Dentists should require DICOM as the standard for storing dental radiographs


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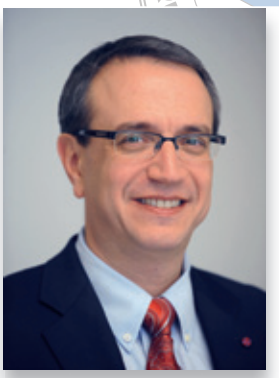
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Digital radiography allows capture, storage, and viewing of images on a computer. This in turn allows image manipulation, fast storage and retrieval, and sharing of images with colleagues for referrals or consultation.

Larger dental practices have implemented digital technologies, using digital sensors for periapical imaging, panoramic machines, and even cone beam computed tomography devices. Integration of these devices and the need to communicate and exchange information with other practitioners make a vendor-independent digital storage format an essential goal. The vendor-independent DICOM (Digital Imaging and Communication in Medicine) standard file format was developed in 1983 and adopted by the medical profession in 1993.[1]

The American Dental Association (ADA) became a member of the DICOM Standards Committee in 1996, and in 2000 the ADA board resolved to implement DICOM as the standard for transmitting digital images.[2] It is apparent, however, that despite organized dentistry adopting DICOM, the industry is still challenged and much remains to be done. For example, for images captured with intraoral sensors, Cyber Medical Imaging uses an *.xdr* format; Carestream Dental (formerly Kodak Practice Works) uses *.rvg* file format; DEXIS uses *.dex*; Schick uses *.dcm* (DICOM); Planmeca uses *.img*; ImageWorks uses *.dcm* (DICOM); Sirona uses *.TIF*; and Gendex uses *.jif*.

With the exception of the DICOM format used by Schick and ImageWorks, and *.TIF* format used by Sirona, all other manufacturers use proprietary file formats to store their images. The *.TIF* format is not proprietary; however, it lack qualities that make DICOM the standard, such as the capability to integrate patient information within the digital image file. While DEXIS software has the option to store images in DICOM, the option is not enabled by default.

Using a manufacturer proprietary format creates several issues:

Image sharing. If a file is saved in a proprietary format, a proprietary viewer to view the radiograph is needed.

They lock you in. If the dentist decides to move to a digital imaging solution from another company, either due to better technology, value, support, etc., there is no easy way to export and re-import existing patients' data into the new software.

Future compatibility. Many practitioners work in their practice for many years before they retire. Digital radiographs stored in a proprietary format raise the concern that companies could eventually abandon the format because of compatibility and/or support issues related to newer software or hardware, and therefore images will become obsolete and inaccessible.

The time has arrived when customers have to push for a change; if you are a practitioner using digital radiography in your practice or you plan to switch to digital imaging, ask the manufacturer to give you the option to store everything in DICOM. It makes sense and it is future proof.

1. Mildenberger P, Eichelberg M, Martin E. Introduction to the DICOM standard. Eur Radiol 2002;12:920–927.
2. Farman AG. Applying DICOM to dentistry. J Digit Imaging 2005;18:23–27.

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