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Medicolegal Death Investigation System in America

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Medicolegal death investigations in the U.S. have become a critical part of crime investigations over the past several decades. additionally, the roles of medical examiners (MEs) and coroners have expanded beyond the field of criminal justice in recent years. despite the fact that these roles are becoming increasingly more important a systematic and comprehensive study of this complicated system is yet to be conducted. Since there is no national standard or federal system, medicolegal death investigations vary across states, districts, and counties in the U.S. In this paper, we attempted to classify the systems into three categories. We also examined the roles and work procedures that MEs and coroners commonly share across the country as well as the problems and challenges that the medicolegal death investigation system is facing today. In addition, we have also provided a brief summary of the Korean system in order to add a comparative perspective, since the Korean legal system differs substantially that of the U.S.

Key words : death investigation system, medicolegal death investigation, coroner, medical examiner

Introduction

Unnatural death has a great impact on both the victims' families as well as the criminal justice agencies that are responsible for determining the cause of death. Science and technology have long played a key role in death investigation. Current death investigation systems mostly involve a combination of medical, legal, and administrative structures. The differences between various jurisdictions of these death investigation systems mostly arise from a variety of interrelated factors that include social, religious, historical, political, and legal influences, as well as the development of the medical profession and its specialties. The American death investigation system originated from England's coroner system; however, during the late 19th century, the medical examiner (ME) system emerged as an alternative replacement. Currently, the United States has a complicated death investigation system with different standards varying by states, regions, and counties.

This paper attempts to understand the death investigation system in the United States and scrutinizes the changing roles of MEs/coroners to accommodate today's political, social, and global circumstances. In addition, a brief examination of the Korean death investigation system, which is rooted in the European system, is presented as a comparison to the American system.

Medico-legal Death Investigation System in America

The medicolegal death investigation system is responsible for conducting death investigations and certifying the cause and manner of unnatural and unexplained deaths.[1] At present there is no federal level standard system for the medico-legal death investigation (MDI). Instead, the U.S. Constitution grants each state responsibility for constructing laws to define the state's death investigation system, as well as which deaths are to be investigated and the minimum requirements for the coroner.[2] Death investigation systems can be established by depending on the laws of particular state. In addition, centralization of the system varies by state. Some states have a statewide ME system while other states have independent ME or coroner offices in each county or other subdivisions such as judicial districts. Therefore, MDIs vary dramatically from one state/county to the next[3] and have a wide variation in terms of the scope, extent, and quality of investigation. These variations include differences in organizational placement in the government, statutory requirement, credential/training of personnel performing the investigations, and funding levels.[1] Therefore, broad classification of the death investigation system in the United States is difficult.[4]

According to the National Association of Medical Examiners (NAME), the American MDI system is a conglomeration of ME, coroner, and mixed systems. About 2,000 medical examiners and coroners' (ME/C) offices provided death investigation services across the United States in 2004.[5] As of 2006, counties in 29 states had some form of coroner system, and counties in 40 states had a ME system.[6] In addition, 18 states have mixed systems.[7] Some jurisdictions combine the two positions into a single Office of the ME/C. Although there are many more coroner jurisdictions than ME jurisdictions, slightly more than half the US population lives in areas served by 239 ME systems; in addition, these systems tend to exist in populated metropolitan areas. In large part, this is related to cost effectiveness and the availability of medical specialists.[3] Most death investigation offices are independent offices of city, county or state government but some may be under the public safety, law enforcement, forensic science, or public health department.[1]

The major differences between coroners and MEs reside in the manner of their selection - elected versus appointed - and their professional status. Coroners are elected lay people who often do not have professional training, whereas MEs are appointed and have a board-certification in a medical specialty.[8] MEs are physicians, pathologists or forensic pathologists who received medical degree and special training.[1] Most coroner systems, however, require minimal or no special training.[1] Measuring the quality of the system is also difficult. Based on the 2003 data, 42 of the nation's ME offices have been accredited by the NAME. Thus, training requirements vary significantly by jurisdiction.

Coroner System

American colonists brought the coroner system from England. An early definition of a coroner's duties in the colonies can be found in the governor of Maryland's 1640 appointment of John Robinson to be high constable and coroner for St. Mary's County. The earliest mention of a physician in connection with the duties of a coroner was in 1860 in Maryland, where the Code of Public General Laws authorized the coroner or his jury to require the attendance of a physician in cases of violent death. Eight years later, the legislature authorized the governor to appoint a

physician as sole coroner of Baltimore.[9]

The coroner system is typically a county or district based death investigation system. The coroner is an elected official who makes rulings as to the cause and manner of death. The coroner system in the United States differs from those found in England and Wales and in Australia. In the United States, the coroner is often political in nature rather than judicial, and the elected coroner may have no qualifications in law or medicine.[10]

The coroner's job depends on the jurisdiction. A non-physician coroner may be required to simply identify the body, notify next of kin, return the deceased's personal items to the family, and complete the death certificate, noting cause and manner of death. He may also arrange autopsies. The Los Angeles County Department of Coroner, however, has a Chief Medical Examiner Coroner who is a medical doctor. Kentucky combines the coroner/medical examiner systems and gives coroners the authority and powers of peace officers.[11]

Even though some jurisdictions have strict requirements such as a medical degree to become coroner, there are very few requirements which must be met in order to run for coroner in a majority of coroner jurisdictions.[12] In all but four states with coroner systems, coroners are not required to be physicians. It is fairly common for the coroner to be a local funeral home director or other nonmedical citizen of that county.[7] In other words, while the coroner is charged with a quasi-judicial function and determines cause of death, no particular education or training is required.[13] The problem with this system is that deaths may be mishandled, evidence obliterated, and homicides mistakenly ruled as suicides, accidents, or even natural deaths.[14] In many jurisdictions, therefore, the coroner utilizes the expertise of a pathologist or forensic pathologist to medically evaluate the body of the deceased and for the purpose of conducting an autopsy. In some jurisdictions, these pathologists are not board certified in forensic pathology but may have some forensic experience.[15] Today, some states still retain their coroners but require training and continuing education.

Medical Examiner System

As advances in industrialization in both manufacturing and agriculture caused the migration of huge numbers of people from farms to urban areas in the late 1800s, big cities in the United States found that many institutions such as the county coroner did not transition well from rural areas. The ME system was introduced in Massachusetts in 1877 when the Massachusetts legislature passed a statute that replaced coroners with MEs and required MEs to be licensed to practice medicine. The ME system of death investigation was adopted by cities such as Baltimore, Richmond, and New York around the time of World War Ⅰ.[14] MEs, however, didn't have the right to order autopsy until the 1940s. Early MEs didn't have a central toxicology lab, either.

The modern ME system began in New York City (NYC) in 1918, where the first NYC ME was Dr. Charles Norris, professor of pathology at Columbia University. Dr. Milton Helpern (1902–1977) further developed the ME system by establishing a modern facility equipped with the scientific, educational, and investigative resources necessary to conduct medicolegal autopsies and death investigations thoroughly. This included a forensic science laboratory to help determine cause and manner of death.[14] The system has slowly replaced or combined with the old coroner system in many areas. One reason many jurisdictions have adopted an ME system is to fight political corruption. MEs are appointed, so they are more independent of political influence and voter mood. Moreover, a coroner with limited formal education could not professionally discuss medical or medically related matters with police or other authorities.[11]

The federal government was not involved in death investigation when the Constitution was written. The creation of the District of Columbia led to the establishment of the first federal governmental coroner. The district abolished the coroner's office in

favor of a ME's office in 1970. No other federal death investigation program existed until the Federal ME's Office was created in 1990. This office also serves the military and is administered from the U.S. Armed Forces Institute of Pathology.[11]

In some jurisdictions, the ME must be a pathologist or a forensic pathologist. Large metropolitan offices usually employ several lay death investigators (non-physician, non-pathologist) who perform non-autopsy aspects of the death investigation. Due to the lack of consistency from one ME system to the next, there is a great deal of variability in the quality of the system and in the meaning of the work of ME. Within ME systems, the ME is responsible for deciding whether or not to perform an autopsy and for signing the official certification.[12] The chief ME is required to be an experienced physician with advanced training in pathology - the study of the causes and processes of disease. The subspecialty of forensic pathology was established in 1959. Forensic pathologists complete advanced training including a bachelor's degree, medical school, a multi-year residency in pathology, and an additional fellowship in forensic pathology.[14] Board-certified forensic pathologists have been certified by the American Board of Pathology and have had forensic pathology training or experience.[11] In addition, the NAME, a professional organization for MDIs with MEs at the core, accredits ME offices. Thus, a certain level of basic expectations is assured by certification of the individual practitioner and accreditation of the office. However, only a fraction of ME offices meet this criterion, although that number continues to gradually increase.[4]

The ME performs autopsies and serves as an integral part of legal investigations.[6] The ME looks into deaths that may be criminal, suicidal, sudden or unexpected, accidental or in circumstances where the medical attendant cannot certify that the cause of death was natural. Deaths are reported to the ME by the police, doctors, public officials and members of the community. However, MEs don't perform autopsies on every bodies referred to their care. The ME decides whether an autopsy needs to be performed and what other investigations should be conducted. The ME may involve other specialists, including forensic experts in nursing, entomology, odontology, anthropology, archaeology, and knot analysis. MEs who perform autopsies in death investigations are usually forensic pathologists.[11] The ME will often attend and supervise the scene of death and can seize evidence to assist in the investigation.[10] If a criminal act is detected, then the District Attorney must be informed. In contrasts to coroners in England, the ME has no power to hold a hearing or inquest. Instead, the investigation records are treated as documents that may be discovered and used in evidence in civil or criminal proceedings.

In 1997, the NAME instituted a revised voluntary inspection and accreditation program for medicolegal offices. The new program is much more stringent than the prior program. The standards represent minimum stands for an adequate medicolegal system by emphasizing policies and procedures. Deficiencies are designated as Phase I or II. A single phase II deficiency precludes accreditations. Categories for evaluation include: 1) the facilities; 2) safety policies, procedures, and equipments; 3) personnel; 4) notification, acceptance and release; 5) investigations; 6) body handling; 7) postmortem examinations; 8) identification; 9) evidence and specimen collection; 10) support services; 11) reports and records; 12) mass disaster plan; and 13) quality assurance. Excessive case load is one of the leading problems in many medicolegal offices. For example, the recommended annual caseload for a forensic pathologist without administrative responsibilities is 250 autopsies.[16] If a ME performs more than 250 autopsies per year, this is considered a Phase I deficiency; if more than 400, a Phase II deficiency.

Mixed System

Of the 50 states and the District of Columbia, 18 are considered mixed systems. In one type, the ME offices exist within metropolitan areas and the coroner offices exist in rural counties. In the second type, each county

is served by a coroner, but the state has one or more ME offices staffed by forensic pathologists in order to perform autopsies for the coroners. In some jurisdictions, the coroners make the decision of whether or not to perform an autopsy while in others that decision is delegated to the forensic pathologists.

Medicolegal Death Investigation in America

In a typical year, American ME/C offices handle about 4,400 unidentified human decedents and about 1,000 remain unidentified longer than one year. Nearly one million human death cases were referred to ME/C offices in 2004, accounting for about 40% of all deaths in the United States that year. Of these, about 500,000 were accepted for autopsy. About 20 percent of deaths in the country are investigated by MEs or coroners.[17] Death investigation is accomplished by the interaction of many individuals with varying expertise. Death investigation in the United States doesn't have a nationally standardized system. There are many training programs available, but few uniform, nationally recognized standards. The American Board of Medicolegal Death Investigators (ABMDI) was founded in the late 1990s to develop a standard training curriculum. Some death investigators are required to obtain this certification.[18] In 1997, the Department of Justice published the National Guidelines for Death Investigation with the support from the National Institute of Justice, the Centers for Disease Control and Prevention, and the Bureau of Justice Assistance.

The medico-legal investigation system in the United States legally defines that death investigation and death certification are the responsibility of a coroner, ME or combination of the two. The statutes usually state that the coroner or ME has investigative responsibility over all the violent, unattended, unexpected or questionable deaths that occur within their jurisdiction.[15] Medical expertise is crucial in death investigations. It begins with body examination and evidence collection at the scene and proceeds through history, physical examination, laboratory tests, and diagnosis.

Although the guidelines for which deaths to investigate vary widely from jurisdiction to jurisdiction, most require that the following types of deaths be investigated:

- Deaths due to homicide, suicide, or accidental causes such as motor vehicle crashes, falls, burns, or the ingestion of drugs or other chemical agents
- Sudden or suspicious deaths, deaths from sudden infant death syndrome (SIDS), and unattended deaths
- Deaths caused by a agent or disease constituting a threat to public health
- Deaths that occur while the decedents were at work
- Deaths of people who were in custody or confinement
- Deaths of other people institutionalized for reasons other than organic disease
- Deaths of people to be cremated.[7]

The major duties of a medicolegal system in handling deaths falling under its jurisdiction are:

- To determine the cause and manner of death
- To identify the deceased if unknown
- To determine the time of death and injury
- To collect evidence from the body that can be used to prove or disprove an individual's guilt or innocence and to confirm or deny the account of how the death occurred.
- To document injuries or lack of them
- To deduce how the injuries occurred
- To document any natural disease present
- To determine or exclude other contributory or causative factors to the death
- To provide expert testimony if the case goes to trial[16]

In every death investigation, the coroner or ME identifies three critical concepts: mechanism of death, cause of death, and manner of death. The mechanism of death is the ultimate physiologic derangement

resulting in death. The cause of death is any injury, imbalance, or event that precipitates a fatal physiologic derangement. The manner of death is an explanation of how the cause of death came about based upon known facts concerning the circumstances surrounding the death. The manner of death is frequently the central subject for autopsy evaluations. The manner of death often has profound social and legal implications and is divided into five major classifications: homicide, suicide, accidental, natural, and undermined.[19] Cause of death is the medical reason for the death, for example, gunshot wound to the chest, stab wound to the abdomen, or blunt force trauma to the head. This is determined by the ME/C. This person is also legally responsible for making the final manner of death determination of either homicide, suicide, accident, natural or undetermined. The death investigator provides the critical information necessary for an accurate determination with a medical evaluation/autopsy of the deceased.[15]

There are multiple roles within the death investigation. The "triangle" of roles that involves criminal justice, public safety, and medicine has now evolved to a "quadrangle," to include public health as one of the beneficiaries of the valuable information collected by MEs and coroners. The traditional role MEs and coroners play serves the criminal justice system by providing evidence to convict the guilty and protect the innocent.[1] The criminal justice system needs information on deaths to ensure that all homicides are correctly recognized, investigated, and prosecuted.[10] This has been done by investigating deaths due to violence or crime and providing reports that can be used in court during testimony. Thus, examiners and corners provide evidence to aid in the determination of cause, timing, and manner of death for criminal trials and civil litigation, such as in malpractice, personal injury, or life insurance claims.[20]

During the last several decades, however, the role of MEs and coroners has evolved from criminal justice service to a broader involvement that now significantly benefits public health and safety.[21] The public service goal of forensic pathology is to investigate death for the benefit of the living by developing strategies to prevent injury, disease, and death.[22] Death investigations are critical for many public health/safety and research including surveillance, epidemiology, and prevention programs such as injury prevention and control, prevention of suicide, violence, or substance abuse. By investigating any death that could potentially affect public health or safety, such as a suspected case of tuberculosis, avian flu, or West Nile infection, ME/C can help to develop prevention strategies for public illness and injury.[23] In addition, more recently, the roles of MEs and coroners have emerged as critically important in evaluating the quality of health care and the nation's response to bioterrorism.[1]

There are several steps in MDI that the death investigators usually follow: 1) initial collection of information; 2) scene investigation; 3) examination of the body; 4) ancillary investigations; and 5) report preparation.4) In some jurisdictions, when a police officer reports finding a body, the ME or a scene investigator working for the ME's office travels to the scene of the death. In other jurisdictions these officials will begin their investigation once the body arrives at the morgue. The most immediate concern is securing the scene in order to preserve evidence that can indicate whether the death was natural, accidental, or intentional. The scene investigator from the ME's office examines the body and the surrounding scene. The ME has the authority to determine the necessary scope of the investigation. In other words, the police agency controls the perimeter of the crime scene at a death investigation, but the body is under the control of a ME or coroner. Until he or she arrives on scene, no other person can touch, move, or remove the body, or those items on or about it.[24] The first and second steps of investigation involve an investigation of the circumstances leading up to and surrounding the death. One must obtain as much information as possible prior to examining the body. Investigation of the circumstances of the death may involve: An investigation of the scene; Talking to witnesses, next of kin, and attending physicians; obtaining past medical

records or police reports. MEs approach a death investigation with six critical questions in mind:

- Who is this (the body)?
- When did this person get sick, hurt, or die? (Timing)
- Where did the decedent get hurt or die? (Location)
- The cause of death
- The manner of death
- Who did it (if the deceased was murdered): the ME can bring forward all the evidence and results from his fact–finding to help provide the answer.[11]

The third step is the examination of the body – autopsy or an external examination. MEs determine whether an autopsy is necessary after the initial investigation. The autopsy is central to the death investigation. An ME performs medicolegal autopsies and these autopsies are performed for legal as well as medical purposes as the results may be relevant in the courtroom. MEs, who are trained in forensic pathology, have the expertise to reconstruct the circumstances of death based on wounds, sudden and unusual changes in the body, trauma to the body, toxicity of blood, and other internal and external physical evidence.[23] Manner and cause of death determinations must be made by a doctor. These determinations are listed on a death certificate, which serves as legal proof of death and lists the accepted medical finding for manner and cause.[25] The fourth step includes the performance of laboratory tests that include toxicology, ballistic test firings, and etc.[26] During the report preparation step, MEs collect all the reports created through different phases of the investigation such as the autopsy report, summary report on investigation, and ancillary procedure summary; they then prepare the final reports. MEs submit the findings in an autopsy report and may later testify as an expert witness if a case goes to court.

Medico-legal Death Investigation System in Korea

The Korean medicolegal death investigation system is different from that of the American system specifically due to differences in legal systems. While the American legal system is originated from the English system, Korean legal systems can be traced back to the European system which authorizes prosecutors for crime investigation. Therefore, prosecutors are in charge of MDI as well. Under the European system, MDI is limited to suspicious deaths or deaths due to crime. Currently, there are no separate laws that regulate the MDI in Korea. Instead, criminal procedure laws state that unnatural/violent death should be investigated by a prosecutor and a prosecutor can order the death investigation to police within the jurisdiction. Prosecutors also decide whether the autopsy is necessary. If prosecutors decide that the autopsy is needed, they request doctors to perform an autopsy upon receiving a warrant from the courts under the jurisdiction.[27] Law enforcement regulation also states that the police should report any suspicious death to prosecutor's office and follow the direction of the prosecutor. In addition, medical regulations state that doctors should report any suspicious death to police.[28]

In addition, the role of the ME in death investigation in Korea is more limited. Most death investigation begins with reporting of unnatural deaths to police. Detectives are dispatched to the crime scene accompanied by a doctor does not have professional training for forensic pathology. The police investigation report and doctor's report are submitted to a prosecutor's office. After examining the reports, the prosecutor visits the crime scene if necessary and decides whether an autopsy is needed. If an autopsy is necessary, the prosecutor requests a warrant to a court. Upon receiving a warrant, prosecutor or police selects a doctor to perform an autopsy. Generally, an autopsy is performed at the National Forensic Service under the direction of a prosecutor. Areas where the National Forensic Service branch is not available, local medical school facility or private forensic facility are also used to perform autopsy.

Discussion

The coroner system, as we discussed earlier in this paper, has presented some shortcomings to be effective in today's society. Those criticisms include political influence and a lack of medical qualification. The coroners are elected administrators so they are subject to political influence. They also can't make medical decisions, no matter how many hours of training they have. Some advocates of the coroner system argue that the coroner system is more economical than a medical examiner system. Opponents, however, argue that savings can get lost when cases are mishandled with resultant expensive litigation.[16]

One major issue concerning the medicolegal death investigation system in the United States is the shortage of skilled personnel. Based on the report in 2003,[1] only about 1,150 forensic pathologists had been board certified since 1959. In 2003, there were 41 training programs that could accept about 70 forensic residents each year. Another problem is insufficient funding by governments for operations and personnel. A readiness of the death investigation system for the growing nationwide demands of public health and criminal justice also emerged as a major issue in recent years.

The Korean medicolegal death investigation system is facing similar problems. First of all, the number of autopsy performed is very low with 12.7% in 2000 compared to 30% in Japan and 55% in America.[27] Another major concern is lack of proper training programs. The number of qualified pathologists is so limited that sometimes practicing doctors with no pathology training have been used to perform an autopsy.[27]

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