Solving Phlebotomy Problems

Ensure quality blood specimen collection by addressing the four most common problems

Karen Appold

ADVANCE [Newsmagazine] asked phlebotomy experts to list what they consider to be the top areas of concern when it comes to blood specimen collection. Then we asked them to give advice on how to resolve these dilemmas or challenges.

Problem #1: Misidentifying a patient or sample
Solution: Treating a patient according to another patient’s results can be catastrophic, especially when a transfusion is involved. One study showed that 11 percent of transfusion-related deaths were caused when the phlebotomist misidentified the patient or mislabeled the tube, reports Dennis J. Ernst, MT(ASCP), director, Center for Phlebotomy Education, Inc., Corydon, IN. In 2005, the chair of the College of American Pathologists’ Quality Practices Committee estimated that 160,000 adverse patient events occur annually in the United States due to patient identification and specimen labeling errors.

“Regardless of who is drawing specimens at your facility, eliminating collection errors is impossible without ruthless, aggressive education,” Ernst says. “In addition to undergoing a comprehensive training program, non-laboratory specimen collection personnel should be mandated to spend a day in the laboratory to see what happens to specimens.”

Even for laboratory-based phlebotomists, education should not be minimized and must be ongoing, Ernst continues. It takes a champion on staff to spearhead the training protocol and to ensure that no phlebotomist is released to draw specimens until and unless he or she can demonstrate competency in all areas including exposure prevention, risk management, customer service, proper technique, post-venipuncture care and specimen processing.

If a facility doesn’t have the resources to train specimen collection personnel, then outsource the training or, alternatively, only hire phlebotomists who are certified from a reputable agency that teaches and tests according to standards set by the Clinical Laboratory Standards Institute (CLSI).

A lack of certification, however, doesn’t denote a lack of expertise. Formal programs that include didactic and clinical components, especially NAACLS-approved programs, may be a good source of skilled phlebotomists with or without certification, Ernst says.

Problem #2: Decentralized phlebotomy
Solution: Studies have repeatedly shown that a laboratory-based specimen-collection staff commits fewer patient identification and labeling errors and has lower blood culture contamination rates and fewer rejected specimens. Studies have also shown emergency room specimens are 10 times more likely to be mislabeled than those drawn elsewhere and 20 times more likely to be hemolyzed than those drawn by laboratory personnel, Ernst reports.

“While some facilities have been successful with this staffing strategy, in most places it fails miserably,” Ernst says. “That’s because they underemphasize the procedure and training required to perform it properly.”

Ultimately, says Ernst, decentralization is a lose-lose proposition. It entices administrators with a reduction in staffing, but the savings are quickly lost. The productivity of a decentralized specimen collection staff decreases dramatically as the specimen rejection rate skyrockets; medical mistakes stemming from improperly collected samples siphon the savings; and when needles are placed in the hands of the unskilled, impaled nerves and lacerated arteries lead to litigation.

Problem #3: Poor phlebotomy technique
Solution: Poor phlebotomy technique is particularly relevant in institutions with decentralized phlebotomy that do not possess properly trained phlebotomists, but rely on nurses to do the blood collections, says Ana K. Stankovic, MD, PhD, MSPH, WW vice president, Medical and Scientific Affairs and Clinical Operations, BD Diagnostics - Preanalytical Systems, Franklin Lakes, NJ.

“During their training, many nurses are not instructed in the use of proper collection technique and the ideal products to achieve optimal specimen quality,” Dr. Stankovic says. “Very often they collect blood specimens from central lines using syringes and do not transfer specimens to blood collection
Problem #4: Improper specimen mixing

Solution: In the process of converting from glass to plastic tubes, improper specimen mixing has emerged as an area for concern. In the past, blood collection tubes were made of glass and contained liquid additives which did not require a lot of mixing. Because of safety concerns, most institutions have switched to plastic blood collection tubes, which require between five to eight inversions, depending on the tube type. The consequence of improper mixing is either partial clotting (in plasma tubes) or incomplete clotting (in serum tubes). Both can lead to fibrin formation, which can cause significant problems during specimen testing, Dr. Stankovic says. This can result in slowed testing or testing errors and erroneous patient results. This issue could also be significantly improved with more robust training, ongoing in-service programs and continuing education efforts.

Concluding Thoughts

In light of tough economic times, a laboratory may be tempted to eliminate dedicated phlebotomy staff or switch to cheaper, lower quality products to meet ongoing effort to improve it.
cost containment requirements. “The cost of poor specimen quality, however, can far outweigh savings achieved by the elimination of dedicated phlebotomy staff or relying on less expensive but lower quality products,” Dr. Stankovic says. Unanticipated expenses result from specimen re-draws, laboratory testing errors, unnecessary treatment delays, prolonged patient stays in the emergency room and subjecting patients to unnecessary procedures due to erroneous testing results.

Ultimately, understanding the impact of pre-analytical variables on test results and, consequently, patient safety by phlebotomy personnel is critical. This can be achieved through:

- Continuing education for health-care providers responsible for blood specimen collection.
- Following manufacturers’ instructions for use when using blood collection products.
- Incorporating specimen collection training in nursing curricula.
- Dedicating phlebotomy staff for specimen collection.

Resources

Use these resources to improve phlebotomy at your facility.

Center for Phlebotomy Education, Inc.
1304 N. Old Hwy. 135, Suite 103
Corydon, IN 47112
866-657-9857
www.phlebotomy.com
(training videos, newsletters, books, online education and CEUs)

COLA
9881 Broken Land Parkway, Suite 200
Columbia, MD 21046
800-981-9883
www.cola.org
(online CEUs)

MediaLab
242 S. Culver St., Ste. 214
Lawrenceville, GA 30045
877-776-8460
www.medialabinc.net
(online CEUs)

The certification agencies below issue proctored exams reflecting the CLSI specimen collection standards to all phlebotomy certification applicants.

American Medical Technologists
10700 W. Higgins Road, Ste. 150
Rosemont, IL 60018
847-823-5169
www.amt1.com

American Certification Agency
P.O. Box 58
Osceola, IN 46561
574-277-4538
www.acacert.com

American Society for Clinical Pathology
Board of Registry
33 W. Monroe, #1600
Chicago, IL 60603
312-541-4999
www.ascp.org

National Center for Competency Testing
7007 College Boulevard, Suite 705
Overland Park, KS 66211
913-498-1000
800-875-4404
www.ncctinc.com

National Credentialing Agency
P.O. Box 15945-289
Lenexa, KS 66285
913-895-4613
www.nca-info.org

National Healthcareer Association
7 Ridgedale Avenue, #203
Cedar Knolls, NJ 07927
800-499-9092
www.nhanow.com
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