H44 A Death Investigation of Mining Fatalities: The Utah Experience

Kacy Krehbiel, MD, Utah Office of the Medical Examiner, Taylorsville, UT 84129; Joseph Pestaner, MD, Utah Office of the Medical Examiner, Taylorsville, UT 84129; Erik D. Christensen, MD, Utah Office of the Medical Examiner, Taylorsville, UT 84129*

Learning Overview: After attending this presentation, attendees will: (1) understand the importance of a thorough death investigation in mining fatalities, (2) be able to describe the impact that autopsy findings have in the subsequent enforcement of safety rules and regulations, and (3) be familiar with the role of outside regulatory agencies in the investigation of these deaths.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by detailing the complexities of the investigation of mining fatalities and highlighting the importance of investigative and autopsy findings in the subsequent regulatory consequences concerning these deaths, as illustrated by a recent case study at the Utah Office of the Medical Examiner (OME).

Mining deaths in the United States, which has active mines in all 50 states, have decreased since the passage of the Federal Mine Safety & Health Act of 1977. This strict liability statute establishes that mine operators may be assessed fines, civil penalties, or even imprisonment for violations of health or safety standards. The number of mining fatalities in the state of Utah has likewise decreased over time, with only one mining disaster (defined as greater than five deaths in an incident) in the new millennium. Death investigation plays a vital role in the investigation and subsequent enforcement of safety rules and regulations. All mining fatalities since 2001 in Utah were reviewed to better understand the investigative challenges in such cases.

Since 2001, there have been 24 mining deaths in Utah that were investigated by the Mine Safety and Health Administration (MSHA), 18 of which were investigated by the Utah OME The six cases not investigated by the Utah OME were individuals whose bodies were not recovered following the Crandall Canyon Mining disaster of August 2007, in which nine individuals were killed in two separate collapses at this underground coal mine. Investigative issues, such as uncertainty regarding jurisdictional authority, can occur, with overlap between cases falling under the jurisdiction of the MSHA and the Occupational Safety and Health Administration (OSHA). The Utah OME has jurisdiction for all such deaths and works with whichever government agency leads the investigation.

Correlation of autopsy findings with the scene investigation is critical, as exemplified in a recent case at the Utah OME. A 56-year-old male sustained a fatal head injury while installing discharge chutes on the screen deck of a gravel sifter. Witnesses saw the decedent fall backward, but nobody could state what exactly had happened. MSHA's preliminary conclusion, as published in the initial fatality alert report on its website, was that the suspended chute shifted, striking the decedent. This preliminary conclusion was made prior to their review of the autopsy findings. The autopsy revealed significant head injury with two separate significant impact sites that supported an alternative hypothesis, namely that the head was pinched or compressed between two objects. Through subsequent collaboration with MSHA, it was determined that the decedent had most likely been working underneath the suspended chute, in violation of applicable regulations, when his head became pinched between the chute assembly and the surrounding steel structures.

In the investigation of mining fatalities, a thorough understanding of the circumstances surrounding death and correlation with the findings at autopsy is critical. Forensic pathologists should be aware of the role their findings play in the investigation and subsequent regulatory enforcement concerning these deaths.

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