



F39 Digital Dental Image Transmission for Forensic Identification

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The goal of this presentation is to present the problems associated with transmission of digital dental x-rays in forensic dentistry.

This presentation will impact the forensic science community by creating a better understanding of the pitfalls associated with electronic transmission of digital dental x-rays when used for forensic identification.

In the aftermath of a mass fatality incident involving multi-geographical decedents, retrieval of antemortem evidence often takes extra time while waiting for their delivery. For the forensic odontologist, trying to obtain one antemortem record from any jurisdiction can present problems. The use of current technology allows the transmission of antemortem and postmortem records, including digitized dental images, to a location of choice.

Proprietary software was developed by many companies for medical and dental imaging devices for use in hospitals and private settings. Transmission of medical and dental images for consultation and diagnostics outside the initial facility could not be done or was extremely complicated. The need for compatibility of imaging systems became apparent.

The American College of Radiography and the National Electrical Manufacturers Association created a joint committee to set up protocols and standards that eventually became known as Digital Imaging and Communications in Medicine (DICOM). The DICOM standards allow different manufacturers to integrate peripherals into a picture archiving and communications system also known as PACS. In hospitals and larger institutions, PACS in conjunction with DICOM, allows for automated exporting of all pertinent information associated with digital images.

The creation of DICOM and PACS has allowed for better transferability for medical and dental imaging. In smaller facilities such as dental offices, the inclusion of a PACS is usually cost prohibitive. Therefore, these changes to proprietary software thru DICOM still does not necessarily allow for easier transferability.

The presentation will show how dental imaging software varies greatly among the different manufacturers. Resulting images produced by DICOM do not always produce the necessary information associated with the original images. Attendees name may not export with the digital dental x-rays and the original dates may be lost during export. The participants will learn that DICOM and PACS are only a set of protocols and standards. There are pitfalls associated with DICOM. The forensic dentist will be shown differences between the DICOM sets. The forensic dentist will leave with a better understanding of what information is contained in the electronically transferred digital images and what information is not.

Forensic Dentistry, Digital Dental X-Ray, DICOM