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■ clinical contributions

How Can Busy Physicians Better Manage Laboratory Results?

Introduction

It's 6:00 pm. You've seen all your patients, answered your messages, completed your prescription refill requests, and faxed back your last work release. The only task remaining is to review the laboratory test results that came back during the afternoon. This job—acting on abnormal test results and communicating findings—is a critically important part of the care we deliver and can occupy a substantial portion of a physician's day.

I have personally been interested in how we manage our lab results and have surveyed internists and family practitioners in the KP Southern California Region for their thoughts on this topic. Most have reported that they spend about one hour each day managing laboratory test results. In this article, I share some lab management techniques which may help you streamline your day.

The Electronic Medical Record

In the KP Southern California Region, we have yet to implement the electronic medical record (EMR); therefore, I have written this article from the perspective of the "EMR-naïve" practitioner. I hope, however, that even those physicians who currently use the EMR will find this discussion useful. In this article, I discuss functions not usually provided by a computer: selecting the most appropriate lab tests, managing patient demands for tests, communi-

ating with patients about test results, and organizing your nursing staff to support you in these lab management tasks.

Evidence-Based Ordering Of Laboratory Tests

Ordering laboratory tests sensibly is probably the most important aspect of efficiently managing laboratory test results. The inevitable false positive results of unnecessary tests consume much valuable time, whether a clinician spends this time explaining the results to concerned patients or requesting additional tests. To paraphrase an old saw, "Order all the necessary tests and not one test more." In practice, achieving this goal is difficult because of many considerations (in addition to the patient's medical history and physical examination findings) that factor into our patterns of ordering laboratory tests. When we order these tests simply because we believe the patient will leave our office more satisfied, we may be the ones disappointed. Contrary to what some may believe, a study from the KP Northern California Region showed that, when controlled for other variables, even a dramatic increase in ordering laboratory tests or imaging would not produce a meaningful change in patient satisfaction scores. (Kristen Hannum Gregory, PhD, unpublished data, May 1999).^a Moreover, ordering more labora-

tory tests compounds a doctor's workload by inviting more messages from patients about test results (S Winarko, MD, unpublished data, 1998).^b In my experience, the most unnecessary increase in workload is imposed by healthy ("worried well") patients who are seen for a routine visit or physical examination and leave the office clutching a long list of lab orders. Fortunately, at least for these healthy patients, we can benefit from a wealth of data on the laboratory screening tests appropriate for each interval of life. The US Preventative Services Task Force Recommendations and KP's clinical practice guidelines are particularly helpful in this regard. For patients without risk factors who are seeing their doctor for a routine periodic health examination, only the following five screening tests (excluding radiologic, nuclear, and endoscopic procedures) are supported by either "good" or "fair" evidence:

- Measurement of fasting blood glucose level every five years starting at age 45;¹
- Measurement of blood cholesterol level once between age 20 and 25 years and then every five years, starting at age 35 for men and at age 45 for women;^{1,2}
- Annual chlamydia testing for sexually active females age 25 and younger;^{1,2}
- Annual fecal occult blood testing (as an option or in addition

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to periodic sigmoidoscopy) starting at age 50;^{1,2} and

- Pap smear testing every three years after two normal annual Pap smear test results in females who are or have been sexually active.^{1,2}

What To Do When Patients Demand Tests

The challenge for physicians with demanding patients is to balance their expectations with the requirements of evidence-based medicine. Contrary to what many doctors believe, I find that most patients readily accept an office visit without an accompanying trip to the phlebotomist if I first explain to them that no blood testing is indicated. Patients who nonetheless desire laboratory testing or who demand a specific test must be managed carefully because abruptly denying their request may alienate these patients. Instead of bluntly responding “No, I will not order that test,” a clinician is more likely to invite rational discussion by saying “Let me tell you my thoughts” if the requested testing is poorly advised or “I’d be glad to order that test, but first let’s talk” if the testing is a reasonable option. Asking the reasons behind a request might also provide valuable information and clues on how to address the patient’s concerns specifically. Sometimes a third person—someone behind the scenes—orchestrates the demand for testing; in those cases, a discussion with that person (with the patient’s consent) may better satisfy all parties.

Managing Your Results

Because primary care practitioners are ultimately responsible for managing laboratory results, we all justifiably concern ourselves with careful review and follow-up of abnormal test results. For example, we all live

in fear of the positive stool occult blood test result that falls through the cracks. Each of us has set up our own system to guide patients with abnormal results through telephone discussion and repeat testing, a second discussion, and perhaps additional testing, treatment or consultation with a specialist. More often than not, test results pile up on our desk, remain there for long periods, and risk being misplaced. Better management of this process requires a sophisticated laboratory system and active involvement of the nursing staff and even of the patients themselves.

Laboratory Capability

Most laboratories already streamline evaluation of abnormal test results by reflexively repeating the test or administering an alternative confirmatory test. For example, an abnormal level of thyroid-stimulating hormone (TSH) triggers testing of the same blood sample for free T₄. The patient, unaware of this additional test, is spared a phone call from the doctor and a second trip to the laboratory. Your evaluation of a laboratory result can be further assisted if it is accompanied by contextual information. For example, a notation that the patient is receiving a particular antibiotic is helpful for evaluating a culture and sensitivity result. In a more advanced clinical system, the physician might also be provided historical information such as diagnoses or prior test results for comparison. These “smart” laboratory results could be a great timesaver and can be particularly useful to any physician covering for you who is unfamiliar with your patients.

Nursing Support

Your nursing staff also should be enlisted to support you in manag-

ing laboratory test results. However, a call from your nurse to a patient with a mildly abnormal test result might save you time initially but could raise more questions later from your justifiably concerned patient. To avoid this situation, prepare your patients in advance to expect a call from your nurse if a test result is abnormal: Tell your patients that the nurse will call them about any abnormal results and will convey your personal instructions about what action to take. During the visit, try to give patients specific information, such as “I will prescribe potassium for you in case your potassium level is low.” This may allay their fears and increase compliance when the nurse does call. If the abnormality is serious, however, nothing should substitute for a personal call from the physician. Many KP departments use clinical practice algorithms that allow registered nurses to manage specific illnesses. The protocol for urinary tract infection (UTI) exemplifies use of such an algorithm: The nurse obtains the patient’s medical history and symptoms from the patient over the phone while filling out a preprinted questionnaire. A urine culture is seldom necessary and is ordered only if the patient meets certain criteria. The physician then reviews the questionnaire, prescribes appropriate antibiotic therapy, and the nurse makes all the necessary arrangements.

Feedback

During the past few years, I have increasingly found patients to be interested in obtaining precise numeric results of their laboratory tests. These patients are not satisfied with being told simply, “we’ll call you if the results are abnormal.” Automated programs have been developed to give confidential results by

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telephone, but many patients are reluctant to try this technology or find it difficult to use. Of the doctors I surveyed, about half use various approaches to relay all or most normal test results to patients. Some doctors send a copy of all laboratory test results directly to the patient's home. This process can be simplified by folding the test report into a window envelope so that the patient's name and address are clearly visible. Other doctors send postcards or prewritten documents with a personal comment added or educational material attached. By all accounts, patients genuinely appreciate this information. Contrary to the fear expressed by many doctors—that they will need to field countless calls from alarmed patients—the doctors I queried stated that informing patients of all test results prompted fewer (not more) telephone calls. Other doctors take a different approach: They simply ask their patients to take their prescribed laboratory tests shortly before the next scheduled appointment so that the results can be discussed in person at the visit.

Tracking The Critical Tests

To ensure that patients follow-up with their requested tests, some physicians find a "tickler file" to be most useful. In my case, I have an accordion file with sections labeled for each month of the year. When I request a particularly critical test or consultation, I simply place a note or a copy of the request into the file under the month I expect to receive the report. Once or twice each month, I look in the corresponding section of the file to confirm that the test was properly completed. An electronic version of this same strategy using your desk or handheld computer also could be used.

Patient Accountability

Enlisting patients in their own follow-up is a final step in managing abnormal test results. Asking patients to call when they complete any retesting not only increases their compliance but also ensures that I review and discuss their case whether the final result is normal or abnormal. Perhaps most importantly, asking patients to make this phone call reinforces the modern proposition that patients must take some responsibility for their own health.

Conclusion

Managing laboratory test results is a time-consuming yet critically important aspect of any physician's work. A surprising fact, however, is that little research has been done on this topic; moreover, physicians seldom discuss their practice strategies with each other. New physicians, in particular, could benefit from having discussion of this topic included in their orientation. Five items are most important to emphasize:

- Order screening laboratory tests in an evidence-based manner;
- Maximize nursing support for communicating with patients and use clinical practice algorithms that include nursing support;
- Give routine feedback to patients about normal laboratory test results (this practice is highly valued by many patients can reduce the number of messages that you receive from patients);
- Encourage patients to take responsibility for their health and test results;
- Discuss helpful techniques with other physicians so that "best practices" of test result management can be shared for the benefit of clinicians and patients.

With all the pressures on primary care practitioners, each of us must develop an efficient, reliable system for optimizing management of laboratory test results. Such a system can make this important task a more satisfying part of our day and not simply a burden that keeps us late in the office. ❖

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