C7 Guidance to Digital Forensics Practitioners on the Handling of Evidence Exposed to Biohazardous Materials

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Learning Overview: The goal of this presentation is to provide guidance to digital forensic practitioners and digital forensic labs on the best practices for handling evidence exposed to biohazardous materials. Limited guidance exists today as to how digital forensic practitioners should protect themselves when encountering devices exposed to biohazardous materials.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing guidance to digital forensic practitioners on the best methods for protecting themselves when handling evidence exposed to biohazardous materials. This presentation will provide guidance to practitioners, management, and labs on the correct personal protective equipment, hazardous cleanup materials, disposal, and evidence packaging to have, should it be needed.

Objectives: (1) identification of standards relevant to biohazardous material handling; (2) understanding of universal precautions; (3) identification of types of hazards; (4) understanding of bloodborne pathogens; (5) understanding of other biohazardous materials; (6) Personal Protective Equipment (PPE) levels; (7) decontamination of items exposed to biohazardous materials; (8) implication of decontamination steps on items of electronic evidence; (9) explanation of Safety Data Sheets (SDS); and (10) best practices for handling electronic evidence items exposed to biohazardous materials.

In the course of establishing procedures and best practices for addressing damaged devices, the research studies undertaken encountered a gap in lab safety policies. The gap was how to address physical items of evidence that may have been exposed to biohazardous materials. A survey of digital forensics labs in local, state, and federal law enforcement agencies identified that most agencies did not have personnel safety protocols to be used for handling evidence once it arrived in the lab.

While crime scene investigators don PPE when collecting evidence on scene, the same items of evidence may be delivered to a lab with no biohazard labeling nor contained in a biohazard-safe container. The safety disconnect extends beyond labeling and biohazard packaging for delivery to the lab.

Lab personnel may lack clear direction regarding safely handling devices during evidence processing, cleaning biohazardous materials off devices, and which PPE to wear to protect themselves while the device exists in the lab.

Industry standards in other scientific disciplines exist with direct applicability to the discipline of digital forensic science. This presentation will explore, identify, and highlight those techniques through literature review and propose the relevant techniques for addressing digital evidence with safety for the handler and care for the discreet pieces of digital evidence.

This presentation will also review the industry standard product SDS (formerly known as material safety data sheets) to highlight how the sections of the sheet can guide practitioners on the appropriate PPE, handling, storage, and spill methods to use in the event these materials are introduced into their labs.

Digital Forensics, Biohazard, Bloodborne Pathogens