



G35 A Review of Postmortem Dental Radiographic Protocol for Emergency Responders in Individual to Mass Fatality Operations

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Learning Overview: After attending this presentation, attendees will understand the advantages of implementing a safer dental sensor stabilization technique in conjunction with a sensor holder, to facilitate radiation exposure safety.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by highlighting the application and use of “at hand” inanimate objects as stabilization devices during the capture of postmortem radiographic images, allowing operators to remove themselves from the field of radiation and thus reduce the risk of radiation exposure to response personnel.

Background: Dental radiograph sensor-positioning devices (X-ray sensor holders) are utilized in the office setting or in operating rooms during patient visits. These holders were developed for the routine care of a patient who is compliant and able to assist in the X-ray sensor stabilization process. In an adjunct application, these sensor holders have been employed in morgue settings to assist in the collection of postmortem radiographs.

Frequently during morgue operations, disaster response personnel attempt to use the same in-office devices on human remains to hold the radiograph sensor holder for a proper radiographic image to be obtained. Eighteen radiographs may be taken for a proper dental autopsy in the form of 4 bitewing and 14 periapical radiographs. If vertical or horizontal angulation corrections were made due to lack of anatomic landmarks or incomplete imaging, the operator tasked with sensor placement has often held the position during evaluation of the previous image. The central beam angles may have been corrected and another exposure accomplished. The various paths of the central beam would frequently put the computer terminal operator at risk of downrange exposure. If corrections in sensor placement were necessary, the sensor was adjusted by hand and held for the next exposure and the expected better image.

Materials and Methods: Controlled radiographic exposure and image capture of human remains were practiced by a small group of Disaster Mortuary Operational Response Team (DMORT) operators in a training Disaster Portable Morgue Unit (DPMU) setting with human remains. Technique repetition in a coroner’s office, and a later opportunity for training of response personnel with human remains, allowed for additional observations of this behavior change being easily accepted.

Results: The repeated effort to remove personnel from the downrange field of exposure was easily accomplished and became the basis for this study being applied to a larger group of responders. All personnel must stay cognizant of the exposure to one another, to stay flexible, and to move away from their station if the central beam would put them at risk of exposure. The use of devices allows the “wet” personnel to clear their hands from the field of radiation while the “clean and dry” data entry operators would step away, which reduces radiation exposure to themselves.

Odontology, Identification, Mass Fatality