



RESEARCH ARTICLE

# Comparative Models of Medicolegal Death Investigation: Prosecutorial, Coronial, and Medical Examiner Systems

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## ABSTRACT

There are three main models of medicolegal death investigation: prosecutorial, coronial, and physician-led medical examiner systems. The use of medical expertise in legal determinations of death dates back to Roman law, where physicians served as expert advisers—a tradition that persisted throughout continental Europe. Systematic autopsy practices developed in Northern Italy during the thirteenth century, and forensic autopsies were further refined in German-speaking centers such as Leipzig, Vienna, and Berlin between the seventeenth and nineteenth centuries. Modern policing evolved later, incorporating medical expertise as evidence. Today, prosecutorial systems are prevalent in continental Europe and many other parts of the world. Coronial systems, which emerged later in the Anglo-Commonwealth tradition, focus on independent, quasi-judicial inquiries into death. Initially, these systems operated without formal medical involvement; however, they now include medical experts and serve important public health functions, while still relying heavily on police for investigations. Medical examiner systems are the newest model, where medically trained professionals—specifically forensic pathologists—have primary authority over death investigations, emphasizing scientific accuracy in the medicolegal process. They oversee their own investigative teams and play a vital role in public health.

**Keywords:** Forensic medicine, legal medicine, medicolegal death investigation, forensic pathology, forensic pathologist, coroner, medical examiner

## Introduction

Systems of medicolegal death investigation are not adequately described and compared in the literature. This article attempts to fill this void by describing and comparing medicolegal death investigation systems and their origins. The author has worked in multiple systems and draws on his experience and knowledge.

From a global perspective, forensic pathologists are professionals who work within three principal models of medicolegal death investigation systems: prosecutorial, coronial, and medical examiner. These systems differ in independence from law enforcement, medical authority, and public health roles.

This article argues that medical examiner systems are best suited to meet modern medicolegal and public health needs.

## Prosecutorial Systems

Most countries outside the Anglo-American tradition use prosecutorial systems for medicolegal death investigations instead of coroner or physician-led medical examiner models. In these systems, the police, prosecutors, or investigative or examining magistrates direct criminal investigations, decide whether to perform an autopsy, and consult with physicians as needed. Forensic pathologists perform autopsies and develop their evidence for prosecuting criminal homicide. Medicolegal death investigation is merely a part of the broader law enforcement process and plays a vital role in providing evidence.

### ORIGINS

The use of medical expertise in criminal justice developed from informal consultations in ancient times to formal evidentiary roles in early modern Europe.<sup>1-7</sup> In classical Greece, physicians (*iatroi*) offered informal opinions in courts, often driven by rhetoric, whereas in Rome, physicians (*medici*) served as technical advisers (*periti*), especially in cases involving injury and death, as seen in later works such as the Digest of Justinian (6th century CE). A greater reliance on medical opinions emerged during early modern German legal reforms, notably with the Bamberg Code (1507), which promoted consultation with physicians in cases involving bodily injury and suspicious deaths. This was followed by requirements for such opinions in the more influential *Constitutio Criminalis Carolina* (1532), issued under Charles V, Holy Roman Emperor.<sup>8</sup>

The French military surgeon, Ambroise Paré (ca. 1515-1590), seems to have catalyzed more extensive use of medical experts in court.<sup>9-11</sup> As royal surgeon to multiple French kings, he was called upon not only for his medical skills but also for his opinion on wounds and causes of death. His writings, particularly *Les Œuvres* (1575), contain detailed case descriptions of trauma and their interpretations, as well as guidance on testifying in court. His efforts created the expectation that technical medical judgment should inform legal determinations of injury and death.

Medieval Islamic medicine, rooted in classical Greek and Roman medicine, also integrated medical knowledge into

its legal system. However, outside continental Europe and the Middle East, criminal justice systems were not as dependent on medical expertise.

The earliest recorded postmortem examination was that of Julius Caesar, conducted after his assassination on the Ides of March in 44 BCE.<sup>12</sup> The physician Antistius found that out of 23 stab wounds, there was a single fatal chest wound that caused his death. Antistius publicly announced his findings at the Roman Forum.

Although other accounts exist, human dissection and postmortem examinations re-emerged in medieval Italy in the 13th century, with Taddeo Alderotti (ca. 1206-1295), a professor of medicine at the University of Bologna, seemingly playing a central role.<sup>13,14</sup> His students included Mondino de Luzzi (1270-1326), known as the “restorer of anatomy,” and Bartolomeo da Varignana (ca. 1258-ca. 1320), who authored one of the earliest known forensic autopsy reports in 1302.

Clinicopathological correlations established the autopsy as a tool for understanding how disease causes death, beginning with Antonio Benivieni (1443-1502) and especially with Giovanni Battista Morgagni (1682-1771) in Italy, and later with Matthew Baillie (1761-1823) in England.<sup>15-17</sup>

Treatises on legal medicine began to appear in the 17th century.<sup>9</sup> Fortunato Fedele (1550-1630) in Sicily, a student or colleague of Giovanni Filippo Ingrassia (1510-1580), who studied under Andreas Vesalius (1514-1564), created the first systematic treatise on legal medicine in the Western world, titled *De Relationibus Medicorum Libri Quatuor*, in 1602. His work was overshadowed by the writings of the Papal physician Paolo Zacchia (1594-1659), often considered the father of legal medicine, although his published *Quæstiones Medico-Legales* in nine volumes between 1621 and 1651 postdate those of Fedele, Ingrassia, and Paré.

In the 19th century, after the Enlightenment, European legal and medical systems increasingly formalized hospital autopsies and perfected the forensic autopsy, especially in German-speaking regions.<sup>1,18-20</sup> This led to the development of large, state-supported autopsy services associated with universities and courts. The expansion was driven both by legal mandates in cases of violent or suspicious deaths and by the rise of clinicopathologic correlation in academic medicine. In the later decades of the century, routine histologic staining and microscopic examination became widespread. These advances promoted the professionalization of pathology and forensic medicine. Key figures in the development of forensic medicine included Johann Michaelis (1607-1687), who gave the first formal lecture on the subject, and Johannes Bohn (1640–1718) in Leipzig, who helped lay the groundwork for integrating medical knowledge into legal investigations; Johann Ludwig Casper (1796–1864) in Berlin, an important pioneer in modern forensic medicine; Carl von Rokitansky (1804–1878) in Vienna, who established large-scale autopsy-based pathology; and Rudolf Virchow (1821–1902), who revolutionized the field by advancing microscopy and establishing

cellular pathology. In Spain, Mathieu Orfila (1787–1853) founded toxicology. In France, Auguste Ambroise Tardieu (1818–1879) and Alexandre Lacassagne (1843–1924) further advanced forensic medicine, especially in the study of asphyxia, toxicology, and criminal anthropology.

Modern police systems gradually developed from communal efforts in ancient societies. In classical Greece and Rome, magistrates depended on citizens, slaves, and soldiers to maintain order. In imperial Rome, organized groups like the *vigiles*—created under Augustus—combined firefighting and night-watch roles. During the Middle Ages in Europe, especially in England, policing was based on mutual responsibility. Tithings—small groups of households—formed the basic unit of the frankpledge, where members were collectively accountable for each other's behavior under the supervision of a tithingman. Constables were local officials responsible for overseeing law enforcement, organizing the watch, maintaining order, and bringing suspects to court. The hue and cry served as a public alarm system: when a crime was uncovered, an outcry was raised, legally requiring able-bodied men to join the pursuit and arrest of the suspect.

Recognizable police forces developed after forensic medicine had developed. Growing urbanization and social complexity led to the development of more centralized policing models, particularly in France, where the office of Lieutenant General of Police was established in Paris in 1667 under Louis XIV, creating one of the earliest state-administered, bureaucratic systems for maintaining urban order and surveillance. In England, modern preventive policing and public safety took institutional form with the establishment of the Metropolitan Police in London in 1829 under Robert Peel, emphasizing professionalism, uniformed officers, and public accountability. Elsewhere in the world, the development of modern police systems was heavily driven by European state models and colonial diffusion, although pre-existing institutions provided the foundational substrate for later adaptation. The notion of policing has undergone its own evolution.<sup>21</sup>

## OPERATIONS

The qualifications of medicolegal experts who perform autopsies and testify in court vary widely by jurisdiction, reflecting differences in legal systems, resources, and professional standards. Globally, a clear trend toward specialized forensic pathology training and certification is evident. In highly developed systems like those in the United States and the United Kingdom, forensic pathologists typically complete medical school, a residency in anatomic pathology, a fellowship in forensic pathology, and obtain board certification or equivalent recognition. In England, Home Office pathologists are accredited through rigorous training and casework requirements, while in North America, certification organizations such as the American Board of Pathology formalize subspecialty expertise. In continental Europe, including Germany, France, and Italy, forensic medicine is often an academic specialty within university institutes, with postgraduate training in legal medicine that can

differ from traditional pathology routes. Conversely, many low- and middle-income countries across Asia, Africa, and Latin America rely on general practitioners or non-specialist pathologists for autopsies due to workforce and infrastructure shortages, though forensic pathology is recognized in some areas, like parts of India and South Africa, where coverage varies. Hybrid systems are also widespread, with non-physician investigators handling scene work and physicians of varying specialties performing autopsies. Despite these differences, international standards increasingly emphasize formal training and certification.

Today, in decentralized prosecutorial medicolegal death investigation systems, the police will consult with university forensic pathologists or private forensic pathologists and contract them to perform autopsies. The independence of university professors is often praised. However, the police may have discretion over which university and which forensic pathologist to collaborate with. They can also control the information provided to the forensic pathologist.

Elsewhere, medicolegal death investigations are conducted at one or more forensic medicine institutes that support law enforcement agencies. These institutes gain some independence through their placement within a department or ministry of justice. Forensic pathologists have less autonomy than they do in universities. Moreover, the police hold much greater power and influence within the Ministry than forensic pathologists do. Autopsy services in such institutes seem more assembly-line in their function. Forensic pathologists in such positions may not be trained in histology and thus do not perform microscopic examinations, which are then conducted by surgical pathologists.

In either decentralized or centralized prosecutorial systems, the forensic pathologists will have little say in the death investigation.

Identification of bodies is clearly a police responsibility in these systems, and accordingly, during mass fatality incidents, forensic pathology focuses on disaster victim identification rather than mass fatality management. The prominent role of INTERPOL in such operations is logical in this context.

## ADVANTAGES AND DISADVANTAGES

Prosecutorial medicolegal death investigation systems are cost-effective. They refer fewer cases for autopsy and avoid duplicating investigative tasks. As a result, the caseload is reduced, and there is no additional administrative overhead.

These systems tend to focus narrowly on potential criminal homicides and exclude deaths that are non-criminal or relevant to public health. Incorporating them into law enforcement raises the risk of investigatory and prosecutorial bias, especially in choosing cases for autopsy and framing investigative questions. Opportunities for independent oversight and counter-investigation are often limited outside of court proceedings or media scrutiny. As a result, mistakes or

shortcomings may be less likely to be identified and fixed, raising concerns about the completeness, transparency, and overall quality of death investigations.

## Coronial Systems

In Commonwealth countries, such as the United Kingdom, Canada, Australia, New Zealand, and Barbados, coroners are responsible for medicolegal Death investigation. In these jurisdictions, the goal is to issue judicial pronouncements in the public interest on the causes and manners of death, independent of the police. These systems still rely on the police for basic investigations. The choice of which cases to investigate and which to autopsy is largely dictated by statute but ultimately determined by the coroner, not law enforcement. Although their focus is on criminal homicide, they also recognize a public health function. Modern coronial systems place greater reliance on medical expertise and the performance of autopsies than do prosecutorial systems.

### ORIGINS

In ancient Imperial China, before police forces were established, judicial investigators without specialized medical training examined the external appearance of dead bodies.<sup>23-26</sup> The *Hsi yüan chi lu* (translated as *Collected Cases of Injustice Rectified* or *The Washing Away of Wrongs*), written by Tz'u Sung (宋慈, Sòng Cí, c. 1186-1249 AD), and printed in 1247 AD, is widely recognized as the earliest surviving comprehensive manual on forensic medicine. It was created during the Southern Song Dynasty, a time of economic growth and a neo-Confucian focus on effective governance. The *Hsi yüan chi lu* outlined how to examine bodies and included methods for distinguishing suicides from homicides, as well as describing deaths caused by fire, drowning, tiger bites, poisons, illness, and other factors. This coronial system likely existed centuries before the book was written and continued into subsequent dynasties but eventually was replaced by a prosecutorial model.<sup>26,27</sup>

In medieval England, the coronial system was originally developed to boost royal revenues—strained by the military campaigns of Richard I of England—and to enhance the Crown's control over criminal justice, initially without systematic involvement of medical expertise.<sup>1,28-32</sup> The office of coroner was formally established by the Articles of Eyre of 1194 under the direction of Hubert Walter. Coroners were tasked with maintaining official records of the pleas of the Crown (*placita coronae*) and served as a check on sheriffs, who had previously exercised considerable discretion and were suspected of diverting royal revenues. Early coroners were local officials of standing—originally knights—who represented the Crown's fiscal and judicial interests and functioned primarily as record-keepers rather than adjudicators. They documented criminal matters, including sudden, suspicious, or violent deaths, preserving evidence and financial interests for review by itinerant royal justices. In cases of unnatural death, coroners summoned local juries to conduct inquests, determining the circumstances of death and identifying objects that caused death and could be forfeited to the Crown as deodands. Their records ensured that fines, forfeitures,

and other revenues were properly tracked, although collection remained the responsibility of other officials. Coroners also participated in enforcing the murdrum fine, under which communities could be penalized if the killer of a person presumed to be Norman was not produced; this practice declined over time and was formally abolished in 1340. Over time, the coroner's role evolved into a quasi-judicial office centered on the inquest and, eventually, the medico-legal investigation of death.

Notable figures in the development of forensic medicine in the United Kingdom include Andrew Duncan Senior (1744–1828) and Sydney Smith (1883-1969) in Edinburgh, and John Glaister Jr. (1856-1932) in Glasgow, Scotland; Alfred Swaine Taylor (1806-1880), Bernard Spilsbury (1877–1947), Francis Camps (1905-1972), and Keith Simpson (1907-1985) in London, England.<sup>1,33,34</sup>

### OPERATIONS

Modern coronial systems in Commonwealth countries are independent, quasi-judicial death investigation bureaucracies—usually part of judicial or government administrative structures—tasked with establishing identity and the circumstances of death rather than determining criminal liability.<sup>35-37</sup> They are mostly regional or state-operated, with New Zealand representing a more centralized model, and are universally governed by statutory coronial laws or equivalent legal frameworks.

Although early coroners were not required to hold any particular qualifications, modern coroners in Commonwealth countries are typically legally trained judicial officers. In England, coroners must have at least five years of post-qualification experience under the Coroners and Justice Act 2009. In some jurisdictions, including the United Kingdom and certain Canadian provinces, coroners may be physicians. In practice, however, the role is overwhelmingly filled by lawyers (barristers or solicitors), reflecting its evolution into a judicial, court-like function that emphasizes legal procedure, evidentiary analysis, and inquest management.

Coroners oversee investigations into sudden, unexpected, violent, or unexplained deaths and preside over inquests. These investigations are conducted in collaboration with police, forensic pathologists, and other experts, with autopsies ordered when necessary to establish the cause of death. Proceedings are generally inquisitorial rather than adversarial, and coroners may issue public safety recommendations to prevent future deaths.

In Commonwealth coronial systems, police serve as the coroner's investigative arm in most jurisdictions, supported by the coroner's statutory powers to compel evidence, which may later be formalized as written statements for use at an inquest. Police generally identify and interview witnesses, obtain formal written statements, and conduct scene investigations, including the collection of forensic evidence. Medical personnel, paramedics, and other professionals typically provide formal written reports (e.g., clinical summaries, autopsy reports) and, when

appropriate, signed witness statements (and sometimes sworn affidavits). Coroners have legal authority to compel the production of documents and testimony—usually through a summons or subpoena—and can exercise these powers when witnesses are reluctant or uncooperative, or when the issues are complex or contested. All statements are reviewed by the coroner and are usually shared with interested parties, such as family members and legal representatives, to identify gaps in the evidence and request additional statements. An inquest may be required for specific types of death, such as deaths in custody, or when the cause or circumstances of death are unclear, or when significant public interest exists. During an inquest, witnesses may give written statements or provide oral testimony and be questioned, primarily by the coroner, with counsel for interested parties participating. In modern practice, witness evidence also includes digital materials—such as recorded emergency calls, body-worn camera footage, CCTV, and electronic communications—which may be admitted directly or with transcripts or summaries.

The result of a coroner's investigation or inquest is a formal, public determination—commonly termed “findings” or a “conclusion”—that addresses the deceased's identity and how, when, and where they died. It may include systemic safety recommendations, but does not determine criminal or civil liability. The coroner answers four core questions: (1) who the deceased was, (2) when they died, (3) where they died, and (4) how they came by their death (i.e., the circumstances). These findings are made according to the applicable standard of proof, typically the balance of probabilities, although a higher standard—beyond a reasonable doubt—may apply to certain conclusions, such as unlawful killing, in some jurisdictions. Conclusions may be expressed in narrative form or as short-form categories, including natural causes, accident or misadventure, suicide, unlawful killing, industrial disease, or an open conclusion where the evidence is insufficient. Findings may also include specific determinations regarding events, actions, or contributing factors. In addition, coroners may issue public safety recommendations directed at agencies or organizations to prevent similar deaths. While coroners do not assign criminal guilt or civil liability, their findings may be relied upon in subsequent legal proceedings. At one time, coroners could indict and bind over a defendant for criminal proceedings, but they can no longer do so.

Although coroners retain legal responsibility for confirming identification, they lack the infrastructure to conduct mass fatality operations. Therefore, Commonwealth countries generally adopt the INTERPOL model for disasters, in which the police command operations. Forensic pathologists are assigned to these operations and play a crucial role in disaster victim identification (DVI) as part of a multidisciplinary team.

#### ADVANTAGES AND DISADVANTAGES

Coronial medicolegal death investigation systems offer several benefits, including independent, quasi-judicial investigations of deaths within their jurisdiction, separate from police inquiries. Cases within their authority receive detailed scrutiny. Their statutory authority to compel

evidence—through summons or subpoena—strengthens this independence and ensures thorough fact-finding. These systems also cover not only criminal homicides but also deaths of broader public concern, such as those involving accidents, custody issues, or systemic failures. Additionally, coroners play a vital role in public health and safety by issuing recommendations to prevent future deaths and to guide policy and institutional reforms.

Disadvantages of the coronial systems include their bureaucratic nature and high costs. The level of procedural attention and scrutiny given to each case can sometimes exceed what is necessary to accurately determine the cause of death. Additionally, medical input is limited within a primarily legal framework. Communication between forensic pathologists and coronial authorities is often minimal, and coroners—who usually lack medical training—may not fully understand the clinical and pathological details in expert reports. Furthermore, physicians typically have a limited role in the investigation, which remains under the control of the coronial process. Finally, the process may take months to years, by which time the report may become irrelevant.

### Medical Examiner Systems

The mission of medical examiner systems is to scientifically determine the causes of death and classify the manners of death for public health purposes. True medical examiner systems are led by physicians, specifically forensic pathologists, who make medical, not legal, determinations of the causes of death. Forensic pathology is a medical specialty, and forensic pathologists work in these systems in roles known as “medical examiner.” Conceptually, causes of death are fundamentally medical determinations. Their mandate for investigation extends beyond criminal investigations to public health concerns.<sup>38</sup>

Like coroners, medical examiners value their independence from law enforcement.<sup>39-41</sup> The requirement that the autopsy be performed independently of law enforcement investigation is the first plank of the National Association of Medical Examiners Forensic Autopsy Performance Standards.<sup>42</sup> These systems are most fully developed in the United States, while similar partial or hybrid systems arguably exist in other countries.

#### ORIGINS

The development of medical examiner systems in the United States was a response to widespread dissatisfaction with coroners, who were inherited from an antiquated English version, in which coroners had no specific qualifications and coroner operations had not yet evolved into sophisticated bureaucracies. County coroner offices became part of local political systems and patronage networks, leading to inconsistent standards and, at times, corruption.

The foundations for reform were established in the nineteenth century through the growing involvement of physicians in legal cases and the development of medical jurisprudence.<sup>43-46</sup> James S. Stringham (1775-1817) in

New York City, NY, and Benjamin Rush (1745–1813) in Philadelphia, PA, espoused greater integration of medicine into the law. *Beck's Elements of Medical Jurisprudence* (1823) emphasized the diagnostic importance of autopsies and scientific analysis, arguing that death investigations should primarily be a medical responsibility backed by law. Progress in pathology and laboratory science revealed the limitations of lay coroner systems. Critics of the coroner system argued that coroners were trying to answer complex medical questions through lay judgment, often resulting in unreliable determinations of cause and manner of death.

The first law in the United States requiring a physician to participate in a death investigation was passed in Maryland in 1860.<sup>43</sup> In 1868, a “physician coroner” was appointed in Baltimore County. By 1877, Massachusetts replaced coroners with physicians known as “medical examiners.” The movement to replace coroners with medically trained professionals spread to several other cities, such as Cleveland in 1914 and Chicago in 1922. Maryland established the first centralized statewide office in 1938.

This movement aligned with the American Progressive Era, which provided the political and intellectual support needed to expand the medical examiner model. Reformers like Richard Spencer Childs (1882-1978) viewed the coroner system as a symbol of broader governance issues and pushed for professionalization and administrative reforms.<sup>47</sup> Organizations like the National Municipal League developed model legislation, including the 1951 Model State Medico-Legal Investigative System and the 1954 Model Post-Mortem Examinations Act.<sup>48,49</sup> Professional groups and federal agencies backed these reforms. The American Medical Association (AMA), through its influential 1945 report,<sup>50</sup> and the National Research Council (NRC)<sup>44</sup> regularly criticized the coroner system and promoted medically directed death investigations.

New York City established a highly modern medical examiner's office in 1918 and appointed Charles Norris, who, together with his toxicologist, Alexander O. Gettler, made significant advances in the field.<sup>51-53</sup> Other influential forensic pathologists, including Alan Moritz (1899-1986) in Boston, MA, and Cleveland, OH, Milton Helpert (1902-1977) in New York, NY, Harrison Stanford Martland (1883–1954) in Newark, NJ, and Russell Fisher (1916-1984) in Baltimore, MD, contributed to the scientific and institutional development of the field.

The term “forensic pathology” was coined in 1940 by Alan Moritz,<sup>43,54</sup> and forensic pathology was formally recognized as a subspecialty by the American Board of Pathology in 1959. The National Association of Medical Examiners (NAME) was established in 1966, and the International Association of Coroners and Medical Examiners (IACME) was established in 2006. NAME began an inspection and accreditation program in 1975, but its current program began in 1995, with the IACME following in 2009.

## OPERATIONS

Today, medicolegal death investigation systems in the U.S. are a patchwork of coroner and medical examiner offices.<sup>46,55,56</sup> More than half of the U.S. population is covered by state, regional, county, or city medical examiner offices, replacing county coroners in those areas. The vast majority of remaining county coroners serve small rural counties. Most coroners are elected, but some are appointed. Generally, even today, there are no qualifications for the position, but in some states, coroners must be physicians, although not necessarily forensic pathologists. Larger coroner offices may function similarly to modern medical examiner offices, but most coroner positions are part-time, with workers acting as medicolegal death investigators and referring bodies for autopsy when needed. Coroners in the U.S. generally do not perform inquests or indict defendants. Hybrid systems exist in which a state medical examiner's office performs autopsies for the county coroners.

Modern medical examiner systems are led by experienced, board-certified forensic pathologists. These experts head the offices, with administrators working underneath them. As in other systems, forensic pathologists perform autopsies and issue autopsy reports. They also certify the cause and manner of death for death certificates.

Medical examiner offices have a much broader mandate to investigate deaths in the public interest and perform a greater public health function than other systems. For example, industrial accidents, because they are not criminal acts, are of little interest to prosecutors and police, despite their significant public health implications. They might be investigated in coronial systems but would clearly fall under the jurisdiction of medical examiner offices.

While forensic pathologists perform autopsies and issue reports, they also oversee death investigations within these systems. Medicolegal death investigators (MDIs) have almost entirely replaced police in conducting investigations across the United States. MDIs investigate the circumstances of death, with particular focus on the medical aspects. MDIs typically determine jurisdiction over cases, take primary responsibility for scene investigation, and coordinate with law enforcement and forensic specialists. The MDI community has become quite professional. The Society of Medicolegal Death Investigation (SOMDI) was formed in 1997. The American Board of Medicolegal Death Investigators (ABMDI) was established in 1998 and offers credentialing with basic registration and advanced certification for MDIs. There are now approximately 1,200 board-certified medicolegal death investigators in the U.S.

Unlike the rest of the world, mass fatality management—not just disaster victim identification—is the responsibility of the medical examiner's or coroner's office.<sup>57-59</sup> Although part of the larger emergency response, it operates largely independently. Many medical examiner offices have the infrastructure to manage mass fatalities and regularly conduct exercises. When the medicolegal death investigation authority lacks the resources to

handle an incident, state and federal resources will provide support.

**ADVANTAGES AND DISADVANTAGES**

Medical examiner systems probably provide the most scientifically accurate determinations of death because their primary focus is on the medical causes of death. They may be less influenced by non-medical factors and are not limited by lay administrators. Additionally, they decide which cases to investigate and oversee the investigations. They are less expensive than the coroner systems of Commonwealth countries because they do not bear the burden of legal review, but they are more costly than prosecutorial systems due to administrative overhead, including an independent set of investigators.

The ability to conduct their own investigations independently of the police is a significant advantage, although in practice, they often seek information from the police. Investigators are specifically trained in medicolegal death investigation and focus their efforts there. MDIs find that witnesses are sometimes more willing to talk to them than to the police because they might be seen as less threatening. Forensic pathologists have more direct input into the investigation through oversight and daily interaction.

Furthermore, medical examiner systems have a greater role in public health and can work directly with public health departments. In fact, many natural deaths are investigated to rule out non-natural deaths. These systems are well-suited to consistently investigating and certifying these deaths, thereby improving mortality data.

A major drawback of medical examiner systems is that medicolegal death investigations are limited. They are

summary investigations performed before the autopsy to aid understanding during the autopsy. Follow-up investigations are often done to answer specific questions. In practice, this rarely causes problems, as subsequent police and court proceedings usually have more thorough and later information from their own investigations and legal discovery. The lack of subpoena power can significantly impair effective investigation, but legislation can address this issue, as seen in some jurisdictions.

**Conclusion**

Three distinct systems or models of medicolegal death investigation are in use worldwide. Each has its own advantages and disadvantages (Table 1). The prosecutorial model is the most common system, with no independence from law enforcement and no public health role. The coronial system, while structurally independent, depends on police investigations. It issues legal determinations with medical input. Such systems have some public health roles. The time required to issue coroner reports is so delayed that it undermines their value. Medical examiner systems are the most recently developed, are led by forensic pathologists, and focus on medical rather than legal determinations. They rely on their own medicolegal death investigators. The fewest autopsies are performed in prosecutorial systems, and the most in medical examiner systems.

These systems are generally deeply entrenched and not likely to change. However, the growing professionalism and advances in forensic pathology are increasingly recognized and respected, minimizing differences between systems. Nonetheless, medical examiner systems appear to best meet modern medicolegal and public health needs.

**Table 1. Comparative Analysis**

<u>Feature</u>	<u>Prosecutorial</u>	<u>Coronial</u>	<u>Medical Examiner</u>
Authority	Police/prosecutor/ investigative magistrate	Judicial officer	Forensic pathologist
Medical role	Advisory	Advisory	Central
Primary Investigators	Police	Police	Medicolegal Death Investigators
Public health role	None	Moderate	Strong
Independence	Weak	High	High
Number of Autopsies	Fewest	Intermediate	Most
System Cost	Least	Greatest	Intermediate
Time to Report	Fast	Delayed	Fast

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