Order more tests? With diabetes, answer may be ‘yes’

Jan Bowers

March 2013—In patients with diabetes mellitus, hemoglobin A1c testing frequency is largely in line with recommended guidelines. In those same patients, LDL testing is not performed frequently enough, and urine protein testing frequency falls far short of recommendations.

Those are the results of a recently completed Q-Probes study of whether and how laboratories monitor the frequency of diabetes testing, and how closely the frequencies in their institutions hew to the American Diabetes Association recommended guidelines.

“It’s important to focus on both over- and underutilization, because sometimes in the lab we tend to focus only on whether we’re performing tests that may not be necessary,” says Peter L. Perrotta, MD, medical director of clinical laboratories at West Virginia University Hospital, professor of pathology at West Virginia University School of Medicine, and a coauthor of the CAP study. But there’s another side, he says: “Tests that should be ordered are not, or they’re not ordered frequently enough.”

Dr. Perrotta

In the aggregate, the study found that 95 percent of patients had eight or fewer HbA1c tests in the prior 24 months. (The ADA recommends HbA1c testing at least twice yearly but no more often than every three months.) Among patients who had had at least three HbA1c tests, 79 percent had at least two LDL tests and 27 percent had at least two urine protein tests in the prior 24 months. ADA guidelines recommend at least annual monitoring of LDL and urine protein, with no recommended maximum number of tests.

“It’s just a little disappointing that among these patients who had at least three HbA1c tests within 24 months, 21 percent didn’t get their LDL tests and 73 percent didn’t get their urine tests” at the recommended frequencies, says coauthor Teresa P. Darcy, MD, MMM, medical director of clinical laboratories, University of Wisconsin Hospital and Clinics, and associate professor of pathology and laboratory medicine, University of Wisconsin School of Medicine and Public Health. Coauthor Peter J. Howanitz, MD, says the proteinuria findings were, to him, “the most shocking.”

“I think the take-home message is that we have to be more aggressive in monitoring urinalysis. We’re not doing what we’re supposed to do; we need to do it once a year. And we have to make sure we continue to monitor hemoglobin A1c values.

Dr. Howanitz

“It was relatively good, but there’s room for even further improvement,” adds Dr. Howanitz, director of clinical

laboratories at State University Hospital and vice chair and professor of pathology at State University of New York Health Science Center.

The Q-Probes, "Frequency Monitoring of Outpatient Laboratory Testing," investigated the frequency of HbA1c, low-density lipoprotein, and urine protein testing. Forty-nine participating labs submitted 1,915 cases that met the criterion of at least three HbA1c tests in the prior 24 months (a level designed to exclude patients being screened for diabetes). Participants also reported the number of LDL and spot or random urine protein tests performed over the same 24 months. For all three tests, the dates and results of the three most current tests were recorded. Inpatients and outpatients were included. Point-of-care and pediatric specimens and patients with known hemoglobinopathies or kidney transplants were excluded.

Dr. Perrotta urges caution in interpreting the data, especially the results related to proteinuria. "Some people may be using point-of-care testing, or they might be using urine dipsticks—which they really shouldn't do—for screening diabetics," he points out. Dr. Darcy also notes that some patients may have been monitored using 24-hour timed urine samples, which the study would have missed. Even so, says Dr. Perrotta, "that number was a little lower than we expected. The LDL frequency also seems low, which is surprising given the large number of LDL tests that are done on everyone."

"That one is a little harder to explain," he adds.

The study also explored the laboratories' practices with respect to monitoring test use, communicating guidelines for test frequency, and detecting duplicate test orders. When asked how the participating lab monitors whether tests are ordered at appropriate frequencies, more than 72 percent said test frequency is not actively monitored. About 21 percent said they monitor frequency through the laboratory information system or other computerized system.

Where clear test utilization guidelines exist, is it the laboratory's responsibility to communicate those guidelines to clinicians and ensure they're followed? The coauthors say the lab has a key role but can't do all the heavy lifting. Says Dr. Darcy, "I think the study points out opportunities for the laboratory, because we have so much data, to be an active participant in setting policies to help monitor that the guidelines are being followed." On the other hand, Dr. Perrotta says, putting the onus on the laboratory is "difficult when physicians are responsible for providing information that shows the medical necessity of testing." Even getting a handle on utilization is a big challenge for most labs, says Dr. Howanitz, pointing to the nearly three-quarters of participating labs that said they don't monitor test frequency. But he called it "absolutely" important that they do, "because we can't waste effort, time, or money on doing things that are not indicated." He adds, "If our health care system is going to become much more effective, we're going to have to develop ways to do these kinds of things."

Dr. Darcy

Easier said than done perhaps, as the issue of detecting duplicate tests illustrates. About half of the participating labs said they have a written policy or procedure for detecting duplicates, though three-quarters said their LIS is capable of flagging them. When a lab technician told Dr. Darcy several years ago that the lab was getting daily orders for HbA1c tests for inpatients, Dr. Darcy consulted with the hospital's diabetes care group to determine if and when inpatient testing is appropriate. The group's response: "'On the first day the patient is admitted, if he or she has not had an HbA1c in the last three months, yes, we would like to have one, but never more than one.' So our LIS accepts one order for an HbA1c for an inpatient, and cancels every other one after that as a duplicate." Still, she admits to the difficulty of rule-writing: "It's hard to write the rules so that we don't cancel things that

shouldn't be canceled. It has to be pretty obvious," she says.

In the LIS at West Virginia University Hospital, duplicate test orders are detected and combined at midnight each day. As a result, if an order for the same test is placed by two physicians at 6 pm and 8 pm, the system will combine them into one order, but if the first physician orders at 8 pm and the second orders at 4 am the next day, the duplication will be missed. Dr. Perrotta's policy is never to cancel a test order without speaking to the physician first, because there are cases when that second test may be necessary. "Let's say you get a result of 5.0 from an HbA1c, and you don't believe that result—you're sure that patient is diabetic. You may want to repeat that test at a much shorter interval."

Pop-up alerts, another tool to help limit overuse, often work better in theory than in practice. Dr. Perrotta's laboratory recently instituted pop-up alerts to notify a physician who might be placing an order for an HbA1c too early that the test had been ordered within the prior 90 days. But he calls pop-ups "a sensitive issue for physicians suffering from pop-up fatigue.

"They begin to ignore them, then they complain, usually at high levels, and you end up having to remove a lot of alerts. So they should be used very cautiously."

At the University of Wisconsin Hospital and Clinics, pop-up alerts have been built into the computerized physician order-entry system for all laboratory tests that have recommended frequencies. "I get a lot of complaints. They hate it," Dr. Darcy admits. "So we've tried not to be too onerous with frequency alerts." However, one clinician has asked Dr. Darcy to institute a "preview pane" similar to the one in Microsoft Outlook so that the physician can easily see when the next test is due, as well as the most recent result. She says adding such features to the hospital's system is "always a negotiation."

"If the diabetes group and the lab go together to ask for it, we have a lot more potential for success than if it's just the lab."

Other University of Wisconsin clinicians have requested peer review. "They're asking us to give them some kind of report card that shows, for example, how many HbA1cs they've ordered in a year," Dr. Darcy says. She suspects many labs are struggling now, as they look at accountable care, with how best to turn so much data into useful information. "If you look at the variation in the number of tests per patient across a peer group of like specialists, you don't even have to decide if the test was ordered appropriately or not. So that's a start."

Dr. Perrotta says the laboratory should initiate the peer review but do so collaboratively with the physicians or quality practice committees. Report cards can be a "powerful motivator," he says, to reduce the frequency of ordering a particular test, but they won't win the lab any popularity contests. "I've had experience with the report card as it relates to blood utilization, and in that case I'm not sure how effective it was," he says.

Some hospital information system features designed to improve care may have had unintended consequences, Dr. Perrotta says, including overuse of certain tests. "It's so important that lab people be involved in the development, implementation, and maintenance of the electronic lab ordering system within the electronic health record," he says, adding that computerized physician order entry at West Virginia, once in place, resulted in more laboratory testing. "It just makes it easier to order tests," he explains. Another culprit: order sets, many of which include the HbA1c test. Initially, Dr. Perrotta was not involved in creating the order sets, but he is now. "It just became a runaway train. We had over 20,000 order sets within the first few months of implementing our EHR. Some providers may have set testing at frequencies that are not appropriate, but it's very hard to go through them all to find out where the problems are. The issue is incredibly complicated."

Asked how their labs provide guidelines for test frequency and other aspects of laboratory test utilization, 43.5 percent of participating labs said they do not provide guidelines, while 23.9 percent said allowable time intervals are set in the hospital information system. Other methods reported were laboratory newsletters (17 percent), other forms of periodic written or electronic communication (17 percent), and pathologist or designee review of test utilization (15 percent). "I see this as an opportunity for the lab to step up and help the organization at the point of

order. Tell them, 'This is when you should order the test,'" Dr. Darcy says. "We've got to put in more decision support that encourages the right behavior, and if the people ordering lab tests don't know the recommended frequency, we should provide it right there with the ordering."

At State University Hospital in New York, the laboratory test manual provides the appropriate frequency for each lab procedure, Dr. Howanitz says. Every physician probably knows what the guidelines are for HbA1c. "It's just a matter of following up on it. How do you get a physician to remember to do it? That's one of the issues."

The information can also be made available to clinicians through the electronic health record, Dr. Perrotta notes, and at the time of order resulting. "Sometimes [at resulting] we'll say, 'Repeat testing in three months is suggested if clinically indicated.'"

If detecting and addressing test overuse is a challenge, nailing down underuse is even thornier. First, as Dr. Perrotta points out, "In the lab, our trigger for any type of action is usually going to be a lab order or lab test results. So it's very hard for us to figure out which patients should have had something ordered and didn't. And unless we have certain protocols at institutional levels, we can't add on testing." Compounding the problem, Dr. Howanitz says, is that a patient may be seeing more than one physician, and a physician may be ordering a patient's tests from more than one lab—in which case underuse may not even exist.

Within the next five years, larger care networks and better integration of patient data in a single, systemwide EHR will make it easier to monitor test use, Dr. Howanitz predicts. "I'm optimistic about the future and confident that we're going to do a better job for patients because we're going to have better tools." Overuse and underuse will not be as poorly controlled as they are now, he says. Dr. Darcy sees a new role for the lab and the pathologist. "It's participating in the care system. And that's where I think laboratory data and pathologists are just a gold mine for accountable care."

Jan Bowers is a writer in Evanston, Ill. Drs. Perrotta, Darcy, and Howanitz are members of the CAP Quality Practices Committee. For more information about the Q-Probes program, call the CAP at 800-323-4040 option 1.