Readers respond

One expert’s opinion
Just a note to express my enthusiasm for the very fine cover story by Sharon Miller and Julie Meeker on hereditary hemochromatosis published in the October 2005 issue (p. 10). I hope that it might be reprinted in journals that are read by family medical practitioners. In my half-century of teaching medical laboratory students, I continually emphasized the important role of laboratory professionals as participants in diagnostic and treatment-monitoring decisions. Iron loading is an excellent example.

The condition is a serious risk factor for infection, cancer, cardiomyopathy, arthropathy, and a wide array of endocrine and neurodegenerative diseases. Laboratory personnel are well situated to recommend and conduct tests for iron loading as well as for monitoring progress of de-ironing procedures.

—E.D. Weinberg, MT(ASCP), PhD
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Editor’s Note: E.D. Weinberg, PhD, began his study of iron in 1952, and is a world-renowned authority on iron as a significant risk factor for cardiomyopathy, cancer, infection, arthritis, various endocrine diseases, and sudden infant death syndrome. A pioneer in the field of iron studies, he has written more than 350 articles and books devoted to iron.

Sharon Miller’s reply: Thank you so very much for your kind note ... (and) for your generous praise of the article.

More on blood-collection standards
Please find enclosed the original manuscript entitled “Laboratory quality improvement by implementation of phlebotomy guidelines” (see below) as a response to the recent article “Coalition strives for phlebotomy personnel standards” (MLO 2005;37:24-25)

… we would like to contribute further to your very valuable and interesting journal in the very next future.

—Giuseppe Lippi, MD, Professor; Camilla Mattiuzzi, MD; and Gian Cesare Guidi, MD
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Laboratory quality improvement by implementation of phlebotomy guidelines

Errors and quality of laboratory testing

Laboratory testing is increasingly claimed as an integral part of clinical decision making and laboratory expenditure represents a substantial proportion of the total hospital care. The increased awareness of the central role occupied by clinical laboratories within national healthcare systems, along with the affirmation of a new connotation of laboratory professionals, call for greater analytical accuracy, more stringent test selection, and interpretation of results. However, there are great needs for improvement to accomplish this influential status. Although there is extensive literature dealing with the prevalence and types of mistakes in clinical laboratories, the error distribution across the different phases of the entire testing process (preanalytical, analytical, and post-analytical) appears consistently similar. Owing to remarkable advances in instrument technology, automation, and computer science, the analytical variability is no longer the main problem to overcome for reliability and clinical utilization of laboratory diagnostics, as most laboratory errors currently occur within the preanalytical phase, mainly due to unawareness or inobservance of standardized protocols. Therefore, consistent quality specimens for routine or STAT laboratory testing are the biggest challenge that clinical laboratories will be facing in the very near future.

Conveying the importance of specimen collection

Unsuitable samples, resulting from inappropriate procedures during blood collection, have always plagued clinical laboratories; and this unfavorable trend is unlikely to change shortly. The crucial reason for such a high prevalence is that it is virtually impossible to monitor all preanalytical variables and to implement necessary improvement processes, particularly when most of such variables are not under the direct control and supervision of the laboratory. Accordingly, decentralized phlebotomy has been blamed for a litany of quality issues, ranging from incorrect identification to inappropriate quality and quantity of the specimen. Inaccurate procedures during specimen collection do not always produce results analytically unacceptable, but might also generate spurious variations that consume valuable healthcare resources and lead to errors or delays in the patient care.

Letters to the editor

MLO welcomes letters to the editor. We ask that you include a phone number for verification. While we prefer to publish the writer’s name, we will publish a letter with “name withheld by request,” but our editorial staff must have the writer’s name confirmed for our files. MLO reserves the right to edit any letter for style and length.

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Phlebotomy guidelines, education and training

There is universal agreement that the key to reducing preanalytical variability is to focus on improving the system of education and not to blame single individuals. An increasing body of evidence demonstrates that major improvements in the analytical error rate could be achieved by training and qualification of testing personnel and by the correct adoption of rules for defining the allowable errors in internal quality-control practice. Analogously, the adverse outcome of most preanalytical variables could be substantially prevented or minimized by a coherent and continuous process of education, which involves improved communication among caregivers and interdepartmental cooperation. As even skilled phlebotomists can run into difficulties, laboratory professionals are in a unique position to sustain knowledgeable information and education, providing proficient assistance to overcome most preanalytical problems and spreading operative guidelines that should encompass a clear description of the correct procedures for a patient’s preparation and specimen collection and handling. In this perspective, the Coalition for Phlebotomy Personnel Standards should be regarded as a prior and essential instrument to improve the quality within the whole laboratory workout. Since its formation, the Coalition has spent much effort to introduce professional standards for phlebotomists and other specimen-collection personnel in several U.S. states, though California is currently the only state that mandates training for specimen-collection personnel. This is a first qualified step to pursue valuable objectives but, unfortunately, similar educative tools did not encounter much success so far, nor were they acknowledged by the national health systems of most Western countries.

We are aware that the pursuit of quality improvement in results of laboratory testing is a multidisciplinary enterprise, and this is as true for patient safety. Engaged in a refractory professional deformation, major efforts have been focused on improving the analytical quality, and targeting imprecision and inaccuracy of several laboratory tests to negligible limits. Accordingly, the extra-analytical quality and related quality specifications have been underestimated and often regarded as a chimera. Although restrictive specimen-acceptance policies and intolerance criteria often are revealed as convenient defenses, proactive efforts to intervene further upstream will definitely grant major benefits, especially in the long term. In this perspective, recommendations and knowledge dissemination, training, and certification of phlebotomists should be welcomed, even outside the United States, as they represent essential steps that laboratory professionals should assiduously promote for purposes of further laboratory quality improvements.

References

Dennis Ernst’s reply: I believe your letter will be of interest to MLO readers, as well as the fact that MLO is read internationally. The authors of this letter perpetuate my oversight that California is the only state that mandates training, and Nevada and Louisiana also have requirements for specimen-collection personnel.