

## Tips from the clinical experts

# Answering your questions

### Chemistry inventory-control software

**Q** Is there a system that can organize reagents and supplies for the laboratory? We are looking for a way to bar code them as they arrive in and bar code them out when they are used, eliminating the need to do inventory. We would also like to have a printout so we can see when reagents were used or when certain lot numbers were put into use. If such a system exists, how would we get in contact with the vendor to purchase it?

**A** Effective and efficient management of the chemicals and supplies inventory of a laboratory is more than a convenience to the managers. It helps create a safe working environment and helps reduce costs. One article highly recommended for any laboratorian involved in the handling of chemicals was produced by the Battelle Seattle Research Center, a source focused on environmental policy and planning.<sup>1</sup> The unrecognized costs and safety issues of haphazard chemical-inventory management are discussed, along with a comprehensive plan for management of chemicals.

One part of prudent inventory management is the use of a cradle-to-grave tracking system. Many software systems exist for chemical inventory, and these range from simple spreadsheet software to elaborate multifeature systems that are linked to MSDS chemical-safety libraries or molecular-modeling programs. The Internet is full of individual end-users who have written their own custom software for laboratory inventory control and are now offering these packages to others. The features of the myriad systems vary by the imagination and needs of the individual laboratories and their software programmers. As is the case when one purchases any off-the-shelf software application, there will probably not be

a totally perfect fit between what the system offers and what the user needs.

Carefully develop a chemicals-management policy, write detailed, step-by-step procedures, and roughly design the types of reports you want to see. With this, you will be able to discuss or correspond with vendor representatives to determine the compatibility of their product with your needs. Find vendor contact information from the reagent-supply representatives who call on your laboratory, from Internet Web browser searches, laboratory-oriented publications (advertisements, product comparisons, and product reviews), and from professional organizations such as CAP, ASCP, AACC, and ACS.

There are several reasonably priced software programs that support bar-code input which you might consider:

- The Chemical Inventory Management (ChiM), J.T. Baker ([www.jtbaker.com/safety/safe\\_chim.html](http://www.jtbaker.com/safety/safe_chim.html))
- CIS Chemical Inventory System Standard, ChemSW ([www.chemsw.com/12012.htm](http://www.chemsw.com/12012.htm))
- Inventory Management in the Clinical Laboratory (InvMan), Cove Laboratory Software ([www.iscpubs.com/articles/abl/b0002low.pdf](http://www.iscpubs.com/articles/abl/b0002low.pdf))

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### Reference

- 1 Davis M, Flores E, Hauth J, Skumanich M, Wieringa D. Managing Chemical Inventories. In: *Laboratory Waste Minimization and Pollution Prevention*. 1996:chap.5. Battelle Seattle Research Center Web site. Available at: [www.seattle.battelle.org/Services/E&S/p2labman/index2.htm](http://www.seattle.battelle.org/Services/E&S/p2labman/index2.htm). Accessed July 6, 2004.

### RBCs in body fluids

**Q** I have a question regarding cell counts on body fluids. Are there any fluids that do not require

the red blood cell (RBC) count? How useful are they?

**A** RBC counts are useful in peritoneal fluid, pleural fluid, pericardial fluid, synovial fluid, and cerebrospinal fluid. First, no RBCs should be present in body fluid under normal conditions. If numerous RBCs are present (except traumatic tap), it suggests a pathologic process. Malignancy, trauma, infarct, and hemorrhage are the major causes for bloody fluid. Second, correlating RBC with white blood cell (WBC) counts is helpful to determine if increased WBCs are due to peripheral blood contamination.

The value of RBC counts in fluids, however, is somewhat limited. No RBC reference value is available for determining hemorrhage in any fluid. A small number of RBCs (5,000/ $\mu$ L to 10,000/ $\mu$ L) will produce a blood-tinged fluid that may be found in transudates, exudates, and a small amount of bleeding. Higher RBC counts (>100,000/ $\mu$ L) in pleural fluid are highly suggestive of malignancy, trauma, or pulmonary embolus/infarct. RBC counts are also used in peritoneal lavage fluids for assessing blunt and penetrating trauma as well as other conditions.

In summary, an accurate RBC count has a limited differential diagnostic value in body fluids. It should not, however, be entirely ignored either.

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