H15 Forensic Field Radiography: In the Trenches With MacGyver

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After attending this presentation, attendees will learn how radiological imaging is a very useful tool in forensic and archaeological investigation. However it is often not deployed in circumstances where it would be very useful due to perceived practical, financial, and logistical concerns. This presentation will demonstrate that with prior planning, many of these concerns can be easily overcome and that a field radiography facility can be swiftly and economically established even in remote areas.

This presentation will impact the forensic community by demonstrating how radiography is a very useful tool in forensic investigation. With prior planning it can easily be deployed in field conditions, offering the opportunity to gather and preserve evidence in difficult or complex situations.

Hypothesis: The potential value of obtaining radiological images using state-of-the-art facilities in hospitals and established research centers cannot be denied. However, access to such facilities is not always possible or desirable. In such circumstances, employing conventional radiography in a field situation offers a viable alternative, particularly in anthropological and forensic applications.

Methods & Results: Establishing a radiographic facility at or close to the site at which remains are recovered and/or stored has a number of advantages. These include: (1) minimal disruption of the taphonomic context, (2) minimal disruption of foreign bodies and/or artifacts that could potentially compromise the evidential value of the data, (3) radiography can be used to triage remains in order to select those for transportation to an imaging facility with advanced modalities such as computed tomography, (4) imaging can be performed in circumstances where transportation is impossible for physical or logistical reasons, and (5) in the case of sensitive human rights situations, there may be security considerations preventing transportation, and/or making it difficult to secure a separate mortuary facility.

Conventional radiographic equipment is highly mobile and a field radiographic facility can be easily established even in remote areas provided that a number of factors are taken into consideration. The objectives of the study or investigation must first be clearly defined, detailing the number and type of specimens to be examined and the aim of such examinations. An experienced radiographer should then develop the radiographic design of the project in conjunction with the investigating team. Project design will include: (1) development of the imaging protocol and selection of appropriate radiographic unit and image recording method, (2) site survey and risk assessments, (3) facility design including x-ray, image processing, image storage and viewing facilities, (4) facility construction, (5) development of schemes of work and health and safety rules, (6) development of a quality control plan and procedures, and (7) facility commissioning including staff familiarization and training.

Conclusion: Radiological imaging is a very useful tool in forensic and archaeological investigation. In certain situations the establishment of a field radiography facility may offer significant benefits to the investigation and should not be discounted on logistical, organizational or financial grounds without a feasibility study being concluded by an experienced radiographer.

Field Radiography, Forensic Radiography, Mass Fatality Incidents

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