Patient Safety Tip of the Week

March 12, 2013

More on Communicating

Test Results

We've emphasized on numerous occasions the importance of having systems in place to ensure that significant findings of test results get appropriately communicated and that appropriate follow up gets done in a timely fashion. We've all seen cases where the suspicious pulmonary nodule on a chest X-ray or CT scan is noted in the radiology report but no practitioner follows up on it until a diagnosis of metastatic cancer appears many months later. Just as important is having systems in place to ensure that appropriate investigation and follow up takes place when an ordered test is not resulted within the anticipated time frame. For example, a Pap smear can be lost in transit to the lab and thus never be examined. Yet the practitioner and patient often assume that the test was done and was normal when, in fact, the test was never done.

One recent study looked at suspected GI malignancies newly discovered on imaging studies (Browning 2012). They electronically routed critical results messaging to the ordering provider. But they also messaged the surgical oncology clinic. This resulted in more than doubling the number of patients who saw the surgical oncology specialist (from 45.9% to 98.0%) and reduced the median time for that consultation from 35 days to 7 days. It almost halved the median time to initiation of definitive management (from 62 days to 35 days).

The system you choose obviously depends upon many factors, most important of which is the nature of the healthcare organization you work in. What works in a relatively "closed" system where there is true integration between the outpatient and inpatient staff may not work nearly as well in a community hospital where there is less integration. We've also cautioned that you need to be careful about "dual" messaging. A previous study (Singh 2009) found that the well-intentioned process of sending test results to both the ordering physician and another physician (such a the primary care physician) actually almost doubled the lack of timely followup (see our Patient Safety Tip of the Week October 13, 2009 "Slipping Through the Cracks").

Another study ([Dimigen 2012](#)) described a radiology notification system, dubbed "Tsunami" that improved communication of non-urgent but significant findings. When a radiologist would see potentially serious findings, such as lung nodules suspicious for malignancy or unexpected fractures, they would email an alert to a centralized clerk who, in turn, would directly notify the referring clinical team by phone or fax. The system was well received by clinicians. Two-thirds felt that an automated email alert system would be difficult to implement or unworkable so this system provided a good alternative. The system was low-cost and easily implemented.

Importantly, they also used the system to notify clinicians of **amended reports**. Amended reports are especially prone to communication error because the clinician often perceives he or she has already seen the report and that it lacked significant abnormalities (see our October 2, 2012 Patient Safety Tip of the Week "[Test Results: Everyone's Worst Nightmare](#)"). If an amended report goes out there must be a good way to alert the clinician that there has been a change to that original report. In the "Tsunami" system 9% of alerts were for amended reports.

How alerts are delivered is important. Another study by Singh and colleages ([Singh 2013](#)) looked at followup of tests in the electronic health record environment. They surveyed primary care clinicians at the DeBakey VA Medical Center in Houston and found that **almost 30%** of respondents reported they had **missed test results** that delayed patient care. Respondents noted they averaged receiving over 60 alerts daily and an overwhelming majority felt the number of alerts was excessive and not manageable. Information overload was felt to be a major contributing factor to missed test results, though not necessarily related to the actual number of alerts. The manner in which the alerts were presented was also perceived to contribute.

But they also found some factors that made it less likely clinicians would miss alerts. Those clinicians who said they consistently notified patients of abnormal results said they were less likely to miss alerts, as did those who found the EHR system easy to use. Interestingly, those whose native language was not Enlgish were also less likely to report missing test results.

One especially problematic situation encountered was **the handoff situation**. For example, when clinicians went on vacation there might be incomplete routing of alerts to the covering clinicians. Note that our own experience would suggest that is a two-way problem, in that covering physicians are notorious for deferring action on results back to the original physician. That often results in a situation where both clinicians assume, erroneously, that the other clinician has or will follow up on the result.

Note that the "handoff" situation is especially problematic for patients seen in the emergency department or those patients cared for as inpatients by hospitalists (or specialists) and then discharged to the care of their primary care physicians. We've discussed those issues in several previous Tips of the Week (March 1, 2011 "[Tests Pending at Discharge](#)", August 21, 2012 "[More on Missed Followup of Tests in Hospital](#)").

In a companion paper to the survey above Singh and colleagues (Singh 2012) discussed several of the other features of the VA system's electronic health record as they pertain to patient notification of results. Over half believed that the EHRs did not have convenient features for notifying patients of test results. And only a little over a third (37.9%) reported having staff support needed for notifying patients of test results. Almost half relied on the patient's next visit to notify them of normal results and 20% relied on that next visit to notify patients of abnormal results. Many felt that there was inadequate technical assistance or training on use of the patient notification system. And many found they had to work extra hours or weekends to address the patient notifications. They discuss the need to improve the usability of the electronic systems with better methods to display and sort and visualize the test results. They note that sometimes a provider might accidentally delete an alert that they need to return to later. They again note the handoff problem, including assignment of responsibility. And they emphasize the importance of the EHR's need to support "prospective" memory (eg. prompting to perform a future task, perhaps akin to "tickler" files). What they are really stressing is that issues revolving around EHR's are not all technological but rather that social and organizational factors play key roles as well.

We have also found many of the barriers that Singh and colleagues have identified. We've put systems in place that produced alerts for every test ordered and found that clinicians readily became overwhelmed. So we had to prioritize the tests that might trigger alerts and assign time frames for checking to see you have received those results. For example, you might always want to know when a Pap smear report has not been received within 7-10 days. The time frame for MRI or CT scan reports might vary depending upon the reason for doing the study (and the accessibility of the study).

Who should communicate the test results to the patient has also been the subject of some debate. One study (Gunn 2013) surveyed primary care practices found ninety-five percent of respondents felt that ordering physicians should deliver the results of examinations. No respondents felt that radiologists should deliver results directly to patients. But another view presented by radiologists (Amber 2013) argues that radiologists not only have a right but also a duty to communicate test results directly to patients who are interested in knowing their diagnostic results. This is especially the case once the radiologist has established a doctor-patient relationship with the patient. They note that most patients want to know their results as soon as possible regardless of severity. They propose an interesting "sliding scale" for delivering results directly to patients, based not on the severity of the abnormalities found but rather on the diagnostic confidence of the imaging findings.

Common sense and courtesy are important in the above "controversy". Probably what is most important is that if the radiologist communicates findings directly to the patient the radiologist also needs to convey to the ordering physician that such communication took place. There is nothing more uncomfortable than getting a phone call from a patient or family regarding a test result that you, yourself, are not yet aware of.

A point we've made before about managing test results is that **there should be two systems in place**: **one in the radiology department (or other department doing the test)** to ensure this message gets to the person who needs to know and **one with the ordering physician** that ensures the physician always identifies results of tests ordered. We've talked about 2 types of system: paper and electronic. And some findings would require both. Actually, there should be **a 3rd system** in place as well: **one with the patients themselves**. The educated patient should always ask the provider "when should I expect the result to be available?" and then contact the provider if they have not heard those results within a reasonable period of time. A patient should never assume that "no news is good news". Some patients are timid when it comes to calling their physician. We recommend you actually use a script such as "We expect to get your test results in x days. The doctor or one of our staff will notify you of the results. However, if you have not heard from us within y days, please call us to double check whether we have received your test results."

See also our other columns on communicating significant results:
- Patient Safety Tip of the Week May 1, 2007 "The Missed Cancer"
- Patient Safety Tip of the Week February 12, 2008 "More on Tracking Test Results"
- Patient Safety Tip of the Week October 13, 2009 "Slipping Through the Cracks"
- What's New in the Patient Safety World July 2009 "Failure to Inform Patients of Clinically Significant Outpatient Test Results
- Patient Safety Tip of the Week March 9, 2010 "Communication of Urgent or Unexpected Radiology Findings"
- Patient Safety Tip of the Week March 1, 2011 "Tests Pending at Discharge"
- Patient Safety Tip of the Week August 21, 2012 "More on Missed Followup of Tests in Hospital"

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