Digital photography has a tremendous amount of utility in the intensive care unit (ICU) setting, although many physicians still do not realize the usefulness of this tool. Some of these attitudes stem from the early days of digital photography when cameras and the technology itself were in their infancy. Today, however, the technology has matured and provides an excellent means of documentation of both patients and pathology in the ICU setting.

In 1995, we purchased our first digital still camera for use in our pediatric ICU. The promise of the technology was obvious to us at that time; however, the execution was less than perfect. Digital photography offered us the means to have an instant record of patients and pathology. Images taken with a digital camera were immediately available for any purpose. The images could be shown on a computer screen, archived, taken over multiple time periods to show progression, and finally sent to far-off consultants and experts by e-mail. Indeed, for teaching the technology seemed perfect. On the technology side, the cameras were supposed to be easy to use and needed no consumables (film). The pictures required no developing, saving both time and cost. The ability to discard unsuitable photos promised that the days of 1 usable picture per roll were finally gone.

The reality of those early digital cameras was less glowing. Early digital cameras had small imagers (charge coupled devices) capable of only minimal resolution, cheap plastic lenses ensured that the quality of the images was quite poor, and these cameras could only take 5 to 10 pictures per set of batteries. Although they used no film, their prodigious use of batteries limited their utility. As digital cameras broke the “megapixel barrier” (ie, were built with imagers capable of capturing images in excess of 1 million pixels), their utility for medical imaging increased dramatically. These cameras produced images that could be printed at 5 inches by 6 inches and larger with excellent clarity. Improvements in lens technology allowed for both zoom capability and increased sharpness. Battery use in these early megapixel cameras was still spotty, but as the technology matured, battery use improved.

The technology improved consistently to the present day. Today, a digital camera capable of capturing 4 or more megapixels can be purchased for less than $500. Storage technology has improved to the point where these cameras can store hundreds of pictures on solid state (compact flash, smart media) memory media that costs less than 50 cents per megabyte (translating in English, media that can hold hundreds of pictures costs less than 50 dollars). Many of these cameras come with rechargeable batteries, making their continued operation relatively inexpensive. Most of these have glass lenses with a zoom capability and the ability to take extreme close up shots (macro).

Software has also matured. Early photo-retouching software required sophisticated knowledge of both photography and computer technology. Today, photo software is both inexpensive and very easy to use. The best of the new crop of software, Photoshop Elements (Adobe Systems Inc), provides all of the features of the industry standard program Photoshop and costs less than $100. This program allows basic photo retouching, resizing, and red-eye reduction and provides an easy, intuitive way to catalogue large numbers of digital photos. Helpful menus and “recipes” allow users to be productive with the software immediately.

It is clear that digital photography has finally come of age. Digital photography in the ICU setting allows for rapid, simple acquisition of images that may be used for teaching, following patients and improved ability to consult with experts both at your institution, and those quite distant. In the next column, we will discuss how this technology can be used in the workflow of a busy ICU, as well as issues of obtaining consent and ensuring HIPPA compliance.

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