F20 Radiation Safety for the NOMAD™ Portable X-Ray System in a Temporary Morgue Setting

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After attending this presentation, attendees will understand the radiation levels at various distances and angles that are generated by the NOMAD™ Portable X-Ray System and how these levels compare to established radiation safety guidelines.

This presentation will impact the forensic community and/or humanity by quantifying the radiation exposure to the dental personnel in the morgue at St. Gabriel utilizing the Nomad portable X-Ray unit. The amount of radiation exposure to the morgue personnel will be compared to established radiation safety levels to determine if additional safety measures are required to protect the dental team members.

The forensic odontologists who responded to the need for identification of the victims from New Orleans following Hurricane Katrina were pleased to find a new tool available to them at St. Gabriel. The new tool was a battery-powered, portable X-Ray unit called the NOMAD™. Sold and distributed by Aribex, Inc., the units performed exceptionally well. They proved to be a very valuable piece of equipment that had the portability and versatility required in the somewhat austere conditions that typically exist in a temporary morgue environment.

The radiation safety characteristics of the NOMAD™, reported by D. Clark Turner, Donald K. Kloos, and Robert Morten for the operator and the patient, were provided by Aribex in their promotional material. Their findings confirm that the radiation levels for the patient and operator are well within established radiation safety guidelines. However, their report did not consider the radiation levels for additional personnel that may be in close proximity to the NOMAD™ in a temporary morgue setting. In the morgue, since the patient cannot hold an X-Ray film or computer sensor in position, a second operator is required to perform that function. The morgue operation in St. Gabriel also made use of digital X-Rays so a third person was required to be present to operate the computer. Early in the operation at St. Gabriel, there were as many as three dental stations, each with three-person forensic dental teams operating simultaneously within the dental section. With that much activity, there is a need to quantify the radiation levels at various distances and locations to ensure that radiation levels to all personnel in the morgue are within the recommended radiation safety levels.

The author will present the results of an investigation of the radiation levels at various locations in proximity to the NOMAD™, using the location of personnel as they were positioned in the temporary morgue in St. Gabriel. A comparison will be made to the various radiation levels obtained in the study to the established radiation safety levels to determine the relative risk of radiation exposure to each member of the forensic dental team. The results will show that the level of radiation exposure to all members of the dental team were significantly below established radiation safety guidelines. Thus the use of the NOMAD™ at St. Gabriel presented no significant radiation risk to any member of the team.

Nomad™, Radiation, Safety

 ** Presenting Author*