Critical result notifications at the point of care

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Lab pursues full documentation compliance

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January 2025—A clinical laboratory team at Ohio State University Wexner Medical Center took on a point-of-care testing problem common to other hospitals: documentation of critical result notification.

At OSU, the documentation rate for point-of-care glucose critical result notification wasn't high enough, and the team set out to raise it.

It's not sufficient to notify the physician or other provider. "You then have to prove you're doing this, with documentation that the notification did in fact exist," said Heather Stieglitz, PhD, D(ABCC), OSU co-director of clinical chemistry and toxicology, in an ADLM point-of-care testing session last summer.

For critical result notification, the CAP requires that the record consist of date and time of communication, the person who communicated the result, the person notified using identifiers traceable to that person (first name alone is inadequate), and test results.

Dr.
Stieglitz

If the person who performs the test is the same person who treats the patient, the identity of the testing individual and person notified need not be recorded. But there must be a record of the critical result, date, and time in the test report or elsewhere in the medical record.

Critical results for glucose in adult patients are defined in the OSU laboratory as those less than 50 percent mg/dL or greater than 400 mg/dL.

In 2023, 879,721 POC glucose results were reported in the health care system, 9,355 of which were critical. Results came from 741 POC glucose devices used by more than 7,000 POC glucose operators, from patient care associates and nurses to anesthesiologists, and documentation of critical results varied across units and personnel.

"It sounds like a simple problem, but when you take a simple problem and multiply that by the sheer number, it becomes a bigger problem," said Dr. Stieglitz, who is medical director for POC testing at five of the medical center's outpatient services sites.

The documentation rate for point-of-care glucose critical value notification of an RN in seven hospital

units ranged from just above 80 percent to 95 percent.

“We want to have a 100 percent compliance rate with all critical results being documented, and we want that documentation to be in accordance with all elements of the regulatory standards,” she said, which require that the documentation of the person notified include identifiers traceable to that person. “We have thousands of RNs in our institution, so ‘RN-notified’ is not traceable to a specific person.”

“We needed to fix that problem,” Dr. Stieglitz said, and making it easy was the way to do so. “We’ve made it really easy in the centralized lab,” with phones, multiple screens, the EHR and LIS, “but the lab does not look like a point-of-care setting.”

The compliance team and laboratory set out to learn more about the barriers to documenting critical result notification in a POC setting and began their investigation with a Gemba walk—directly observing how the process is done by “walking in the steps” of those who perform it.

POC coordinators and the compliance team shadowed nurses and others on various hospital units to observe the workflow. In one case, Dr. Stieglitz said, the nurse handoff included informing the patient care associate which patients needed a glucose test. That PCA would take a patient’s vitals, including the glucose measurement, scan their strips and wristband for a positive patient ID, and run the test. If the POC glucose result was critical, the PCA would call a nurse or other licensed caregiver from their cell phone or the telephone in the patient’s room. The PCA would then return to the glucose device, select “RN-” or “MD-notified,” and write the result on paper because PCAs on this unit did not have immediate computer access.

“So they would walk down the hall, find a computer, and type the glucose test result, and once they docked the POC glucose meter, the results and the RN- or MD-notified selection would transmit to the electronic health record.”

The two main takeaways from several Gemba walks, she said, were that the computers and workstations on wheels were not always available to each PCA—though they were on each unit—and that while the POC glucose devices had an option to notify an RN or MD, there was no good option for entering a first or last name or any other kind of unique identifier.

“We tried to think of how to make this easy,” Dr. Stieglitz said, noting they first looked at how to enhance the documentation on the meter itself. The manufacturer’s solution was to use the barcode reader on the meter to scan the QR code on the employee badge of the person notified of the critical result, if there was a critical result. “That would log the medical center ID that was unique to every employee.” That information would be transmitted into the EHR and posted as a component comment to those results.

“We were really excited about this,” Dr. Stieglitz said, because it did not require immediate access to a computer to log a unique identifier for the critical result notification, allowing the POC operator to move on to the next patient more rapidly, and it worked for inpatients and in clinics.

The nurses and PCAs said this solution was not going to work for them. The reason: A nurse or other licensed caregiver was not always immediately accessible, and often when they reported a critical result it was by telephone. The proposed solution meant finding the person whose badge had to be scanned.

Typing in the licensed caregiver's medical center ID was the alternative, Dr. Stieglitz and her team told them. "That would still be a traceable identifier," she said. But because the medical center ID or employee number can be used to make purchases in the gift shop or cafeteria, they were uneasy about giving that number out. There was another reason: If there was a critical result, "your thought is patient care, not using a T9 keyboard to log someone's name, if you even happen to know how to spell it."

At the time, too, "we didn't have wireless transmission available," Dr. Stieglitz added, "so the meters would have needed to be docked for all that information to make it into the electronic health record."

Two options were left: "revisit the computer idea or use a piece of paper. Nobody wanted to use a piece of paper," she said.

Though not everyone had immediate access to a computer, each hospital unit had multiple computers, though it might require a walk down the hall. The laboratory team asked its IT team and PCA colleagues what activities they use in the EHR. "We know they're not the same as what we use in the laboratory," Dr. Stieglitz said. "They came up with a flow sheet where they were documenting all of their vitals, so it made sense this is where you would document critical results."

The flow sheet already had a couple of rows for manual entry of POC glucose results. "We enhanced it such that if the result was critical, it was going to create an extra row in the flow sheet, specifically for the critical result. The point-of-care glucose result was reported, too."

Clicking on an icon brought up a preselected list of the authorizing provider, the ordering provider, and a nurse assigned to the patient, Dr. Stieglitz said. Documenting one of them required simply clicking on or free-texting a name. "There's your unique identifier."

"We brought this back to our stakeholder group," she said, and noted for them the advantages of using a familiar feature in the EHR and the one click of a button or the option to free text. "But at least you have a keyboard, and you would always have that first and last name—that unique identifier."

The disadvantages: It required immediate access to a computer or workstation, and it worked only for inpatients because the flow sheets were used for inpatients only. Still, the nursing and PCA stakeholder group accepted the proposal.

The POC and compliance team then developed multiple education strategies, defined the new procedure in the standard operating procedures, and distilled the procedure for a tip sheet. "We also integrated this into our computer-based learning modules," and POC coordinators talked about it in their rounding. They went live with the procedure within the year.

"We saw some success," Dr. Stieglitz said. "The documentation rate of critical results using a first and last name was lower than we wanted for the eight months before they went live with the new procedure. After go-live, that rate increased significantly."

Auditing the results was next.

"We integrated it as one of our quarterly QI metrics," Dr. Stieglitz said. "We want to know how many critical result notifications were being documented appropriately." The team needed two numbers: the number of compliant critical result notifications (numerator) and the number of critical results that require those notifications (denominator).

The numerators and denominators could be acquired in two ways, one of which is to pull flow sheet reports. “The easy information from those reports is the number of critical result notifications documented with the first and last name,” Dr. Stieglitz said. Of those who logged their critical result notifications in the flow sheet, compliance with the first and last name requirement is 100 percent.

“The hard part is in that denominator,” she said. “Not all of the device users are using the flow sheet, so [determining] what percentage of our total critical results requiring notifications have this compliance is difficult just using flow sheet reports.”

The other auditing option is a middleware report, “the software that lies between our point-of-care device and EHR.” The total number of critical results is fairly easy to get from the middleware report, she said, though it requires some manual removal of duplicates and retests. “But you can at least get your total. Your denominator is achievable.” The number of critical results requiring notification also requires manually cross-referencing the list of users to a list of job titles.

The hardest part is that the middleware report isn’t where the notifications are documented. “So we have to take the information we get from those reports and manually check the electronic health record of each critical result,” she said, “nearly impossible” to do in an institution where thousands of critical results are documented each year.

Now, years into the change, the need for education never ends. “Our point-of-care coordinators are still bringing this up when they round, and I don’t think we will ever stop.”

Addressing noncompliant departments can be challenging, she said. In its auditing, the laboratory can obtain a list of the POC operators, and it sends an email to those who are regularly noncompliant. If noncompliance continues, the inquiry escalates to the nursing manager. Rather than be punitive, she said, they try to understand: “Is it that you don’t know to do this, or is there something in the workflow that doesn’t work?”

Because it can indeed be about workflow. “Sitting in our lab where we have access to our computers and phones and full keyboards and an activity that’s designed for this purpose, we think, ‘Why is nobody doing this? This is easy to do in the lab.’ And it wasn’t until we walked with and talked to the operators that we found out the infrastructure just isn’t there for point-of-care devices.”

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