F18 Radiography 101 for NOMAD™

Allan A. Raden, DMD, MPH, 814 North Delsea Drive, Glassboro, NJ 08028*

After attending this presentation, attendees will have a greater scope of knowledge pertaining to the judicious use of radiographic equipment, specifically a self-contained portable X-Ray generator.

This presentation will impact the forensic community and/or humanity by providing general principles to be followed for safe and effective operation of radiographic equipment.

Emerging technologies in any scientific field can be a mixed blessing. Just because something is new does not mean that it is useful or appropriate for the desired application.

The analysis of dental remains has recently seen two new technologies; digital radiographic sensors and cordless radiation generating sources. While the general principles of dental radiography have not really changed since the move from a bisecting to a paralleling technique in the 1980s, newer, more powerful, faster and smaller X-Ray sources have made the job easier and more predictable. Whether the capturing device is an electronic sensor, phosphor plate, or silver based film, a reliable and safe radiation source is essential for successful evidence collection.

The introduction of the NOMAD X-Ray generating source has stimulated much discussion in the dental industry. The device is a self - contained, portable, and cordless hand-held unit capable of generating a quality X-Ray beam useful for dentists' purposes in the field as well as in the clinic or morgue. However, with this new device the user and others on the forensic team must be fully aware of its strengths and weaknesses. No instrument or device is a perfect tool, and, like a hammer, it can be very useful when used properly as well as very destructive if used improperly.

The purpose of this presentation is to familiarize the forensic investigator as well as the dental team in the proper use of this revolutionary device. Radiation hygiene must be respected in all cases because forensic dentists are frequently presented with adverse conditions in which to work. Discussion will focus on proper exposure technique, radiation safety, and team coordination. A review of basic principles of radiation generation and safety will be included to insure that all potential users can function with skill, accuracy, and safety.

A training protocol should be an essential element to familiarize the users with the technology and to maximize its potential. While dentists are all well versed in standard radiographic techniques, there still exists a learning curve that must be followed to insure efficacy and safety. The manufacturer's recommendations as well as field experience and application of basic physics could only benefit the forensic team in achieving speed, accuracy, and safety.

Radiation Physics, Morgue Team Performance, Digital Technique

 ** Presenting Author*