

**Best Practice Recommendations For Death Investigations From The
Virginia Office of the Chief Medical Examiner**

**Sanisha Bailey, D-ABMDI
Audrey Johnson, D-ABMDI
Bridget Kinnier, D-ABMDI
Medicolegal Death Investigators
Virginia Office of the Chief Medical Examiner
Richmond VA
vdh.virginia.gov
804.786.3174**

**Katherine Kim, D-ABMDI
Medicolegal Death Investigator
Virginia Office of the Chief Medical Examiner
Northern District
703.530.2636**

May, 2013

Introduction

The Office of the Chief Medical Examiner (OCME) is responsible for determining the cause and manner of deaths that occur under certain circumstances. The OCME is similar to a local Coroner's Office; however, the two terms are not interchangeable. Coroners are elected officials whereas Medical Examiners are appointed. This is the most basic difference. From here forward, the two systems will be referred to as ME/C. It is the job of the ME/C to investigate deaths reported to the office to determine whether they fall under their jurisdiction. There are five manners of death which can be investigated by the ME/C: homicide, suicide, accident, natural and undetermined. In general, the following deaths would fall under the ME/C's jurisdiction:

- A death as a result of **trauma** (i.e., gunshot wound, motor vehicle accident, falls)
- A death of a person who is not under the care of a treating physician
- A death of an adult that is younger than middle age, without medical history
- A death of a person who **cannot be visually identified**
- A death of a person related to an infectious/communicable disease or terrorism or within public interest
- A death as a result of overuse of a toxic substance (i.e. alcohol, illicit drugs, prescriptions)
- A death of a child who does not have medical history that could result in death
- A death of a person in custody (i.e. jail, prison, state health facility)
- A death of a person where there is a suspicion of **neglect or abuse**
- A death of a person which is considered **suspicious** for any reason

With every case reported, there is basic information that must be known in order to make a disposition. Please note this is a starting point rather than an all-inclusive list:

- What are the circumstances surrounding the death (i.e. last seen alive and when/how found)?
- What medications have been prescribed? Do the medications appear appropriate, overused, underused?
- Any social history of alcohol or drug abuse?
- What is the decedent's medical history?
- Who is the treating physician? A treating physician is any doctor, physician assistant or nurse practitioner who has seen or prescribed medications within the past year.
- Any suicidal history, ideations?

These preliminary questions, depending on the answers, can lead to additional questions. In the end, the information collectively helps the investigator to determine if the death falls under the jurisdiction of the ME/C.

After a death is reported, the investigator will advise whether the death falls under the ME/C's jurisdiction or is not a case. If the death is not suspicious, the decedent is under the care of a treating physician, and there is documented medical history, the case will be released from ME/C jurisdiction. The decedent can then be

released to the funeral home, and the treating physician is responsible for signing the death certificate. If the death falls under the ME/C's jurisdiction, it will be accepted as a case. For all deaths considered ME/C cases, the remains must be examined by a Medical Examiner or Coroner who will also be responsible for signing the death certificate. There are two types of ME/C cases:

- Deaths that require only an external examination, or viewing and;
- Deaths that require a full postmortem examination, or autopsy.

With most cases, you will be advised whether it is a view or an autopsy at the time of reporting. The ME/C will always attempt to do the least intrusive exam that will allow for accurate certification of the cause and manner of death. Be advised that the disposition is subject to change dependent on new information.

Once the death falls under the jurisdiction of the ME/C, there are a few things law enforcement can do on scene in order to prepare the decedent to be transported to a funeral home or the ME/C office. These specific protocols will be discussed more in the following sections.

After the exam has been completed, additional assistance from law enforcement may be requested. In any death investigation, it is the combination of the ME/C's findings and the law enforcement investigation that will provide the necessary information for the ME/C to certify the cause and manner of death. The ME/C will always request a copy of the official investigative report and any supplemental information that is learned during the investigation. Please also send a copy of your scene photographs to the office. The sooner the photographs and investigative report are received, the sooner the ME/C can certify cause and manner of death.

Some death investigations pose immediate complications and sensitivities that require additional follow up on the part of the investigating jurisdiction. The specifics will be discussed in the following sections as well.

While these are all guidelines to assist with understanding how your ME/C office works, know that they are only guidelines. The goal is for your field investigation to provide the ME/C doing the exam with as much information to determine cause and manner of death. In turn, the ME/C provides law enforcement their exam findings. Not every death investigation is the same, but establishing a general protocol will aid ME/C

investigations. Most importantly, every office operates a little differently and it is imperative you speak with your local offices regarding specific protocols.

Basic Application

While there are many different types of evidence at a death scene, the body is the only evidence that actually falls under the jurisdiction of the ME/C. Please note that the scene is a death scene, not a crime scene. The medical examiner does not determine if a crime has been committed. Crime is a legal rather than a medical classification.

As stated before, not every death falls under the jurisdiction of the ME/C office. Once the ME/C has assumed jurisdiction, there are a few duties that should be performed, prior to the decedent being transported for examination. First, photo document the scene. It is important to get pictures of the body as it was found, along with any pertinent evidence such as weapons, suicide notes, and blood evidence. While these types of evidence do not fall under OCME jurisdiction for examination, they do provide the ME/C with important scene details that might affect cause and manner of death.

When examining the body on scene, pay attention to livor and rigor mortis. Livor mortis refers to the settling of blood that starts almost immediately following death, and it will obey the laws of gravity. Livor can be described as unfixed or fixed. Unfixed livor will blanch white when pressure is applied. Fixed livor will not change regardless of pressure. Describing the color of the livor is also important. In some cases, the color can provide information of the substances the decedent might have been exposed to prior to death. Rigor mortis refers to the stiffening or tightening of muscles after death. The stiffening occurs starting in the jaw and smaller muscles, progressing to the larger muscles and passes in the same fashion.

Also take pictures of the decedent's position, front and back, the hands, front and back, and any trauma. Wear gloves so as not to contaminate the decedent. Do not be afraid to get dirty or touch the body. The more comfortable you are with being around a deceased person, the more likely you are to capture vital information. When in doubt, take a picture. Once disturbed, the scene will never be the same, but if you have useful photographs, it can be reconstructed.

For all ME/C cases, it is best to bag both hands. This ensures that evidence left on the hands will not be lost in the body bag or compromised during transport. If the death involves a firearm, the ME/C may request that the decedent's hands be tested for gunshot residue prior to bagging. If you are unable to do this on scene, simply notify your ME/C and the hands can be tested during examination. In cases where identity is in question, it might be beneficial for law enforcement to fingerprint the decedent on scene. Do not fingerprint at the expense of destroying evidence from the hands. If you are able to print on scene, be sure to process the fingerprints. This will speed up the identification process. Regardless of any extra processing or handling of the decedent's hands, and regardless of the manner of death, both hands should be bagged prior to transport.

In general, the body should be transported "as is" to the ME/C. This includes clothing. Do not remove any clothing at the scene. During the examination, clothing and any defects will be photographed. The clothing can then be turned over to the investigating police jurisdiction as evidence. There are a few items that, if known to be on the body, are exceptions to the rule and should not be transported to the ME/C office. These items include but are not limited to weapons and illicit substances. Weapons pose a danger to the morgue staff and are not necessary for the examination of the body. If the ME/C needs to examine the weapon, and the photographs taken on scene were not sufficient, you will be notified. The ME/C does not test for the identity of illicit substances. Instead, the decedent will be tested for the presence of the illicit substance. Therefore any illicit substance sent will be packaged as evidence and the investigating jurisdiction will need to make arrangements for immediate pick up. If there are any questions about what to send to your ME/C, please contact their office.

After time, death scene investigation procedures will become routine. You will become accustomed to what to look for and what to question. It is usually at this time that an error can be made. Usually a person middle age or older, with natural medical history and a treating physician, does not fall under the jurisdiction of the ME/C. However, it is important to be sure that this decedent does not have any trauma, and all prescription medications of abuse are accounted for. The decedent may have a well-documented medical history, but something else may have contributed to the death.

On the other hand, a scene where there is a lot of blood is not automatically a ME/C case. A person who has been repeatedly stabbed will have a bloody death scene, but so will an elderly person who is taking Coumadin and gets a small cut on the foot. Coumadin is a blood thinner, prescribed for patients who are at risk for fatal blood clots. A small cut, which is not normally fatal, may become fatal because the Coumadin prevents the person from clotting. The small cut will bleed endlessly. This is why it is important to identify and photograph the trauma. Injury from a knife is suspicious, while a small cut on the foot is not.

Scene findings inconsistent with the reported circumstances should also be investigated carefully. For example, a gunshot wound victim that appears to be a suicide due to the suicide note on scene may turn out to be something else if the weapon is out of the decedent's reach or absent from the scene. This should raise suspicions and should be relayed to the ME/C. Also look for evidence of staging or the removal of pertinent evidence to hide the truth. Staging will be more common in homicides or auto-erotic scenes where family found the decedent. Additionally, the location found may be suspicious. Scenes where the decedent is found at the bottom of stairs or in a bathtub should be examined carefully to rule out trauma and drowning, respectively.

In earlier sections of this paper, it was recommended that law enforcement obtain the decedent's medical history. As with the Coumadin related deaths, understanding a person's medical history may explain scene findings. For example, a decedent found on scene with multiple bruises and dark brown blood in multiple locations of the residence may initially seem suspicious for foul play. However, when it is learned that the medical history included chronic alcoholism, the scene findings can be explained. Due to excessive alcohol intake, liver function will decline, making the decedent more susceptible to bruising. Additionally, alcoholics will frequently suffer from gastrointestinal bleeds, resulting in coffee ground color vomit and/or fecal matter.

While death investigation can be routine, it is very important to have a full understanding of the scene, the decedent's medical history, and the expectations of the ME/C. A balance of these three things will ensure that a suspicious death does not miss your scrutiny. Remember, things may not always be as they seem and it is best not to make any assumptions before the death is fully investigated.

Common Difficulties, Problems, Issues

There are certain death investigations that pose immediate complications and require additional information, follow up and special attention to detail on part of the ME/C. Listed below are common examples of such investigations.

Investigating the death of unidentified persons and skeletal remains

The ME/C, with the help of law enforcement agencies (LEA), is not only tasked with determining the cause and manner of death but also verifying the decedent's identity. Regardless of the circumstances surrounding the death, the case will fall under the authority of the ME/C until the decedent has been positively identified. The ME/C will rely heavily on LEA to assist in gathering information that is necessary to establish identification. Crucial information includes a "Presumed to be" (PTB) name in order to gather potential medical/social histories and possible NOK for future DNA comparison, all of which are vital when employing different methods for identification. For example, if a decedent is found without identification, but police believe the decedent is the PTB individual based on circumstances and evidence, the information should be relayed to the ME/C. The following are methods commonly used to identify remains:

- Visual identification or Black & White photograph
- Fingerprint comparison
- Dental comparison
- Radiographic comparison (other than dental)
- Medical intervention/hardware serial numbers
- DNA comparison
- Anthropometrics, circumstances and unique markings

It is important to locate the presumed next of kin or another individual who is familiar with the decedent's medical and social histories. Depending on the protocol of the ME/C, family may or may not view the decedent at the facility. Please contact your local ME/C for further information. Family can also be shown a

black and white photo to confirm identification if the decedent is not overly decomposed and/or has not sustained significant facial trauma.

Another method of identification is fingerprints. Gathering prints from a decedent is not only an easy process, but the preferable route when visual identification cannot be obtained. State systems and AFIS allow for comparison of antemortem (before death) to postmortem (after death) prints of civilians and individuals that have a criminal background.

LEA should try to contact a primary care physician or a dentist if possible. Such physicians may be able to provide x-rays and images that can be helpful in identification through dental or radiological comparison.

DNA comparison is generally a last resort for identification for most if not all ME/C, because it is time consuming and expensive. However, when the previously mentioned methods of ID have failed, the ME/C can use DNA comparison from a living, consenting blood relative. Parents, children and full siblings of the decedent are preferred. In cases of advanced decomposition, it is good practice for LEA to ask the relative for a DNA sample at the time of the initial interview. Typically, a simple swab from the inner cheek from the supposed relative will suffice. Relatives should be made aware that samples will be used only for identification and are not entered into any criminal or civil data base.

If a DNA sample from a living relative has been obtained and is pending comparison, a decedent may be positively identified via circumstances and anthropometrics. Anthropometrics, referring to height, weight, eye and hair color, and distinguishing features, should be obtained on every unidentified case. This antemortem information will be compared with the postmortem findings to determine if they are consistent. Positive identification based on circumstances and anthropometrics pending DNA results are determined by the ME/C on a case by case basis.

While positive identification of an unidentified decedent does require extra footwork, it is necessary. It is critical that we can say, without a doubt, that the decedent is the PTB individual based on methods of identifications and circumstances surrounding the death. Until positive ID can be established, the decedent will remain on hold with the investigating jurisdiction.

It is important to note that investigators from the Coroner's or Medical Examiner's office will gladly visit the scene if requested by law enforcement. Investigators consult frequently with forensic anthropologists, odontologists and pathologists analyzing skeletal remains.

Sudden and Unexplained Infant Death Investigation

The death of an infant that does not have a documented natural disease which can cause death is considered unexpected or sudden. In many cases, infants are perfectly healthy leading up to their death. In such instances, LEA and the ME/C must perform an autopsy to obtain gross findings and cultures in order to determine the cause and manner of death. The ME/C typically requires the bedding, toys, pacifiers or other items found near the decedent at the time of the incident at the exam; once completed, the items are returned to the LEA.

As in every death case, the ME/C requires information surrounding the circumstances of death. In the case of infant deaths, however, LEA must further gather additional information such as prenatal care, if there were any complications during the birth, any subsequent follow-up visits with a pediatrician, sleeping and eating patterns, the infant's developmental stage (gross and fine motor skills) and much more. The SUIDI form created by the Center for Disease Control assists investigators in gathering the necessary information to complete infant death investigations.

Though the SUIDI form is helpful, a scene reconstruction of the events leading to the death is invaluable. A reconstruction allows investigators an opportunity to re-stage the scene and hopefully identify key information that may be difficult to relay verbally. It is important that LEA reach out to the appropriate caretakers early in the investigation, while the circumstances of the death are still fresh in their mind, to see if they would be willing to participate in the reconstruction. While this is not mandatory or required by law, it should be explained to the caretaker that the information gathered during the exercise can provide vital information to the ME/C. The following instances should be reconstructed and photographed: last seen alive, placed and found positions. Special attention to spacing between others, in the case of co-sleeping, items and

the infant should be documented. Additionally, the orientation of the infant's head, nose and mouth should also be documented.

It is always good practice to explain to the caretaker associated with the infant death the importance of the SUIDI form and scene reconstruction. Remember this is a difficult time for all individuals involved in the death and it is important to be empathetic but clear on what is required for the investigation. As a result, it is important that LEA be familiar with the process so that it can go as smoothly as possible. If there is any doubt about how to proceed, do not hesitate to contact your local ME/C.

Innovative Techniques & Future Directions

Death investigations which fall under the jurisdiction of your ME/C office may be cases which would benefit from further analysis. The field of death investigations is one that is full of innovations and technologies. Each specific field has its own set of technological advances, and these advances certainly are vital to determining cause and manner of death. As is evidenced throughout this handbook, it is the ultimate goal of all contributing investigative agencies to effectively work together to assist ME/C investigations. Each separate field will continue to develop new techniques, but it is also very important to rely on the basics. The following is a list of some useful innovative techniques, and ways they can be implemented to assist in a death investigation, but it is by no means exclusive. Many of these resources may be performed by external agencies and not the ME/C office, so be sure to consult your local jurisdiction for further reference.

- DNA Analysis- identification
- DEXIS- dental imaging for making identification
- Facial approximation- ID unidentified remains
- Lodox Scanner- full body x-ray in <13 seconds
- AFIS- Automated Fingerprint Identification System
- Toxicology- confirm RX/illicit drug use, poisoning
- Leica Scanner- 3D laser scanner (can freeze death scene to revisit later)
- Firearms/toolmark comparison

For instance, DNA has become crucial and irreplaceable, but it is through death scene observations and case circumstances that one is able to determine when DNA analysis would be necessary. The actual DNA analysis cannot be performed on scene, so it is important to note what can be preserved on scene for lab analysis

later. There is no replacement for scene sketches, photography and documentation. As stated earlier, photography, especially digital photography, is a great asset to the field of death investigation. It allows investigators to immediately check their scene photos to ensure a scene is fully documented and the photographs are reliable. It also allows agencies to store the multimedia in various ways, which further prevents loss of data or information. However, in the event that technology fails, or is not available, your basic techniques will still be available and extremely reliable.

A bulk of techniques required for death scene investigations are best performed by using four of the five basic senses; sight, smell, sound and touch. Honing these abilities is ideal, as they cannot be replaced by technology. Once you become accustomed to specifics needed to complete a thorough investigation, it will become second nature, regardless of the death scene. In doing so, this should aid you in ensuring that the body and appropriate evidence is not mishandled.

For instance, if you enter a scene and there is an immediate **odor** of human decomposition, this utilizes one of your senses and prepares you for what you should look for next. Once you **see** the decedent, you want to verify if they are visually identifiable, and how extensive the decomposition is. If the decedent is not visually identifiable, you are now able to tailor your investigation to search for dental records, or anything that could serve as an acceptable form of identification. Although it might not always be possible in a decomposition case, it is important to **physically assess** the body for rigor and livor mortis, which could help determine how long a decedent has been there, and if everything is consistent with how the case was reported. During a death investigation, it is important to **listen** to other investigative agencies on scene, or to speak with pertinent individuals to obtain social and medical information, if applicable. This is also an ideal time to observe anything else which might assist the ME/C office in determining cause and manner of death, such as illicit substances, prescription medications, or a suicide note. All of the above mentioned processes are rudimentary and should be supplemented with appropriate technology, such as photography.

The field of death investigations is rapidly advancing. One day it may be possible to run a rapid DNA analysis on scene, or to immediately have the name and address of a suspect confirmed with just lifted

fingerprints. However, possessing the ability to rely on basic investigative and sensory techniques will ultimately prepare you to properly utilize the up and coming technological advances.

Summary

The key to any death investigation is multi-agency collaboration. It is important to develop a working, symbiotic relationship with your local ME/C in order to facilitate all aspects of the investigation and ensure maximum results. Examination and scene findings are equally utilized in determining cause and manner of death; therefore, it is essential that law enforcement agencies understand what constitutes a ME/C case and what information needs to be collected. As a general rule of thumb, any case where manner of death is unnatural or ambiguous will fall under ME/C jurisdiction. Become familiar with your locality's specific protocols and code as they ultimately dictate case disposition. Each death is unique but always keep in mind that the body is evidence, which must be preserved, photographed, and extensively documented within the scene to obtain a true and accurate representation of what happened. Be cognizant of red flags such as drugs/alcohol, empty prescription bottles, inconsistent body positioning or location, potential trauma, and/or unusual circumstances. Certain cases, such as sudden infant deaths and decomposed or skeletal remains, may require additional considerations including scene reconstruction and forensic identification, respectively. Consult your local office for guidance on how to handle follow up for these cases. Although there is continuous development in the field of forensic science, innovative techniques are useless if the body, scene, or evidence is initially mishandled. The situation may not always be what it seems, so it is imperative to consistently practice basic techniques during each death investigation. When in doubt, contact your local ME/C for assistance. Following these guidelines will ultimately result in a successful investigation.

References:

Clark, S.C., Ernst, M.F., Haglund, W.D. & Jentzen, J.M. (1996). *Medicolegal death investigator: A systematic training program for the professional death investigator*. Big Rapids, MI: Occupational Research and Assessment, Inc.

The website for the American Board of Medicolegal Death Investigators (<http://abmdi.org/>).

Office of the Chief Medical Examiner

<http://www.vdh.state.va.us/medexam/>

Central District

400 East Jackson Street
Richmond, Va. 23219-3694
(804) 786-3174
Fax (804) 371-8595

Northern District

10850 Pyramid Place, Suite 121
Manassas, VA 20110
(703) 530-2600
Fax (703) 530-0510

Tidewater District

830 Southampton Ave., Suite 100
Norfolk, Virginia 23510
(757) 683-8366
Fax (757) 683-2589

Western District

6600 Northside High School Road
Roanoke, Va. 24019
(540) 561-6615
Fax (540) 561-6619