. Toward that end, they must interpret and finalize reports as expeditiously as possible and advocate for integrated information systems to facilitate effective and efficient report delivery. They should take every reasonable step to communicate findings directly with clinical colleagues and to co-locate services with clinical teams. As new medical trends and expectations evolve, radiologists increasingly will be expected to take a more active role in direct patient communication.

The next and final article in this series focuses on how the use of big data, data mining, and business intelligence tools will transform the radiologists' landscape to enable ever-increasing value and better outcomes for patients.

REFERENCE

1. Larson PA, Berland LL, Kahn CE, Liebscher LA. Actionable findings and the role of IT support: report of the ACR Actionable Reporting Work Group. J Am Coll Radiol 2014;11:552-8.

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