Commentary (II)

Calibration, Chromatography, and Floods

The importance of quality control is impressed upon the technologist from the time his training begins. Daily evidence of its importance is found in the nuclear medicine department where quality control procedures are performed before the arrival of each morning's first patient. Nevertheless, in many departments, both small and large, these procedures are occasionally circumvented with the frequent rationaliza- that "I know this machine" or "I just don't have the time." Perhaps more common and even more unfortunate is a second occurrence in which quality control procedures are completed, displayed, and then filed without anyone bothering to study the results. Why do we sometimes fail to utilize these procedures thoroughly? The answer to this question can be found if we examine an individual's motivation for conducting quality control tests.

There are many reasons for performing quality control assessments; there are many problems associated with them. The strongest justification for quality control testing has been to ascertain whether an instrument is operating satisfactorily. Administrators, technologists, and physicians all agree that quality control testing is mandatory for preserving a high caliber of patient care. However, these tests are based on an inherent assumption that when quality assurance findings are not as expected, the equipment found wanting will not be used. There are no difficulties when this concept is conscientiously practiced. But in a case where a decision is made to use the equipment, despite its questionable status, quality control procedures completely lose their effectiveness. In such a case, not only does patient care suffer, but the technologist begins to see his quality control work as meaningless.

There is another purpose for quality control, which is not taught in training, but which does address the needs of the technologist. We must remember that nuclear medicine uses some of the most sophisticated diagnostic aids available today. Consequently, it is easy for the technologist, whose knowledge of this instrumentation is understandably limited, to become alienated from the complex devices used. In order to avoid this, the technologist can use quality assurance procedures to learn more about these instruments and at the same time become more comfortable working with them.

Nuclear medicine offers numerous opportunities for the technologist to practice quality control for his own benefit. For example, resolution patterns acquired on a gamma camera reveal detection capabilities and equipment limitations. In the RIA laboratory, similar information can be gained from generating gamma spectra to compare a spectrometer's ability to detect different nuclides. In addition, as the technologist's comprehension of test results increases, so will his ability to perform his job effectively. One example would be improved radiopharmaceutical preparations that arise from the technologist's appreciation of chromatography results. Lastly, there are tasks such as calibration of imaging instruments and analysis of flood field images that permit the technologist to accomplish his studies with the confidence and security that he is providing his best efforts.

In essence, then, quality control is the unifying link between the professional, his tools, and the satisfaction he requires from his career.

MARK LERNER
George Washington University
Medical Center
Washington, DC