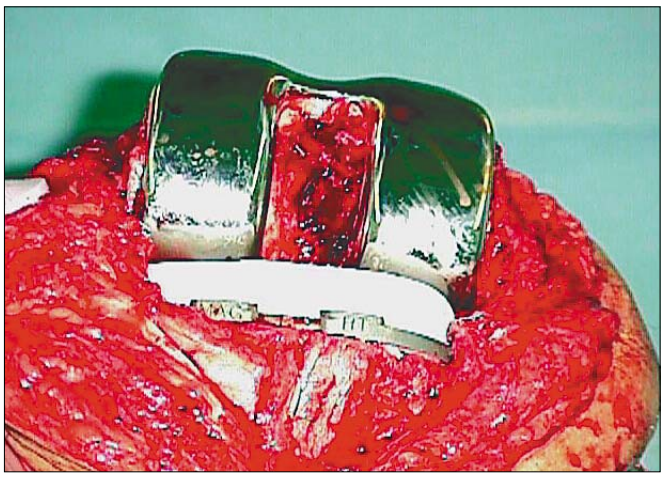
Digital cameras and the Internet

Rapid communication with colleagues improves patient care, and digital cameras are but the latest innovation supporting this goal. The ability to send images such as x-rays to augment an email is now easier with newer cameras.



Actual photo from Dr. Carruthers' Web site

Once very expensive, today's cameras have advanced features that produce quality images that can be transmitted directly over the Internet. Their portability makes it convenient to take pictures in the office or operating room.

They record images digitally on a computer disc. Earlier models provided 2 major obstacles: limited storage capacity and the need to transfer images from camera to computer via a cable. Earlier models had minimal storage and it could take up to an hour to transfer images. Once the storage capacity was reached, images had to be transferred to a computer before new pictures could be taken.

Sony recently introduced a new $1000 model, the Mavica F7, which overcomes these obstacles by recording images on a standard computer disc, each of which can hold 20 to 40 images as JPEG (electronic-image format) files. The discs are cheap and can be exchanged easily, allowing the storage of virtually an unlimited number of images, which can be converted by Windows-based or Macintosh computers. They can also be enhanced by software programs such as Adobe PhotoDeluxe. The photo quality is quite good for computer viewing but the resolution (640 x 480) is not suitable for high-quality prints, although more expensive cameras will produce them. Scanners can also be used to create a digital photo from a standard print, but this can be time consuming. A digital camera allows immediate access to a photo on your computer.

The use of these images can improve medical care in many ways. The images can be transmitted attached to an email, or posted on a Web page. Family physicians can send x-ray images from their offices or emergency departments to a specialist; an orthopedic surgeon can post a difficult case, with accompanying images, within an Internet discussion forum. This will bring advice from around the world on treatment options. Images can also be transferred to a Web page, where physicians and patients can see them. They can be downloaded for later viewing or incorporated into a slide presentation.

Telemedicine has been evolving in recent years, and this evolving technology provides an economical way to transmit quality images over the Internet. To view sample images, visit **www.achilles.net/~cccarrut/photos/medical**. — Dr. *Christopher C. Carruthers*, Orthopedic Surgeon and Health Care Consultant, Ottawa

Cool Site

www.pnhp.org/

Canadian physicians interested in the debate over two-tier medicine should visit the Web site of Physicians for a National Health Program (PNHP). It offers little in the way of technical innovation but contains information germane to debates occurring here. PNHP is a network linking 7000 American physicians and other health care workers who support universal access to health care. Formed in 1987, it promotes reform "based on principles of social justice and medical need" rather than the profit motive that drives most health maintenance organizations. Specifically, it advocates universal coverage and a single-payer system similar to Canada's. The site contains articles supporting its position, including a recent *New England Journal of Medicine* paper (Mar. 13, 1997) which found that for-profit hospitals are costlier and less efficient than public or nonprofit hospitals. In this era of reform in which some Canadians are pushing for privatization, it's interesting to see someone coveting our system. This site contains selective information but the material should at least cause proponents of two-tier medicine to pause and reflect on the difficulties it may cause in the long run. — Dr. *Robert Patterson*, **robpatterson@msn.com**