

Moving Toward a More Uniform System: Recommendations for Minimum
Standards of Medical Examiner Offices in Texas

By

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Applied Research Project

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Abstract

Research Purpose: Texas operates a two-tiered system for certification of deaths. Elected officials with no scientific background determine and certify cause of death for residents in the majority of Texas counties. The issues raised by this system include accusations of missed homicides, incomplete vital statistics, under utilized public health data, and an overall lack of transparency. The purpose of this research is to first, establish a set of recommended minimum standards for the creation of medical examiner offices in Texas counties with populations under 500,000, based on the literature. The standards established include Education, Facilities and Staffing, Technology, and Oversight. Proposed medical examiner standards are presented to Texas experts in the medical examiner field. Finally, incorporating stakeholder recommendations and feedback, a revised set of minimum medical examiner office standards for Texas counties with populations under 500,000, is presented.

Methodology: This research uses focused interviews to gather detailed input from experts in the field. 8 respondents interviewed include 3 currently serving medical examiners, 3 Justices of the Peace, 1 attorney and 1 medical examiner administrative assistant.

Results: Based on the feedback gathered, recommendations in the Education and Facilities categories were added. The Ethics standard was incorporated into minimum education recommendations.

About the Author

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Finally, I would like to thank the State of Texas. What a strange and unique place we have crafted for ourselves. We do some things better than anywhere else in the world, but on the other hand, as I learned in the course of my research, we have serious room for improvement. As a person who loves quirky, strange and unusual topics, Texas never fails to provide a wealth of material. Truth truly is stranger than fiction.

Table of Contents

Abstract	2
About the Author	3
Acknowledgements.....	3
Chapter 1- Introduction.....	6
Chapter 2- Setting.....	10
Chapter Purpose	10
Historical Background	10
Death Investigation in Texas	12
Baker Bill	13
Agreements Between Counties.....	15
Developments in Forensic Science	17
Texas Forensic Science Commission.....	18
Reform	19
Texas vs. Other States	21
Table 2.1 Coroner States (29) and number serving with office requirements.....	22
Chapter Summary.....	25
Chapter 3- The Preliminary Model.....	27
Chapter Purpose	27
Creating a Minimum Standard	27
1. Education	28
1.1 Minimum Education Standards	29
1.2 Continuing Education.....	32
1.3 Ethics Education.....	36
2. Facilities and Staffing.....	40
2.1 Staffing levels	41
2.2 Facility Characteristics	43
2.3 Security	46
3. Technology	48
3.1 Database Utilization	49
3.2 Digital Record Keeping.....	53
4. Oversight.....	56
4.1 Review	56
4.2 Reporting.....	60
4.3 Budgeting	62
Model Summary	66
Table 3.1: Proposed Minimum Standards for Medical Examiner offices in counties with populations less than 500,000.....	67
Summary.....	69
Chapter 4- Methodology	70
Chapter Purpose	70

Methodology	70
Table 4.1: Operationalization of Conceptual Framework.....	71
Research Technique	73
Identification.....	73
Human Subjects Protection.....	75
Feedback and Refinement	75
Summary	76
Chapter 5- Results	77
Chapter Purpose	77
1. Education	77
1.1 Minimum education standards	77
1.2 Continuing Education.....	78
1.3 Ethics Education.....	79
2. Facilities and Staffing.....	80
2.1 Staffing Levels	80
2.2 Facility Characteristics	81
2.3 Security	82
3. Technology	83
3.1 Database Utilization.....	83
3.2 Digital record keeping	84
4. Oversight.....	85
4.1 Review.....	85
4.2 Reporting	87
4.3 Budgeting.....	88
Chapter Summary	89
Chapter 6 Conclusion	90
Chapter Purpose	90
Revisions.....	90
Refined Model	93
Table 6.1 Refined Proposed Minimum Standards for Medical Examiner offices in counties with populations less than 500,000.....	93
Limitations	94
Suggestions	94
Chapter Summary	96
Bibliography.....	97
Appendix 1	102

Chapter 1- Introduction

"They see it often as wasting money on the dead, without realizing that everything that is done in a medical examiner office, or a coroner office, is truly done for the living. We try to protect society. We look for deaths that are premature, or that should not have happened, so that we can go forth and correct those errors in society,"- Dr. Victor Weedn, Maryland Assistant Medical Examiner (Thompson, 2008).

In Burnet County a man was reported dead following injuries sustained during a single-car auto accident. The county justice of the peace challenged the results of the autopsy and it was discovered the body found on scene was actually that of an 81-year-old woman whose body had been exhumed. The identification found at the scene belonged to a man due to be sentenced to prison for child molestation. He was attempting to fake his own death (Berard 2009). Cynthia Cash is currently serving an 8 year-term, convicted of homicide, for the death of a child she was babysitting. The Harris county Medical examiner ruled the case a homicide, but in an independent autopsy, the cause of death was found to be adverse reaction to a series of vaccines (Berard 2009). On September 21, 1992, Dr. Ralph Erdmann pleaded no contest to seven felony counts of falsifying autopsy results. According to the Lubbock county district attorney, he simply did not conduct the autopsies he was contracted to do. In a colorful summation of the case, Tommy Turner, the special prosecutor said, "This guy was a Liar," (Suro, 1992). The prosecution led to a

string of retrials and overturned convictions that were based in part on Erdman's falsified autopsy reports.

Medical examiner (ME) offices are critical components of the public health and judicial system. Currently, counties with populations of 500,000 or more operate under specific guidelines for the provision of ME offices. In counties below the population threshold, the justice of the peace serves as the first death investigation officer and makes decisions that affect both public health and criminal justice proceedings. The need for a more professionalized medical examiners office in counties, regardless of population, has been expressed by voices both inside and outside the field. The National Research Council articulated their concern over the lack of standards in the seminal report, *Strengthening Forensic Science in the United States*.

In short, the quality of forensic practice in most disciplines varies greatly because of the absence of adequate training and continuing education, rigorous mandatory certification and accreditation programs, adherence to robust performance standards, and effective oversight. These shortcomings obviously pose a continuing threat to the quality and credibility of forensic science practice (National Research Council, 2009 p. 6).

Relying on individuals with minimal education in medicine or forensic pathology to make cause of death determinations creates ample opportunity for mistakes that affect all citizens.

The current medical examiner regulations create a two-tiered system for Texas residents. Depending on the population of the county in which the death occurs, the level of training of the individual making the cause of death determination can vary

widely. This system is known nationally as a mixed coroner-medical examiner system (Hanzlick, 2007 p. 279). Texas does not use the term coroner; instead, the local justice of the peace acts in the role of coroner.

A justice of the peace in a small county does not conduct an autopsy, but will make the decision as to whether or not the case is referred to a qualified forensic pathologist or in the case of an obvious cause of death certifies the death and remit the remains to a funeral home (Goldstein 2011 p. 230). The troubling instances occur when the cause of death appears obvious, and certification of cause of death based on visual cues alone leads to an incorrect conclusion, resulting in missing emerging public health issues, incorrect public health statistics and false or missed prosecutions.

These errors suggest the need for minimum standards for Texas Medical Examiners. An examination of the literature reveals clear ways in which minimum standards should be created that would move the medical examiner provisions to a more equitable coverage from all residents. The minimum standards encompass education, facility and staffing characteristics, technology, and oversight. This paper addresses the problem of missing standards.

Research Purpose

The purpose of this research is to first, establish a set of recommended minimum standards for the creation of medical examiner offices in Texas counties with populations under 500,000, based on the literature. Second, to present the

proposed medical examiner standards to Texas stakeholders in the medical examiner field. And finally, incorporating stakeholder recommendations and feedback, a revised set of minimum medical examiner office standards for Texas counties with populations under 500,000, is presented.

Looking Ahead

This Applied Research Project explores the current system for death investigation in Texas. The setting chapter, chapter 2, illustrates the current system through its historical roots and previous reforms. Chapter 3 presents a preliminary model and its basis in scholarly literature. The methodology chapter explains focused interviews and why they were used to gauge the proposed model. Chapter 5 presents the results and discusses findings and outcomes. Finally, Chapter 6 summarizes the entire project, presents the revised model and makes recommendations for future study.

Chapter 2- Setting

Chapter Purpose

The purpose of the setting chapter is to introduce the current Texas system for death investigation and certification. The chapter begins with an overview of the historical background of the current system, including discussion of the Baker Bill and Inter County agreements. Next, the chapter discusses the nature of forensic science as a discipline and the creation of the Texas Forensic Science Commission. The chapter closes with a discussion on the state of reform nationwide.

Historical Background

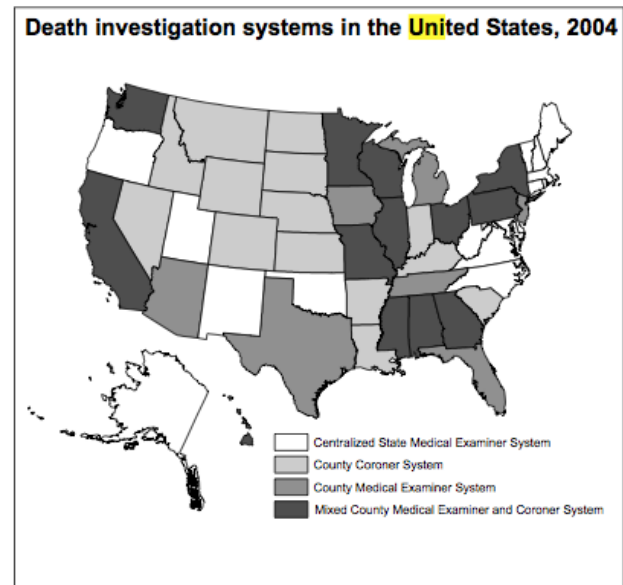
The current system is founded on principles derived from the coroner's offices of England. The word coroner is a development from the title of "crowner," (Timmermans 2006 p. 5). The crowner did rounds, collecting taxes for the king. When one failed to pay taxes due to death, the death had to be verified and it was the crowner's duty of reporting the official death. Verifying deaths also served to notify the king of the potential transfer of property back to the crown. As scientific knowledge expanded, governments realized the importance of recognizing the cause of death and the implications such findings had on public health. The English

coroner system began to develop into a scientific position more focused on public health outcomes (Allen 2011 p. 4).

Looking to the British system, America adopted their coroner system. Early coroners were elected and required little, or no

Map 2.1

medical training. Subsequent developments in the establishment and professionalization of the office diverge from this common beginning and vary by state. Some states took an early lead and established comprehensive reform and regulation. Creating offices with educational standards, appointments and



funding. New York became the first state with a medical examiners office in 1981 and marks the “modern era” of medical examiner systems (Hanzlick 1998 p. 872). Map 2.1 illustrates the diversity

J.M. Hickman, K.A. Hughes, K.J. Strom, and J.D. Roper-Miller. 2004. Medical Examiners and Coroners' Offices, 2004. U.S. Department of Justice, Bureau of Justice Statistics Special Report

in death investigation systems across the United States.¹ Variation of standards both across and within states translates to 2,000 different death investigation jurisdictions (See Map 2.1)(Center for Disease Control, 1987). While the systems vary widely across states, there is also a large degree of variability within Texas, due to the current system of death certification.

¹ In Map 2.1, Texas is listed as a County ME system, because once a death has been flagged for review it is referred to a Medical Examiner for autopsy, but a justice of the peace makes initial determination.

Death Investigation in Texas

In Texas, the powers to investigate and certify deaths were granted to the office of Justice of the Peace. The office of Justice of the Peace is an elected official, at least 18 years of age, a resident of the county for six months, and a United States citizen. There is no formal education requirement to hold the office, including no minimum legal or medical training (Andrade, 2012). The office is considered the judicial branch closest to the people. According to the Office of Court Administration, "Justice of the peace courts have original jurisdiction in Class C misdemeanor criminal cases, which are less serious minor offenses. These courts also have jurisdiction of minor civil matters. A justice of the peace may issue search or arrest warrants, and may serve as the coroner in counties where there is no provision for a medical examiner. These courts also function as small claims courts," (Office of Court Administration, 2012).

Texas is not alone in allowing individuals with little or no applicable training to hold the position tasked with investigating cause of death. New Mexico, until recently, had a death investigation similar to Texas. The mismatched qualifications for the office were pointed out by the assistant chief medical examiner for New Mexico, Kurt Nolte, "We have jurisdictions where in order to be a death investigator you have to be 21, registered to vote, and never have fought a duel," (Pyrek, 2007 p. 166).

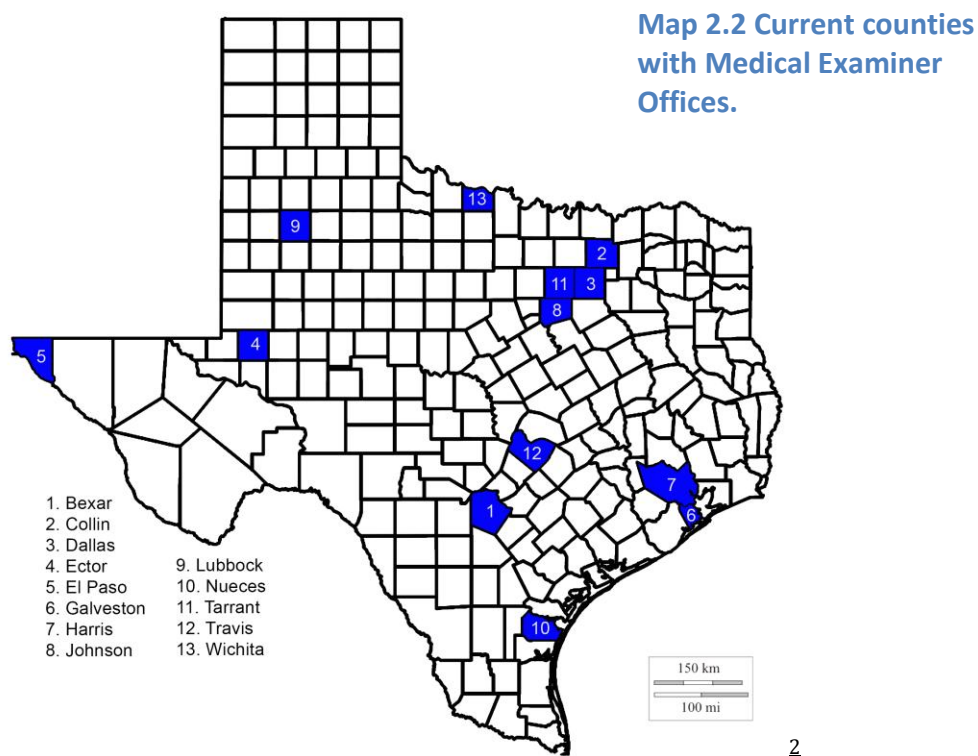
Attempts at reform have been made. The practice of allowing Justices of the Peace to investigate and determine cause of death has undergone one significant development that explains the current state of affairs.

Baker Bill

In 1955, the Baker Bill, as it was known, was passed by the Texas State Legislature. The bill required counties with a population over 250,000 to establish a medical examiners office (Petty, 1980). These counties would hand over death investigation and certification powers from the Justice of the Peace to the appointed medical examiner. A provision of the bill exempted counties that had an established and reputable medical school from the requirement. The other counties were free to establish medical examiner offices if they wished, but once a county created the office there was no escape clause that allowed them to abolish the office and return the powers to justices of the peace. Bexar County quickly established a medical examiners office, as did Harris County, despite having a medical school, while Dallas County opted not to.

In 1965, the law was amended to require a population threshold of 500,000 to mandate the establishment of a medical examiners office (Petty, 1980). According to 2010 census figures, of the 254 counties in Texas, 9 had population over 500,000 requiring the establishment of a medical examiners office (U.S. Census Bureau, 2010). Currently, 13 counties operate medical examiner offices, covering

roughly 59% of the population of Texas (Ector County, 2011). Map 2.2 illustrates the 13 different counties that operate Medical Examiner offices, and their distribution across the state.



² List compiled using the following sources, www.co.galveston.tx.us;
www.co.collin.tx.us/medical_examiner; www.tarrantcounty.com/emedical_examiner;
www.co.travis.tx.us; www.co.lubbock.tx.us; www.bexar.org/medicalexaminer;
www.co.ector.tx.us/ips/cms/Medicalexaminer.html; www.harriscountytexas.gov/ifs/faq.aspx;
www.epcounty.com/medicalexaminer/faqs.htm

Agreements Between Counties

Many counties in Texas have formal agreements where they share a central medical examiners office for cost saving purposes (Emerson, 2006, p. 1). Still others contract with larger counties that have mandated medical examiners office to perform autopsies. Finally, in a third option, there exists private pathology labs that are often run by individuals employed in the larger counties that contract their services to counties without the resources to maintain and staff a medical examiners office (Berard, 2009). Illustration 2.1 is the Permian Basin Forensic Center, a private turned public Medical Examiners office (PermianBasin360.com, 2011).³

Illustration 2.1 The Permian Basin Forensic Center

Berard (2009) has raised several concerns about these arrangements. First, a county that contracts with another to provide autopsy service often does not equate the same level of due diligence in



NewsWest9.com

³ In a further example of the turmoil in the Medical examiner system, a private company built a lab to serve the contracting needs of the Permian Basin area of west Texas. When they lost the serving pathologist and were unable to hire a new certified pathologist, they gifted the building to the county. For more information, please see http://permianbasin360.com/fulltext?nxd_id=113907

investigations that are applied to cases from the original jurisdiction. According to Allen (2011) this may be due to a sense of disconnect between the servicing county and the infrastructure of the originating county. For example, medical examiners may not have access to scene of death information or medical records, which can result in more errors and a further undermining of the system. When counties contract out autopsy services, someone in the role of Justice of the Peace often makes precursory decisions about referrals to autopsy. Because, the individual tasked with that decision generally has little to no medical experience or education, errors in judgment are often made easily and unknowingly. This was the case in the example mentioned in Burnett County where the body was sent to Travis County for an autopsy based on the request of the Burnett county Justice of the Peace (Berard, 2009). In this instance it was the Justice of the Peace who raised a red flag over the results, but one can see how easily the arrangement could have led to a grave miscarriage of justice.

Secondly, questions have been raised about the “moon lighting” of county medical examiners as independent contractors to other counties. A perverse incentive structure emerges. Profit may motivate these individuals to turn over as many cases as possible; therefore, creating problems for the credibility of his or her work. “The incentive is to move as many bodies through your morgue operation as possible. The more you can do, the more money you can make,” (Berard, 2009). This sentiment is one that most individuals find repugnant.

Counties tasked with finding ways to provide appropriate death investigations, do, at times find contracting and multi county partnerships the only way to survive in a high-cost low-priority marketplace. The arrangement is a limited choice of two options, with neither being an ideal solution.

Developments in Forensic Science

Although the requirements for medical examiners in Texas have not evolved, the opposite is true for the techniques used in the field. Past practices for determining cause of death have been abandoned in light of scientific discovery (Hadley 2008 p. 133). New techniques have been developed and widely adopted. The field continues to advance and evolve, as those techniques become a more integral part of the criminal justice system.

Recognition of the important role that forensic science is playing in the lives of Americans led the National Academies of Science to examine the field as a whole and make recommendations. The report listed three ways further improvement in forensic science can influence individual lives on a large scale.

First, further improvements will assist law enforcement officials in the course of their investigations to identify perpetrators with higher reliability. Second, further improvements in forensic science practices should reduce the occurrence of wrongful convictions, which reduces the risk that true offenders continue to commit crimes while innocent persons inappropriately serve time. Third, any improvements in the forensic science disciplines will undoubtedly enhance the Nation's ability to address the needs of homeland security (National Research Council, 2009 p. 4).

This report was also a scathing indictment of the lack of attention paid to the field. It recommended change at the national level. On the other hand, reformers, made up of medical examiners and public health officials, who understand the federalist nature of our criminal justice system have called for individual states to lead the transformation and find local ways to better oversee the provision of services (Thompson 2011). The call for reform⁴ on a state-by-state level also takes into account the difficulty in mustering the political will for the creation of a new federal agency and the implementation of a national medical examiner system. State reformation can be implemented in a way that is faster, more responsive and may be easier to enact.

Texas Forensic Science Commission

Texas recognized the need for oversight in 2005 following the controversial case of Cameron Todd Willingham, who was convicted using arson investigation forensic science techniques. The methods used to determine his guilt were widely criticized. He was convicted of starting the 1991 fire that killed his three young daughters and was executed in 2009. Largely believed to have been convicted using

⁴ Advocates of reform come from both inside the forensic science field and without. Locally, the Innocence Project of Texas has championed the inclusion of medical examiner decisions under the jurisdiction of the Texas Forensic Science Commission. (For more see www.IPoFTexas.org) The documentary program Frontline in conjunction with ProPublica and NPR released a multi part investigation into the state of death investigation in America, which questioned the current state of the system. Call for reform from medical examiners has occurred almost as long as the system has been in place. A 1953 article argued, "The defects in the office of coroner are inherent in the system," citing technical incompetence and going on to argue that "There are dozens of murders in Kansas each year that are either undetected or detected at such late date that prosecution is impossible," (Blair, 1953, p. 12). A leading scholar in the field cites the past 25 years as "a lull in the action," (Hanzlick, 2007)

junk science, the state created the Texas Forensic Science Commission (TFSC) to evaluate the case as well as provide recommendations to the state in the area of forensic science (Goldstein 2011, p. 245). Illustration 2.2 shows the Texas Forensic Science Commission meeting shortly after their creation.

In addition, the TFSC was empowered to hold reviews of future cases and hear citizen complaints of practices in the field of forensic science (Texas Forensic Science Commission



2011, p. 5). Unfortunately, from the perspective of reform, in a clarification of the enabling statute issued by Greg Abbot, Texas Attorney General, medical examiners were exempted from review of the commission (Texas Forensic Science Commission, 2011 p. 7). Further, the board was directed not to make recommendations for the handling and field of medical examiners. Hence, while TFSC was created to oversee forensic science practice in the state, it was barred from overseeing a critical component of accepted practice—appropriate educational backgrounds for examiners.

Illustration 2.2

Texas Forensic Science Commission meeting.
www.fsc.state.tx.us

Reform

Many states have recognized the need for reform in the way death investigations are handled within their borders. The cost of reform is becoming lower than the cost to the state in civil penalties when a new error is discovered. Furthermore, after numerous scandals in some states, the public is demanding that their state provide tougher oversight to ensure that the public health and trust is protected (Donovan, 2012). States have tried a number of reforms each tailored to their specific needs and citizenry and modeled on recommendations from the National Academies of Science. Of course, each set of reforms addresses different issues because each state represents a different starting point (National Research Council, 2009 p. 56). For example, states that already possess medical examiner offices have less overhaul to undertake than states like Texas where the responsibilities fall to an elected officer.

Texas attempted some reform in the 81st Legislature. Bill 3485 was passed and would have created tighter restrictions on medical examiners and given them subpoena power of medical records and law enforcement. Unfortunately, Governor Rick Perry vetoed the bill, despite having wide support from the legislature and the Texas Association of Urban Counties (House Research Organization 2009, p. 44). While the proposed regulation would have empowered the medical examiners in conducting their examinations, it would not have addressed the need for reform in other areas of the field. It did not address the need to remove the power to certify cause of death from the local Justice of the Peace.

HB 3485 would have revised requirements for county medical examiners' office, including staffing structure, certification for examiners, and the circumstances under which a medical examiner was required to perform an inquest. The authority of medical examiners would have been revised, including allowing them to limit or prohibit the harvesting of donate tissue or organs if they determined it would interfere with an investigation and to perform an autopsy without notice to a deceased person's next of kin. The bill would have revised the circumstances under which an autopsy was performed and redefined an autopsy to allow procedures to determine the manner of death, obtain evidence, or identify the deceased. Counties could have created funds to pay for disposing of bodies of deceased paupers (House Research Organization 2009, p. 43).

While the bill was not enacted, it was a clear indication that legislators in Texas are aware of the need for reform, but may be unaware of the vast array of reforms needed. The scope of the needed reforms comes into focus when Texas is examined in light of the systems employed by other states.

Texas vs. Other States

Texas is not the only state with an amalgamation of standards, but it is unique in the variability of the medical examiner services provided its residents. In a paper describing the training needs of coroner and medical examiner offices nationally, Hanzlick pointed out that Texas is unique in the number of jurisdictions in the state. "In Texas, nearly all counties have multiple precincts, each precinct with an elected justice of the peace who serves as coroner, resulting in approximately 885 coroners among the 247 counties that do not have a medical examiner system," (Hanzlick 1994, p. 1776). This large number of jurisdictions means that Texas contributes to around 60% of the number of people serving as a lay coroner. Table

2.1 presents the 29 other states that have a coroner system as well as the number of jurisdictions in each state.

Table 2.1 Coroner States (29) and number serving with office requirements.

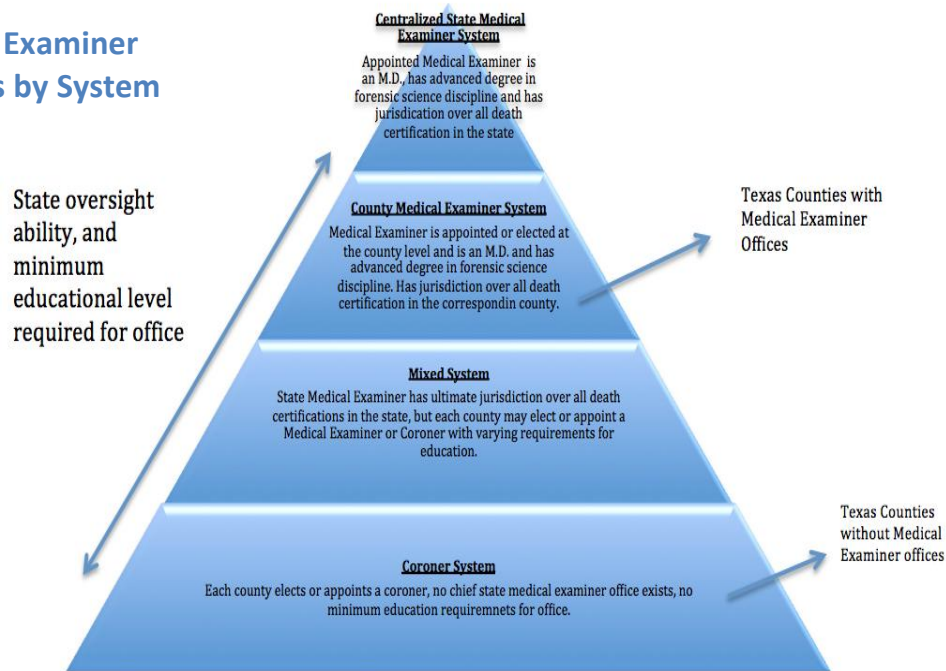
State	Number of Counties	Number of Coroners	MD Required	Mandated Training
Alaska	23	4	N	N
Alabama	67	64	N	N
Arkansas	75	75	N	N
California	58	55	N	N
Colorado	63	63	N	N
Georgia	159	155	N	Y
Hawaii	5	4	N	N
Idaho	44	44	N	N
Illinois	102	101	N	Y
Indiana	92	92	N	N
Kansas	105	31	Y	N
Kentucky	120	120	N	Y
Louisiana	64	64	Y	N
Minnesota	87	75	N	N
Missouri	115	105	N	N
Mississippi	82	82	N	Y
Montana	56	56	N	Y
North Dakota	53	53	Y	N
Nebraska	93	93	N	N
Nevada	17	17	N	N
New York	62	137	N	N
Ohio	88	88	Y	N
Pennsylvania	67	65	N	Y
South Carolina	46	46	N	N
South Dakota	66	66	N	N
Texas	254	885	N	N
Washington	39	37	N	N
Wisconsin	72	59	N	N
Wyoming	23	23	N	Y
Total	2197	2759	Y= 4 OF 29	Y=7 OF 29

When consideration is given to the frequency of elections, Texas in any given year can have between 159 and 708 new coroners in the state. This

equates to 45 percent of all new coroners nationally in any given year (Hanzlick 1996, p. 1777)⁵

Figure 2.1 Illustrates the tradeoffs that states face with the implementation of a coroner system or a mixed system versus a medical examiner system with a Chief Medical Examiner. In the figure, one can see the varying systems and where different counties fall within the systems.

Figure 2.1 Medical Examiner System Hierarchies by System Type



⁵ This estimation is based on an assumption that roughly 25% of the Justices of the Peace would be replaced following an election. According to Hanzlick, "The potential number of new coroners ranges from 159 to 1546 per year during each 4 year cycle (nationally). Excluding Texas, the number ranges from 159 to 838," (Hanzlick 1996, p. 1777)

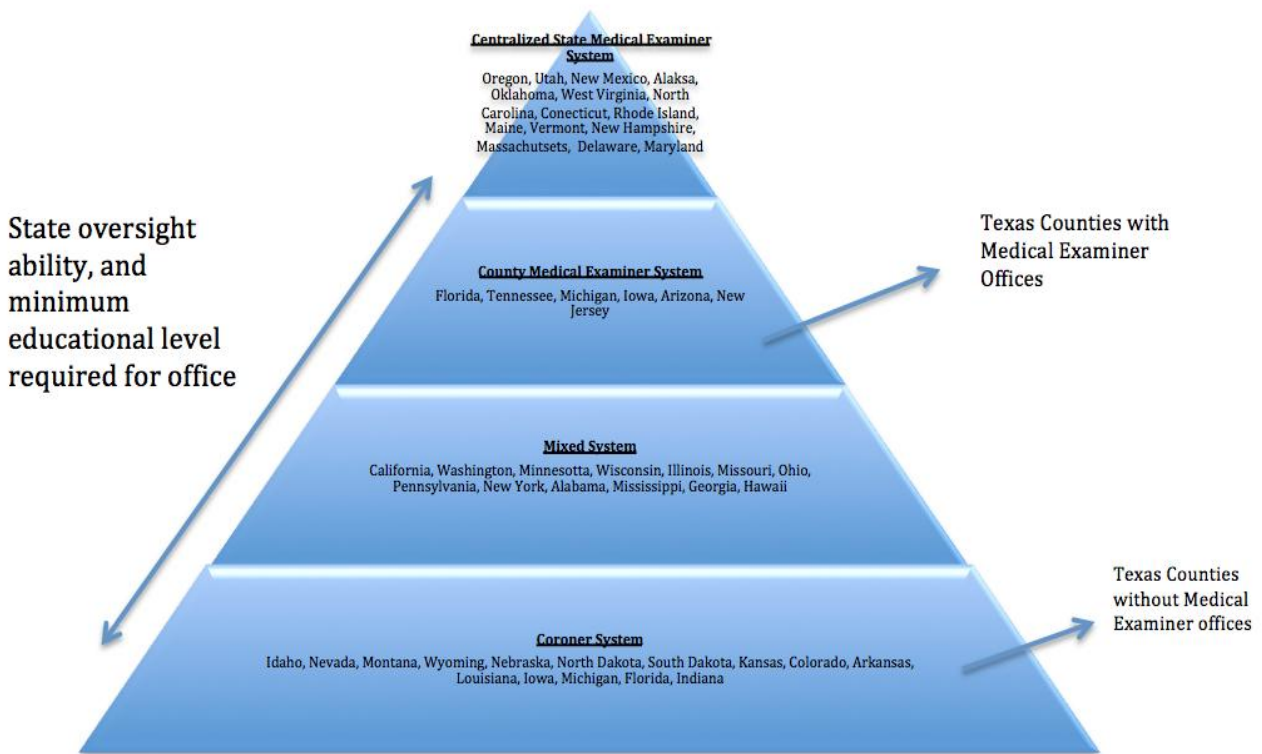
While larger counties with Medical Examiner offices find themselves near the top of the pyramid for education and oversight, smaller counties are significantly below them in the hierarchy.

As one moves up the pyramid, each different system gains oversight ability and indicates a higher level of minimum standards required to serve as a medical examiner or coroner. While Texas is sometimes classified as having a mixed system, the state actually exists within two different realms of regulation. Those living in counties with populations under 500,000 are covered under a coroner system, while those in larger counties are served by a Medical Examiner with state prescribed requirements.⁶

Illustration 2.2 classifies where every other state falls on the hierarchy of Medical Examiner and coroner regulations. It makes clear that Texas residents depending on their location receive varying degrees of service. The system in place in smaller counties is closer to the system used in much less populated states (Idaho, Montana, Wyoming).

⁶ When discussing this topic throughout my research, the response from Texas residents ranges from shock to disbelief. This is a common response and has been referred to as the CSI effect. As popular television has taken on the field of Forensic Science, many assume that the shows are based in at least some truth. The CSI of television could not be farther from the truth for most Texas residents. For more see the engrossing book *Forensic Science Under Siege*, by Kelly Pyrek (2007)

Illustration 2.2 Medical Examiner System Hierarchy by



Chapter Summary

The system in Texas for investigation and certification of deaths is multifaceted and has grown out of the English Common Law coroner system. While there have been some reforms made to the system, the two tiered structure remains and the training level of the coroner depends on the county of death. Texas also accounts for a disproportionate number of coroners in the United States. In the next chapter a proposed model for reform of the medical examiner system in Texas is

presented. The parts of the model are drawn from the scholarly literature and establish a minimum level of competency for all residents.

Chapter 3- The Preliminary Model

Chapter Purpose

The purpose of this chapter is to elucidate the essential components of a standard for medical examiner offices in Texas counties having populations under 500,000. The model is organized according to a practical ideal type framework ⁷ (Shields & Tajalli, 2006; Shields, 1998). The model includes 4 main components, education, facilities and staffing, technology, and oversight, drawn from recommendations found in the scholarly literature. Taken together, the components present a “first round” model for the minimum standards required to assure a sufficient level of service to citizens across Texas regardless of location.

Creating a Minimum Standard

Education, Facilities and Staffing, Technology, and Oversight are time and again sighted as the necessary focus for professionalizing the field. Through the literature, a framework emerges as the guide for minimum standards to set Texas on the path to providing a consistent level of forensic inquiry for all of its citizens. This framework takes the shape of a practical ideal type. A conceptual framework table lays out proposed standards and establishes clear links from a proposal to

⁷ For more examples of Practical Ideal Type Frameworks, see: Eivens 2000; Garcia 2001; Lindsey 2010; McLemore 2008; Thompson 2011

relevant literature. This research draws connections between empirical research on the need for reform and clear proposals for implementation.

A practical ideal type, according to Shields, creates benchmarks to measure policies, and allow for flexibility in the development in categories (Shields 1998, p. 219). The practical ideal type framework is a useful tool for identifying not what a program is doing, but what a program should be doing. (Shields & Rangarajan, 2013) While practical ideal type frameworks are often used to identify best practices, they are also helpful in creating minimums in laws and policy. In this research the practical ideal type constructed serves as a floor for recommendations and ensures a minimum of coverage. This reflects the almost total lack of standards currently promulgated.

1. Education

Establishing medical examiner offices in Texas should begin with an evaluation of education requirements. The lack of statewide education standards for medical examiners creates colossal deficiencies in a vital health and justice system. Varying standards, as established by individual counties, also results in patchwork professionalism. At present, this absence results in one of two scenarios. Roughly half of the residents of Texas are, in fact, covered by well-qualified medical examiners (Emerson 2006, p. 1). However, the other half are under the jurisdiction of elected justices of the peace, who carry out the services of the county medical

examiner with little to no scientific background (Goldstein 2011, p. 231). An education standard should incorporate:

1.1 Minimum Education Standards

1.2 Continuing education

1.3 Ethics education.

1.1 Minimum Education Standards

Doctors, teachers, lawyers, and even hairdressers have minimum levels of training mandated by the state. These requirements vary from profession to profession and reflect the importance of the field, creating a barrier to entry that ensures a minimum competence level (Goldstein, 2011 p. 231). Medical examiner clearly resides within the spectrum of doctor and hairdresser. “The level of education and training of medico-legal professionals is crucial to the quality performance of the job,” (Pyrek 2007, p. 160). A baseline requirement should be established, requiring medical examiners to hold a certificate in forensic pathology from an accrediting body: such as, the National Association of Medical Examiners, American Academy of Forensic Sciences, or the American Board of Medico Legal Death Investigators (National Research Council 2009, p. 258).

A certificate in forensic pathology ensures a minimum understanding of the scientific principals behind modern medico-legal death investigation (National Research Council 2009, p. 217-224). Accreditation provides a baseline measure,

which can then be built upon. Hanzlick is explicit in the need for education requirements of coroners, “The second level of need, a practical one, involves learning of basic death investigation techniques and the common body of knowledge necessary to conduct competent death investigations,” (Hanzlick 1996, p. 1777). The lack of required skills and knowledge boils down to a question of competence. As the Chief Medical Examiner for Virginia, a leading advocate for medical examiner reform put it, “I’m not anti coroner, I’m pro competency,” (Thompson 2011, p. 1).

The Texas Forensic Science Commission, addressing forensic science techniques used in arson investigation recommended individual certification and a phased in time line for educational requirements which would allow those in the field to continue in current capacity as they gain the appropriate credentials (Texas Forensic Science Commission 2011, p. 1)⁸ A phased requirement for certification would allow those currently working in the field to continue while they attain the proper credentials.

Research performed by an Organ Donation Center argued that the lack of education leads to “individuals with little or no medical background, in essence, making life and death decisions,” (Shafer 2003, p. 167). Risinger argues that individual certification is the only way to address education issues, “Unless somebody provides the impetus for cooperation with real research and for individual certification beyond the laboratory setting, most of us will not live to see

⁸ The National Association of Medical Examiners recognizes the need for individual certification and education needs and requires differing certification for different positions in the office rather than relying on an overall office certification and the knowledge of just one highly trained chief medical examiner. (NAME 2009, Accreditation Checklist)

substantial improvement in much of the forensic science that makes it into court,” (Risinger 2009, p. 242).

Another way this lack of education comes into play is in the interpretation of laws that require inquest. “For example, one ME/C may decline to investigate deaths of stillborn infants because there was, legally no life and therefore, no death.

Another ME/C may interpret the statute more loosely and investigate such “deaths,”” (Hanzlick 1996 p. 389). Hanzlick advocates clearer language and more education as the solution to such inconsistencies.

Finally, the lack of educational standards is cited as a leading cause in the lack of a research culture in Medical Examiner offices. A culture of research is one that recognizes that techniques are not static and attention should be paid to the development and refinement of science. Giannelli echoes this including notes that even forensic science research journals do not often “satisfy the typical standards of research publication,” (Giannelli 2012, p. 11). According to Timmermans, the lack of education and scientific culture affects the professional authority of all serving in the Medical Examiner role, “Medical examiners with similar backgrounds classify comparable cases differently, and the variation suggests reliance on personal rather than scientific criteria. Unfortunately, such variability affects every aspect of death investigation in the United States,” (Timmermans 2006, p. 267). Further, these authors emphasize that the lack of scientific training begins to erode away at

“professional and cultural authority” leaving their findings open to criticism by politicians, citizens and virtually everyone (Ibid, p. 5).⁹

The following standards measure minimum education and should be included in a model.

1.1 Minimum education standards	<ul style="list-style-type: none"> • The Chief medical examiner for the county should be a pathologist granted, by the American Board of Pathology, a certificate of qualification for the practice of Forensic Pathology, having at least 2 years of forensic pathology work experience beyond forensic pathology residency/fellowship training. • The Chief medical examiner should be employed full time, with the duties of the office as the primary professional obligation. • Medical investigators should be Board certified Fellows of the American Board of Medical Death Investigators.
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Of course, a well prepared coroner in 1950 would not be prepared to face the advances in science that take place in modern death investigations. For this reason, an education standard should contain a mandate for continuing education.

1.2 Continuing Education

Continuing education requisites should be established as part of the office. In a field as young and dynamic as forensic science, the need for continuing education is important. The National Institute of Justice is explicit in the value of continuing education for forensic science community, saying, “(continuing education is) the

⁹ One example of this occurred with heat related deaths in Chicago, Illinois. The coroner’s office classified several deaths as heat related and the public became angry that public officials were not doing enough to address the situation. Public officials began to publicly question the findings of the coroner’s office in an attempt to deflect attention. They were successful. Eventually, the education of those working in the coroner’s office became the news story, detracting from the health consequences of the heat wave. For more, see Stefan Timmermans Postmortem (2006)

mechanism through which a forensic scientist remains current or advances to a higher level of expertise, specialization, or responsibility,”(National Institute of Justice 2004, p. 25). Forensic science techniques change as our understanding of the science evolves and technology progresses. Medical examiners must neither continue to employ discredited techniques, nor overlook emerging technologies. Developments in the field have identified, “Problems in regard to our knowledge concerning the accuracy of various techniques even under ideal conditions,” (Risinger 2010, p. 233). As the science behind the techniques is strengthened, entire processes may need to be abandoned.

This was the case in a cause of death determination made by the former El Paso County medical examiner, Corinne Stern (Berard, 2009). Stern was criticized for using the unreliable and discredited “floating lung technique.” Evidence generated by this technique can be the difference in determining whether a death was the result of natural causes or homicide (Berard, 2009). Requisite continuing education credits would serve as a channel to eliminate the use of now debunked methods (National Research Council, 2009, p. 231). The use of such methods, according to Tarrant County medical examiner Nazim Peerwani, are hold overs from what was once taught, but is now discarded science (Berard, 2009).

Continuing education does not have to be lengthy and could be as little as 1 day a year. “An annual, 1-day course for basic and update information or the regular provision to coroners of current, written materials on the topics would probably suffice in most cases,” (Hanzlick 1996, p. 1777). Working to keep medical examiners

abreast of trends and emerging research indicates the states' recognition of the weight of the work carried out in the field.

Most states, with current statutes requiring continuing education, mandate between 8 and 16 hours of training on an annual basis (Prahlow 1995 p. 56). Additionally, according to the National Research Council's 2009 report, "Continuing professional development also is a means of expanding expertise and career advancement," (National Research Council 2009, p. 232). Providing continuing training may help to encourage practitioners to stay in the field.

The lack of a continuing education requirement often puts medical examiners proactive about staying abreast of trends and research in a position of having to defend expenditures on courses and conferences. According to Fisher, "If there were some continuing education requirements, we wouldn't have such a tough time in trying to justify why it is important to send people to meetings," (Fischer, 2002 p. 85) Haglund makes a similar argument in suggesting that continuing education must be required in order to assure that investigators comply, saying, "In the experience of the authors and many chief medical examiners, administrators, and others responsible for training, a majority of investigative staff do not attend training sessions unless training is mandated or they are compensated to do so," (Haglund 1997, p. 24).

Finally, medical examiners are not only tasked with staying up to date on the developments in their field but also the legal aspects and other fields that are affected by decisions made in the medical examiners office. Serving as a medical

examiner in a country as diverse as the United States means making decisions that take into account a variety of social and cultural preferences and restrictions. Additionally, advances in other medical fields can be deeply affected by decisions made by a medical examiner (Shafer 2003, p. 167).¹⁰ Continuing education can serve as a way to keep medical examiners aware of changing cultural norms in the communities they serve as well as a way to disseminate emerging guidelines cultivated from new research (Garrett 2009, p. 95). The National Association of Medical Examiners recognizes the need for further education of professionals in the field and has included continuing education as a prerequisite for certification, but makes no specific hour requirements (National Association of Medical Examiners, 2009, p. 47).

The following standards measure continuing education and should be included in a model.

1.2 Continuing education	<ul style="list-style-type: none"> • Each licensed professional should be required to participate in continuing education. • A minimum of 24 hours of continuing education credit hours must be accrued every 2 calendar years. • Sufficient funding should be provided for office approved and professionally required continuing education.
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The National Research Council's report underscores that accreditation and certification should only be one part of quality assurance (National Research Council 2009, p. 218). The final check on the quality and competence of medical examiners

¹⁰ Advancements in transplantation have been effected by medical examiners lack of knowledge as to when it is appropriate to deny transplant and seek further investigation. Some in the organ transplantation field believe that the lack of medical knowledge in medical examiner offices leads to a greater rate of denial of release of organs. See Vital Role of Medical Examiner and Coroners in Organ Transplantation (Shafer, 2004).

should come from within via a solid code of ethics and training on a variety of topical ethical issues.

1.3 Ethics Education

Ethics education should be included in state medical examiner qualifications, separate from ongoing scientific learning. Forensic medicine, by nature closely tied to the courts and therefore entwined in life and death issues, necessitates a level of ethics training above and beyond the requirements of other professions. Along with education in the ethical considerations of the position, establishment of a code of ethics for medical examiners is also recommended.

Similar to the professional journalist, the forensic practitioner has a foundational duty to independently and accountably seek and report facts while minimizing harm. Reportage is not advocacy and vice versa. Ideally all practitioners strive for the objectivity of the pinnacle in each and every case. Shifts in perspective can occur subtly and imperceptibly. Maintaining neutrality requires diligent effort in order to keep potential biases in check. Clearly, practitioners should maintain an absolute foundation of balanced perspective- recognizing falsehood is essential to avoiding it! (Upshaw Downs, 2012, xiii).

Texas's use of capital punishment reaffirms the obligation for an independent medical examiner with a strict adherence to a well-established code of ethics. The close relationship to the courts, with the impact that medical examiner findings can have on the outcome of criminal proceedings, is a clear indication that ethics training should be included in standards.

The varying demands made upon medical examiners, and their relationship to law enforcement, necessitates a strong ethics background. “A basic ethical tenant of forensic scientists is that as witnesses they are not advocates in the trial—that their analytical results and conclusions should not be swayed or biased by the party who calls for their testimony,” (Pyrek 2007, p. 382). Medical examiners must be willing to search for the truth despite what the findings might reveal.

There exists a pervasive feeling that some medical examiner offices are too closely tied to the criminal justice system, operating more as a rubber stamp for a district attorneys office (Hansen, 1995; Downs, 2012). This relationship becomes especially troublesome in the investigation of use of lethal force by police officers (Sorensen, 1993). The special prosecutor in the case of the Lubbock County medical examiner suspected ties to the criminal justice system played a role in the mishandling of several cases. “From what I learned about the man,” Turner said, “it seemed Erdmann had fantasies aggrandizing his role in law enforcement to the point that he may have shaded things to follow along with the police theory of a case,” (Suro, 1992). Furthermore, if a case leads to the wrongful conviction of an individual, the clear ramification is that the guilty party goes unpunished.

A strong code of ethics can also help act as a safe guard against situations like the one mentioned. “In recognition of the scientific principles of the field, considerations for integrity of evidence, impartiality, acceptance of limitations of conclusions and examiner expertise, confidentiality and testimony must also be included,” (Pyrek 2007, p. 471; Roberts, 2012). A strong code of ethics and

education in ethical principles can help officials understand how to operate independently. The challenges of this are difficult and recognized by experts in the forensic science field, "The ultimate ethical challenge in forensic practice is to embrace instances where the facts lead the scientist and the jury to opposite conclusions, as such instances demonstrate an appreciation for an essence of American jurisprudence," (Downs 2012, p. xiii).

Risinger makes the argument that courts cannot be relied on to serve as gate keepers of what is and is not appropriate in court because they (lawyers, prosecutors and judges) do not have scientific backgrounds (Risinger 2009, p. 242). A strong ethics background ensures that medical examiners and those in the forensic science field are better equipped to defray the pressure from prosecutors and defense attorneys to interpret results in a way that might be more or less favorable to the accused (Ubelaker, 2013 p. 33).

There exist some established codes of ethics for various forensic science disciplines, and the National Research Council recommended that all should be strengthened and enforced (National Research Council 2009, p. 212). Ubelaker in his book, *Forensic Science*, reiterates this point saying, "Forensic Scientists should be assiduously held to Codes of Ethics," (Ubelaker 2013, p. 329). Ubelaker goes on to illustrate that a strong ethical basis of practice leads to a more legitimate authority for those practicing forensic science. Additionally, a code of ethics serves as a starting point for enforcement when ethical principals of the field are violated. Upshaw Downs points out that a code of ethics specifically for Medical examiners is

necessary because traditional government employee codes do not address the unique situations faced by ME's (2012, p. 84). He goes on to argue that the need for a code of ethics is self evident given that the profession is the mixture of two fields that pioneered the codification of professional ethics (Law and Medicine).

The following standards address ethics education and should be included in a model.

1.3 Ethics education	<ul style="list-style-type: none"> • Any employee of a county medical examiners office should be required to complete a minimum 2 hours of ethics training, in addition to any licensure requirements upon hire. • All county medical examiner office employees should be required to complete a biannual ethics review course. • A universal code of Ethics for Medical Examiner office employees should be established and adopted.
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The most highly trained staff, ready and able to perform the duties asked of them by the citizens of Texas, is worth little if they are not equipped with the appropriate facilities and tools to carry out their duties. The facilities in which we ask medical examiners to carry out their duties should be given as much scrutiny as the people we allow to work in the office. This is why in creating minimum standards for Texas Medical Examiners, the facilities and staffing characteristics they are expected to work within should be an integral part of the standard, and is the second major part of the model.

2. Facilities and Staffing

The National Research Council recognized the patchwork of oversight for medical examiners extended to the facilities in which they practiced. In Texas, the varying regulations translate into a large gap between the best facilities and those counties with the barest of resources (Goldstein 2001, p. 231). For example, large cities like Dallas may have state of the art facilities that allow forensic science practice that stays abreast of emerging trends in the field. Other counties in the state may have to lease time from a local funeral home, more equipped for standard burial and not for determining complex causes of death. Citizens of all counties in Texas should be guaranteed a minimum level of assurance and this requires a standard for the facilities in which death investigations are conducted.

Few people outside of the field think about the work done by medical examiners in Texas. Part of this is explained by the varying degrees of professionalism, although dedication is found even in those individuals who are elected and do not possess a scientific background (Timmermans 2006, p. 254).

In much the same way that there exists literature on the number of physicians per capita that must exist in order to ensure positive health outcomes for residents, there is also a minimum provision for medical examiners that ensures competent levels of service (Pyrek 2007, p. 180). The same is true if we examine the health facilities that are recommended on a per capita basis and facilities for medical examiners, which illustrates what should be available to all practicing

medical examiners. Minimum standards for staffing and facilities emerge from the literature and should include:

2.1 Staffing Levels

2.2 Facility Characteristics

2.3 Security

2.1 Staffing levels

The accreditation boards have recognized the need to establish staffing levels that help insure qualified personnel are not lost to burnout in a high stress occupation (Summit, 2004). Excessive caseload is frequently cited as a leading problem in medical examiner offices (Choo 2012, p. 8). The National Association of Medical Examiners (NAME) recommends that the level of staffing should be tied to the population of the county as well as adjusted to the number of cases served in an average year.

The goal of a well functioning medical examiner office is ensuring employees have the time to make thorough examinations. The common standard is that no medical examiner performs more than 250 autopsies a year (Wecht 2006, p. 391). NAME will tolerate up to 350 autopsies a year, after which accreditation is no longer possible.

The lack of a maximum number of cases is something that has been dealt with by professionals in the field.

In the forensic laboratories, our colleagues face huge backlogs and significant caseloads, which is analogous to a worker in the department of family and children's service where there is supposed to be one caseworker for every 12 or 14 kids, and instead they are working 40 cases at a time. But they do it because they love the work, they know it needs to be done, and they just accept it. We, as forensic pathologists, do the same thing (Pyrek 2007, p. 180).

When medical examiners are pushing the upper limits of allowable cases per year, the consequences can be dangerous. "If you push those limits, there is an increased margin for error and a tendency to make mistakes. It becomes easier and more tempting to skimp on the investigation as a whole," (Pyrek 2007, p. 178). The mistakes made in a death investigation can result in the prosecution of an innocent person or in a missed finding of homicide. Incorrect causes of death can cause emotional and financial repercussions for the decedent's surviving family.

Focus on processing as many cases as quickly as possible affects other aspects of the profession. "(More than 250 cases a year) leaves no time to do the other things that make you valuable, like talk to high schools, visit medical schools, talk with your colleagues, lobby your representatives, do research, and maybe throw in some clinical forensic medicine practice," (Pyrek 2007, p. 180). Addressing caseload by ensuring staffing levels are adequate, according to Goldstien, should precede any provisions for technology (Goldstien 2011, p. 254). The idea being that even a state of the art facility does little good if there is not enough staff to adequately utilize the technology. With roughly 10% of all medical examiner slots

vacant nation wide, without statutory staffing levels counties are likely to allow short-term fixes (Weedn 2003, p. 12). Mandatory staffing levels would ensure that facilities are being utilized correctly.

The following standards measure staffing levels and should be included in a model.

2.1 Staffing levels	<ul style="list-style-type: none"> • The medical staff size should be sufficient so that no autopsy physician is required to perform more than 325 autopsies a year. • The office should employ sufficient non-technical staff to handle routine daily caseload for administration, including visitor reception. • The office should employ sufficient non-technical staff to handle routine daily caseload for medical transcription, records keeping and data analysis.
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After making provisions to ensure that Medical Examiners are not asked to carry workloads that undermine their findings, it is just as important to set standards for the environments in which they operate. A manageable caseload is just one part of examining the workplace. The second piece has to be a consideration of the facilities in which they practice.

2.2 Facility Characteristics

Staffing level is not the only area in which the medico legal death investigation can feel the ramifications due to a lack of minimum standard. The facilities in which medical examiners report to work each day are critical, yet often inadequate. A National Association of Medical Examiners survey reported, "Overall, systems were small, poorly funded, and housed in outdated facilities," (NAME 2011). The same report argues that all medical examiner offices should have in-house

support laboratories and toxicology staff (NAME 2011). Risinger identifies the two main challenges to forensic science practice as “ accuracy and less than ideal working conditions,” (Risinger 2010, p. 233). Ensuring that medical examiner offices in Texas have certain minimum technologies available, as well as adequate space to provide services, should be a central part of any standard.

When considering the infrastructure of medical examiner offices, careful attention should be paid to the working conditions within the office. The current state of facilities nation wide contributes to a high number of infections amongst forensic pathologists. Nolte uses the transmission of Tuberculosis as a way to illustrate the poor working conditions faced by those in the field.

There was a time when autopsy was the most common way for TB to be transmitted to health-care workers and medical students; large numbers of medical personnel got TB, and some died. The rates at which TB was being contracted fell, thanks to public health initiatives so it became transmitted less frequently at autopsy because fewer individuals had it. But that is not to say that the risk of transmitting it in any given medico-legal case had changed. As a consequence, the efforts to change ventilation in ME offices never happened...I think it's critical to address this issue because if you can't protect the forensic pathologists and other personnel in these offices, how can you attract them to the field (Pyrek, 2007, p. 559)?

The physical location of the building is also critical to the level of services provided. Having to transport a body long distances not only costs the county additional monies, but also affects the results of certain toxicological and medical tests vital to determining cause of death (Pyrek 2007, p. 201). Consideration should be given to the physical location of the medical examiners office in relation to the population it serves. In a state as geographically vast as Texas, it makes sense to

make some provision for those counties in which no chosen location would be central. In those instances, the location should be mutually beneficial to all the counties served.¹¹

The location of the office also becomes important when consideration is given to the needs of the decedents family. Ector County, in deciding to establish its own independent medical examiner office, cited the ability to return the remains to the body in a matter of hours following intake (Ector County, 2012). This time frame was often extended days, if not weeks, when processing required transporting the body to Tarrant County, where they had contracted services. According to Roberts, there exists a therapeutic value in the autopsy for the decedents surviving family; therefore, provisions for the autopsy to be handled in the quickest and most efficient manner possible by way of location should be considered and may increase those willing to consent (Roberts, 1986, p. 162).¹²

The following recommendations address Facility characteristics and should be included in a model.

2.2 Facility Characteristics	<ul style="list-style-type: none"> • County medical examiners office should have administrative area separate from the autopsy room(s), laboratories, and body receiving area so that it is accessible to visitors who have legitimate business with the office without exposure to autopsy activity? • County medical examiners office should be within a reasonable distance of the population it serves.
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¹¹ For example, regulation should be flexible enough to recognize that in larger less populated counties the location of facilities may need to be closer to the population center and not necessarily the geographic center of the county.

¹² The geographic challenges presented by some of the vast counties with large uninhabited portions in West and South Texas would require flexibility. Those living in these counties are generally, more accepting of the delay in government services based on the remoteness of location. The most geographically central location for some of these counties would, obviously not be the best location for a Medical examiners office and in those cases the office may want to be located nearest the other governmental buildings or near the population loci.

Finally, in considering the physical characteristics of the building, security must come into play. The security of the office, and the importance of the work being done inside, should be addressed when constructing standards.

2.3 Security

Recognizing that medical examiner offices in the state are part of the Department of Homeland Security (DHS) National Response Framework, and are part of the leading edge of protection, the physical security of the building should be considered (National Research Council 2009, p. 260). Like any government facility containing sensitive data and potentially hazardous substances, a minimum standard for office security should be established.

A starting point would be compliance with the DHS National Response Framework provisions for medical examiner offices. The DHS National Response Framework indicates that in the event of a mass casualty event, medical examiner offices should have in place plans to deal with potential exposure to toxic chemicals, ways to secure evidence, and the ability to secure property of the decedents (Federal Emergency Management Agency 2005, p. A9-1). While these concerns address the event of a mass casualty, a medical examiners office could be expected to have to deal with cases on a smaller scale that none the less require the same level of site security.

Medical examiner offices may come into contact with hazardous materials in the event of a terrorist attack, or they may come into contact with hazardous materials in the everyday provision of services. Many of the newest drugs used to treat cancer are actually highly toxic and classified as hazardous material (Health Care Environmental Resource Center 2011). The ability of a medical examiner or forensic science laboratory to handle appropriate substances with little disruption to workflow is key to keeping the system efficient (Pyrek 2007, p. 260).

The Department of Justice published a 1998 handbook outlining considerations in designing and building a forensic laboratory. The handbook listed examples of security concerns which included passive security, electronic security, and proximity access (National Institute of Justice 1998, p. 14). According to the Department of Justice, lighting of the building should be considered in making security arrangements, ensuring employees can safely enter and exit the building and to discourage vandalism and unauthorized entry. The report does not endorse one access plan over another but does say that a security plan for the building should include the provisions for restricting access to the building (National Institute of Justice 1998, p. 23).

Another security consideration, according to Joshi, should be the data and information of case files stored inside the building (Joshi 2001, p. 66). According to Joshi, "The government's archived information should be protected from tampering yet remain accessible under proper authorizations. Among all government functions, maintaining collective security remains the most crucial element,

requiring that security concerns be addressed at each level of the government's information infrastructure," (Joshi 2001, p. 66). Any data collected by the government should be safeguarded, but the information contained in the details of a medical examiners report could have potential negative effects for the decedents surviving family.

The following recommendations address Security and should be included in a model.

2.3 Security	<ul style="list-style-type: none"> • Access to the facility should be through controlled entrance. • Office should have after-hours locked storage area available for evidentiary material. • Office should have written policies covering facility security. • County medical examiners offices should have clear chain of command and chain of custody procedures in the event of emergency.
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The preceding considerations of education and facilities are concerns that were minimally included in the original establishments of some of the oldest medical examiner offices in the country. To some extent they were even realized in the Baker Bill. The next area for development of minimum standards includes developments that utilize current technology to set the office up for the transition into the digital age.

3. Technology

The field of forensic science is changing as new techniques are developed and old techniques are honed or discarded. Mandating the use of certain forms of practice while prohibiting others may be something that an oversight board takes

into consideration in future decision making. At present, there are certain technological mandates that should be put in place that would allow the offices to not only function in the appropriate way, but also begin to contribute to the further development of the office (Thompson, 2008).

New standards should require both database access and utilization and digital record keeping. The incorporation of the two technologies, alone, will allow for the foundations of a greater sharing of wealth (of research) and help to form a culture of research in the field that many have criticized as lacking (Giannelli 2012, p. 10). Currently, forensic science must meet what is called the “Daubert test” to remain admissible in court. Daubert cited four factors in considering admissibility: whether a technique had been tested, if said technique had been subjected to peer review and publication, identified error rate and established standards (Glancy 2012, p. 84). The data compiled will serve to ensure that techniques either meet, either currently or in the future, the Daubert test.

Recommended minimum standards for technology include:

3.1 Database Utilization

3.2 Digital Record Keeping

3.1 Database Utilization

According to Pyrek (2007 p. 186), simply requiring the medical examiner offices in the state to access and use the Medical Examiner and Coroner Information Sharing Program (MecISP) national database to record cause of death would do a

tremendous amount of good, not only for the state—but also for the nation. Created in 1986, the database tracks trends in deaths that alone may not seem significant, but aggregated over the country as a whole may show a series of deaths that could identify larger threats (Hanzlick 1997, p. 531). According to Choo, making data more available helps to further the goal of forensic pathology, “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,” (Choo 2012, p. 9).¹³

With the ease of cross border travel, individuals can be in any number of states in a matter of days or even hours. Deaths from bioterrorism need to be recognized as soon as possible to address the public health crisis they present. The use of the MecISP system has already proven its worth, “in the 2001 outbreak of bioterrorism related anthrax, all the deaths were investigated by medical examiners, thus medical examiner/coroner databases can be a significant repository of data about infectious diseases,” (Wolfe 2004, p. 48). Requiring all medical examiners to make full use of the database is one more step towards making sure our DHS has all of the tools necessary to respond to any act of terrorism.

Surveillance is one of the great promises of a database. As previously discussed, the demands on the time of a medical examiner are robust, and an electronic system can help facilitate trends in “sentinel” deaths. For example,

¹³ The four major goals of the MecISP are 1) To improve the quality of death investigations in the United States and to promote more standardized practices concerning when and how to conduct these investigations; 2) to facilitate communication among death investigators, the public health community, federal agencies and other interested groups; 3) to improve the quality, completeness, management, and dissemination of information regarding investigated deaths; and 4) To promote the sharing and use of medical examiner/coroner death investigation data (Hanzlick 1997, p. 531).

Hanzlik points out, "Such deaths might include deaths related to tainted or defective consumer products, medical devices, or newly appearing illicit drugs, for example. MecISP may be able to serve as an information gathering "clearinghouse" capable of referring data to other interested agencies," (Hanzlick 1997, p. 532).

A second database exists with the FBI, the National Crime Information Center (NCIC) (Hickman 2004, p. 6). This is a listing of all unidentified deceased. There is no requirement that counties use this database and according to the National Academies of Science report, the database goes unused a large portion of the time. In fact, in a department of justice survey, 80% of medical examiner offices reported they rarely or never used the system," (National Research Council 2009, p. 244). The same survey reported that on average there were 4,400 unidentified human remains in an average year.

Use of the NCIC is a virtually cost free way to ensure that these individuals are identified, or at least to not hinder the process for identification of the remains. If an individual dies in a county that does not use the system, and their remains are unidentified, it could be years before their loved ones are able to locate them. Even then, there is no guarantee that they will ever be identified if their last known location is not available to whomever may be looking for them.

Louisiana learned during the aftermath of Hurricane Katrina the value this system could have (Felder 2008, p. 629). In the event of a mass casualty disaster, a process for entering the location of the remains of unidentified decedents is invaluable to reuniting the remains with their family. If a medical examiners office

diligently enters their information into the database, it spares the family the grim task of contacting office after office in an attempt to locate their loved one. At the same time, it speeds up what is surely an agonizing process and allows more families the ability to hold a burial.

Texas experiences its fair share of hurricanes and experimented with the use of electronic data collection to monitor storm related deaths (Choudhary 2012, p. 1-6). While utilization was not perfect, “Some ME’s and JP’s initially had difficulty in understanding and applying the indirectly- and possibly related case definitions,” the use of active mortality monitoring allowed health officials to tailor prevention messages (Choudhary 2012, p. 4).¹⁴ Through the use of active mortality monitoring, health officials were quickly able to recognize that a great number of deaths were being caused by exposure to CO₂ via generator use and to quickly move to address the problem through the use of press releases and public service announcements.

The following standards address database utilization and should be included in a model.

3.1 Database utilization	<ul style="list-style-type: none"> • County Medical examiners offices should have sufficient access to computing resources to access and use federal and state databases. • County medical examiner offices should record unidentified deaths into all applicable state and federal systems in a timely manner.
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The optimization of available database resources is made possible only if medical examiner offices also make the switch to a record-keeping format that

¹⁴ Although the study called the monitoring “active,” because no State wide instant database was utilized, researchers called counties individually and tracked hurricane related death. The study acknowledged that computerized records would have allowed them to alter messages more quickly and identify likely hurricane related deaths that were not properly classified.

allows full integration with the system. With this in mind, the following standard becomes critical, that records should be digitized.

3.2 Digital Record Keeping

New standards in the creation of statewide medical examiner provisions should include a requirement that records kept in the office are digitized. The need to move from paper records serves both to save money in the long run and also allow for the ease of searchable and usable data (National Research Council, 2009, 253). The information to be gleaned from comprehensive statistics about the number, types, and cause of death is enormous.

While the Department of Health and Human Services keeps detailed records on the number and type of deaths in the state, vital information for researchers is not available. The information surrounding the specific cause of death, and the circumstances leading up to it, can yield significant data (Harris 2012, p. 117). For example, one can imagine the lessons to be learned by researchers interested in specific types of cancer and the segments of the population affected by them. As of now, that data would only be recorded as a cancer death. Requiring the records to be digitized would allow for a pool of already created medical information to be utilized by researchers.

Digital records would allow for greater ease of real time use and monitoring via public health databases. This real time monitoring is known as “sentinel surveillance” and is highly effective in monitoring outbreaks of influenza and other

outbreaks that require early detection for effective containment (McGowan 2010, p. 429).

The field as a whole also stands to gain from digitized records. This would allow record keeping on the types of processes used to determine cause of death and create a way to review decisions as scientific process evolves. For example, if a death is ruled a homicide using technique XYZ and it is later found that that determinant is not accurate, having digitized and searchable records would allow cases using that technique to be more easily identified (Pyrek 2007, p. 247). Currently, having a case reviewed once adjudicated, requires a lawyer who is scientifically savvy enough to identify changes in the field significant enough to be the basis of a petition for a new trial. Unfortunately, this kind of dedication is not often available to individuals who have already been convicted or were indigent to begin with. In fact, many have come to the conclusion based on the Nation Research Council's report that relying on the courts for oversight has been "entirely ineffective," (Koehler 2010, p. 2).

As it happens in any field there are going to be bad actors. The lax standards have led to multiple allegations of mishandling by medical examiners. Requiring records of investigations to be digital creates a way to track which cases are handled by each investigator, and translates to a traceable and linkable record to the individual investigator. This becomes important if there is a discovery that an investigator did not do his or her due diligence in the investigation, or if there is, as has been the case in past instances, an investigator who simply signs off on a case

without actually performing the investigation at all (Hansen 1995, p. 65). A comprehensive review of all the cases that person was responsible for would need to be undertaken, and the easiest way to do that would be if those cases could be quickly be identified.

Finally, digital records work more efficiently as a way to correct human errors. A quality assurance study looked at the errors made on certified death certificates for just one county and noted that in one year 8% of the death certificates issued had to be amended for either change in cause of death or recording errors (Hanzlick 2005, p. 63). Death certificates are legal documents that can have repercussions for surviving family in terms of insurance settlements, estate settlement and the like. It is imperative that the documents be correct, and digital records help to streamline that process.

The following standards address digital record keeping and should be included in a model.

3.2 Digital record keeping	<ul style="list-style-type: none"> • Records of cases and findings should be kept in digital form. • Feedback should be solicited and compiled from all stakeholders in digital form via email, web form, or transcribed.
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Minimum standards that dictate levels of education, work load, technology and facility characteristics are still not a fool proof guide for ensuring that mishandling of cases never occurs. In recognition of this fact, minimum standards should therefore include provisions for oversight of those practicing in the field.

4. Oversight

Minimum standards that seek to create a level of competency in the medical examiner field must also provide a level of oversight that reflects the importance of the field. Literature examining reforms needed in the field identify three critical ways in which the medical examiner offices can be strengthened in terms of oversight. Provisions for review, reporting and budgeting address conflicts of interest and bad actors in the medico legal investigation field. Goldstein comments on how striking the lack of oversight is, when the ramifications are taken into account, “Since any unresolved problems affect state criminal justice systems at their core, state oversight should play a critical role in forensic science oversight. A post conviction exoneration or the discovery of a negligent technician puts the credibility of the state criminal justice system in question,” (Goldstein 2011, p. 233).

Minimum standards for oversight should include:

4.1 Review

4.2 Reporting

4.3 Budgeting

4.1 Review

Recognizing that even with the most perfect standards, there will still exist the need for oversight and review, minimum standards should include the creation

of a centralized agency authorized to review and adjudicate problems within the system. As was mentioned earlier, Texas recognized the flaws with major portions of the forensic science community and addressed them largely by creating the Texas Forensic Science Commission. Unfortunately, no provision was made to allow the commission to have oversight capabilities involving medical examiners and coroners in the state, and the Commission has been criticized for its political ties (Goldstein 2011, p. 246).

Other states have addressed the need through creation of a comprehensive oversight and review board or by the appointment of a chief medical examiner (Hanzlick 1996, p. 387). According to Goldstein, either solution should be tasked with responding to citizen complaints as well as be empowered to review cases as they see fit (Goldstein, 2011). The lack of this type of oversight is often sighted as one of the main flaws in the system nationally.

A distinct problem facing death investigations throughout the United States derives from both the laws that qualify those who may perform death investigations and the great discretion the laws give to these officers...death investigation offices commonly lack higher government supervision and regulation (Felder 2008, p. 651).

According to the annual report from the TFSC, the majority of the requests for review were from inmates or families of inmates (Texas Forensic Science Commission 2010, p. 15). Obviously, not all requests for review will be legitimate, but the idea that there is no ability to petition official results is not something that corresponds to the general notion of our overall system of justice.

The need for oversight that is independent and empowered is critical, according to Goldstein, "Oversight should be independent, transparent, and active. The entities charged with oversight should continually recommend reforms- rather than act as ad hoc task forces or infrequent investigators-and should monitor the implementation of reforms," (Goldstein 2011, p. 250). The National Research Council recommended the formation of a federal agency tasked with oversight, but according to Risinger, the ability to form a new federal agency is not likely given the current political opposition to regulation and a state solution is the most feasible (Risinger 2009, p. 239).

Additionally, those who are in a position to request a review of cause of death determination are often in one of life's hardest situations, facing the untimely death of a loved one. Therefore, the procedure for requesting review must be set up in a clear and easily accessible way.

Without effective higher governmental regulation, nothing can prevent certain officers (no matter what their education) from blatantly failing to perform their statutorily prescribed duties. Better regulation, therefore, through the creation of a state medical examiners office or commission, or regulation through a board or government agency charged with supervisory duties throughout the statewide death investigation system, is necessary to ensure that better funding and better laws have the desired effect (Felder 2008, p. 655).

A tertiary benefit of a main review board is the ability to influence the methods and science practiced in offices across the state. In much the same way a standardized licensing board would ensure that those who pass the test have a

minimum level of education and understanding, so would review allow the state greater control over the individual medical examiner offices (Hanzlick 2007 p. 280).

A protocol for review also helps to move the forensic science community toward a more research and peer reviewed orientation. Risinger argues that, the lack of research and review is a flaw in the current system perpetuated by a lack of standards. Speaking of forensic scientists in general, he says, “They are already, with only rare exceptions, allowed to testify to whatever they want, and the results of research can only make their situation the same or worse; it can’t make it better, from their perspective,” (Risinger 2009, p. 241). A review system may not be initially popular, but it can help to address questions of efficiency, quality, and thoroughness. Some states have implemented automatic review for particular cases in light of the gravity of the situation.¹⁵

The following standards address the review component and should be included in a model.

4.1 Review	<ul style="list-style-type: none"> • A statewide review board should be established with the power of oversight and review of all medical examiner offices in Texas. • The board should be empowered to review offices and individual case based both on independent referral and complaint from the criminal justice system and/or public. • The board should make public all findings in cases reviewed.
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¹⁵ In California, mandatory reviews exist for child and domestic violence cases on a monthly basis, including many stakeholders. “Reviews of child-death cases involve the Office of the Medical Examiner, police agencies, prosecutors office, protective services, hospital pediatricians, U.S. Consumer Safety Product representatives, and a forensic psychiatrist,” (Welner 2012, p. 22)

It is important to recognize that under the current system, there is little way to provide the necessary information to a board tasked with review that would allow them the ability to decide which cases need review. It is because of this, reporting standards should be established.

4.2 Reporting

There exists a dramatic lack of data when it comes to quantifying the number of autopsies completed in the state, the times when cause of death is changed after a case being closed, or the number of instances in which someone protests the official findings (Goldstein 2011, p. 232). A major contributor to the problem is the lack of a comprehensive and coherent standard for collecting data. Furthermore, there is no standard on the data that must be collected and therefore there is no easy way to compare numbers across jurisdictions (National Research Council, 2009).

According to Koehler, the National Research Council's study indicates that funding is not the only issue plaguing forensic science. A key area of reform lies in the "poor acknowledgement, understanding and measurement of potential sources of bias and error," (Koehler 2010, p. 3). Based on his assertion, a practical minimum standard, should establish annual reporting requirements for each office.

Simply requiring offices to report on the number of cases in which a cause of death is changed, would revolutionize the understanding of the current field (Pyrek, 2007). This type of report would demonstrate how developments in science are

changing determinations made by medical examiners. Almost constant review is necessary for assessment of the field, given the nature of forensic science, “relentless advances in knowledge have clinical science and practice in a constant state of change,” (McMahon 2010, p. 453).

Before determining it did not poses jurisdiction to review the cases, the Texas Forensic Science Commission received 7 complaints directed at Medical Examiner offices (Texas Forensic Science Commission 2011, p. 16). While these complaints made up roughly 14 percent of all complaints lodged with the TFSC, without a reporting mechanism, there is no way to identify what percent of completed cases face complaint.

Thomas Noguchi, former chief Medical Examiner for Los Angeles County advocates for mandatory reporting as a way to ensure the professionalization of the field and in recognition of the political nature of the office. His position supports factual reporting, “We can try to avoid the conflicts by being minimally involved in society’s problems, by limiting our work to the simple pronouncement of the cause of death...Or we can accept the challenge, rise to the responsibilities inherent in the best medical examiner system which permits us to make vital decisions based on our own best judgment, and take the lead in seeking solutions,” (Noguchi 1987, p. 834).

The following standards address reporting and should be included in a model.

4.2 Reporting	<ul style="list-style-type: none"> • County medical examiner offices should prepare an annual report tabulating total cases reported, accepted, examined, and autopsied and the major causes of death. • County medical examiner offices should compile statistical data on average workload of medical examiners in the office. • County medical examiners should compile statistical data on the number and manner of complaints received to the office. • County medical examiner offices should make public statistical data on frequency and cause of changed cause of death determination.
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Finally, with reporting standards created and proper oversight established, an eye must be turned to one of the largest sources of criticism towards the current system. The budgeting for medical examiners has been seen as a source of conflict of interest, creating problems for both law enforcement and medical examiners.

4.3 Budgeting

Reforming and increasing oversight necessitates an understanding of how budgeting effects the organization of a medical examiner office. As was articulated earlier, understanding the need for the office to operate independently of law enforcement is key to making sure pressure does not exist to report in specific ways. Medical examiners in other states often cite the conflicting message that is sent by receiving funding from a criminal justice budget (Upshaw Downs 2012, p. 420).

First and foremost, whether it exists or not, there is clear evidence that funding a medical examiner office with law enforcement dollars leads many to feel that the office is inclined to pronounce causes of death in ways that are consistent with criminal investigations (National Research Council 2009, p. 249). While the

pressure may not be overt, in a matter as sensitive as the one at hand, every opportunity to eliminate the notion should be exercised. Many have argued that removing the medical examiners office out from under the budgeting structure of law enforcement actually helps the police (Berard, 2009). The findings are less likely to be scrutinized in a criminal proceeding and are more likely to be seen as impartial. Practitioners continue to recommend, "Agencies administering death investigation systems should be medically oriented," (Hanzlick 1990, p. 632).

Prioritization of case processing based on the law enforcement time line is another example of criticism stemming from medical examiner offices funded via law enforcement budgets (Upshaw Downs 2012, p. 418). For instance, imagine the scenario of two death investigations referred to the office at the same time. If the medical examiner receives funding from the sheriff's office, there may be pressure to complete the investigation of the case that is involved in a criminal matter. This may not seem all that bad, but what if the other case is actually more relevant to public health matters? Moving the medical examiner office to either funding via the health and human services department or by providing direct funding more closely aligns the offices with the intent of the service (National Research Council, 2009, 249).

Additionally, as Law points out, review procedures can be much more effective with an independent budget (Law 2010, p. 69). Using the bureaucratic autonomy theory, he discusses medical licensing boards, but the same would hold true for medical examiner offices and a state medical examiner review board.

“Greater independence (organizational and budgetary) from political influence as well as less political or public oversight of medical licensing boards should result in more effective enforcement,” (Law 2010, p. 69). This is seconded by Mary Ernst, past president of the American Academy of Forensic Science. She notes the effect bureaucratic structure has on the quality of funding available to the medical examiners office- “jurisdictions are controlled by some form of governmental constraint, be it county, state or federal, and these agencies are the ones who determine what kind of system you are going to have because they are the ones who determine funding you are going to get,” (Ernst 2003, p. 147).

Finally, independent budgeting for the medical examiners office would provide more leverage in procuring the amount necessary for adequate death investigation (Pyrek 2007, p. 170). Sufficient funding is a seminal problem in the field that is not helped by an unclear funding source. “The age-old problem continues to be an interesting challenge for the forensic community: How can quality death investigation be provided without adequate funding,” (Prahlow 1995, p. 57)? Maintaining a separate and clearer funding of medical examiners offices may help to eliminate some of the conflicts of interest and prioritization problems.

Many in the field have spoken out about the decisions that money makes in deciding whether or not to pursue the full investigation of a death. According to Timmermans, “Funding levels vary from sixty two cents to 5.54 per capita. Autopsy rates vary across locales by a factor of forty,” (Timmermans 2006 p. 268). He goes

on to argue that the variance indicates reliance on factors other than scientific criteria.¹⁶

Having a budget for the medical examiners office that is separate and alone might cause the county to reexamine the message it conveys with its monetary decisions. For example, if each autopsy costs \$5,000, and the county budgets \$100,000 clearly there are going to have to be decisions made based on monetary concerns, and not public health or justice, in deciding what investigations are carried out to the fullest degree. Furthermore, independent budgeting would allow citizens a better idea of where the office falls on the spectrum of county priorities, and allow cross-jurisdictional comparison. This type of comparison is currently near impossible because of the myriad of ways in which different counties process the funding (Emerson 2006 p. 1).

Current head of the TFSC, Nazim Peerwani, pointed out that the cost of a well run medical examiner system would be relatively affordable, “The cost to operate a medical legal system employing forensic pathologists, investigators, and toxicologists would be between \$1.50 and 2.00 per annum to those living in the community,” (DiMaio, 1997, p. 531). When wrapped up inside a large budget for criminal justice, however, the potential for the cost to seem enormous exists. The argument is also made by those in the field that, “Some advocates of the coroner system argue that the coroner system is more economical than a medical examiner

¹⁶ Burnet County Justice of the Peace, Peggy Simon, discussed making decisions based on budgetary influences and not science. “You might think twice about ordering an autopsy just because of the cost of your county. If your county can’t afford it, it might play into your decision to make sure justice is done the correct way,” (Berard, 2009).

system. Opponents, however, argue that savings can get lost when cases are mishandled with resultant expensive litigation,” (DiMaio 2001, p. 17)

The following standards address budgeting and should be included in a model.

4.3 Budgeting	<ul style="list-style-type: none"> • County medical examiners office should receive funding directly or via county health funds. • County medical examiners should report either directly to county commissioners or to head of county health department. • County medical examiners office should be funded so that it may recruit and retain highly qualified staff.
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The components of the model contained under the heading oversight are steps in both professionalizing medical examiner offices and in allowing the public to more clearly see the duties performed by the offices. Together they will strengthen the current system as well as provide a path for further improvement, something the entire framework seeks, as well.

Model Summary

The preceding literature is used to create a practical ideal type model that serves as a recommendation for proposed minimum standards of medical examiner offices in Texas counties with populations fewer than 500,000. The ideal model incorporates standards for education, facilities and staffing, technology, and oversight. The proposed standards and the associated categories of the conceptual framework are included in Table 3.1 below.

Table 3.1: Proposed Minimum Standards for Medical Examiner offices in counties with populations less than 500,000.

Standards	Sources
1. Education	
1.1 Minimum education standards	National Research Council (2009), Pyrek (2007), Texas Forensic Science Commission (2011) Risinger (2009) Giannelli (2012) Shafer (2003) Timmermans (2006), Emerson (2006) Thomson (2011) Goldstien (2011) Hanzlick (1996) Thompson (2011)
1.2 Continuing education	National Research Council (2009), Fischer (2002), Risinger (2009), Shafer (2003) National Institute of Justice (2004), National Association of Medical Examiners (2009) Hanzlick (1996) Prahlow (1995), Haglund (1997), Garrett (2009) Berard (2009)
1.3 Ethics education	National Research Council (2009), Pyrek (2007), Risinger (2009), Roberts (2012), Ubelaker (2013), Hansen (1995) Downs (2012) Sorensen (1993)
2. Facilities and Staffing	
2.1 Staffing levels	Pyrek (2007) Goldstien (2001) National Association of Medical Examiners (2009) Summit (2004) Choo (2012) Wecht (2006), Weedn (2003)
2.2 Facility characteristics	National Research Council (2008), Pyrek (2007), Risinger (2009) National Association of Medical Examiners (2009) Ector County (2012) Weedn (2003), Nolte (2000), Roberts (1986)
2.3 Security	National Research Council (2009), Pyrek (2007), Federal Emergency Management Agency (2005), Joshi (2001), Health Care Environmental Resource Center (2011), National Institute of Justice (1998)
3. Technology	
3.1 Database utilization	National Research Council (2009), Pyrek (2007), Thompson (2008), Giannelli (2012) Wolfe (2004) Hickman (2004) Felder (2009) Choudray (2012) Hanzlick (1997), Choo (2012)
3.2 Digital record keeping	National Research Council (2009), Pyrek (2007), Koehler (2010) Harris (2012) Hansen (1995), McGowan (2010), Hanzlick (2005)
4. Oversight	
4.1 Review	Risinger (2009), Goldstien (2011) Texas Forensic Science Commission (2010) Felder, Hanzlick (2007), Hanzlick (1996), Welner (2012)
4.2 Reporting	National Research Council (2009), Pyrek (2007), Koehler (2010) Texas Forensic Science Commission (2011) Goldstien (2011) McMahon (2010), Noguchi (1987)
4.3 Budgeting	National Research Council (2009), Pyrek (2007), Law (2010), Emerson (2006), Timmermans (2006), Hanzlick (1998) Prahlow (1995) DiMaio (1997) Ernst (2003)

Reforming the office of medical examiner through the adoption of new standards must build on education standards. Minimum education standards should establish a threshold for forensic science knowledge necessary for anyone holding the office (Shafer, 2003; Emerson, 2006). Continuing education recognizes

that the field of forensic science is evolving and ensures that medical examiners remain up to date in policies, procedures and techniques (Neufeld, 2010; NAME, 2009). Understanding the gravity of decisions and conclusions made by medical examiners, and ethics education, should be included in a new standard. Ethics education serves not only to safe guard against blatant violations of the public trust, but also to remind medical examiners of the consequences of their work.

A new standard should include recommendations for staffing levels that ensure an adequate level of service (NRC, 2009; Pyrek, 2007). Facility characteristics should be included to ensure that well trained medical examiners have sufficient space and resources to perform the task (Risinger 2009; NAME, 2009). Additionally, security recommendations, including compliance with the Department of Homeland Security's National Response Framework, should be built in (Risinger, 2009).

Technology considerations included in the model would require offices to utilize common databases to record deaths and unidentified persons. Use of these databases, and more wide spread digital record keeping, not only strengthens the forensic science community, but adds to public health statistics (Wolfe, 2004; NRC, 2009).

Finally, because no standards are perfect, and there should always be a second system of assurance, oversight is included in the model. Oversight takes the form of review and reporting. Minimum standards should include the creation of a review board, more petitionable by citizens (Goldstien, 2011). Local medical

examiner offices should also be required to report, annually, important statistics in the evaluation of their office. For example, how many times cause of death is amended, or the number of citizen filed complaints (Laub, 2011; Koehler, 2010). The last standard included in oversight is a clearer budgeting process that allows citizens to see allocation for offices (Law, 2010; Risinger, 2009) but also removes the funding for medical examiner offices out from under criminal justice budgets. Budgeting for medical examiner offices separately, or funding them via health department spending, more closely aligns them with their public health intent (NRC, 2009; Giannelli, 2012).

Chapter Summary

Examination of the current literature on the state of medical examiner offices has guided the creation of a preliminary model for the establishment of Medical examiner offices in Texas. The model is comprised of recommendations for Education, Facilities and Staffing, Technology, and Oversight. The model serves as a recommendation for minimum requirements to ensure a base-line level of service to residents of all counties. Chapter 4 introduces the methodology used to evaluate and refine the model.

Chapter 4- Methodology

Chapter Purpose

The purpose of this chapter is to describe the methods used to evaluate and refine the proposed model for medical examiner offices in small to medium counties previously presented in Chapter 3. Focused interviews are the method used to gather input from experts currently serving in the field.

Methodology

The purpose of this research is to develop a minimum standard. The preliminary ideal type standard, developed in chapter 3 is used to build a more complete standard using the feedback of practitioners and knowledgeable individuals in the field.

The questions presented in the course of the interviews correspond directly to the preliminary model. Each proposed standard along with the interview question is presented in the following Operationalization table.

Table 4.1: Operationalization of Conceptual Framework

Category	Proposed Minimum Standards for Medical Examiner offices in counties with populations less than 500,000.	Interview Question
Education		
1.1 Minimum education standards	<ul style="list-style-type: none"> The Chief medical examiner for the county should be a pathologist granted, by the American Board of Pathology, a certificate of qualification for the practice of Forensic Pathology, having at least 2 years of forensic pathology work experience beyond forensic pathology residency/fellowship training. The Chief medical examiner should be employed full time, with the duties of the office as the primary professional obligation. Medical investigators should be Board certified Fellows of the American Board of Medical Death Investigators. 	<ul style="list-style-type: none"> After reviewing the recommendations for educational standards, what recommendations do you have? Should minimum recommendations be added? Should minimum reconditions be eliminated?
1.2 Continuing education	<ul style="list-style-type: none"> Each licensed professional should be required to participate in continuing education. A minimum of 24 hours of continuing education credit hours must be accrued every 2 calendar years. Sufficient funding should be provided for office approved and professionally required continuing education. 	<ul style="list-style-type: none"> After reviewing the recommendations for continuing education requirements, what recommendations do you have? Should continuing education requirement recommendations be added? Should continuing education requirement reconditions be eliminated?
1.3 Ethics education	<ul style="list-style-type: none"> Any employee of a county medical examiners office should be required to complete a minimum 2 hours of ethics training, in addition to any licensure requirements upon hire. All county medical examiner office employees should be required to complete a biannual ethics review course. A universal code of Ethics for Medical Examiner office employees should be established and adopted. 	<ul style="list-style-type: none"> After reviewing the recommendations for ethics education requirements, what recommendations do you have? Should ethics education requirements recommendations be added? Should ethics education requirements be eliminated?
2. Facilities and Staffing		
2.1 Staffing levels	<ul style="list-style-type: none"> The medical staff size should be sufficient so that no autopsy physician is required to perform more than 325 autopsies a year. The office should employ sufficient non-technical staff to handle routine daily caseload for administration, including visitor reception. The office should employ sufficient non-technical staff to handle routine daily caseload for medical transcription, records keeping and data analysis. 	<ul style="list-style-type: none"> After reviewing the recommendations for staffing level requirements, what recommendations do you have? Should staffing level requirements recommendations be added? Should staffing level requirements be eliminated?
2.2 Facility Characteristics	<ul style="list-style-type: none"> County medical examiners office should have administrative area separate from the autopsy room(s), laboratories, and body receiving area so that it is accessible to visitors who have legitimate business with the office without exposure to autopsy activity? County medical examiners office should be within a reasonable distance of the population it serves. 	<ul style="list-style-type: none"> After reviewing the recommendations for facility characteristic requirements, what recommendations do you have? Should facility characteristic requirements recommendations be added? Should facility characteristics requirements be eliminated?

Category	Proposed Minimum Standards for Medical Examiner offices in counties with populations less than 500,000.	Interview Question
2.3 Security	<ul style="list-style-type: none"> Access to the facility should be through controlled entrance. Office should have after-hours locked storage area available for evidentiary material. Office should have written policies covering facility security. County medical examiners offices should have clear chain of command and chain of custody procedures in the event of emergency. 	<ul style="list-style-type: none"> After reviewing the recommendations for security requirements, what recommendations do you have? Should security requirements recommendations be added? Should security requirements be eliminated?
3. Technology		
3.1 Database utilization	<ul style="list-style-type: none"> County Medical examiners offices should have sufficient access to computing resources to access and use federal and state databases. County medical examiner offices should record unidentified deaths into all applicable state and federal systems in a timely manner. 	<ul style="list-style-type: none"> After reviewing the recommendations for database utilization requirements, what recommendations do you have? Should database utilization requirements recommendations be added? Should database utilization requirements be eliminated?
3.2 Digital record keeping	<ul style="list-style-type: none"> Records of cases and findings should be kept in digital form. Feedback should be solicited and compiled from all stakeholders in digital form via email, web form, or transcribed. 	<ul style="list-style-type: none"> After reviewing the recommendations for digital records keeping requirements, what recommendations do you have? Should digital records keeping requirements recommendations be added? Should digital records keeping requirements be eliminated?
4. Oversight		
4.1 Review	<ul style="list-style-type: none"> A statewide review board should be established with the power of oversight and review of all medical examiner offices in Texas. The board should be empowered to review offices and individual case based both on independent referral and complaint from the criminal justice system and/or public. The board should make public all findings in cases reviewed. 	<ul style="list-style-type: none"> After reviewing recommendations for review requirements, what recommendations do you have? Should review requirements recommendations be added? Should review requirements be eliminated?
4.2 Reporting	<ul style="list-style-type: none"> County medical examiner offices should prepare an annual report tabulating total cases reported, accepted, examined, and autopsied and the major causes of death. County medical examiner offices should compile statistical data on average workload of medical examiners in the office. County medical examiners should compile statistical data on the number and manner of complaints received to the office. County medical examiner offices should make public statistical data on frequency and cause of changed cause of death determination. 	<ul style="list-style-type: none"> After reviewing the recommendations for reporting requirements, what recommendations do you have? Should reporting requirements recommendations be added? Should reporting requirements be eliminated?
4.3 Budgeting	<ul style="list-style-type: none"> County medical examiners office should receive funding directly or via county health funds. County medical examiners should report either directly to county commissioners or to head of county health department. County medical examiners office should be funded so that it may recruit and retain highly qualified staff. 	<ul style="list-style-type: none"> After reviewing the recommendations for budgeting requirements, what recommendations do you have? Should budgeting requirements recommendations be added? Should budgeting requirements be eliminated?

Research Technique

Focused interviews are selected as the data-gathering tool because of the ability to gather detailed input from experts and stakeholders in the field. The preliminary standard was presented to interview subjects and followed by a series of open-ended questions. Open-ended questions according to Johnson, “allows researchers greater freedom to explore statements in greater detail by asking additional questions that are not on the interview guide,” (Johnson 2010, p. 108). Given that the nature of the research is so preliminary, interviews allowed for the capture of expert and stakeholder input that would not be possible via other methods.

Identification

Stakeholders and experts were identified by their current presence in the field and solicited for interviews. The sampling technique used was a purposive sample. Interviews were conducted with a variety of individual experts including administrative workers (1), medical examiners (3), justices of the peace (3) and attorney (1) in order to tap into expertise on each individual component of the standard. Interviewees were asked to recommend others in their field that might have interest and insight into the creation of a new minimum standard, effectively resulting in a snowball sample (Johnson 2010, p. 111).

The interviews were conducted both in person and via email. The 3 participating justices of the peace all granted hour long interviews held in their respective offices. Interviews with all others were conducted via email. The choice of email reflected the need to allow those in the medical examiners office the flexibility to complete the questions at their own time. The snowball sample method was very effective at gathering input and led to more than half of the contact with the interviewees. The interviews were all conducted between February 2013 and April 2013.

The medical examiners that were interviewed, 2 of 3 hold medical degrees and the other earned a degree in forensic pathology. Together they had over 25 years of experience working in medical examiners offices.

The three Justices of the Peace have been elected or appointed for a combined 8 total terms. They possess diverse backgrounds including law enforcement, primary education and the public sector.

The administrative worker described her position at a medical examiners office as a "Jill of all trades." She has served in her current capacity for 26 years and handles all administrative tasks for a large NAME accredited medical examiners office.

Finally, an attorney was interviewed who has worked in the district attorneys office of a large Texas metropolitan for 4 years.

Contact was made with all of the Texas medical examiners offices and input was solicited from anyone in the office willing to participate.¹⁷ The majority of the offices cited either a lack of time, the contentious nature of the topic or simply did not respond. Input was request from over 20 justices of the peace. Two of the JP's that responded were the result of the direct cold solicitation and the third was a referral from one of the initial interviews. The attorney interviewed was a result of a referral from another interview subject.

Human Subjects Protection

An exemption has been requested from institutional review based on 45 CFR, part 46, section 101(b)(2) and 45 CFR, part 46, section 101(b)(3) because respondents will not be identified in the final document and the majority of respondents are appointed public officials.

Feedback and Refinement

The feedback received from the interviews was reviewed and used to refine the practical ideal type model. For example, where respondents agreed that one standard needed to be completely eliminated and another measure added in for a more refined set of recommendations, those changes were made. The new practical

¹⁷ An interview was conducted with forensic investigators in an additional ME office, but shortly after the interview was conducted the office found itself in the middle of a high profile case and requested that their input not be included in the research. Despite not identifying the responses by name, I felt it best to honor their request to be excluded and their responses have been omitted.

ideal type which incorporates the feedback is backed not only by the literature previously presented but has undergone stakeholder and expert review. This review lessens the chance that important benchmarks are left out and lends credence to the standard as a starting point in the move toward legislation.

The notes from the interviews were reviewed for agreement and consensus on each portion of the standard. That input was then examined for a level of agreement or disagreement and weighed against other considerations.

Chapter Summary

In this chapter, the methodology used for evaluation of the proposed model was discussed. Selection of participants was described, along with their backgrounds, as well as the steps taken to protect respondents. In the proceeding chapter, responses to the interview questions are presented and the results are discussed.

Chapter 5- Results

Chapter Purpose

The purpose of this chapter is to present the feedback received via interviews conducted on the various component of the proposed model. Each standard is offered along with the corresponding data from the interviews.

1. Education

1.1 Minimum education standards

The interview began by asking respondents to evaluate the Education component of the proposed model and to detail their thoughts on each standard including whether standards should be added or eliminated. All of the interviewees agreed that there should be minimum education requirements for serving as the medical examiner. According to one Medical examiner, “Most JP’s know they have no business in the field.” It was suggested that the education requirements, while advantageous, would push many counties toward partnerships to defray the cost of hiring a certified forensic pathologist. One Justice of the Peace noted that his personal education (as a veteran police officer) contributed to his ability to perform the necessary functions of certifying cause of death but that he “could not imagine how someone with no background could handle the task with any level of

confidence.” He believed that “people really have no idea that there are not education requirements.” According to the administrative staff interviewee, “clear definitions of qualifications would make hiring and recruiting much easier.” She went on to say that without clear and delimited minimum qualifications there was no easy way to narrow the pool of applicants or to compare applicants when filling a position.

The interviews also led to the consensus that professional and scientific ethics should be included in the initial training and education requirements. That change is reflected in the model below, but is discussed in the following section.

1.1 Minimum education standards	<ul style="list-style-type: none"> • The Chief medical examiner for the county should be a pathologist granted, by the American Board of Pathology, a certificate of qualification for the practice of Forensic Pathology, having at least 2 years of forensic pathology work experience beyond forensic pathology residency/fellowship training. • The Chief medical examiner should be employed full time, with the duties of the office as the primary professional obligation. • Medical investigators should be Board certified Fellows of the American Board of Medical Death Investigators. • Training on Professional and Scientific Ethics should be mandated at hire.
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1.2 Continuing Education

All interviewed agreed that continuing education was lacking in the current system and it was recommended that the model be changed to 24 hours of continuing education per year as opposed to biannually. The lack of continuing education was one of the main concerns of all interviewed. One of the medical examiners indicated that the requirements should be beefed up to a yearly requirement because of the fast paced nature of change in forensic science. The

Justices of the Peace all commented on the lack of thorough continuing education currently, and highlighted the reliance on input from others in the field. It was frequently cited that Justices with questions about how to proceed in particular cases would call on Justices in other jurisdictions for input. One respondent noted that the current continuing education consisted mostly of direction on inputting data into the state Department of Health death certificate system, and laughed at the training materials provided, saying, “they give you this flow chart, and it’s like the blind leading the blind.”¹⁸ In an interview with a medical examiner, he noted that an annual requirement could easily be met on any number of topics and said, “it’s the most important thing, period.”

1.2 Continuing education	<ul style="list-style-type: none"> • Each licensed professional should be required to participate in continuing education. • A minimum of 24 hours of continuing education credit hours must be accrued annually • Sufficient funding should be provided for office approved and professionally required continuing education. • A portion of continuing education should be dedicated to legal developments in the field. • A portion of continuing education should be dedicated to ethical considerations of forensic science.
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1.3 Ethics Education

The respondents recommended elimination of the Ethics education category. Rather, the Ethics education portion should be wrapped into the initial training. The Justices of the Peace both agreed that the current system left much of the job up to personal decisions with one noting, “there is a lot of room for ethical judgment.” He

¹⁸ See Appendix A

continued by explaining that he thought most of the work was carried out with the best intentions to “serve the citizens in the best way possible.” It was also noted by one interviewee that a portion of the continuing education requirements could include information on legal and scientific ethical principals. The medical examiners pointed out that many of the ethics requirements would be encapsulated in the requirements for maintaining a medical license, with one noting “the commitment to the deceased is no weaker than a commitment to a living patient.” The respondents, as a whole, indicated that while Ethics education was advantageous and beneficial, the need for technical know how and updates was paramount. The interviews reflected concern over real world funding issues and all interviewed seemed to see ethics education and continuing education as competing for funds.

2. Facilities and Staffing

2.1 Staffing Levels

All 8 interviewees agreed with recommendations on facilities and staffing, noting that with the current lack of staffing requirements it becomes very difficult to secure funds for additional staff. One Medical Examiner interviewed strongly agreed with the need for vagueness in rules about employment of non-technical staff noting that it would “allow an office to use staff in a variety of positions related to the level of experience.” In an interview with a Justice of the Peace, she discussed the workload of the current system and her reservations about not setting minimum staffing levels. She explained how the current system has JP’s “on call” 24 hours a

day, and that it goes unrecognized by local government. “People don’t realize I am on duty all of the time, and you can’t think of this as a 9 to 5 job,” she said. Her concern is that the time demands would be dumped on an underfunded and understaffed office, leaving the residents of her jurisdiction underserved.

2.1 Staffing levels	<ul style="list-style-type: none"> • The medical staff size should be sufficient so that no autopsy physician is required to perform more than 325 autopsies a year. • The office should employ sufficient non-technical staff to handle routine daily caseload for administration, including visitor reception. • The office should employ sufficient non-technical staff to handle routine daily caseload for medical transcription, records keeping and data analysis.
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2.2 Facility Characteristics

The agreement was across the board with recommendations for facility characteristics. One Justice of the Peace suggested that the facilities should be constructed “with regard to the dignity of the deceased, the respect of the family and with a consideration for the community it serves.” When discussing this, it was noted that the current lack of facilities make opportunities for community service such as educational services to the public almost impossible. This was highlighted by a Justice who said they would like to have the ability to use a medical examiner facility in the way larger counties are able to as a “shock therapy” for first time alcohol offenders.¹⁹ Both medical examiners commented on the difficulty of getting

¹⁹ This is a somewhat controversial policy, but many counties sentence first time alcohol and drug offenders to community service or visits to the medical examiners office to view the likely results of driving while under the influence. For more information see <http://www.nytimes.com/1988/09/21/us/santa-ana-journal-drunken-drivers-visit-the-morgue.html>

funding for new facilities even in counties with current ME offices. One went on to discuss that adequate facilities were absolutely tied to the ability to “do quality work in a timely manner.” The administrative worker explained the need to have facilities that allowed for a separation between “work space” and visitors was of the utmost importance, but not always provided in the “most ideal way.” She discussed the desire to have an office that was clinical but allowed space for the dignity of the decedents family.

2.2 Facility Characteristics	<ul style="list-style-type: none"> County medical examiners office should have administrative area separate from the autopsy room(s), laboratories, and body receiving area so that it is accessible to visitors who have legitimate business with the office without exposure to autopsy activity? County medical examiners office should be within a reasonable distance of the population it serves.
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2.3 Security

When asked about Security, all agreed with the model but suggested that it might serve as a baseline and would improve with stronger requirements for security features. One interviewee noted that “security would be essential and a certified evidence holding room and system would be necessary.” On this note, he went on to explain that currently there are no security requirements for data or documents related to death inquiries and that a minimum requirement would make it easier to justify the expense related to securing the sensitive information. Another interviewee reiterated the need to ensure the safety of staff entering and exiting the

location would be a prime consideration. Noting the emotional weight of the work being conducted, the medical examiner made clear that the office often interacts with highly charged, angry, and sometimes distraught clients. A Justice of the Peace also referenced this and discussed how sometimes she feels “more than a little uneasy certifying deaths in private residences.” In discussing how current inquiries are conducted, the JP explained that often the investigations take her into the homes of the deceased and that gives her some trepidation. These visits occur as close to the time of death as possible and may mean traveling large distances and entering into homes in various states. A centralized location with adequate security was seen as being beneficial to all involved in the process.

2.3 Security	<ul style="list-style-type: none"> • Access to the facility should be through controlled entrance. • Office should have after-hours locked storage area available for evidentiary material. • Each office should be equipped with a certified evidence holding room. • Office should have written policies covering facility security. • County medical examiners offices should have clear chain of command and chain of custody procedures in the event of emergency.
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3. Technology

3.1 Database Utilization

The technology recommendations were approved by all interviewed. Database utilization was noted as being advantageous and that requiring offices to utilize all State and Federal databases would work to make the systems more worthwhile. All of the Justices of the Peace that were interviewed commented that

they have never received questions about their current utilization of the system. One respondent noted that the current paper files and notes of an investigation contained data that went above and beyond current reporting abilities and that the utility of that data was “lost” once the death certificate was entered into the system. When asked if anyone from the state had ever inquired about filled death certificates, 2 of those interviewed laughed. One JP noted that the only way he thought you might hear from the state about a certification was, “If you screwed something up,” adding that, “even then, I think a family member would have to advocate for a change.”

3.1 Database utilization	<ul style="list-style-type: none"> • County Medical examiners offices should have sufficient access to computing resources to access and use federal and state databases. • County medical examiner offices should record unidentified deaths into all applicable state and federal systems in a timely manner.
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3.2 Digital record keeping

While most of the comments indicated that offices were moving toward digital record keeping on their own, agreement was universal that there should be a greater incentive to move in the direction of a completely digital office. One interviewee noted “digital records make everyone’s lives easier, especially when there is a transfer of cases between jurisdictions.” The concern from respondents focused on the security of digitized records and the training that would be necessary to make sure that all confidential information was kept secure. A local Justice of the

Peace noted the time demands of creating a paper record at the scene of a death and the desire to move to digital records. He illustrated this point by showing me the 2 large file boxes he keeps with him at all times so that he is prepared to attend to a death at any time. The medical examiners that were interviewed agreed that the use of digital records helped to make the data more accessible and would be advantageous. One Justice of the Peace noted that digital records could lead to a greater standardization of forms used between offices. She then illustrated that the majority of the paper work was created “in house,” and varied from jurisdiction to jurisdiction.

3.2 Digital record keeping	<ul style="list-style-type: none"> • Records of cases and findings should be kept in digital form. • Feedback should be solicited and compiled from all stakeholders in digital form via email, web form, or transcribed.
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4. Oversight

4.1 Review

Lastly, on the Oversight component, the responses were the least consistent. The three Justices of the Peace indicated that they agreed completely with the establishment of a review board. When asked how disagreements are handled when a cause of death is issued, all had various procedures and reflected the lack of standardization between jurisdictions. Those interviewed who worked in a medical examiners office indicated that either they did not think it was necessary to establish a chief Medical examiners office, or that with the other elements of the

model in place it would become unnecessary to establish the review board. The attorney cited the review board as “the most critical component” of the model.

Employees in a medical examiners office intimated that a review board would subject them to undue scrutiny, and there was a resistance to greater state oversight. In all of the interviews conducted with medical examiners, they made clear that they believed the work being done in state medical examiners office was “excellent.” One ME said, “residents of large counties are well served and the need for oversight of licensed medical examiners is unnecessary.” The recommendation from those in the ME offices was that there would be little to no need for a review board if all certification of deaths were turned over to a trained medical examiner. The medical examiners also believed that a review board put in place with no additional changes to the current system would do little to secure better coverage for residents of non medical examiner counties.

The interviews with the Justices of the Peace and the attorney took a more open view of a review panel and agreed that review or appeal of cause of death, and other determinations, would be best handled by an outside party. The split seemed to reflect the divergent credentials in the field. Those who felt under prepared to carry out the job of certifying deaths seemed to welcome greater oversight, while the ME’s viewed their system as being comprehensive and not in need of further review.

4.1 Review	<ul style="list-style-type: none"> • A statewide review board should be established with the power of oversight and review of all medical examiner offices in Texas. • The board should be empowered to review offices and individual case based both on independent referral and complaint from the criminal justice system and/or public. • The board should make public all findings in cases reviewed. • An appropriate statewide review board should compile statistical data on the number and manner of complaints received to the office.
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4.2 Reporting

The reporting standard included in oversight was met with agreement by all interviewed. Recommendation was made that reporting of complaints be handled by the proposed oversight board as “what action is sufficient to constitute a complaint may confuse the issue/alter the data.” Adding that having the individual offices report complaints may make the situation “quite subjective.” The administrative worker interviewed talked about the current workload demands on employees in medical examiner offices and worried about adding to the duties of the office. She explained that “reporting might add a huge burden to the office,” going on to say that, “what we need is more investigators and we might have to add administrative staff (if reporting standards are required).” The opposition to reporting was not with having a requirement, but rather with how the burden of that requirement would be met by current staff.

4.2 Reporting	<ul style="list-style-type: none"> • County medical examiner offices should prepare an annual report tabulating total cases reported, accepted, examined, and autopsied and the major causes of death. • County medical examiner offices should compile statistical data on average workload of medical examiners in the office. • County medical examiner offices should make public statistical data on frequency and cause of changed cause of death determination.
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4.3 Budgeting

All interviewed agreed with the recommendation that budgeting come via health funds and report either to the county commissioner or the health department. One medical examiner reported that their office currently reported to the county commissioner and that the structure “worked very well,” suggesting that this may be preferred over the additional level of bureaucracy conferred when the department of health oversaw the Medical Examiners office.

A Justice of the Peace who was interviewed laughed when she explained the current budgeting system and said “anything would be better than having to explain how I have no control over how many death inquests we need to have and no good way of predicting those costs.” In an interview with the Medical Examiners administrative staff member, she explained that “there is a relationship between the medical examiners office and law enforcement, but it can’t be a partnership.” The attorney noted that independent budgeting, or health department oversight might do “a lot” to reduce the view that law enforcement and the medical examiners office work in concert, giving the office greater independence.

4.3 Budgeting	<ul style="list-style-type: none"> • County medical examiners office should receive funding directly or via county health funds. • County medical examiners should report either directly to county commissioners or to head of county health department. • County medical examiners office should be funded so that it may recruit and retain highly qualified staff.
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Chapter Summary

Overall, there was wide agreement with the proposed model. The interviews were consistent that some reforms were absolutely necessary and that the current system was not providing the same level of service to all Texas residents. While there were some concerns with the nuances of the standards, there were no suggestions for complete removal or the addition of whole standards. In the Conclusion chapter, the revised model is presented using refinements suggested by the interviewees.

Chapter 6 Conclusion

Chapter Purpose

The purpose of this chapter is to review all of the data presented in the Results chapter. Next, a refined model that takes into account all feedback is presented. It is followed by discussion of the limitations of the research and makes recommendations for further study.

Revisions

The revisions suggested by those interviewed were incorporated into the revised model presented below. Changes in the model based on the suggestions included the elimination of the ethics education requirement as a separate component. Ethics education was seen as valuable by those interviewed, but it was recommended it be incorporated into minimum education and continuing education (bolded).

1.1 Minimum education standards	<ul style="list-style-type: none"> • The Chief medical examiner for the county should be a pathologist granted, by the American Board of Pathology, a certificate of qualification for the practice of Forensic Pathology, having at least 2 years of forensic pathology work experience beyond forensic pathology residency/fellowship training. • The Chief medical examiner should be employed full time, with the duties of the office as the primary professional obligation. • Medical investigators should be Board certified Fellows of the American Board of Medical Death Investigators. • Training on Professional and Scientific Ethics should be mandated at hire.
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Per the feedback given in the interviews, the Continuing education standard was increased to 24 hours annually. Stipulation that continuing education include a focus on legal developments and ethical considerations of the forensic science field were also added to the proposed model (bolded).

1.2 Continuing education	Each licensed professional should be required to participate in continuing education. A minimum of 24 hours of continuing education credit hours must be accrued annually Sufficient funding should be provided for office approved and professionally required continuing education. A portion of continuing education should be dedicated to legal developments in the field. A portion of continuing education should be dedicated to ethical considerations of forensic science.
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Recommendations for the inclusion of a requirement that offices have a certified evidence room were added to the security standard. This reflected the changing needs of the office in the event each county becomes responsible for their own investigations.

2.3 Security	Access to the facility should be through controlled entrance. Office should have after-hours locked storage area available for evidentiary material. Each office should be equipped with a certified evidence holding room. Office should have written policies covering facility security. County medical examiners offices should have clear chain of command and chain of custody procedures in the event of emergency.
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Finally, the requirement for reporting and handling of complaints was shifted from individual counties to the suggested statewide medical examiner review board. The recommendation for the review board was kept in the model despite mixed reviews. This was based on the nuances of the feedback. Those working in certified medical examiner offices did not feel they needed the oversight of a state board, but agreed that it would be necessary to oversee the statewide conversion from a coroner system. One medical examiner noted that he believed the conversion was “inevitable.”

4.1 Review	<p>A statewide review board should be established with the power of oversight and review of all medical examiner offices in Texas.</p> <p>The board should be empowered to review offices and individual case based both on independent referral and complaint from the criminal justice system and/or public.</p> <p>The board should make public all findings in cases reviewed.</p> <p>An appropriate statewide review board should compile statistical data on the number and manner of complaints received to the office.</p>
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The other aspects of the proposed model were not changed, reflecting agreement of those interviewed with the model. The entire model including revisions is presented.

Refined Model: Table 6.1 Refined Proposed Minimum Standards for Medical Examiner offices in counties with populations less than 500,000.

Category	Proposed Standard
Education	
1.1 Minimum education standards	<p>The Chief medical examiner for the county should be a pathologist granted, by the American Board of Pathology, a certificate of qualification for the practice of Forensic Pathology, having at least 2 years of forensic pathology work experience beyond forensic pathology residency/fellowship training.</p> <p>The Chief medical examiner should be employed full time, with the duties of the office as the primary professional obligation.</p> <p>Medical investigators should be Board certified Fellows of the American Board of Medical Death Investigators.</p> <p>Training on Professional and Scientific Ethics should be mandated at hire.</p>
1.2 Continuing education	<p>Each licensed professional should be required to participate in continuing education.</p> <p>A minimum of 24 hours of continuing education credit hours must be accrued annually</p> <p>Sufficient funding should be provided for office approved and professionally required continuing education.</p> <p>A portion of continuing education should be dedicated to legal developments in the field.</p> <p>A portion of continuing education should be dedicated to ethical considerations of forensic science.</p>
2. Facilities and Staffing	
2.1 Staffing levels	<p>The medical staff size should be sufficient so that no autopsy physician is required to perform more than 325 autopsies a year.</p> <p>The office should employ sufficient non-technical staff to handle routine daily caseload for administration, including visitor reception.</p> <p>The office should employ sufficient non-technical staff to handle routine daily caseload for medical transcription, records keeping and data analysis.</p>
2.2 Facility Characteristics	<p>County medical examiners office should have administrative area separate from the autopsy room(s), laboratories, and body receiving area so that it is accessible to visitors who have legitimate business with the office without exposure to autopsy activity?</p> <p>County medical examiners office should be within a reasonable distance of the population it serves.</p>
2.3 Security	<p>Access to the facility should be through controlled entrance.</p> <p>Office should have after-hours locked storage area available for evidentiary material.</p> <p>Each office should be equipped with a certified evidence holding room.</p> <p>Office should have written policies covering facility security.</p> <p>County medical examiners offices should have clear chain of command and chain of custody procedures in the event of emergency.</p>
3. Technology	
3.1 Database utilization	<p>County Medical examiners offices should have sufficient access to computing resources to access and use federal and state databases.</p> <p>County medical examiner offices should record unidentified deaths into all applicable state and federal systems in a timely manner.</p>
3.2 Digital record keeping	<p>Records of cases and findings should be kept in digital form.</p> <p>Feedback should be solicited and compiled from all stakeholders in digital form via email, web form, or transcribed.</p>
4. Oversight	
4.1 Review	<p>A statewide review board should be established with the power of oversight and review of all medical examiner offices in Texas.</p> <p>The board should be empowered to review offices and individual case based both on independent referral and complaint from the criminal justice system and/or public.</p> <p>The board should make public all findings in cases reviewed.</p> <p>An appropriate statewide review board should compile statistical data on the number and manner of complaints received to the office.</p>
4.2 Reporting	<p>County medical examiner offices should prepare an annual report tabulating total cases reported, accepted, examined, and autopsied and the major causes of death.</p> <p>County medical examiner offices should compile statistical data on average workload of medical examiners in the office.</p> <p>County medical examiner offices should make public statistical data on frequency and cause of changed cause of death determination.</p>
4.3 Budgeting	<p>County medical examiners office should receive funding directly or via county health funds.</p> <p>County medical examiners should report either directly to county commissioners or to head of county health department.</p> <p>County medical examiners office should be funded so that it may recruit and retain highly qualified staff.</p>

Limitations

There are several limitations to this research. One is the time frame allotted for data collection. The input of expert stakeholders was difficult to secure given the enormous demands those individuals have on their time. Input from a wider variety of sources would have led to further refinement of the model. Additionally, Justices of the Peace felt uncomfortable commenting on the inner workings of medical examiners offices while medical examiners were uncomfortable commenting on local government affairs. Because of the vast difference in the way death certifications are handled in counties with ME offices and those without, none of the interviewees felt that their expertise spanned both systems.

Another limitation was the current system for medical examiners in the State of Texas, itself. The field is so vastly unregulated that a number of recommendations for strengthening the level of quality assurance could have been tackled.

Suggestions

Further study is recommended on each individual component of the model. An entire research project could be undertaken just on the funding structure of medical examiners offices in Texas. Many comments were made about the pressure

to make sure that offices come in under a certain budget number in the provision or services. This translated to a feeling that offices had to tailor the number of in depth inquests they completed to make sure that they did not go over budget.

Additionally, the model presented here is a recommendation for minimum standards; further study could focus on an ideal set of standards that would lead Texas to having an exemplary medical examiner system. Finally, the interviews became very passionate when discussing the possible creation of a medical examiner review board. Further study into the make up of that board, jurisdiction, and funding may reveal large disagreement across all aspects.

In the course of this research, it became apparent that those in the field who were interviewed expressed varying degrees of urgency that reforms be undertaken. While their urgency differed, no one said that the current system was working the way it should to serve the needs of all of the citizens of Texas. Many of the interviews discussed the desire to reform the system had to be weighed against the realities of securing adequate funding and the lack of political will to undertake such an overhaul. The recommended changes presented in the Applied Research Project need not be implemented as a whole. Establishment of a review board as the only change would do a great deal to provide a safety net to residents of small and medium counties. In addressing the shortcomings of the current system lawmakers should be careful not to dismiss any reforms just because all reforms may not currently be possible.

Chapter Summary

In this chapter results of the interviews conducted were incorporated into a refined model that reflects stakeholder input. Limitations of the research project were discussed and recommendations for further study were put forth.

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Appendix A: Texas Justice of the Peace education materials

