



H73 Jay Dix Memorial Bonus Day Lecture Series

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After attending these presentations, attendees will understand how medicolegal deaths are evaluated and certified and how and why deaths related to the specified topics occur. Attendees will be aware of a systematic approach to the evaluation of such deaths that can be readily implemented in their daily practices.

These presentations will impact the forensic science community by providing a comprehensive review of what causes and contributes to deaths related to the specified topics. Attendees will better be able to systematically evaluate deaths in their daily practices in which the specified topics may have played a role.

A proper medicolegal death investigation is a multidisciplinary process that often involves non-medical personnel as well as medical professionals. This annual series of lectures is intended to provide the non-forensic pathologist forensic scientist a comprehensive basic review of selected topics in forensic pathology in order to increase familiarity and understanding and enhance inter-discipline communication.

This year's lecturers will discuss the medicolegal investigation of death and its certification -- the investigation of deaths due to firearm injuries, deaths that are temporally related to law enforcement apprehension and custody, deaths involving blunt trauma, and adult deaths involving acute and chronic head trauma.

Blunt force injury is one of the major categories of mechanical injury. Blunt force injuries are among the most common injuries sustained by people. These injuries include abrasions (scrapes), contusions (bruises), and lacerations (tears). Blunt force is also a substantial component of chop wounds, injuries caused by relatively heavy-edged objects, such as a machete or ax. Multiple factors and mechanisms are involved in injuries and deaths involving blunt forces. Understanding and evaluating injuries and deaths in which blunt force injuries may have played a role requires: basic knowledge of injuries caused by blunt forces and how to distinguish them from other types of trauma; recognition of patterned injuries; and recognition of injury patterns (e.g., pattern of falling versus pattern of being struck by an object). This lecture will provide a comprehensive review of these issues.

Firearm injuries constitute a major category of physical injury. Firearm fatalities are a major cause of non-accidental morbidity and mortality in the United States. The appearance of these injuries is affected by the firearm, ammunition, range of fire, victim anatomy, and, in some cases, intervening targets. Multiple factors and mechanisms are involved in injuries and deaths involving firearm injuries. Understanding and evaluating injuries and deaths in which firearm injuries may have played a role requires basic knowledge of injuries caused by firearms, how these injuries are produced, and how to distinguish them from other types of trauma. This lecture will provide a comprehensive review of these issues.

Head injury is a common cause of trauma-related morbidity and mortality among adults. Findings in serious head injury depend on the mechanisms of injury, duration of survival, and, in some cases, co-morbid conditions. Proper evaluation of head injury is important in recognizing how an injury was sustained, excluding various potential or alleged mechanisms, evaluating accuracy and reliability of witness accounts, and aid in identifying the perpetrator in those cases involving inflicted injury. This lecture reviews the features of acute and chronic adult head injury, mechanisms of injury, manifestations of head injury, and the interpretation of anatomic and clinical findings in the context of a medicolegal death investigation and quality of evidence in the literature.

The certified cause and manner of death have far-reaching ramifications, impacting areas such as grief, estate settling, insurance claims, civil litigation, criminal investigation and adjudication, investigations by regulatory agencies, public health policy, and research funding allocation, among others. The medicolegal death investigation is a multidisciplinary process designed to collect information pertaining to the deaths of individuals who die of conditions or under circumstances that place them under the jurisdiction of the medical examiner or coroner so that the medicolegal official is able to accurately and reliably determine cause and manner of death of these decedents. The determination of the cause of death is the practice of medicine and, like other medical practices, is based on integrating and interpreting information about the circumstances (history), physical examination (decedent and scene of incident/death), and ancillary studies (e.g., laboratory analyses, radiographic imaging). Accurate and comprehensive information obtained during a medicolegal death investigation contributes to the ability of the forensic pathologist to reliably and accurately determine the cause of death, identify other factors that contributed to death, and properly classify the manner of death. This lecture explores components of a modern medicolegal death investigation and discusses the fundamentals of the certification of deaths.

There are multiple causes, mechanisms, and contributory factors that can play a role in deaths that are temporally related to custody. The custody process can be divided into several stages — pre-custody, pre-incarceration, and incarceration. Particular diseases and injuries tend to occur and/or become manifest during each of these stages. This lecture will systematically review what diseases and injuries cause/contribute to death in the phases of custody related to apprehension and arrest, how they affect physiology and anatomy, when they are typically operative, and how they are manifest. Recognizing what occurs during the various stages of custody allows a systematic approach to assessing deaths that occur during the custody process. This lecture will review the conceptual and practical aspects of understanding and investigating deaths that are temporally related to the apprehension/arrest phases of custody.

Death Investigation, Forensic Pathology, Trauma