2016

An Analysis of the Michigan Medical Examiner's System

Prepared by

The Michigan Public Health Institute

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Executive Summary

In December of 2015, the Michigan Department of Health & Human Services (MDHHS) contracted with the Michigan Public Health Institute (MPHI) to convene a diverse workgroup of stakeholders to identify capacity and potential areas of improvement within the current medical examiner (ME) system in Michigan, consider its strengths and weaknesses, and determine potential improvements that could be recommended to bolster the system. The workgroup membership was comprised of medical examiners and medical examiner investigators, forensic pathologists, and other affected associations and professionals, including prosecuting attorneys, law enforcement and emergency services personnel, and funeral directors from jurisdictions across the state.

Members of the workgroup participated in four facilitated discussions from February to July of 2016 around the strengths and weaknesses of the current system. The workgroup also looked to other states for the potential to replicate and expand any effective models that may improve the system as a whole. Meetings were specifically structured to address the goal outlined above, but were flexible enough to allow for discussion of other identified needs and recommendations elicited by the workgroup throughout the process. By the end of this process, workgroup recommendations around system improvement centered on the following: death scene investigation (DSI) and autopsy standards; standardized data systems and reporting; changes to the structure of the Michigan medical examiner system, including shifting towards regionalization and the development of regional networks; training and qualification standards for medical examiners and medical examiner investigators; and the creation of a centralized leadership entity to ensure standardization of services and collaboration across county lines.

The recommendations made have the potential to improve the medical examiner services as well as other systems medical examiners interact with, namely the public health system and judicial systems as a whole. Future activities include the operationalization and implementation of the workgroup's recommendations.

Background

Medical Examiners (ME) provide an essential function in Michigan and interact with many other vital systems that work to keep citizens safe and healthy. Public health, law enforcement, child welfare, and mental and behavioral health services all rely on the ME to provide accurate and detailed information because "how" and "why" people die impacts the health of the nearly 10 million persons who reside in Michigan.

In 2014, there were 93,527 deaths among Michigan residents and over 32,000 of those cases were referred to the local Medical Examiner's offices. (MDHHS, 2014). Proper resolution by medical examiners (MEs) as to the cause of death not only brings attention to the potential for unsuspected homicides, it also exonerates the innocent; determines the cause(s) of injury or suicide; mitigates the economic aspects of inappropriate insurance claims; and identifies infectious diseases, drug-related deaths and other public health hazards. Public health hazards can include a wide variety of issues including communicable disease, deaths by violence such as suicides and homicides, sudden unexpected infant deaths (SUID), and environmental toxins resulting in death.

Overall, the quality and capacity of the ME system is closely linked with the quality of the other systems it interacts with, namely the public health system and judicial systems. Thorough, high-quality death investigations by well-trained personnel ensure that cause and manner of death are correctly identified, recorded and reported. Standardized reporting of deaths and death-related data allows for more accurate identification of risk factors, health concerns and mortality trends across the state. Accurate data on cases of infant mortality, including sleep-related infant deaths, suicides, communicable and chronic diseases, fatal injuries (both intentional and unintentional), and drug-related deaths or overdoses can be used to inform public health efforts and vie for or justify the use of funds and activities aimed at prevention and health promotion in these areas. These data are also used to inform judicial proceedings that can impact the overall safety of the community.

However, the ability of ME systems, and the personnel within those systems, to comprehensively perform their duties and correctly determine the cause of death and the circumstances surrounding each death varies greatly. The Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council, (2009) noted,

> *"…resources, the extent of services, and the amount of expertise that medical examiners and forensic pathologists can provide vary widely in different jurisdictions. As a result, the depth, reliability, and overall quality of substantive information arising from the forensic examination of evidence available to the legal system varies substantially…" (pg. 6)*

Participating Organizations

- Michigan Department of Health & Human Services Bureau of EMS, Trauma and Preparedness
- Medical Examiner Offices across Michigan
- Michigan Association of Counties
- Michigan Association of Medical Examiners
- Michigan Department of Health and Human Services Michigan Division for Vital Records
- Michigan Funeral Directors Association
- Michigan Public Health Institute
- Michigan State Police
- Mid-Michigan Emergency Medical Services
- Prosecuting Attorney's Association of Michigan
- Representatives of Departments of Public Safety
- Sparrow Forensic Pathology Services
- Western Michigan University Homer Stryker M.D. School of Medicine
- University of Michigan Dept. of Pathology

Common Acronyms

ABMDI: American Board of Medicolegal Death Investigators

ABP: American Board of Pathology

DOJ: Department of Justice

DSI: Death Scene Investigation

FP: Forensic Pathologist

MAME: Michigan Association of Medical Examiners

MDHHS: Michigan Department of Health & Human Services

ME: Medical Examiner

MEI: Medical Examiner Investigator

MPHI: Michigan Public Health Institute

NAME: National Association of Medical Examiners

NIJ: National Institute of Justice

Stakeholders across the state have noted that Michigan's current ME system experiences its own varying degrees of quality and consistency and that there are gaps in the system. To fully assess these gaps and determine the ways in which the system can be strengthened, the Michigan Department of Health and Human Services (MDHHS) contracted with the Michigan Public Health Institute (MPHI) in December of 2015 to convene and facilitate a diverse workgroup of stakeholders from across the state. This workgroup included local MEs and medical examiner investigators (MEIs), forensic pathologists, and other affected associations and professionals, including prosecuting attorneys, public health representatives, law enforcement and emergency services personnel, and funeral directors. The purpose of this workgroup was to assess the current ME system in Michigan, consider its strengths and weaknesses, and determine potential improvements that could be recommended to bolster the system.

The Current Medical Examiner System

While ME systems tend to vary somewhat from state to state, Michigan is one of only two states in the nation that has a county ME system (Figure 1). According to the current state statute, each county has a ME, appointed by the county commissioners or in some cases the County Executive, which must be a licensed physician of any specialty. However, there are no additional training requirements or death investigation standards required of those physicians. Some counties choose to appoint a board certified forensic pathologist (FP) as their ME. A forensic pathologist is a medical doctor who has completed training in anatomical pathology and who has subsequently specialized in forensic pathology. FPs are specialists in this field and are seen as experts in determining cause and manner of death.

Given the relatively small number of forensic pathologists in Michigan, there is relatively high demand for competent, experienced MEs and for forensic pathologists throughout the state. Furthermore, mandated requirements or qualifications for who can become a Medical Examiner Investigator (MEI) in Michigan do not yet exist, and it is likewise difficult to find and retain qualified staff for this position. Because MEIs are often the "eyes and ears" of the ME in the field, visiting the scene and gathering pertinent details surrounding each death, well-qualified and well-trained MEIs are essential for ensuring a thorough, high-quality death investigation. Similarly, mandated death scene investigation (DSI) standards do not exist in Michigan. Many offices create their own individual standards and protocols, however, this is not consistent from office to office. National recommendations for death scene investigation such as the U.S. Department of Justice (DOJ) National Institute of Justice (NIJ) guidelines that were developed in 1999 and updated in 2011 are

available, but they have not been universally adopted in Michigan (U.S. Department of Justice, 1999).

Figure 1. Death Investigation Systems

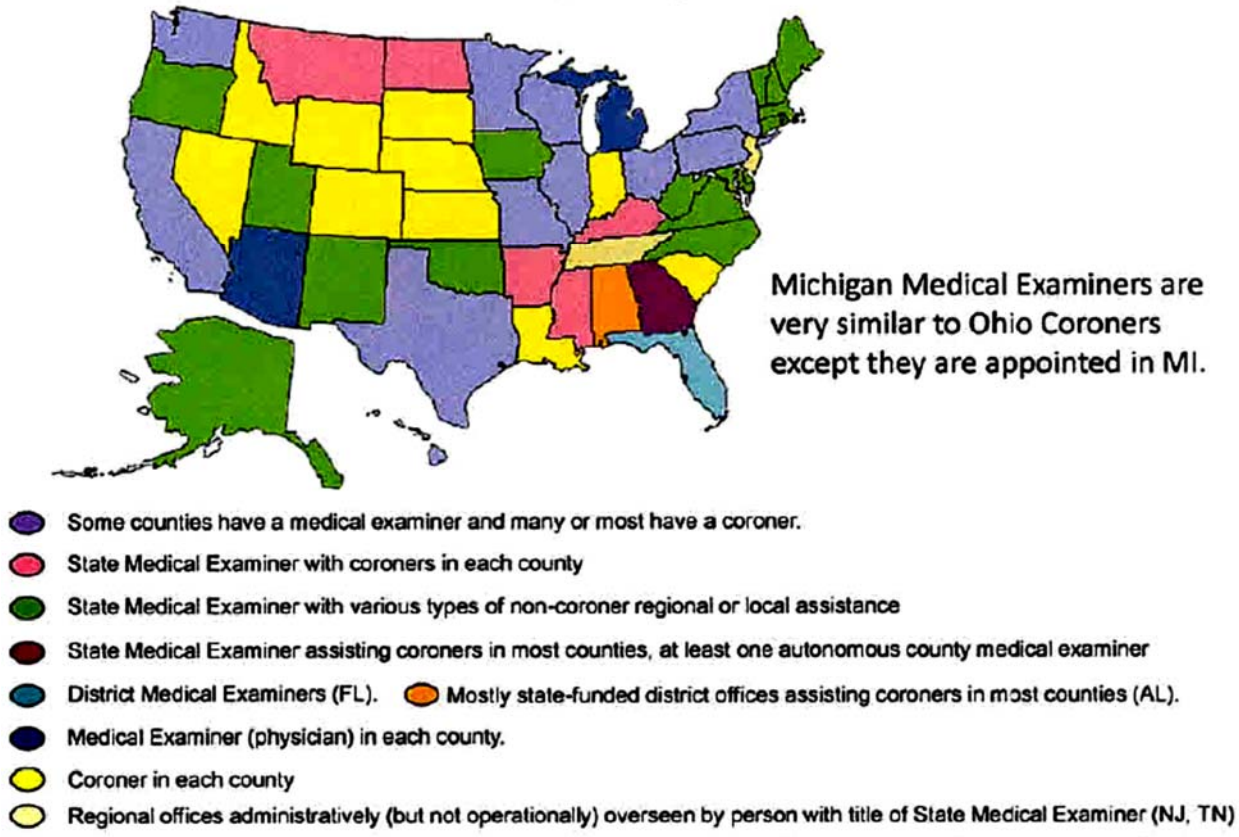


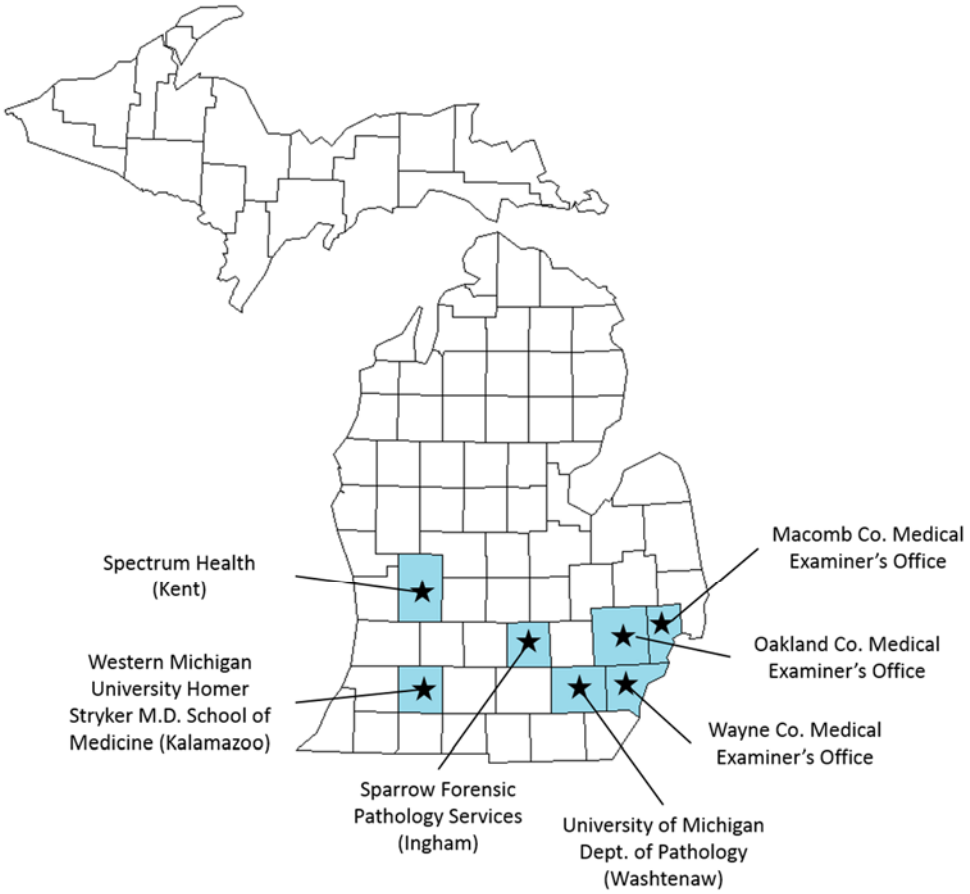
Image Source: Hanzlick, R. (2016). Medical Examiner Systems (With Emphasis on State MEs) [PowerPoint slides]

Finally, Michigan does not currently mandate forensic autopsy standards or accreditation of autopsy facilities. Only some autopsies in the state are performed by American Board of Pathology (ABP) certified forensic pathologists in accredited autopsy facilities or offices. The National Association of Medical Examiners (NAME) developed forensic autopsy performance standards that have been adopted in other states and that outline the circumstances in which an autopsy should be conducted. These standards additionally specify that all autopsies be performed by licensed physicians who are forensic pathologists or by a physician who is a forensic pathologist-in-training (NAME, 2015). Within the current ME system, local MEs must decide when and if an autopsy should be performed. When a ME determines that an autopsy is warranted, the body of the deceased must be transported to the autopsy facility of the MEs choice. For counties in lower northern Michigan and those in the Upper Peninsula, the nearest autopsy facilities are often several hours drive away.

NAME also developed Accreditation Standards for offices and ME systems throughout the United States that "represent minimum standards for an adequate medicolegal system" (NAME, 2016a). Offices that wish to become NAME accredited must apply for and pass an inspection. Offices must also pay both a first year fee and a smaller annual fee that are determined by the size of the population served by the office (a population of less than 2 million or greater than 2 million). The accreditation period for each office is five years. There are currently seven NAME accredited facilities in Michigan, two of which are

county government facilities (Macomb and Oakland), two that are private hospital-based pathology groups, (Sparrow Forensic Pathology Services in Ingham County, and Spectrum Health in Kent County), and three that are University-based systems (University of Michigan Department of Pathology, which provides services for Wayne, Washtenaw, and Monroe with facilities in Wayne and Washtenaw both, and Western Michigan University Homer Stryker M.D. School of Medicine in Kalamazoo) (Figure 2). There are additional facilities across the state where forensic pathologists perform autopsies (Genesee, Mecosta, Saginaw and St. Clair for example).These facilities are not currently NAME accredited. In addition, many of the NAME accredited facilities provide autopsy services to additional counties throughout the state. However, not all counties are able to readily afford the costs associated with body transport and autopsy services and find it difficult or impossible to order all of the autopsies they may need.

Figure 2. NAME Accredited Forensic Autopsy Facilities in Michigan, 2016

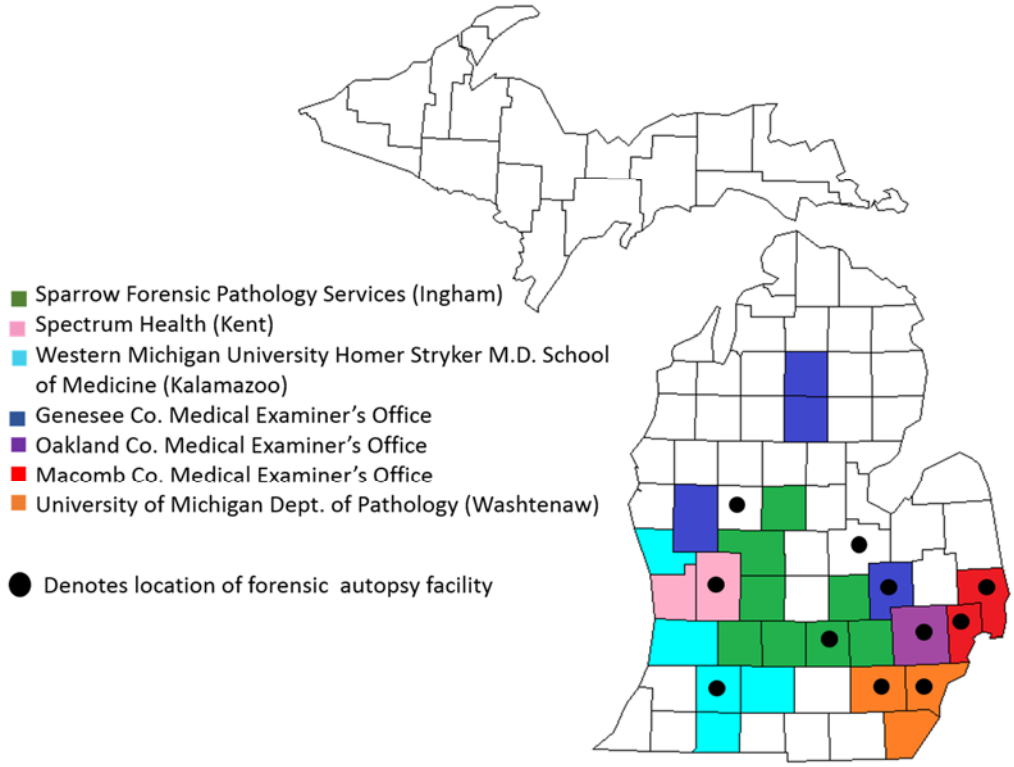


Approximately 67% of the Michigan population (6,743, 257 out of 9,922,576 residents) currently has an appointed medical examiner from a NAME accredited office. This includes: residents of Kalamazoo, Calhoun, Allegan, St. Joseph and Muskegon serviced by the Western Michigan University Homer Stryker M.D. School of Medicine Department of Pathology; residents of Barry, Eaton, Ingham, Ionia, Isabella, Livingston, Montcalm and Shiawassee serviced by Sparrow Forensic Pathology Services; residents of

Macomb and St. Clair, serviced by the Macomb County Medical Examiner's Office (all St. Clair autopsies are performed at McLaren Hospital Port Huron, a facility that is not NAME accredited, by Forensic Pathologists from the NAME-accredited Macomb office); residents of Wayne, Washtenaw and Monroe serviced by the two facilities covered by the University of Michigan Department of Pathology; residents of Oakland County serviced by the Oakland County Medical Examiner's Office; and residents of Kent and Ottawa, serviced by Spectrum Health. Figure 3 illustrates this. In addition, various local MEs occasionally contract with forensic pathologists operating out of NAME accredited facilities. However, this does not allow for the well round forensic services provided when board certified forensic pathologists are the actual appointed MEs. They are not able to play to vital role in overseeing the investigation. They merely conduct the autopsy. The black dots denote which counties have forensic autopsy facilities or facilities where FPs perform post-mortem examinations.

Furthermore, this does not mean all facilities are NAME accredited. There are many other counties across the state that use these facilities for forensic autopsies while having their own county based non-forensic pathologist medical examiner. The current coverage can change at any given time because the usage of these accredited facilities is not required or mandated in any way.

Figure 3. Michigan Forensic Autopsy Facilities and Counties They Serve as Appointed Medical Examiner, 2016



In sum, broad challenges within the current ME system that compromise the system's capacity include an inadequate number of forensic autopsy facilities, an inadequate supply of forensic pathologists, inadequate or nonexistent mandated accreditation for facilities, inadequate or nonexistent mandated

training, minimal standards and qualification requirements for MEs and medical examiner investigators (MEIs), lack of standardization and inconsistent quality of death investigation and autopsies, and lack of standardized data collection and reporting. Additionally, the current system in Michigan does not have a mechanism of oversight for MEs and does not allow for the coordination of standardized practices and data reporting. This lack of consistency from county to county results in a gap in the quality of forensic death investigations (Pearsall, 2011). The gaps in quality in the current ME system in Michigan can lead to unreliable and inadequate information regarding how and why Michigan citizens are dying. This information is necessary in understanding all factors surrounding an individual's death, and can be used to inform prevention and health promotion efforts, public health practice and health policy throughout Michigan communities.

Currently, 25 other states have adopted an office of the State ME, which provides system oversight and standardization, ensures quality of services, facilities and staff, and advocates for needs and funding at the state and national levels (CDC, 2015). These states vary in their organization around and under the State ME office; some states have retained county-level coroners or non-coroner regional/local assistance, while others have district level MEs or district ME offices who assist county-level coroners, and a few have regional offices overseen by the office of the State ME (Hanzlick, 2016).

The Workgroup Process

The purpose of the workgroup was to identify gaps in quality and capacity within the current medical examiner (ME) system in Michigan, consider its strengths and weaknesses, and determine potential improvements that could be recommended to bolster the system. Specifically, the workgroup was tasked with determining guidelines for the appointment of MEs, responses to specific types of fatalities, and training needs; assessing the need for accreditation standards and reporting requirements; and making recommendations to improve or revise the current system, including new policies and changes the public health code. The workgroup also looked to other state ME models and discussed the potential to replicate, expand and modify effective models that could improve the Michigan system and could best incorporate their recommended changes.

The following are the activities that were outlined at the beginning of this project:

- Convene four workgroup meetings of stakeholders including MEs, FPs and related associations/professionals
- Assess the current Michigan ME system
- Develop best practices in ME cases including responses to specific types of fatalities (SUIDs, drug overdoses, mass casualties, etc.)

Goals of the Workgroup

The workgroup was tasked with:

- **Determining guidelines for the appointment of MEs, responses to specific types of fatalities, and training needs**
- **Assessing the need for accreditation standards and reporting requirements**
- **Discussing potential to adopt new model for system**
- **Making recommendations to improve or revise the current system**

The workgroup met four times over the course of the project period (in February, March, May and July).

- Determine guidelines or recommended qualifications/training for appointment as a county ME
- Establish recommendations for accreditation standards for ME offices
- Determine potential reporting requirements or data systems for MEs
- Prepare recommendations on revisions to the current ME system and public health code
- Prepare final report of workgroup activities and recommendations
- Present workgroup findings and recommendations to outside stakeholders and policy makers
- Explore the possibility of a state or regional ME system

The workgroup met four times throughout this process, with one meeting each held in February, March, May and July of 2016. Meetings were held at the Interactive Learning Center at the Michigan Public Health Institute campus in Okemos and had a virtual option for participants who were not able to attend the meeting in person. Each meeting lasted approximately five hours. Meetings consisted of facilitated discussions and activities prepared by MPHI to promote workgroup dialogue around the strengths and weaknesses of the current system and to capture workgroup recommendations around system improvement. Meetings were specifically structured to address the activities outlined above, but were flexible enough to allow for discussion of other identified needs and recommendations elicited by the workgroup throughout the process. Between meetings, members of the workgroup were given pre-work and asked to conduct a strengths, weaknesses, opportunities and challenges (SWOC) assessment, provide information on educational backgrounds and qualifications of themselves and staff in their offices, identify standards for death investigations, and complete a cost assessment/provide budgets for their respective offices. Completed pre-work for each meeting was compiled by MPHI and was used to inform and structure workgroup discussions, and were presented back to the workgroup at subsequent meetings.

Over the course of their meetings, the workgroup discussed the strengths and weaknesses of the current system and provided recommendations for the following: death scene investigation (DSI) and autopsy standards; standardized data systems and reporting; changes to the structure of the Michigan ME system, including shifting towards regionalization and the development of regional networks; training and qualification standards for MEs and MEIs; and creation of a centralized oversight and leadership entity such as a state ME office or an advisory board. The workgroup additionally aided with the completion of a cost assessment that was used to gauge current variations in funding throughout the current system and determine how well the system is meeting the budgeting standard of $3.75 per person recommended by the national Scientific Working Group for Medicolegal Death Investigation in 2013. Below is a basic list of topics that were covered in each of the four workgroup meetings.

First Meeting held February 10th, 2016:

- Purpose of the workgroup and project background
- Presentation of Medical Examiner Systems across the Nation by Dr. Randy Hanzlick, Chief Medical Examiner, Fulton County, Georgia
- Goals of the workgroup and the plan for upcoming meetings
- Complete SWOC analysis of current system

Second Meeting held March 29th, 2016:

- Review education and training and death investigation pre-work

- Review individual SWOC analysis pre-work
- Conduct an analysis of education and trainings for MEs and MEIs
- Discuss DSI standards and protocols
- Forensic pathologists address autopsy protocols

Third Meeting held May 26th, 2016:

- Continue discussion of medical examiner and medical examiner investigator qualifications and training
- Discuss the structure of the Michigan medical examiner system
- Discuss standardized data system and data reporting

Fourth Meeting held July 14th, 2016:

- Recap structural recommendations
- Discuss oversight entity and/or state medical examiner
- Review data reporting requirements
- Discuss the cost assessment
- Elect a chair/workgroup representative and discuss future implementation plans

Challenges in the Workgroup Process

When working with large groups to recommend overall systems changes challenges are often present. One such challenge is the uncertainty of how these modifications could impact the workgroup members' position and autonomy. This is common when working with large groups and addressing large systems change. Large scale change requires adaption and commitment to give up what is known and comfortable.

A second challenge was inconsistency with member participation. Recommendations were derived through structured facilitative conversations and then built upon from meeting to meeting. Inconsistency in participation led to challenges with building consensus on the previous meetings' work.

Assessment of the Current System

The workgroup collectively completed a SWOC analysis of the current ME system during a facilitated discussion at the first meeting in February. Additionally, each participant was individually asked to rank each strength, weakness, opportunity and challenge during a pre-work assignment ahead of the second meeting in March, and compiled results from this analysis were presented during this meeting.

Strengths

The top strengths of the current ME system identified by the workgroup during the SWOC analysis included: MEIs who were trained by forensic pathologists; forensic pathologists who are already practicing by National Association of Medical Examiners (NAME) guidelines; well-trained forensic pathologists with facilities and equipment to perform high quality work (e.g., infrastructure); and local ME offices providing for local representation of community needs. In addition the system has major academic centers strongly supportive of forensic medicine and forensic pathologists that make themselves available to assist smaller more rural counties with their needs.

Weaknesses

The top weaknesses of the current ME system identified by the workgroup were the inconsistent quality of death investigations and autopsies across the state, limited statewide data to identify trends and public health concerns, and various weaknesses associated with funding shortages, including inadequate funding for: ME and MEI positions, training and certifications for staff, and forensic autopsies.

Opportunities

The workgroup identified opportunities within the current system and ranked these according to both importance and feasibility. The workgroup determined that the most important opportunity is increasing awareness among county administrators of the need for a professional ME system and encouraging counties to fund such a system; however, regional opportunities to cooperate and share resources was identified as the most feasible. Additionally systems improvements would allow for the ability to apply for grants and federal funding. Below is a table with the opportunities identified by the workgroup. After the SWOC analysis the workgroup was asked to rank the opportunities based on their level of importance to them and the system as a whole. They were also asked to rank the feasibility of the opportunity. The chart below displays those rankings.

Opportunity	Importance Rank	Feasibility Rank
To increase awareness among county administrators of the need for a professional ME system, and encourage counties to fund an appropriate system	1	3
There are regional opportunities to cooperate and share resources	2	1
There are certifications for MEIs and MEs available in the state, including American Board of Medico-Legal Death Investigation certification	3	6
A process and protocols for autopsies and death investigations can be developed	4	5
There is an MEI training program in development by the Western Michigan University School of Medicine that can be utilized by MEIs in the state	5	4
There are statewide trainings for MEIs	6	7
There could be greater distribution of information on MEI and ME trainings within the state (e.g., MAME trainings, online trainings)	7	2
There are opportunities to partner with the Michigan State Police Forensic Sciences Division	8	9
There are autopsy assistant training opportunities	9	8

Workgroup Recommendations

The workgroup provided recommendations for the following:

- **Training and Qualification Standards**
- **Death Scene Investigation Standards**
- **Autopsy Standards**
- **Standardized Data Systems and Reporting**
- **Regionalization of the Michigan ME System**
- **Creation of a Centralized Leadership Entity or State Medical Examiner**

Challenges

In addition to the above opportunities, challenges to the current system were considered during the SWOC analysis. The most commonly cited and discussed challenge throughout the workgroup process was that of funding. This echoed the weaknesses identified by the workgroup above regarding insufficient funding to hire and retain qualified staff and for staff training and certifications. In addition the workgroup cited challenges in building consensus regarding systems improvements given the vast number of MEs that represent their own interests. Challenges in the improvement process with policy makers was also listed as a barrier to systems change.

Workgroup Recommendations

The assessment of the current ME system and the SWOC analysis conducted early on by the workgroup informed the focus and development of their recommendations. Utilizing facilitated discussions, brainstorming activities, pre-work and other activities, the workgroup provided recommendations for the following over the course of their meetings: training and qualification standards for MEs and MEIs; death scene investigation (DSI) and autopsy standards; standardized data systems and reporting; changes to the structure of the Michigan ME system, including shifting towards regionalization and the development of regional networks; and creation of a centralized leadership entity, such as a state ME office or independent office. Each of these recommendations are discussed in detail below. The recommendations are organized in the order in which the workgroup addressed each area of need. The order of the report does not indicate the priority of the recommendations.

Training and Qualification Standards

There are few qualification or training requirements for MEs and MEIs in Michigan, and yet there is relatively high demand across the state for competent, well-trained and experienced personnel for these positions. Currently, the only qualification requirement for MEs is that they be physicians licensed to practice within the state; there are no further requirements for specialized training of these physicians. There are also no mandated qualification requirements for who can serve as an MEI. Because MEIs are often the eyes and ears of the ME in the field, visiting the scene and gathering pertinent details surrounding each death, well-qualified and well-trained MEIs are essential for ensuring thorough, high-quality death investigations. As such, the workgroup recommended mandating a mix of trainings, certifications and continuing education for MEs and MEIs. The top two recommendations are highlighted below.

1. **Mandate Training for Medical Examiners**

The workgroup noted that ideally, every ME would be a board certified forensic pathologist, though a shortage in board certified FPs nationwide would make that difficult. In order to improve on the current lack of qualifications and standards, training requirements should be mandated and be overseen by the centralized leadership entity or state ME. This is discussed further later in the report.

2. **Mandate Standardized Basic Training to all Medical Examiner Investigators**

This recommendation is explained in-depth in the subsequent section of this report. There are no qualification requirements regarding who can serve as an MEI, and it is up to local ME offices to determine the educational and work-experience backgrounds of those they hire as death investigators. For some ME offices, the current absence of qualification requirements do not pose a problem, as they are able to find and train individuals to serve as quality MEIs. However, lack of basic and local educational and training opportunities makes it difficult to train these individuals, and lack of funding makes it difficult for some counties to not only afford to send their MEIs to death investigation certification courses, but to also then retain (or competitively attract) qualified and experienced MEIs.

Many of these training and qualification standards are echoed below in subsequent sections of this report, as having competent and well trained MEs and MEIs are vital to all components of the system.

Death Scene Investigation Standards

Michigan does not currently have required standards in place for DSIs. This contributes to varying degrees of quality and consistency in these investigations throughout the state. As such, workgroup recommendations on DSIs focused on strengthening death scene investigation processes and mandating standards. Specific recommendations to improve death scene investigation fall into the seven categories outlined below.

1. **Mandate and Adhere to the Department of Justice (DOJ) National Institute of Justice (NIJ) death scene investigation guidelines**

The workgroup strongly recommended mandating the Department of Justice (DOJ) National Institute of Justice (NIJ) death scene investigation guidelines, as outlined in the document *Death Investigation: A Guide for Scene Investigator* (U.S. Department of Justice, 1999). The workgroup discussed at length the components of an effective and thorough investigation including: both written and photographic documentation, utilization of standard document tools, evidence collection, meeting standard timelines and obtaining the appropriate medical and social history. All of these items are addressed specifically in the DOJ guidelines and mandated adherence to them would allow for consistency in how investigations are conducted.

2. **Provide Standardized Basic Training to all MEIs**

Many workgroup members felt that training for MEIs and death scene investigators was not always consistent or adequate. MEIs are the often the eyes and ears of MEs on the scene and the collection of data relies heavily on how the MEI was trained. Standardized training, setting minimum training

requirements for MEIs and having MEIs trained by forensic pathologists would overall contribute to thorough and effective death scene investigations.

Cost currently deters some counties and ME offices from sending staff to trainings or mandating that they be certified or receive continuing education. Additionally, many trainings and courses are out-of-state, and MEIs must travel to attend, creating additional costs for ME offices and MEIs. To support and subsidize these costs, the workgroup discussed having the state provide funding for certification, and/or allowing ME offices to receive monetary compensation for each signed death certificate, a model currently used in Indiana. To keep courses and trainings local, the workgroup proposed developing a basic, online introductory course complemented by local, in-person trainings, as well as utilizing a death investigation course currently in development by Western Michigan University's Homer Stryker M.D. School of Medicine Department of Pathology with the potential to travel to train.

The workgroup recommends that at least one MEI in each local ME office be certified in death investigation. Additional trainings and continuing education should be made accessible and be mandated for all MEIs. In general, each MEI should receive a mixture of formal (e.g., classroom, online and mobile) and on-the-job trainings. There are several training and certification courses available, including those sponsored by the American Board of Medicolegal Death Investigators (ABMDI), a death investigator training course at Saint Louis University, and the course in development by Western Michigan University.

3. Foster Inter-agency Cooperation

Death scene investigations often rely on the coordination and collaboration of emergency services personnel, law enforcement, ME staff and occasionally other agencies. The development of good working relationships with all involved entities and collaboration was identified as a key component of a thorough investigation. The workgroup discussed the need for fostering inter-agency cooperation to ensure smooth, robust death scene investigations.

4. Ensure Comprehensive and Caring Interaction with Families and Next of Kin

Those attending to death scene investigations must often interact with witnesses, law enforcement, and families of decedents, gathering pertinent information on the deceased and details of the death. As such, the workgroup discussed the importance of interacting effectively with families and others with whom they may need to gather information. Effective interactions include conducting a thorough and comprehensive investigation as well as being caring and sensitive to the family's needs. Their discussion also included addressing any concerns of law enforcement or family, learning and practicing good interviewing skills, and conducting thorough witness interviews, including gathering medical history and establishing a timeline leading to the death.

5. Assure Quality and Consistency in Death Scene Investigations

Assuring quality and consistency with death scene investigation was recognized by the workgroup as another important component of ensuring high-quality, thorough investigations. The workgroup specifically reinforced the "every scene, every time" motto found in the DOJ death scene investigation guidelines, and advocated for quality assurance through the collection of reliable data.

6. Create a Statewide Medical Examiner Reporting System

Lastly, the workgroup recommended creating a standardized, electronic statewide reporting system. This particular recommendation was explored further in subsequent workgroup meetings and is discussed in greater detail in the 'data systems and reporting' section of this report.

7. **Recruit and Retain Qualified and Highly Trained Investigators**

Workgroup members also noted a high-turnover rate for MEIs and difficulties retaining qualified staff (often due to inadequate funding for salaries and pay). Ideally, all MEIs in the state would be employed by the county in which they serve and each would work within his/her local ME office. Full-time employment of MEIs would be optimal to ensure that these staff are always available when needed and are compensated adequately to increase retention, though this is currently costly for inadequately funded counties. Alternatively, MEIs could be employed by staffing agencies, though this can lead to training and independent contractor issues. Either way, the workgroup stressed ensuring that there are enough highly trained and experienced MEIs to cover the population and to be available or respond to deaths when needed.

Autopsy Standards

Michigan does not currently mandate forensic autopsy standards or the accreditation of autopsy facilities. As such, autopsies are conducted inconsistently across the state. Generally, autopsies are conducted at the sole discretion of local MEs and law enforcement, and are not required to be conducted by a forensic pathologist or to be conducted in a NAME accredited facility. Further, some counties are unable to perform or order autopsies due to lack of funding.

The workgroup's autopsy recommendations address standardizing the ordering of autopsies, ensuring that autopsies are conducted when needed, and improving the overall quality of autopsies conducted across the state. The following are recommendations put forth by the workgroup regarding autopsy standards:

1. **Adopt NAME *Forensic Autopsy Performance Standards* (NAME, 2015)**

Workgroup participants recommend the adoption of the NAME Forensic Autopsy Performance Standards (NAME, 2015). These standards specify the responsibilities of medicolegal death investigation officers, the types of deaths that require autopsies, identification procedures of decedent(s), external examination procedures, internal examination procedures, and provide standards for ancillary tests (e.g., performing radiographs, collecting specimens for laboratory testing etc.) and support services (e.g., ensuring access to a radiologist, to toxicology testing etc.). These standards are modified regularly to stay up to date with the current science and practice.

2. **Require that autopsies be performed by American Board of Pathology certified forensic pathologists and according to the NAME standards within accredited facilities**

Workgroup participants additionally recommended that all autopsies be performed by American Board of Pathology-certified forensic pathologists. This recommendation echoes the NAME standards, which specify that all autopsies be performed by forensic pathologists or residents in pathology. Furthermore, the workgroup recommended that all autopsies be performed in NAME accredited facilities. Figure 2

denotes the current NAME accredited facilities. Facilities in Genesee and Mecosta are currently in the process of meeting inspection standards and seeking NAME accreditation. However, because there is currently a shortage in forensic autopsy facilities and forensic pathologists in the state, it is likely that additional autopsy facilities will need to be identified and/or built and staffed. These future forensic autopsy facilities, and current forensic autopsy facilities that are not yet NAME accredited, should be provided with the support they will need to pursue accreditation including time and funding.

The state of Colorado recently passed legislation similar to this requirement. The workgroup strongly supported achieving this recommendation in that way. Colorado statute specifies which types of deaths are required to be investigated and which types of deaths are required to be autopsied, while also mandating that all autopsies be performed by a board-certified forensic pathologist or physician who is a pathologist-in-training (CDC, 2014). However, Colorado statute (30-10-606.5) also states that "the coroner shall perform a forensic autopsy or have a forensic autopsy performed in accordance with the circumstances in the most recent version of the 'forensic autopsy performance standards' adopted by the national association of medical examiners", providing amenability to these statutes based on any changes or updated recommendations within the NAME standards (Colorado Coroners Association, 2016). Requiring that autopsies be conducted according to the NAME standards would allow for continued improvement of the system as the standards and guidelines continue to be updated by NAME.

3. **Ensure funding for all indicated autopsies, irrespective of county or local funding or geography.**

The workgroup stressed the need for funding to perform an autopsy when indicated, irrespective of the county government or ME's office ability to pay or their geographic location. Without both legislating the NAME standards and addressing these funding shortages, some county ME offices will likely remain unable or unwilling to pay for autopsies. Addressing funding shortages may require supplemental funding from the state, pooling of resources from regional ME systems, or some other arrangement between forensic pathologists and county MEs.

Data Systems and Reporting

The state currently does not have standardized data reporting requirements for ME offices. ME offices are not required to report any data unless they are NAME accredited. The seven ME offices in Michigan that are NAME accredited must follow NAME reporting requirements found in the *NAME Inspection and Accreditation Checklist* (NAME, 2014). Each accredited office must prepare an annual statistical report available to the public with various standard data indicators, including total cases reported, accepted, examined and autopsied, and major causes of death sorted by each manner of death category, among others. Unaccredited ME offices vary in the data they capture and report, and each office chooses the data system or database in which they would like to input and store their data. While this allows for flexibility within each county to classify deaths, report what they choose, and use their preferred database (or the one they can readily afford), this inhibits both comparability of data from county to county and aggregation of data across the state. Overall, it is difficult for epidemiologists to compare mortality data and identify or analyze statewide trends; this in turn makes it difficult to track public

health concerns (e.g., drug-related deaths/overdoses) as well as the state's progress on addressing these concerns.

Over the course of their discussions on standardizing data systems and reporting, the workgroup explored:

1. Developing a centralized, statewide database to be used by all ME offices.
2. Alternatively, mandating utilization of an existing database (e.g., MDI Log) for all ME offices.
3. Improving the utilization of the existing Electronic Death Registration System (EDRS).
4. Holding statewide meetings to discuss data and create consistency in reporting.
5. Consolidating local or county offices into regions in which data collection and reporting are standardized.
6. Mandating financial sanctions for ME offices that do not provide their data to a designated centralized body that can then store, analyze and report this data for the state.

1. Require that all ME Offices report on standard data elements according to NAME Guidelines.

The workgroup recommends that each office be required to report on a set of standard data elements to allow for county to county comparison and aggregation of data at the state level. The workgroup suggested adopting the NAME guidelines for reporting requirements.

2. Determine whether to mandate that ME offices use a centralized, statewide database or continue to use their own databases to report standard data elements.

The workgroup also discussed options for ME databases, including mandating the use of a centralized, statewide database or a pre-existing database to be used by all ME offices, or continuing to allow each county ME office to use the database they prefer. Pros and cons for these options were considered by the workgroup.

The strengths and weaknesses of mandating use of a statewide database were explored throughout the workgroup process. Strengths include: standardized data collection, statewide tracking of mass fatalities, cross-state access to data, pooling of resources, and more accurate and reliable mortality trend analyses for the state. Weaknesses include: loss of current investment of county ME offices that have already invested resources into current databases, additional training required for a new system, significant coordination required to upload and transfer data from previous systems, continual maintenance and funding required.

The workgroup believes that improved data collection and standardized reporting would increase the state's competitiveness when vying for national funding. The workgroup also explored ways in which a statewide database could be funded. Though it would be costly to require each ME office to buy into the same database or contribute to the costs of developing a centralized database, particularly those offices that are smaller and less-well funded, each office could increase their revenue and support these costs by charging a standard fee for Freedom of Information Act (FOIA) requests and reports made to their office. The state could also supplement costs by providing additional funding, or applying for external grants that could support development and costs for a standard, statewide database.

Allowing for the continued use of individual databases and solely requiring standard data be reported has its own set of strengths and weaknesses. Strengths include allowing each ME office to choose the database that best serves their needs and maintain office ownership of their own data, helping to ensure data accuracy and integrity. Drawbacks include not readily allowing for aggregation of data, little standardization of data, and issues with most jurisdictions being unable to get statistically valid numbers for research due to small sample sizes.

3. **If the system becomes regionalized, require that regions report out data for their counties.**

An additional recommendation regarding the system structure could allow for regional reporting of data as well. Requiring regions to report data, rather than individual counties, would minimize duplication of reporting and reporting efforts. A breakdown of data by counties within the region would be important as well. Additional information about the structural recommendations themselves are below.

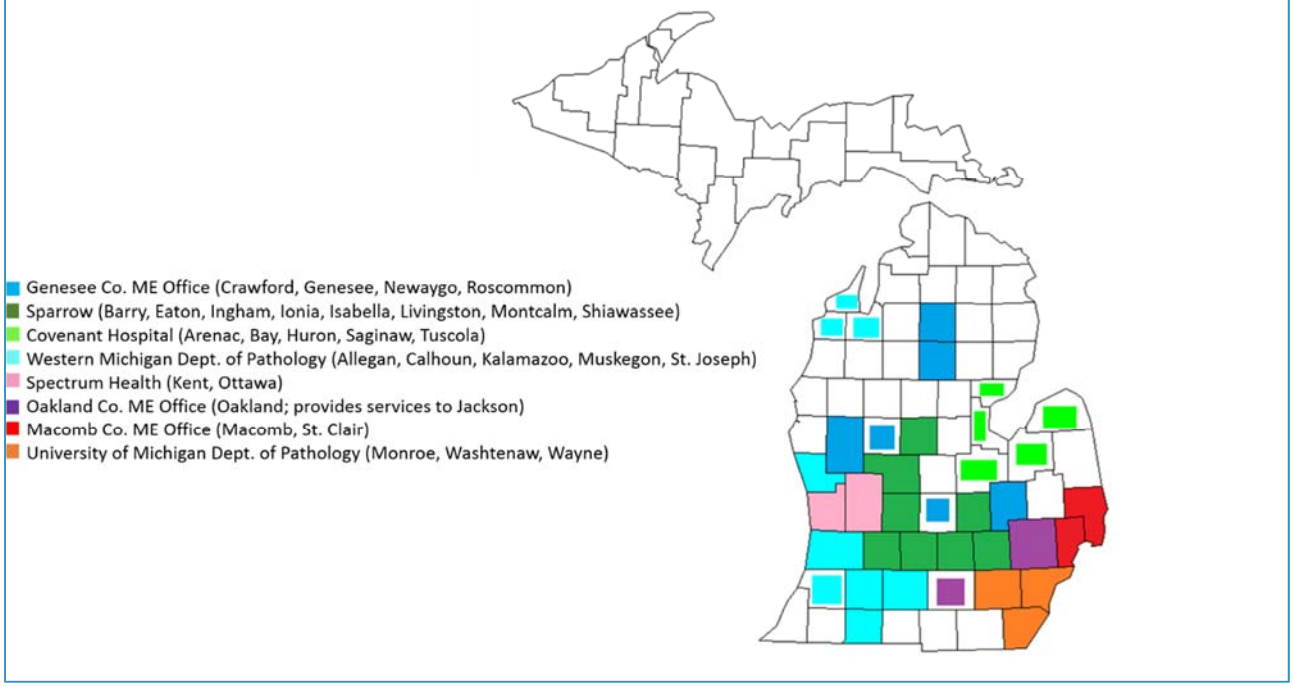
Regionalization of the Michigan Medical Examiner System

While discussing recommendations for each of the aforementioned areas, the workgroup identified potential system models in which these recommendations would best fit and which would most contribute to overall improvement of the ME system. System models throughout the United States include those that are centralized and those that are county- or district-based. States with either system may have a state medical examiner office, and may utilize either coroners or MEs or may utilize both (CDC, 2015). Given the regional-like qualities of the current system, the workgroup recommends that Michigan adopt a regionalized ME system incorporating the option of maintaining county MEs and ME offices.

Regions in the Current System

There are already several ME offices and forensic autopsy facilities that provide services to nearby counties within the current system, and there are MEs who serve in this position for multiple counties. However, the workgroup agreed that these pre-existing "regions" are not completely ideal, as some offices serve distant counties and some MEs are required to travel significant distances to perform their duties. For example, the Genesee County Medical Examiner (a forensic pathologist) is currently serving as the ME for Crawford, Roscommon and Newaygo counties, and performs autopsies for Mecosta County but is not their ME. Many counties in Michigan have a local ME but contract with a FP to perform their autopsies regularly. Figure 4 below illustrates this breakdown and the current informal regions in the Michigan ME system that utilize the current board certified forensic pathologists across the state. Counties shaded the same color share an ME; those counties with a square of another color within their borders receive autopsy services regularly from the county/region of that color. Saginaw County has a hospital where a board certified FP conducts autopsies although he is not an appointed ME for any of the identified counties. This map does not take into consideration the number of counties who contract out to forensic pathologists on occasion. This breakdown changes frequently given there are no mandated boundaries or regions. This figure illustrates the many idiosyncrasies within the current system, and one can see that there could be benefits to reorganizing and simplifying this system.

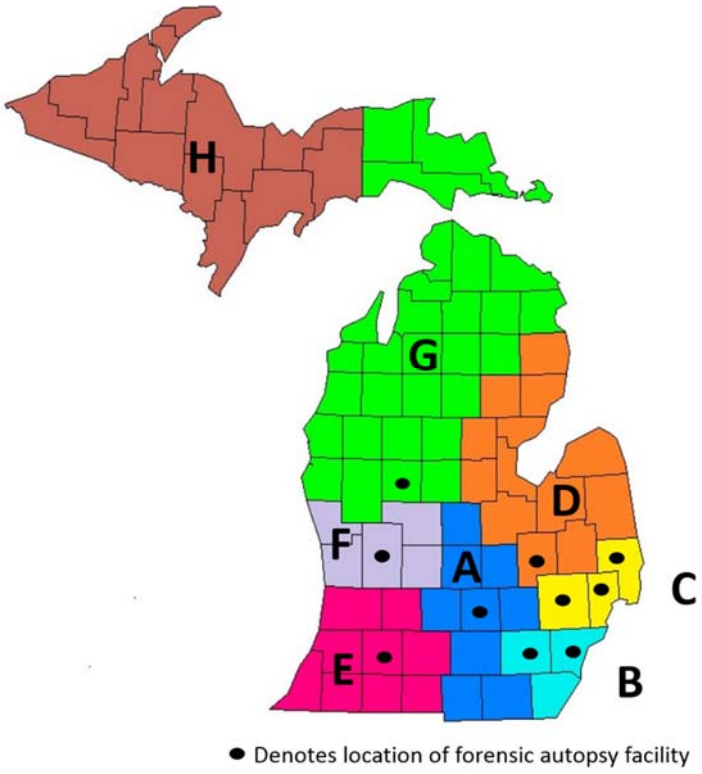
Figure 4. Current Informal Regions in Michigan, 2016



Proposed Regions

While discussing official regions for the system, the workgroup looked the existing effective practices while also considering the needs of those counties in the state with fewer resources, namely rural counties such as those in the northern lower part of the state and those in the Upper Peninsula. The workgroup discussed maintaining some current referral patterns for county ME offices, such as those counties in the eastern Upper Peninsula who refer their cases south to the northern lower part of the state. Availability of forensic autopsy facilities further impacts the delineation of regions in the state, as each region will need at least one facility in which to conduct their autopsies. Given these considerations, the workgroup developed a tentative map of proposed regions (Figure 5), but further discussion and clarification of these regions will be necessary.

Figure 5. ME System Regions Proposed by Workgroup, 2016



NAME Accreditation of Each Region

As a component of the recommendations, each region will be required to be NAME accredited, that is, each region must have at least one NAME accredited forensic autopsy facility in which all autopsies within that region are performed. This will likely require construction of at least one new autopsy facility, or remodeling of pre-existing autopsy facilities to ensure they meet NAME standards and are capable of passing NAME inspection. The proposed regions map above shows the location of current autopsy facilities. Note that proposed region H (the majority of the Upper Peninsula) does not yet have a forensic autopsy facility; there was discussion amongst the workgroup of the potential for building a facility at Northern Michigan University, one which could become a part of a Forensic Sciences program at the university.

Per NAME standards, each medical examiner ordered autopsy within the region must be signed off by a forensic pathologist. In addition the workgroup recommended that all autopsies be completed by a board certified forensic pathologist. This necessitates that each region have at least one forensic pathologist operating within a NAME accredited facility. The workgroup further recommends that forensic pathologists within each region be required to handle or oversee all regional cases and testify at least in all high-visibility cases, if not all cases. Oversight would include ensuring the investigation is completed according to the DOJ guidelines, following the NAME guidelines to determine if an autopsy is required, ensuring that a board certified forensic pathologist conducts the autopsy (or supervises a forensic pathologist in training), and coordinates with the judicial system in their process. Overall, these recommendations will require additional recruitment and hiring of forensic pathologists within the state

and likely other personnel as well (e.g., radiologist, laboratory staff). Hiring of forensic pathologists and staff for regions G and H may prove challenging, and incentives may be needed to attract qualified personnel to these areas.

The continued "local presence" of county MEs and MEI was seen as valuable by the workgroup. While forensic pathologists will oversee cases within each region and perform all autopsies, county ME offices could be maintained and local MEs and MEIs could remain responsible for responding to deaths in their counties, performing death scene investigations, determining the need for autopsies, and collecting local standardized data, while adhering to DOJ Death Scene Investigation and NAME guidelines. Each local ME office will be required to provide its data to the region. The region will be responsible for developing a comprehensive data report, following NAME and additional mandated reporting requirements, with aggregate data for the region as well as data for each of the region's counties.

Per NAME guidelines and collected data, one autopsy per every 1,000 persons is deemed an acceptable level (NAME, 2014). According to the Scientific Working Group for Medicolegal Death Investigation (SWGMDI), this autopsy rate is "a best case scenario formula" that ensure autopsies are conducted "in numbers that meet public health, public safety, justice system, medical quality assurance, and other needs" (p. 3). However, NAME guidelines require that a forensic pathologist perform no more than 250 autopsies per year. Given these criteria, the SWGMDI Infrastructure Committee recommends that one forensic pathologist be available for every 250,000 persons in a jurisdiction (SWGMDI, 2013). Further, the Committee recommends that each regional forensic autopsy facility staff a minimum of two forensic pathologists to ensure adequate coverage and support. In sum, for each autopsy facility staffing two forensic pathologists, the Committee proposes "a minimum population catchment area of 500,000 population", with the understanding that this is flexible given other factors such as travel distances and death rates (SWGMDI, 2013).

If only population standards are considered, it appears that regions G and H would be unable to meet this standard, as there is not yet NAME accredited autopsy facilities or designated forensic pathologists serving these areas. All other regions potentially have the recommended number of forensic pathologists given their population size. However, it is difficult to ascertain whether each region fully meets the standards recommended above. Further data collection will be needed to determine how many autopsies are being performed in each existing forensic autopsy facility, and how many autopsies are performed by each board certified forensic pathologist. If a forensic pathologist is currently performing more than 250 autopsies a year, it may indicate the need for an additional pathologist in that region. There is a current shortage of board certified forensic pathologists across the nation, and this will need to be considered when recruiting and identifying how to staff the facilities in each region.

Proposed Regions and their Populations	
Proposed Regions	**Population***
Region A	1,073,759
Region B	2,267,783
Region C	2,267,019
Region D	1,106,011
Region E	954,568
Region F	1,216,282
Region G	786,761
Region H	250,393
Total MI Pop	**9,922,576**
*Using 2015 data from the U.S. Bureau of the Census and Michigan Department of Management and Budget, Office of the State Demographer	

Regional Representatives and State Board

It was also recommended that each region be required to elect or appoint a regional representative who will help oversee regional operations, advocate for regional needs, and who will participate on a state board with other regional representatives. Regional representatives could also be responsible for mandating ME and MEI qualifications, trainings and certifications for local ME offices, as these were identified as important needs within the system. The regional representative must be a board-certified forensic pathologist with at least two years of experience; it is also expected that this individual will be a practicing forensic pathologist within the region.

The purpose of the state board is to discuss ME issues as well as system and regional needs, identify system trends and review problem cases, and foster collaboration and support throughout the system. The board will also be responsible for developing a formalized system of regional reciprocity, sharing resources and aiding one another as needed. All in all, the board serves as a means to bring forensic pathologists from across the state together to share expertise and resources, unify the system, and collectively work towards its improvement.

Formation of the Regional System

The workgroup felt that in order to maintain some strengths of the current system it could be beneficial for a small number of counties to be given the opportunity to opt-out of the regional system if they so choose. For a county to opt-out of the regional system, the county must satisfy all of the same requirements of a region: the county must follow NAME standards and be NAME accredited, which includes having a NAME accredited forensic autopsy facility, and must have an ME who is a board-certified forensic pathologist with at least two years of experience. All other regional requirements and participation in the system as a whole would also remain.

Overall, the benefits of a regional system, as outlined by the workgroup, include: pooling of regional resources; improving system quality via NAME accreditation of each region, and easing this process by requiring that only one forensic autopsy facility within each region be NAME accredited rather than each individual county in the state; and fostering collaboration and reciprocity across the system. Other

benefits include retaining local and accessible services with representatives from their region who can consider specific regional strengths and needs.

Creation of a Centralized Leadership Entity or State Medical Examiner

Currently Michigan does not have a mechanism for leadership within the ME system. The workgroup spent the largest proportion of their time discussing the creation of an entity who could foster coordination of standardized practices and data reporting and could advocate on behalf of the system. There was clear consensus for the need for a leadership body or individual to promote standardization of services and collaboration across the state. The leadership body would increase stability of the system, increase standardization of the system, unify all regions in the system, identify gaps in funding and resources across the state, provide support to smaller counties and regions, serve as a national liaison, and increase the ability to find and compete for national funding There were varying opinions on how this leadership and/or oversight can be achieved.

25 other states have adopted a state ME office that provides organizational oversight and leadership, assures standardization and quality of services, facilities and staff, and lobbies for system needs (CDC, 2015). However, the organization and character of each state's ME office varies. Some state ME offices are embedded within a state's public health agency or department of public health (e.g., Maryland, Virginia), some within a state's law enforcement agency (e.g., Georgia, Oregon), some within academia (New Mexico), some are independent or standalone offices (e.g., Florida), and some offices are organized around public-private partnerships or are privately contracted (e.g., Houston, Nashville) (Weedn, 2015).

Funding for this centralized leadership entity will require further discussion, as both options proposed by the workgroup – either a state ME office or independent coordinating body - will likely rely on supplemental funding from the state for support and sustainability. The workgroup discussed additional ways to increase funding to support such an entity, including creation of standardized rates for cremation permits, autopsies, and other ME services.

Roles and Responsibilities of the Centralized Leadership Entity

The workgroup framed the roles and responsibilities of the centralized leadership entity around their previous recommendations and the weaknesses they identified within the current system. The workgroup would primarily like this entity to serve in a supportive and organizational role. There were varying opinions on whether the centralization or possible state ME should have oversight capacity or serve in more of an advisory capacity. There was agreement on the following set of responsibilities of the centralized leadership entity should include:

- Participating on the state board alongside regional representatives
- Serving as a liaison between ME regions and offices, MAME, the state departments and the state legislature
- Strengthen collaboration and communication of MEs across the state
- Work with MAME to promote increased membership, expansion of training opportunities and cross county collaboration similar to the Prosecuting Attorney's Association of Michigan (PAAM)

- Advocating for system needs with MDHHS and legislature
- Handling legislative analyses and impacts
- Developing system budgets and grants, as well as submitting proposals and applying for national grant opportunities to increase funding for the system
- Assisting with challenging ME cases and system issues
- Establishing and overseeing training and qualification requirements for personnel in the system (e.g., MEs, MEIs and FPs)

State Medical Examiner or Advisor

One option discussed to achieve the responsibilities listed above is through an office of the state medical examiner. This recommendation appeared to have the most energy and support around it from the workgroup. It was seen to address the majority of the needs and would be most effective at implementing the previously listed recommendations. This individual could serve in an oversight capacity or an advisory capacity. This individual should be an ABP-certified forensic pathologist with at least two years of experience. The additional qualifications of this individual are still in need of refinement. As mentioned previously, many state ME offices are housed with the state's department of public health. A state office housed within MDHHS could assist in securing additional state funding for system changes. Challenges of a state office housed within MDHHS include the addition of layers of oversight, loss of autonomy by local offices and uncertainty of sustainable funding.

Independent Coordinating Body

Another option was having an independent coordinating body that would work towards achieving the goals and responsibilities outlined above. This would potentially be the Executive Director of a small non-profit like the Michigan Association of Medical Examiners (MAME). This individual would need to have experience and knowledge of grant-writing, lobbying and working with state legislature. An independent office built around MAME could potentially provide more consistent funding than the government through its members, and it already has the trust of its members to lead the group of MEs and MEIs. However, an independent office like MAME does not have as much clout as MDHHS and not all MEs and MEIs within Michigan are members. In addition, the infrastructure does not yet exist to expand their role, and current and future funding stability remains uncertain.

Board of Regional Chiefs

A third option the workgroup explored, as mentioned previously, was that of an advisory or oversight board that would be comprised of representatives from each of the previously discussed regions. Each region would be overseen by a board certified forensic pathologist who would serve on a statewide body that works as a group to coordinate services statewide and ensure standardization of the system.

A hybrid of these options was also explored that drew from the strengths of each system.

Drawbacks

The drawbacks and concerns of the establishment of a centralized leadership entity or oversight body were discussed by the workgroup. Some potential drawbacks of the system include the increased bureaucracy, the possibility that it would penalize regions that are already providing high quality of service, the expense, and the difficulty for the individual serving as leadership representative (e.g., chief

or state ME, executive director of system) to keep up with forensic pathology or continue to be a practicing forensic pathologist.

Suggestions to address concerns include:

- Rotation of the system representative
- Ensure every county has equal representation
- Potentially prohibit the representative from practicing as forensic pathologist while serving
- Do not require the representative to be a forensic pathologist, instead require knowledge and experience with grant-writing, lobbying and other government work
- Adopt a model similar to the Prosecuting Attorney's Association of Michigan (PAAM), which has all counties represented in this independent association, but receives state funds to help support training efforts and continuing collaboration across the state. (PAAM)
- Involve MAME in the process to ensure representation of local MEs and MEIs and voice concerns
- Do not allow regional representatives to serve as state medical examiner or advisor to avoid bias towards own region
- Maintain local ME offices as they are a valuable resource and would maintain the community perspective, or make local ME offices optional
- Create a hybrid model that respects differing populations and demographics across the state by preserving some of the current structure

Cost Assessment

Purpose of the Cost Assessment

As mentioned throughout the report, funding is a barrier to a fully operational and well-functioning medical examiner system. In order to achieve many of the recommendations listed above, additional funds may be necessary. The cost assessment was prepared to articulate how the current system functions as well as how resources are distributed across ME offices and programs in the state. The aim is to identify any gaps or deficiencies in the system and subsequently to aid in possible decisions to improve these conditions. A national workgroup recommended funding benchmarks for a well-functioning ME system. This initial cost assessment attempts to gain a preliminary understanding of where counties are in relation to that funding benchmark.

The 'Regional Autopsy and Death Investigation Center Construction Report' by the System Infrastructure Committee of the Scientific Working Group on Medicolegal Death Investigation (SWGMDI) developed in September of 2013 includes information regarding establishing and maintaining regional medical examiner facilities in the United States. Some of the variables they included were population catchment area, body transport, staffing, and per capita funding. They based their recommendations on NAME standards as a whole and the cost it would require to adhere to those standards. While focusing specifically on per capita funding, the report cites 31 NAME-accredited offices in 2012 that reported adequate or more than adequate facilities and staffing. The average annual funding level for these offices was $3.79 per capita. The Committee concluded that a minimum annual funding per capita of

$3.75 was recommended for regional medical examiner offices—especially for the employment of investigative, autopsy, histological, body transport, and basic radiology services (SGMDI, 2013).

Current Funding Levels

Given that a regional system was recommended and the Committee report establishes a regional per capita benchmark, the data below is displayed to show the current funding levels in the proposed regions. Data on current funding levels was obtained from the Michigan Department of Treasury. The table below displays how the regional per capita cost per death data were calculated.

Regional Per Capita Formula

Per capita ($) =

$$\frac{\textit{Final budgets for all Counties in Region for } 2014}{\textit{Proposed Region population in } 2014}$$

Per Capita per Region in 2014

As displayed in the chart below, none of the proposed regions would meet this recommended benchmark. While pooling of resources would likely allow for more cost effective services, additional funding would still be needed overall to reach the nationally recommended benchmark and achieve a well-functioning ME system.

One additional factor to consider when looking more closely at costs is the types of deaths handled by each ME office. Certain types of deaths will require more testing and more thorough investigations, such as homicides or accidents. The proportion of types of death each county handles could dictate the need for a higher funding level.

Region	Per Capita Budget*
Region A	$1.72
Region B	$3.03
Region C	$2.83
Region D[1]	$2.31
Region E[2]	$1.69
Region F[3]	$1.67
Region G[4]	$1.95
Region H[5]	$1.30

*Based on final county budgets from 2014
[1]Excludes Bay and Midland Counties
[2]Excludes Calhoun County
[3]Excludes Muskegon County
[4]Excludes Charlevoix, Emmet, Kalkaska and Presque Isle Counties
[5]Excludes Baraga and Marquette Counties

Challenges and Limitations

Gathering this data posed some challenges. It was challenging to obtain data from each individual medical examiner office due to low response rates and challenges with the counties ability to obtain the information to provide in response to our requests. Public records, such as annual reports, audits, or budgets, were not always accessible as well. Additional data necessary to conduct a more thorough assessment would include:

- Number of autopsies performed per year
- How frequently body transport exceeds 100 miles (whether this occurs for 10% or less of cases, or if it occurs for more than 10% of cases)
- How many FTE's every office employed
- The size of each facility and autopsy area
- Revenues accrued per county in 2014 from medical examiner services
- Cost recovery % (ME revenues compared to the ME budget)

Funding Structure Options

There were two different models explored to fund the ME system in Michigan. One such model would be associated with a State Medical Examiner Office. This model would be a "top down" funding model where the funding source began at the state and regional-levels, or in which county funding was allocated by the state office. This model was deemed as more stable by the workgroup but would require substantial changes to modify the current system.

A second option is to maintain the current county funding model and bolster the funding where needed to achieve the adequate funding levels necessary to adopt the recommendations listed in the report and maintain/achieve NAME accreditation in each region. This model is viewed as more complicated, as it would require a mix of county funds, state funds, and public and private entities. However, it would maintain the strengths of the current system and just build upon that capacity.

Moving Forward

Over the course of this project, a diverse workgroup of stakeholders provided recommendations to strengthen the medical examiner system in Michigan. The workgroup's recommendations included:

Workgroup Participants

Workgroup Chair: Dr. Philip Croft, Barry Co ME

Dr. Russell Bush – Saginaw/Tuscola Co ME

Jon Campbell, Dana Gill, and Elizabeth Gorz – Michigan Association of Counties

Joanne Catania – Chief MEI WMU

Dr. Stephen Cohle – Kent Co Medical Examiner

Glenn Copeland - Division for Vital Records

Det/Sgt Thomas DeClercq - Michigan State Police

Dr. Joyce deJong – Allegan, Calhoun, Kalamazoo, Muskegon and St .Joseph Co. ME

Chief Darin Dood – Village of Lakeview Police Dept

Dr. Ljubisa Dragovic – Oakland Co ME

Rick Dupon – Former MEI Roscommon Co.

Barbara Faarup and Leslie Johnson– MAME

Ron Frantz and Melissa Powell – PAAM

Dr. Carl Hawkins – Mackinac/Cheboygan Co ME

Cana Garrison – Michigan Funeral Directors' Assoc.

Dr. Brian Hunter – Genesee Co ME

Lt Darin Hunter - Escanaba Dept. of Public Safety Dr.

Charles Iknayan – Gogebic Co Medical Examiner

Dr. Jeffrey Jentzen - Washtenaw Co ME

Sheriff Blaine Koops – Allegan Co Sheriff's Dept.

Jennifer Lixey-Terrill, Shelley Norris-Chapman and Kathy Wahl – MDHHS

Dr. Michael Markey – Eaton, Ionia, Ingham, Isabella, Livingston, Montcalm, Shiawassee County ME

Mary Palmateer – St Clair Co MEO

Dr Mary Pietrangelo and Patricia Rowland - Macomb Co ME Office

Sherriff Tom Reich – Eaton Co Sherriff's Dept.

Elizabeth Reust – Chief MEI for Sparrow FP

Karen Roberts – Criminal Defense Attys. Assoc. of MI

John Shaffer – Mid-Michigan EMS

Dr. Carl Schmidt- Wayne/Monroe County ME

Dr. Dan Spitz – Macomb County Medical Examiner

Wendy Trute - Health Officer, Grand Traverse County HD

training and qualification standards for MEs and MEIs; death scene investigation (DSI) and autopsy standards; standardized data systems and reporting; changes to the structure of the Michigan ME system, including shifting towards regionalization and the development of regional networks; and creation of a centralized leadership entity or state ME office. The workgroup worked diligently and thoughtfully to provide their recommendations. These recommendations should be highly considered by those interested in not only strengthening the current medical examiner system in Michigan, but in improving the overall health and wellness of Michigan communities.

Moving forward, refinement and operationalization of these recommendations will need to continue. Important details and determinations remain, and the workgroup should be provided the opportunity to continue their work. For example, it has not yet been fully determined what the centralized leadership should be, and this recommendation alone will have a significant impact on the structure of the Michigan ME system. In preparation for the continued necessary work, a second phase of the project has been planned. The Michigan Public Health Institute (MPHI) is in the process of applying for additional funding that, if received, will allow for this second phase. Activities in this next phase of the project include: operationalization of recommendations; determining the "home" and composition of the centralized leadership entity; finalizing system regions; hosting regional needs assessment and implementation meetings across the state; developing a plan for standardization of data and reporting, including a plan for a centralized, statewide database; and working with legislators and other stakeholders to discuss implementation of recommendations and changes to the public health code.

Acknowledgements

We would like to thank all members of the workgroup for their time and participation in this process.

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References

Centers for Disease Control & Prevention (CDC) Public Health Law Program. (2014). *Coroner/Medical Examiner Laws*: *Investigations/Autopsies*. Retrieved from http://www.cdc.gov/phlp/publications/topic/coroner.html

Centers for Disease Control & Prevention (CDC) Public Health Law Program. (2015). *Death Investigation Systems*. Retrieved from http://www.cdc.gov/phlp/publications/coroner/death.html

Colorado Coroners Association. (2016). *CRS 30-10-606*. Retrieved from http://www.lpdirect.net/casb/crs/30-10-606_5.html

Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council. (2009). *Strengthening forensic science in the United States: A path forward.* Washington, D.C.: National Academies Press. Retrieved from https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf

Gallagher, D.J. (2011). *Office of the Medical Examiner Performance Audit*. Office of the Auditor, Audit Services Devision, City and County of Denver. Retrieved from https://www.denvergov.org/Portals/741/documents/Audits2011/Medical%20Examiner%20Audit%20Report%2012-15-11.pdf

Hanzlick, R. (2016). *Medical Examiner Systems (With Emphasis on State MEs)* [PowerPoint slides]. Presented February 10th, 2016 during the Analysis of the Michigan Medical Examiner's System Workgroup Meeting.

Hughes, R. & Hanzlick, R. (2014). *2014 National Directory of Full-Time Government, Academic, and Independently-Operated Medico-Legal Autopsy Facilities*. Retrieved from https://netforum.avectra.com/eweb/DynamicPage.aspx?Site=NAME&WebCode=AutFacil

Michigan Department of Health & Human Services (MDHHS), Division for Vital Records & Health Statistics. (2014). *2014 Michigan Resident Death File; Population Estimate (latest update 9/2014).* National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories. Retrieved from http://www.mdch.state.mi.us/pha/osr/deaths/LeadingAgeSpecificCauseTotal2014.asp

National Association of Medical Examiners (NAME). (2014). *NAME Inspection and Accreditation Checklist, Adopted February 2014*. Retrieved from https://netforum.avectra.com/public/temp/ClientImages/NAME/50bd792b-7ad8-4f8b-b0d4-2dbbe5a91f99.pdf

National Association of Medical Examiners (NAME). (2015). *Forensic Autopsy Performance Standards*. Retrieved from https://netforum.avectra.com/public/temp/ClientImages/NAME/56572359-cd17-42f9-9213-10cb190ec95f.pdf

National Association of Medical Examiners (NAME). (2016a). *Inspection and Accreditation*. Retrieved from https://netforum.avectra.com/eweb/DynamicPage.aspx?Site=NAME&WebCode=Accred

National Association of Medical Examiners (NAME). (2016b). *Organization Directory* (search results for NAME accredited organizations in Michigan). Retrieved from https://netforum.avectra.com/eweb/DynamicPage.aspx?Site=NAME&WebCode=OrgResult&FromSearchControl=Yes&FromSearchControl=Yes

Weedn, V.W. (2015). Model Medical Examiner Legislation. *Academic Forensic Pathology, 5*(4), 614-627.

Western Michigan University Homer Stryker M.D. School of Medicine. (2015). *Office of the Medical Examiner Annual Report 2016: Allegan County, Calhoun County, Kalamazoo County, Muskegon County*. Retrieved from http://cms.allegancounty.org/Annual%20Reports/2015%20Medical%20Examiner%20Annual%20Report.pdf

Pearsall, B. (2011, March 3). *Improving Forensic Death Investigation*. Retrieved from http://www.nij.gov/journals/267/pages/investigation.aspx

Scientific Working Group for Medicolegal Death Investigation (SWGMDI). (2013). *Regional Medicolegal Autopsy and Death Investigation Center Construction Report.* Retrieved from http://swgmdi.org/images/si6.facilityconstruction.published.9-17-13.pdf

U.S. Bureau of the Census and Michigan Department of Management and Budget, Office of the State Demographer. (2016). *Michigan Population by County, Selected Years 1990-2014*. Retrieved from http://www.senate.michigan.gov/sfa/economics/MichiganPopulationByCounty.PDF

U.S. Department of Justice (DOJ) Office of Justice Programs, National Institute of Justice (NIJ). (1999). *Death Scene Investigation: A Guide for the Scene Investigator, Technical Update* (NCJ Publication No. 234457). Washington, DC: U.S. Government Printing Office. Retrieved from https://www.ncjrs.gov/pdffiles1/nij/234457.pdf

Appendix

County Population as of July 1st, 2014			
County	**County Population**	**County**	**County Population**
Alcona	10,454	Lake	11,341
Alger	9,459	Lapeer	88,153
Allegan	113,847	Leelanau	21,915
Alpena	28,988	Lenawee	99,047
Antrim	23,267	Livingston	185,596
Arenac	15,353	Luce	6,426
Baraga	8,654	Mackinac	11,042
Barry	59,281	Macomb	860,112
Bay	106,179	Manistee	24,420
Benzie	17,519	Marquette	67,676
Berrien	155,233	Mason	28,824
Branch	43,545	Mecosta	43,186
Calhoun	134,878	Menominee	23,714
Cass	51,608	Midland	83,427
Charlevoix	26,121	Missaukee	15,037
Cheboygan	25,675	Monroe	149,824
Chippewa	38,321	Montcalm	62,893
Clare	30,652	Montmorency	9,300
Clinton	77,297	Muskegon	172,344
Crawford	13,745	Newaygo	47,900
Delta	36,559	Oakland	1,237,868
Dickinson	25,957	Oceana	26,221
Eaton	108,579	Ogemaw	21,039
Emmet	33,204	Ontonagon	6,172
Genesee	412,895	Osceola	23,169
Gladwin	25,411	Oscoda	8,371
Gogebic	15,737	Otsego	24,158
Grand Traverse	90,782	Ottawa	276,292
Gratiot	41,665	Presque Isle	13,004
Hillsdale	45,830	Roscommon	23,955
Houghton	36,495	Saginaw	195,012
Huron	32,065	St Clair	160,078
Ingham	284,582	St Joseph	60,946
Ionia	64,294	Sanilac	41,587
Iosco	25,420	Schoolcraft	8,171

Iron	11,387	Shiawassee	68,933
Isabella	70,616	Tuscola	54,000
Jackson	159,741	Van Buren	75,199
Kalamazoo	258,818	Washtenaw	356,874
Kalkaska	17,394	Wayne	1,764,804
Kent	629,237	Wexford	32,886
Keweenaw	2,217		

Deaths Referred to ME by County of Occurrence, 2014			
County	Deaths referred to ME	County	Deaths referred to ME
Alcona	30	Lake	33
Alger	29	Lapeer	172
Allegan	183	Leelanau	33
Alpena	90	Lenawee	150
Antrim	45	Livingston	297
Arenac	44	Luce	17
Baraga	19	Mackinac	39
Barry	88	Macomb	4,112
Bay	250	Manistee	54
Benzie	28	Marquette	153
Berrien	273	Mason	58
Branch	73	Mecosta	85
Calhoun	340	Menominee	64
Cass	46	Midland	120
Charlevoix	47	Missaukee	13
Cheboygan	63	Monroe	207
Chippewa	107	Montcalm	145
Clare	82	Montmorency	23
Clinton	78	Muskegon	475
Crawford	72	Newaygo	90
Delta	32	Oakland	5,850
Dickinson	20	Oceana	68
Eaton	170	Ogemaw	85
Emmet	138	Ontonagon	26
Genesee	1,251	Osceola	36
Gladwin	63	Oscoda	27
Gogebic	56	Otsego	64
Grand Traverse	220	Ottawa	405

Gratiot	68	Presque Isle	29
Hillsdale	109	Roscommon	73
Houghton	72	Saginaw	584
Huron	97	St Clair	968
Ingham	776	St Joseph	125
Ionia	87	Sanilac	84
Iosco	83	Schoolcraft	26
Iron	38	Shiawassee	145
Isabella	97	Tuscola	86
Jackson	298	Van Buren	133
Kalamazoo	666	Washtenaw	913
Kalkaska	43	Wayne	8,528
Kent	1,422	Wexford	76
Keweenaw	2		33