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Patient Safety Tip of the Week

September 8, 2020

Follow Up on Tests Pending at Discharge

In our many columns on test results "slipping through the cracks" there is one particular scenario we always caution about. That pertains to the patient who is discharged from the hospital or from the emergency department when the official result of one or more tests is "pending". Every hospital must have in place a mechanism to ensure that the "clinician who needs to know" will follow up on that test result and take appropriate action based upon that test result.

We've previously discussed the emergency department as one area prone to failure to follow up, particularly for radiology studies and lab tests. Callen et al. (Callen 2010) noted that studies have reported rates of failure to follow-up laboratory tests for ED patients range from 3% for microbiology tests to 75% for pregnancy tests and that 6% of cervical spine injury might be missed.

The reason for the ED visit may also be important. Trauma patients get lots of studies, particularly imaging studies, that are likely to have incidental findings. Sich et al. (Sich 2018) found that trauma patients had a rate of incidental findings of 70%, of which 36% were clinically relevant.

There are several factors that make "slipping through the cracks" more likely in the emergency department. The clinician who initially ordered the test may have already ended his/her shift, yet the official report may be sent to that clinician. Worse yet, that clinician may not be scheduled to be in the hospital again for some time (and maybe not even at all). In some cases, the official report may come hours after the patient is discharged or the following day. But sometimes several days may elapse.

Add to that another problem we often see: the primary care physician is often never notified that his/her patient had an emergency department visit and, thus, is unaware of any test results that are pending. Hospital IT systems do not, in general, do a good job of ensuring that the correct PCP is in the system. Patients may change PCP's and the hospital IT system may never be informed.

Responsibility to ensure closing the loop is the responsibility of the ordering physician, the radiologist/imager (or lab for lab test results), the physician primarily responsible for management of the patient, and the patient him/herself.

A new study reported in the Annals of Emergency Medicine (Mikhaeil 2020) addresses this issue as it pertains to patients seen in the ED. It gives two examples of common problematic occurrences:

- The incidental pulmonary nodule discovered when the radiologist does the official report on a chest X-ray done for other purpose
- The urine or blood culture which shows an organism that is resistant to the antibiotic the patient was sent home on

The Mikhaeil study was a systematic review of the literature on this topic. They found primarily four types of processes used to address test results pending at discharge:

- nurse or clerical staff contacting patients
- physician-driven processes
- engaging patients themselves in the follow-up process
- collaborative efforts between ED practitioners and clinical pharmacists

Nurses or clerical staff contacting patients used a variety of methods. Phone contact, followed up with a letter if phone contact was unsuccessful, was the most commonly used method. Some used certified letters. They gave examples where these efforts resulted in an increased percentage of patients with successful follow-up, from 8.1% before to 57% after the new processes were implemented. The time to patient follow-up also decreased from 20.1 hours to 7.1 hours.

Physician-led follow up included systems led by either emergency department physicians or radiologists. We previously have recommended that the clinical director of the emergency department, or his/her surrogate, could review cases the next day to determine which patients needed follow up. Note that computer systems can help identify such cases by using the timestamps on the reports and the timestamp showing when the patient was discharged (these are helpful but not infallible). The study by Callen et al. (Callen 2010) also suggested online "endorsement" of test results could be an important intervention. If you had such a system in place, the physician reviewing cases the following day could simply search for test results lacking a physician "endorsement".

Mikhaeil et al. describe the Callen study as the only one where dedicated administrative shifts for emergency physicians were used to follow up on test results pending at discharge. The other studies involved radiologists doing the follow ups. We've done several columns highlighting the responsibility of the radiologist to follow up on any report that has significant unexpected findings. Systems must be in place to facilitate that. But we've also pointed out the barriers and resulting frustrations for the radiologist who is attempting to do that follow up. They would usually want to discuss the findings first with a responsible clinician rather than calling a patient blindly. But the clinician who ordered the study may no longer be available and it may not be clear to the radiologist what clinician will be following the patient after discharge from the ED.

Mikhaeil et al. note that the process led by radiologists allowed 59% of patients to be notified of their incidental findings and given appropriate follow-up instructions, compared with the 7% before implementation.

Patient engagement. We also always recommend that patient discharge instructions include comment about any test results pending and encourage them to contact their physician if they have not heard those results within a reasonable amount of time. We emphasize "no news is not good news" and they should never assume the test result was normal. The Mikhaeil systematic review found some studies with unique ways in which patients were engaged in the process. One of those studies was by Huppert et al. (Huppert 2012), who were studying a population of adolescents and young adults seen in the ED with possible STI's (sexually transmitted infections). Those test results typically take several days to come back after ED discharge. In those who test positive, follow up is important not only to ensure they receive the correct treatment, but also to receive counselling on partner treatment and safer sex practices.

First, they assigned a single nurse practitioner (NP) to handle all STI follow-ups. Then they tried to ensure they had a confidential phone number in the EMR for each patient by issuing a prompt in the EMR for the clinician to update that phone number. Then, they developed the "patient activation card". Each business-sized card read: "Our goal is to keep you healthy! You had tests performed on (date). Your results should be back in about 3-4 days. Tell your doctor or nurse today what number we should call to reach you. We will contact you in a few days if your results are positive. You may also call Rachael at 513-xxx-xxxx to get your test results. Please call between 9 AM and 5 PM". The nurse practitioner was also given a dedicated cell phone to receive these calls.

These interventions improved the proportion of patients they were able to reach for follow up from 45% to 65%. Moreover, they achieved a decrease in patients lost to follow up from a baseline of 40% to a postintervention result of 24%.

In the Mikhaeil study's last category, **the "collaborative" methods** were used to ensure the correct antibiotic was being used in those patients for whom cultures were done and antibiotics prescribed. Clinical pharmacists would review all microbiology results and confer with the emergency physician about potential antimicrobial changes. After that discussion, a nurse or a pharmacist would contact the patient with the recommendations.

We've always recommended that hospital discharge summaries should always have a section for "test results pending" and a phone conversation with the clinician assuming care after discharge should specifically include discussion of test results pending. Similarly, any ED summary intended to be sent to the PCP or other clinician responsible for post-discharge care should also include a specific section for "test results pending".

The study by Sich et al. (Sich 2018) was particularly enlightening, and applied to trauma patients who were admitted or discharged from the emergency department. Because of the high rate of failure to follow up on incidental findings, they developed an intervention

with 2 key changes. First, radiologists were asked to report as a clinically relevant finding any incidental finding with the potential for requiring follow-up or need for clinical correlation. If a clinically relevant incidental finding (CRIF) was identified, radiologists would provide high and low risk follow up modalities and time intervals for each CRIF. Radiologists would report CRIF's in the impression/summary of their report for easy identification in addition to the body of the dictation.

Secondly, the electronic trauma history and physical examination was modified to include a required section for incidental findings. Trauma providers were asked to report CRIF's at the conclusion of the trauma evaluation prior to admission or discharge from the emergency room and then required to document it in a new section of the electronic H&P. When this field was populated in the trauma H&P, it created a follow-up visit order automatically with the PCP. This order was then pulled into the discharge instructions automatically with other required follow-up visits.

Rates of follow up recommendation and disclosure to patients were 22% and 27%, respectively, before their intervention. After their intervention, rates of follow up recommendation and disclosure to patients were 68% and 85%, respectively.

In their systematic review, Mikhaeil et al. found 5 features in quality improvement studies that improve the likelihood of successful follow-up for test results pending at discharge:

- dedicating staff to quality assurance processes
- giving staff time off from clinical duties
- integrating the process into the electronic medical record
- encouraging collaboration between disciplines and departments
- enabling patient engagement

Dedicating staff or giving clinicians "off" time to carry out these processes, of course, costs money. But, we'll be the first to point out that a single malpractice case avoided by doing this more than makes up for the additional expense incurred. We've always favored assigning someone to check the day following ED visits for any test results that came in after the patient left the ED (or have still not yet come in). Using IT to help identify those tests that need follow up is also important. Responsibility for closing the loop belongs to the hospital and its ED, the ordering physician, the discharging physician, the radiologist/imager (or lab for lab test results), the physician primarily responsible for management of the patient, and the patient him/herself.

See also our other columns on communicating significant results:

- May 1, 2007 "The Missed Cancer"
- February 12, 2008 "More on Tracking Test Results"
- October 13, 2009 "Slipping Through the Cracks"
- July 2009 "Failure to Inform Patients of Clinically Significant Outpatient Test Results"
- March 9, 2010 "Communication of Urgent or Unexpected Radiology Findings"

- March 1, 2011 "Tests Pending at Discharge"
- August 21, 2012 "More on Missed Followup of Tests in Hospital"
- October 2, 2012 "Test Results: Everyone's Worst Nightmare"
- March 12, 2013 "More on Communicating Test Results"
- October 2013 "New AHRQ Toolkit: Improving Your Office Testing Process"
- January 2014 "Email Alerts for Pending Test Results"
- July 2015 "Technology to Avoid Delays in Follow-up of Significant Results"
- November 17, 2015 "Patient Perspectives on Communication of Test Results"
- December 20, 2016 "End-of-Rotation Transitions and Mortality"
- September 2018 "ECRI Institute Partnership: Closing the Loop"
- September 24, 2019 "EHR-related Malpractice Claims"
- November 26, 2019 "Pennsylvania Law on Notifying Patients of Test Results"
- January 2020 "The Joint Commission on Closing the Loop"

References:

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