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Quality Assurance for Picture Archiving and Communication Systems (PACS) and PACS Technology Applications in Radiology—Part 2

IN THE PREVIOUS ISSUE of *Journal of Digital Imaging* (vol. 8, no. 1), the focus on quality assurance (QA) featured three reports that addressed QA issues and practices for laser film digitizers and cathode-ray tube display systems. We continue this series with two reports in this issue of the *Journal*: one on QA for phosphor-plate radiography, and the other on digital mammographic systems.

Given the increasing use of phosphor-plate systems to replace film-screen radiography, there is a concomitant need for methods to establish image quality bases and procedures to maintain such quality. The image-processing techniques available in most of the phosphor-plate systems provide wide-ranging flexibility in altering the way images look; however, the way to achieve a particular qualitative or quantitative appearance of the images is nontrivial. Freedman et al have examined the types of problems that phosphor-plate imaging can have, and their report describes the methods they use to prevent or correct these problems. The techniques they use form the basis for a comprehensive quality control program for phosphor-plate radiography.

One of the last areas to have film-screen technique be replaced by various digital equivalents is mammography. The challenges posed by the very high spatial resolution and very wide

contrast range are significant, and presently, many researchers are digitizing conventional film to get the digital images they want. Some attempts at digital mammography, whether partial area or whole breast, produce direct digital output. As we begin to use digital mammographic techniques, we will need to preserve the thorough quality assurance ideas developed for conventional film. The report by Roehrig et al is an overview of digital mammography and the methods that may prove essential for the QA of such systems. The paper has been written more as a tutorial overview rather than a research article, and should prove useful to those of us using digital techniques in mammography.

I thank the authors for their important contributions, the reviewers who provided the constructive criticism of the papers, and Dr Roger Bauman, the Editor-in-Chief, for his invitation to serve as Guest Editor. The *Journal* continues to seek contributed papers in the area of quality paradigms in digital imaging.

Steven C. Horii, MD
Guest Editor
Department of Radiology
Hospital of the University of Pennsylvania
Philadelphia, PA