



Bedside Labs For Quality, Savings

Point-of-care blood and urine tests can produce immediate results for enhanced care planning, while eliminating the cost of sending specimens to the laboratory.

INSTANT ACCESS TO RELIABLE information is no longer a luxury in today's fast-paced health care environment—it's a necessity. And one clinical area where the collection of key data can be substantially accelerated is in the application of technology to bedside blood and urine testing.

The recent availability of expanded point of care testing (POCT), a term used for the assessment of factors at the bedside that would otherwise need to be sent to a laboratory, means that providers can improve the quality of care delivered to patients, enhance the work environment for nurses, and reduce ancillary expenditures.

By its very nature, POCT shortens the amount of time required to make a decision about a patient's course of treatment. Traditionally, tests are sent to a laboratory, creating a situation in which providers and patients must wait for the results before making care-planning decisions. POCT provides the same information at the bedside, therefore allowing clinical staff to make on-the-spot decisions about the best course of care.

Until recently, blood-glucose monitoring, which is a critical component of care for patients with diabetes, was among the few POCT procedures available in the long term care setting. Under the Clinical Laboratory Improvement Amendment (CLIA) of 1988, the Department of Health and

Human Services (HHS) regulates the settings in which POCT can be used. HHS also regulates the specific tests for which POCT technology can be applied, based on the level of expertise

waivers for two tests commonly performed in long term care facilities: prothrombin times/international normalized ratio (PT/INR) and urinalysis (UA). The PT/INR test, utilized to assess the blood's ability to clot, is a regular feature of treatment for patients receiving oral anticoagulants such as warfarin and Coumadin. These blood-thinning drugs are commonly prescribed for patients at risk of stroke or heart attack.

In an average 120-bed skilled nursing facility (SNF), roughly 25 patients receive blood-thinning drugs on a monthly basis, resulting in approximately 40 PT/INR tests per month. Using the traditional methods employed by most providers, the nursing staff contact a phlebotomist to come to the facility and draw the patient's blood. The blood is then sent to the laboratory for analysis, while the provider and patient wait for the results. This usually takes a full day, unless the test is ordered stat (rush), which means an additional charge. Once the results arrive, typically via fax or telephone, a nurse contacts the physician to discuss the next steps in the patient's treatment plan.

Using the POCT version, a drastic contrast in the care process is evident.

Marcie S. O'Reilly, R.N., is vice president of clinical services and Crista M. Stark is vice president of marketing and public relations for IHS, Sparks, Md.

of the user and the availability of quality controls to ensure the equipment is functioning properly. If these criteria are satisfactorily met, CLIA offers waivers for which facilities can apply if they wish to implement the program.

New Waivers Issued

CLIA has recently issued POCT

As soon as the test is ordered, the nurse administers the PT/INR test at the bedside with a simple finger stick. Referring to analysis guidelines to interpret the results, the nurse then contacts the physician to determine the direction of the patient's care. It is also possible that a physician may order the test while conducting rounds in a facility. In such cases treatment can be adjusted on the spot due to the immediacy of results and the physician's ability to issue an order right away. Additionally, when using the POCT version of PT/INR, patients benefit from a simple finger stick versus a full blood draw.

According to studies, systematic anticoagulation management accomplished through POCT improved patient outcomes and satisfaction, while also lowering the trauma and costs associated with adverse events

such as stroke, hemorrhage, and the formation of blood clots.

Curbs Unnecessary Antibiotic Use

Contrasting current practices for UA and its POCT counterpart yields similar findings. UA is another commonly used test, most often ordered to rule out urinary tract infection (UTI) and provide indications of dehydration. The average 120-bed SNF orders roughly 50 UAs per month to be sent out for lab evaluation. UA is effective at ruling out UTI, but cannot by itself diagnose it. Therefore, if a UTI is suspected, the physician will often order a urine culture and sensitivity (C&S) test to accompany the UA. The C&S is used to diagnose UTI and identify the specific organism causing the infection in order to select the appropriate antibiotic. In light of the waiting time for lab results, ordering these two tests

at once helps to speed up the assessment and treatment processes. However, 60 percent of UAs are negative, which renders the C&S unnecessary. Furthermore, in many cases a broad-spectrum antibiotic is started at the time that the UA and C&S are ordered as a way of moving forward with treatment. These antibiotics are often not discontinued when the UA/C&S proves negative, resulting in unnecessary treatment and antibiotic-resistance buildup, additional medication costs, and supplemental nursing time.

Beyond these testing implications, the POCT version of UA also has an impact similar to that of the blood-clotting test in terms of care-delivery efficiency. Currently, nursing staff collect a clean-catch urine specimen and send it out to the lab, waiting a day for results before contacting the physician.

In contrast, the POCT for UA uses an analyzer that reads 10 components of a urinalysis using a strip that is dipped into a clean-catch urine specimen and then inserted into a small machine that prints out the results.

As with the PT/INR example, the POCT for UA significantly reduces the waiting time involved in assessment. And, because results are available immediately, physicians are not as likely to place simultaneous orders for C&S testing and antibiotics. This process results in the immediate implementation of an accurate course of treatment for the patient and savings related to nursing time, medication costs, and unnecessary lab testing.

Implementation Of POCT

Integrated Health Services (IHS) is one of the first long term care providers to implement POCT for uri-

nalysis and PT/INR. IHS conducted a pilot test during which facilities were trained on the equipment and its use, as well as changes in care routines brought about by the technology.

IHS found that employing POCT not only improved patient care and the related nursing work processes, but it also made life a lot easier for attending physicians. The facility is able to provide better service to its medical staff by having the availability of accurate clinical test results within a few moments of the order, clinicians say.

John Emmel, M.D., medical director at IHS-Magnolia Manor in Moncks Corner, S.C., explains, "As a medical director and attending physician, I am thrilled to be able to order a test and get an accurate result while I'm still on duty to receive it and be able to adjust treatment right away. It's better for the patient, the nurse, and the doctor. Of

the several facilities I visit, only IHS is utilizing POCT, and it's the most rural place I attend."

Staff Training

In order to implement POCT, nursing staff must be oriented to care-delivery process changes, specimen collection, the equipment itself and how to ensure its continued proper function, and the appropriate interpretation of lab results. Providers should conduct a broad overview of the benefits of POCT and its anticipated impact, with special training provided to the nurses who will be responsible for quality control of the equipment, patient testing, and physician communications.

Proper quality control is an important part of the implementation of POCT in a SNF. The equipment for both PT/INR and UA requires nursing staff to take infection control and

other precautions to ensure proper function. For example, testing strips have a fixed shelf life, should be stored in a temperature-controlled environment, and must remain in their sealed pouches until use. The equipment itself must be regularly checked and can be recalibrated by the nursing staff when necessary. HHS and CLIA will provide on-the-spot evaluation of providers' use of the equipment to ensure it is used appropriately.

Savings Add Up

Since POCT eliminates the need to send UA and PT/INR tests out for laboratory analysis, providers will see a significant drop in their standard lab costs, with a complete elimination of stat processing fees per month. These



savings benefit the facility, but also result in cost reductions for managed care organizations. As noted, the potential for decreases in medication costs also exists, particularly related to UA.

Current pricing for PT/INR testing includes an \$8 fee for the PT, a \$3 draw fee, and a \$3 trip fee for an average total cost of \$12 per test. The POCT version of PT/INR will cost the facility anywhere from \$4 to \$4.75, depending on volume discounts for which the facility may be eligible. This is a saving of roughly \$8 per test, or \$320 per facility per month using the 40-test monthly average from the previous example. In the case of UA, current pricing is roughly \$6 vs. the POCT cost of between 50 and 65 cents, resulting in savings of roughly

\$5.50 per test. Using the previous example of 50 tests ordered per month, this would result in monthly savings of \$275, plus any savings in stat fees for standard tests.

POCT is one way for providers to ensure they are doing everything possible to promote the efficient delivery of quality care. It does require an upfront investment for the equipment and training. However, the equipment tends to pay for itself in a matter of months as a result of the ongoing savings, according to IHS.

In today's health care environment, providers are responsible for continuously finding ways to add value to their many customers. POCT is a terrific example of a service that offers far-reaching benefits, not only to patients and their families, but also nursing staff, physicians, and referral sources. ■

