Digital teaching files cost much more than analog files

October 07, 2002

While digital teaching files have become increasingly popular, the effect of the move away from traditional analog teaching files is largely unknown. Two recent studies examined this trend, with one finding the costs of digital files much higher. A

A study (Acad Radiol 2002;9(2):205-210) surveyed radiology residency program managers about whether digital teaching files are worth the expense.

"We became concerned there are many hidden costs with any teaching file, whether an old fashioned collection of films or state of the art digital files," said Dr. J. Fritz Angle, a radiologist with the University of Virginia Health System.

Angle's survey showed that most program directors appreciate the advantages of digital files but find them incomplete compared with old faithful analog files.

"This is no surprise, as many institutions have been collecting interesting cases on film for decades," he said.

Angle also found that the costs of both types of files were higher than expected. The annual costs at the University of Virginia were $44,720 ($91 per case) for maintaining an in-house-produced DTF and $24,601 ($50 per case) for maintaining an ATF.

"We think institutions considering switching to an in-house DTF should look carefully at the costs," he said. "There are commercial DTFs available for much less money."

The second study (Acad Radiol 2002;9(2):157-162) attempted to determine the information content needed in a digitized radiological image for it to be equivalent in quality to an analog image.

"No one has previously studied the amount of information required in radiological teaching images," said Dr. Dawid Schellingerhout, a radiologist at Massachusetts General Hospital.

Most radiologists accumulate digital teaching cases, often with no control on the amount of information included.

"We need a rational basis for deciding how much image information to include," Schellingerhout said. "Too little, we lose detail. Too much, we waste resources. Our study was an attempt to provide radiologists information on how to make good decisions in this area."

Perceived image quality increases as the amount of information in radiological images increase, but only to a point. After that, increasing information content does not add to quality, Schellingerhout said. It is up to the radiologist to decide what level of quality is desired.

"PACS is only at the beginning of the impact it will have on medicine," he said. "We should encourage academic study of digital images and their perception by human observers. Images are often a black box with little known about the algorithms that manufacturers use to create them. We will need open standards for digital images, down to the raw image matrix, to allow for images created on different systems to be compared using identical and published postprocessing algorithms."

Disclosures:

Source URL: