E66 Down the Rabbit Hole: The Functional Paralysis of a Medical Examiner Facility by Contaminated Palo Mayombe Artifacts

Brett E. Harding, MBA, District 5 Medical Examiner's Office, Leesburg, FL 34748; Kyle Shaw, MBBS, District 5 Medical Examiner's Office, Leesburg, FL 34748; Barbara C. Wolf, MD, District 5 Medical Examiner's Office, Leesburg, FL 34748*

Learning Overview: After attending this presentation, attendees will understand: (1) the dangers of elemental mercury facility contamination, (2) the potential danger of Palo Mayombe artifacts and the potential risks to facility and staff, and (3) the multidisciplinary methods utilized to return facilities to functional operations.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by highlighting the dangers associated with Palo Mayombe artifacts and elemental mercury.

The efficient daily operation of a medical examiner/coroner facility is an integral part of the criminal justice system and is essential for the timely service of the citizens who are served. The operations are usually dependent on predictable factors, such as employee staffing, case load, equipment operations, etc. These institutions are expected to maintain a functional operational status through all types of adversary. Protocols address the possible interruption of utility services to help assure the continued operation. However, unforeseen factors or situations arise that may paralyze the successful daily operations of the usually "smooth running" institution.

Contamination hazards within a medical examiner/coroner facility are usually confined to bloodborne pathogens associated with decedents' bodies. These pathogens are generally well understood, and safety procedures have been universally instituted. These biological hazards do not routinely affect the general operation of a medical examiner's office.

Chemical contamination can also be encountered when removing decedents from hazardous environments. Liquids, such as diesel fuel, gasoline, and non-petroleum-related chemicals, can be neutralized or semi-neutralized after the body is removed from the hazardous environment but before transport to the institutional facility for examination.

Gases such as carbon monoxide, cyanide, and methane are usually contained within the environment itself and do not routinely present a threat from "off gassing" once brought into a medical examiner/coroner facility. Potassium and sodium cyanide, often used in jewelry cleaning, may be of particular concern because of the rapidity with which it kills. These effects can be limited to the scene of death and may not pose a risk to operational effectiveness.

Bio-terrorism utilizing bacterial agents, such as anthrax, can also shut down the functional effectiveness of a facility. Unfortunately, in the short term, a false bacterial agent can be as effective as the real bacteria until its authenticity can be verified.

Radiation exposure is a potential hazard but is often limited to the medical therapies within the body itself. These radioactive dangers are limited to the staff performing the internal examination of the body and not to the functional operation of the facility.

Elemental mercury is one of the most common and hazardous contaminants in health care and biomedical research facilities. Its neurological effects are a known danger to individuals who suffer a significant exposure to this toxic "liquid metal." The inadvertent spilling of elemental mercury is the most common method for human exposure. The "Mad as a Hatter" neurologic effects are often a result of chronic exposure from unrecognized spilled mercury and may result in significant medical treatment.

Elemental mercury contamination of human remains, and other objects associated with Palo Mayombe religious practices is an infrequent but real danger encountered by medical examiner's facilities in Florida. The mishandling of such remains may result in not only the interruption of medical examiner services, but substantial monetary costs associated with decontamination and medical evaluation and treatment of exposed staff.

This presentation details the case of an acute elemental mercury contamination within a medical examiner facility. The multidisciplinary methods that are used to continue daily operations, the restoration of functional facility operations, the medical evaluation of staff, and the potential for the establishment of a universal contamination control plan will be highlighted.

Elemental Mercury, Palo Mayombe, Contamination