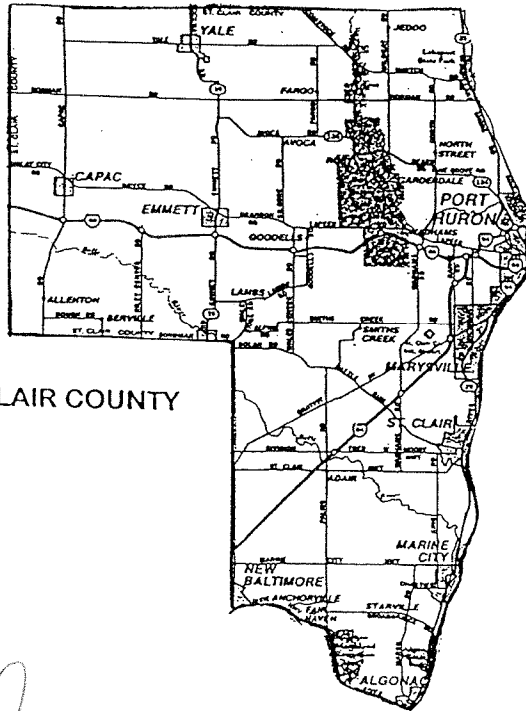


# ST. CLAIR COUNTY MEDICAL EXAMINER

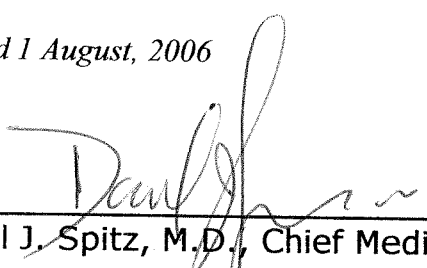
**DANIEL J. SPITZ, M.D.**

## POLICY AND PROCEDURE PLAN



ST. CLAIR COUNTY

*Revised 1 August, 2006*

  
\_\_\_\_\_  
Daniel J. Spitz, M.D., Chief Medical Examiner

*Prepared by: Mary M. Palmateer*

# TABLE OF CONTENTS

<b>INTRODUCTION</b>	I
<b>ADMINISTRATION</b>	
Organization.....	1
Mission.....	2
Approach to Service.....	3
Legal Counsel to Medical Examiner.....	3
Sections of the Department.....	4
Personnel Policies.....	5
Hours of Business, Access to Building and Visitors.....	6
Quality Assurance.....	7
Revenue.....	8
<b>JURISDICTION</b>	
Death Investigation.....	9, 10
Other Investigation.....	11
Duty to Medical Examiner .....	12
Organ Donors: General Policies .....	13
<i>Organ Procurement Agency Agreement</i> .....	13A (TBD)
Unclaimed Bodies.....	14
Federal Jurisdiction.....	15
<b>INVESTIGATION AND AUTOPSIES</b>	
Investigations Generally.....	16, 17
Deaths under MCL 52-202/ 52-203.....	18, 19
Bodies to be Cremated or Dissected.....	20
Bodies to be removed from the State.....	21
Fetal Deaths.....	22
Investigation of Deaths of Indigent Persons.....	23
Autopsies request by Families, physician or Hospitals.....	24
Sudden Unexplained Infant Death Protocol.....	25
Identification of Remains: Routine.....	26
Identification of Remains: Unviewable or Criminal.....	27
Identification of Remains: Unknown Identity.....	28
Scene Investigations: General.....	29
Scene Investigation: Liaison, Inquire and Environment.....	30, 31
Scene Investigation: Examination of Body.....	32
Ancillary Autopsy Procedures.....	33
<b>REMAINS AND EVIDENCE</b>	
Collection of Specimens, Evidence and Property.....	34
Collection of Specimens: Evidence and Property Specific.....	35, 36
Medications.....	37
Transportation of Dead Bodies.....	38

**REMAINS AND EVIDENCE (CONT)**

Remains, Specimens and Evidence: Definitions/Rational..... 39, 40  
Retention and Disposition policy for Remains and Specimens... 41, 42  
Local Retention and Disposition Policies for Evidence/Property.43, 44  
Release of Remains..... 45  
Disposition of unclaimed Remains..... 46  
Disposition of unidentified bodies..... 47

**FILES DOCUMENT AND THE COMPUTER DATASBASE**

File Content: Primary Records..... 48, 49  
Case numbering System..... 50  
Unpending and Amending Death Certificates..... 51  
Standard Letters Sent..... 52  
    Next of Kin letter..... 52a  
    Sudden Unexpected Infant Death letter..... 52b  
    No-contagion letter..... 52c  
    Physician Obligation letter..... 52d  
    Physician letter..... 52e  
Types and Composition of Reports..... 53, 54

**OTHER AGENCIES**

Public Record Law ..... 55  
Public Relations and the Press..... 56  
Tests on dead bodies performed for Rescuers..... 57  
Hospital, Health Department, Police Agencies ..... 58  
The Death certificate and Vital Records..... 59

**EXPOSURE CONTROL PLAN**

Purpose of the Plan..... 60

**MASS FATALITIES PLAN**

General..... 61  
Notification..... 62  
Responsibilities..... 63, 64, 65  
Medical Examiner Response: General Considerations..... 66, 67, 68  
Medical Examiner Response: Aircraft Crash..... 69  
Medical Examiner Response: Large Structural Disaster..... 70  
Medical Examiner Response: Chemical Incident ..... 71, 72, 73  
Medical Examiner Response: Biological Incident..... 74  
Medical Examiner Response: Natural Disaster..... 75

**REFERENCES**

FORENSIC AUTOPSY PERFORMANCE STANDARDS (NAME) .....  
A guide for MANNER OF DEATH CLASSIFICATION (NAME) .....

# INTRODUCTION

This manual is intended to serve as a reference for employees. A *policy* broadly outlines the manner in which we conduct business. A *procedure* describes how something is done. Procedures often describe the means by which a policy is carried out. Policies change infrequently, and must be permanently recorded. In contrast, procedures change to suit the needs of the day, and are issued by the Chief Medical Examiner or Manager of Operations. Records of procedures can be discarded when they are superseded. *Information* in this manual is intended to illuminate the rationale and history behind some of policies and procedures.

## **ADMINISTRATION**

**CHIEF MEDICAL EXAMINER** is a St. Clair County position created by the County Administrator and the Board of County Commissioners (BOCC). The Chief Medical Examiner serves as the Medical Examiner for the entire County of St. Clair under the Statutory Authority of Public Act 181 of 1953. The Chief Medical Examiner must be a licensed physician in the State of Michigan and be Board Certified in Anatomical and Forensic Pathology at the time of hire. The appointment term is a period of 4 years

**COUNTY ADMINISTRATOR.** The Chief Medical Examiner administratively reports to the County Administrator of St. Clair County.

**MANAGER OF OPERATIONS, CHIEF FORENSIC INVESTIGATOR, COORDINATOR** is the administrator for the Office of the Medical Examiner, acts on behalf of the Chief Medical Examiner and is responsible for all aspects of the offices' operations not required by law of the Chief Medical Examiner. This person reports directly to the Chief Medical Examiner.

**DEPUTY MEDICAL EXAMINER** act on behalf of the Chief Medical Examiner with respect to statutory duties in the case of his absence. The Deputy Medical Examiners are appointed by the county commission after receiving recommendations by the Chief Medical Examiner. They must also be physicians licensed to practice in the State of Michigan

**CONSULTANTS** such as forensic odontologists and anthropologists render opinions in the area of their expertise.

**MEDICAL EXAMINER INVESTIGATORS.** The County Medical Examiner may appoint medical examiner investigators to assist the County Medical Examiner in carrying out the duties required by Public Act 181. The County Medical Examiner shall determine the qualifications of the medical examiner investigators, taking into consideration the person's education, training or experience, and shall be solely responsible for determining the duties assigned to the medical examiner investigator.

## **MISSION**

- a. Determine cause of death pursuant to Michigan Public Act 181
- b. Determine the manner of death pursuant to Michigan Public Act 181
- c. Dispose of unclaimed bodies pursuant to statute.
- d. Optimize rate of organ donation
- e. Improve medical care in the community by disseminating findings to medical community and acting as a teaching affiliate to community agencies

## **APPROACH TO SERVICE**

The Department strives to offer customized service to families, funeral directors, physicians, hospitals, law enforcement officers, and attorneys when it can be done without significant extra cost of money or time. If the service is one that would be provided if a commissioner asked on behalf of a taxpayer, it is a service that should be provided when the requestor asks the department, rather than when it has been routed through a commissioner.

The Department strives to foster an environment that encourages learning, and encourages the disseminations of original medical and scientific observations to the medical community. The Department provides lectures to Medical colleagues and community minded service groups.

The Department encourages innovation and the delegation of decision-making power to the lowest level possible.

## **LEGAL COUNSEL TO THE MEDICAL EXAMINER**

The legal representative of St. Clair County Medical Examiners and employees is the County Attorney. The County Attorney is appointed by the Board of Commissioners and the County Administrator and is not to be confused with the State Attorney General.

## **SECTIONS OF THE DEPARTMENT**

The Medical Examiner Department is funded from the Board of County Commissioners, which for practical purposes is a division of the General Fund. The Chief Medical Examiner Reports directly to the County Administrator.

### **A) Pathology Unit**

Chief Medical Examiner (1)  
Deputy Chief Medical Examiner (1)  
Deputy Medical Examiner (1)

### **B) Administrative Unit**

Manage of Operation - Coordinator (1)  
(All positions as follows :)  
Senior Forensic Investigator  
Human Services Manager  
Secretary  
Deputy Coordinator (1)

### **C) Morgue Unit**

Senior Autopsy Technician (1)  
Deputy Autopsy Technicians (3)

### **D) Investigative Unit**

Senior Forensic Investigator (1)  
Forensic Investigator (Law enforcement agencies)



## **Personnel Policies**

See Personnel Files for job description

# Hours of Business, Access to Building and Visitors

## POLICY

1. Administrative matters 7:00 a.m. to 3:00 p.m. weekdays
2. Death Investigation: 24 hours per day, 7 days per week
  - a. The Medical Examiner call schedule runs 24 hrs. per day, 7 days per week
  - b. Cremation Authorization is to be faxed to the Medical Examiner's office; any permit received by **noon** will be signed and returned the same day to the funeral home (**permitting there is no further investigation needed**). Any cremation permit received after noon will be returned the following day. Personal appearance by funeral directors for cremation approval may come at any time but with no guarantee of a medical examiner staff on the premises.
3. The Morgue is located at Port Huron Hospital. We must comply with all hospital regulations in regards to the morgue.
4. The check point for all visitors is as follows: Main entrance to Port Huron Hospital. The reception area will notify the M.E. staff of a visit by contacting us at extension 2126. The M.E. Staff can meet with the family in the lobby area or in the family viewing room located in the Emergency Center.
5. The checkpoint for drivers from funeral homes and body removal services is the back door. Local Funeral Directors all have been issued access codes to enter the building and respond directly to the morgue. All out of town Funeral Homes must have appointment with M.E. office to pick up bodies. (Port Huron Hospital Security Department will allow access to the morgue)

## PROCEDURES

1. The Investigative Unit is staffed 24 hours a day by both MEC and law enforcement agencies. When dispatch is notified of a death a uniformed officer will be dispatched to the scene. The Officer will contact the MEC (Medical Examiner Coordinator) on call and case disposition will be determined.
2. The MEC will determine which body removal service will be utilized.
3. Telephones are answered by the MEC on duty. All after hour calls are answered by the MEC on call.
4. The MEC will determine jurisdiction, consulting with the Medical Examiner by telephone if needed, dispatching the Medical Examiner to the scene if needed, and dispatching the removal service as needed. Pursuant to guidelines in effect at that time.
5. On call Medical Examiner and investigator carry pocket pagers and cell phones when they are not near their home telephone.

# **QUALITY ASSURANCE**

## **POLICY**

**Toxicological testing:** The toxicology laboratory participates in external quality assurance testing programs, as described in the Toxicology Manual.

**Report Review:** Every week the Medical Examiner is responsible for viewing all the reports of the previous week for completeness and effectiveness.

**Condition of Autopsied bodies:** Funeral Directors are invited to comment on the suitability of autopsied bodies for embalming and viewing.

## **PROCEDURE**

**Report Review:** The MEC will provide the Medical Examiner the files from the previous week and the Medical Examiner can review random cases.

**Condition of Autopsies bodies:** All bodies leaving the morgue will be in a sealed body bag.

## REVENUE

### A. POLICY

- (1) *CREMATION*. For investigations of death where the body is to be cremated, shipped out of state, buried at sea or donated for anatomic dissection
  - a. A \$30.00 fee is charged to the funeral director or direct disposer
  - b. The fee is waived occasionally for infant cremations, indigent or hardship circumstances, at the discretion of the Manager of Operations or the Chief Medical Examiner.
  
- (2) *RECORDS*. Charges for copies of public records are as follows:
  - a. \$25.00 for copy of Autopsy report (including toxicology report)
  - b. \$10.00 for copy of toxicology report
  - c. \$10.00 for copy of Medical Examiner Report
  - d. \$10.00 per slide for copies of Microscopic slides
  - e. Special processing fees for large requests

### B. PROCEDURE

- (1) Requests for reports will be processed as received and the report will be forwarded once a request and appropriate payment is made. *(A report may be mailed out with a statement at the discretion of the Manager of Operations or Chief Medical Examiner)*

### C. INFORMATION

- (1) State of Michigan Act No. 368 of the Public Acts of 1978 as amended states Medical Examiners can be compensated for autopsies of child death that meet the following criteria
  - a. Infant death occurring outside of the hospital
  - b. Infant must be less than 12 months old at time of death
  - c. The death must not be caused by trauma either accidental, such as fire auto accident, drowning or homicide
  - d. A death scene investigation must be completed and sent in with the autopsy report
  - e. The State of Michigan Protocols to determine cause and manner of sudden and unexplained deaths must be used.

Each autopsy request that meets these criteria will be reimbursed at \$800.00

- (2) *DAWN* Drug Abuse Warning Network reimburses at the rate of:
  - a. \$500.00 Yearly incentive payment
  - b. \$0.60 per file reviewed and \$3.00 per DAWN case reported

# JURISDICTION

## DEATH INVESTIGATION Under Public Act 181 of 1952 as amended Section MCL 52.202.

(1) *Medical Examiner Cases.* The Medical Examiner shall determine the cause and manner of death in all cases of persons:

- (a) who have come to their death by violence
- (b) death is unexpected
- (c) who dies without medical attendance by a physician, or dies while under home hospice care without medical attendance by a physician or a registered nurse, during the 48 hours immediately preceding the time of death, unless the attending physician, if any, is able to determine accurately the cause of death. "Home hospice care" means a program of planned and continuous hospice care provided by a hospice or a hospice residence the consists of a coordinated set of services rendered to an individual at his or her home on a continuous basis for a disease or condition with a terminal prognosis.
- (d) Dies as the result of abortion, whether self induced or otherwise
- (e) Who is a prisoner in a county or city jail dies while imprisoned, the county medical examiner or deputy county medical examiner, upon being notified of the death of the prisoner, shall examine the body of the deceased prisoner

(2) *Determination of jurisdiction* is the professional assessment by the Medical examiner of where and when the criteria of PA 181 MCL 52.202 apply to a reported death. When the death meets on or more criteria in MCL 52.202 the body is almost always brought in for an inspection or autopsy and the medical examiner issues a death certificate. The usual term for this type of death is *medical examiner case*. If the death does not meet any of the criteria in MCL 52.202 the medical examiner usually will not bring the body to the medical examiner facility for examination and will not issue a death certificate. Although the medical examiner does not usually issue a formal cause of death opinion for these deaths, he or she developed an implied opinion of the cause of death through the process of inquiry. These deaths are often referred to as *jurisdiction declined cases*.

(3) *Geography of Medical Examiner Jurisdiction.* Medical examiner jurisdiction is the county where the death occurs, not the county where the injury occurred. Consequently when a person is injured in St. Clair County, is then treated and dies in another county hospital, medical examiner jurisdiction is in the county where the death occurred and that county may relinquish jurisdiction back to St. Clair County based on the request of the St. Clair County Prosecuting Attorney and the Chief Medical Examiner of St. Clair County.

**Continued. JURISDICTION  
DEATH INVESTIGATION**

- (4) *Who decides jurisdiction.* Investigators in the Medical Examiner Department are authorized to act on behalf of the medical examiner to decide whether jurisdiction exists for regular death referrals. Jurisdiction is not decided by attending physicians, the organ procurement organization or funeral directors.
- (5) *Office Policy:*  
All accidental, suicidal and homicidal death certificates are signed by medical examiners and not by the attending physicians. For example, a death caused by fracture of the femoral neck which is not caused by metastatic cancer, but is caused by impact, is a medical examiner case.

## **OTHER INVESTIGATIONS**

### **POLICY**

(1) *Bodies brought into the state with improper certification.* The medical examiner shall determine the cause of death when any body is brought into the state without proper medical certification.

(2) *Cremation investigations;* The medical examiner shall determine the cause of death when a body is to be cremated, dissected or buried at sea. When a death is referred to the medical examiner under MCL 52.202 the investigative process is commonly but incorrectly termed *cremation approval*. The investigation is usually by inquiry without examination (usually by inspected of the death certificate signed by the attending physician). The inquiry proceeds until one of two end points is reached: the death meets one or more criteria MCL 52.202 and jurisdiction is then accepted, or the death does not meet any of the criteria of MCL 52.202 and jurisdiction is declined (cremation is approved).

(3) *Removal of Bodies from State.* The medical examiner shall determine the cause of death when a body is to be removed from the state for disposition (shipment out of state). As with cremation cases, the investigation is by inquiry without examination of the body unless jurisdiction is found.

(4) *Fetuses.* All fetal deaths are to be reported to the medical examiner if the remains are to be cremated.

(5) *Duties of Medical Examiner Department Outside the Scope of the Medical Examiners Act.*

- a. *Pronouncement of death.* Medical Examiners do not provide pronouncement of death services. When bodies are thought to be dead, Paramedics through local Med Control are customarily summoned by police to determine death. (or for hospice patients a licensed nurse)

# DUTY TO MEDICAL EXAMINER

## POLICY

(1) Duty to report and timeliness of referral.

a. It is the duty of *any person* in the county where a death occurs, including all municipalities and unincorporated and federal areas, who becomes aware of the death of any person occurring under the circumstances described in *MCL 52.202* to report such death and circumstances *forthwith* to the County Medical Examiner. The Medical Examiner Department accepts referrals of death from any person as described in *MCL 52.203*.

b. Hospitals and physicians are not prohibited from providing information or records to the medical examiner by the federal HIPAA (health insurance portability and accountability act) statute: *Coroners and medical examiners. A covered entity may disclose protected health information to a coroner or medical examiner for the purpose of identifying a deceased person, determining a cause of death, or other duties as authorized by law. A covered entity that also performs the duties of a coroner for medical examiner may use protected health information for purposes described in this paragraph* [ 45 CFR 164.512g:(g) Standard: uses and disclosures about decedents].

c. *Liaison with other Investigative agencies.* Law enforcement agencies are required to share information with the medical examiner. “Any evidence material to the determination of the cause of death in possession of the law enforcement officers assigned to the investigation of the death shall be made available to the medical examiner”. It is the duty of the law enforcement officer assigned to and investigating the death to immediately establish and maintain liaison with the Medical Examiner during the investigation into the cause of death. *MCL 52-208*



## **ORGAN DONORS: GENERAL POLICIES**

### **POLICY**

(1) Onset of jurisdiction. For a death occurring in one of the circumstances listed in MCL52.202 Medical examiner jurisdiction and control of the body begins at the moment that death is known to have occurred, regardless of whether the death was determined by cardiorespiratory arrest or by cessation of brain activity. Medical records produced after the point of brain death in the case of a decedent under medical examiner jurisdiction are part of the medical examiner record.

(2) TBD (St. Clair County must enter into an agreement with the ORGAN PROCUREMENT AGENCY OF MICHIGAN).

When permission is requested to proceed with a vascular organ donation the paramount concern of the medical examiner is to save the life of the intended recipient(s).

# UNCLAIMED BODIES

## POLICY

(1) *Jurisdiction for disposition of unclaimed remains:* The County is required in accordance with the Public Health Code (MCL 333.2653) to dispose of unclaimed bodies by furnishing them to one of the Medical Schools in Michigan as follows:

Wayne State University  
(313) 577-1199

Michigan State University  
(517) 353-5398

University of Michigan  
(313) 764-4359

(2) MCL 333.2653 requires the county to:

- a. make a reasonable effort to identify the deceased
- b. Make a reasonable effort to contact the relatives of the deceased.
- c. Ascertain if the decedent was a veteran entitled to burial in a national cemetery
- d. Notify the Medical School within 72 hours of death (excluding Sundays and holidays) of the presence of an unclaimed body.
- e. Make available the following information:  
Name, Age, Sex, Religion, Cause of death, Height, Weight  
Determine if patient had surgery within past 6 months and if the patient has any bed sores and if so what stage.
- f. Notify a benevolent society, requesting notice (Hebrew Benevolent Society. At (248-542-1622).

(3) Costs associated with transport, burial or other actions shall be borne by the benevolent organization taking receivership of the unclaimed body.

(4) If the Medical Schools have a surplus of bodies, or if a body is unfit for dissection, the Medical Examiner can apply to the State of Michigan for funding for burial.

(5) Responsibility for unclaimed bodies in the county where death occurred (not the county of residence)

## INFORMATION

*Jurisdiction over unclaimed bodies.* Like medical examiner jurisdiction, the responsibility for indigent bodies is vested in the county where death occurred or the body was found. Residents of St. Clair County who die indigent in another county are buried by the other county.

# FEDERAL JURISDICTION

## POLICY

### (1) *Assassination of Federal Officials.*

- a. The Federal Bureau of Investigation has investigative jurisdiction that suspends the jurisdiction of local government agencies whenever any of the following are killed.
  - 1) President of the United States, President elect, Vice President, acting President, a person employed in the executive office of the president or Vice President
  - 2) Members of Congress, Member of Congress-elect, head of a department of the federal executive branch, second-ranking official in a department, Director of Deputy Director of the Central Intelligence Agency, major Presidential or Vice-Presidential candidate, Justice of the United States or a person nominated to be a Justice of the United States.
- b. *Other Federal death investigations.* Killing of a foreign official, official guest, or internationally protected person in a crime under 18 USC1116. Local authority is not suspended, and the Medical Examiner will investigate in liaison with federal law enforcement agencies.
- c. *AFIP.* The FBI has a memorandum of understanding with the *Armed Forces of Pathology* to provide pathology services on request. For investigations under 18 USC 1751 and 19 USC 351, the FBI can choose to have the local medical examiner perform the autopsy, or can use the AFIP or any other forensic pathologist of its choosing. The St. Clair County Medical Examiner will cooperate and provide services to whatever extent is requested.

- (2) *FAA inquiries.* Local authority is not suspended, and the Medical Examiner will investigate in liaison with federal law enforcement agencies.

# INVESTIGATIONS AND AUTOPSIES

## INVESTIGATIONS GENERALLY

### POLICY

- (1) A medical examiner shall investigate under the authority of Public Act 181 in order to determine the cause of death and such circumstances surrounding it as are necessary and in the public interest. Such an investigation shall consist of examinations or investigation as the medical examiner shall deem necessary, including but not limited to:
  - a. An examination of the scene of death or injury and physical evidence
  - b. questioning of relatives, witnesses, prior attending physicians, or law enforcement officers
  - c. an examination of the deceased's medical records
  - d. an examination or autopsy of the body, including the testing of specimens and a complete or partial dissection
  - e. such photographs as needed to record the findings.
  
- (2) The following paragraphs concern elements of medical examiner investigations that are conducted by *inquiry*, as opposed to *view*. Inquiries can be conducted at the scene or at the office; in person by interviewing witnesses or investigators from other agencies; or by telephone, depending on the needs of the investigation and the resources of the medical examiner office. Some of the following data is necessary for every investigation, some is necessary only from some investigations. Investigations should be focused to answer the anticipated questions and should include:
  - (3) *Terminal circumstance* (what was the decedent doing just before death?)
    - a. This information may be know by witnesses or inferable from elements of the scene investigation.
    - b. Knowledge of the terminal circumstances help in forming mechanism-of-death opinions (rapid cardiac death vs. slow death by respiratory depression). For example terminal circumstances are well documented for deaths in hospitals generally and intensive care units in particular, but must be inferred for death at home of persons living alone.
    - c. For most deaths is it useful to determine, if possible:
      - Decedent activities prior to death
      - Symptoms or signs of disease prior to death
    - d. For death in ambulance or hospitals, the circumstance can be learned by:
      - Interviewing treating paramedics or physicians OR
      - Obtaining and reading the treatment record
  
- (4) *Medical History*
  - a. The following should be sought:
    - A list of the decedent's disease and operations
    - A list of medications prescribed to decedent
    - Family medical history e.g. premature death by heart disease
    - Initial cardiac rhythm strip or report thereof from terminal event

Continued **INVESTIGATIONS AND AUTOPSIES**

b. Sources of Medical History can be one or more of the following, depending on the on the needs of the investigation

- Inference from list of medications, scars and missing organs
- Interview of family members, friends or neighbors
- Telephone interview of physicians, nurses or paramedics
- Duplicate records of physicians, clinics, hospital or nursing homes

(5) Mental illness history should be sought for specific types of investigations, most notably possible suicides, Elements include:

- Diagnosis of depression
- Suicidal ideation, gestures and attempts
- Psychosis
- Records of treatment and interviews with counselors

(6) Social History: the following elements should be sought in all cases:

- Date of birth of decedent
- Civil Status (never married, married, widowed, divorced)
- Michigan address of decedent
- Permanent address of decedent
- Next of kin name, address and telephone number
- Funeral home for decedent

Selective Elements:

- Alcohol use or abuse
- Drug abuse
- Occupation and employment history
- Daily Routine
- Criminal history
- Swimming ability for bodies found in water
- Training for operation or repair of equipment
- Familiarity with firearms
- Relationships with friends
- Religious and ethnic affiliation
- Education
- Financial history
- Sexual history

# DEATHS UNDER MCL 52.202/3

## POLICY

Notification of a death must be accepted from any person who reports the death.

When a death is reported to the Medical Examiner Department, it is the obligation of the Department to make such inquiry as is necessary to see if jurisdiction exists for an investigation.

On receipt of notification of a death that falls under MCL 52.202/3 a law enforcement agency shall take charge of the dead body and notify the Medical Examiner Department.

When the Medical Examiner Representative has determined that no jurisdiction exists for a death:

The findings and conclusions supporting that determination are recorded in the database.

The person having control of the body is notified of the determination

If the initial determination of no jurisdiction is made by an investigator, the determination is reviewed by a medical examiner with timeliness sufficient to precede the final disposition of the body.

If the Medical Examiner Representative determines that jurisdiction for an investigation does exist he shall:

Discuss the case with the law enforcement agency. If death investigation has not been assigned to a law enforcement agency – contact the appropriate agency and have an MESI assigned.

Assign a M.E. case number

Inform the person having control of the body that the body should not be embalmed or otherwise prepared for burial or disturbed until examined by the medical examiner *MCL 52-204*.

Arrange for the transportation of the body to the morgue facility *MCL 52-205*.

Ensure that the next of kin is notified and that an investigation is being performed. (The contact with the next of kin or attempt to contact shall be documented in the M.E. case file.

Promptly notify the next of kin, authorized funeral home or other representative when the body can be released, provided the identification and location of the next of kin is known.

The investigators will record any spontaneously expressed objections to autopsy from the next-of-kin. The medical examiner on duty will record and give careful consideration to any such objections. Neither an investigator nor a medical examiner will solicit such objections either directly or indirectly from any death that clearly falls under MCL 52.202.

### *Specific questions of Jurisdiction.*

*Unattended death.* : The Medical Examiners act defines an unattended death as anyone who has not been seen by a physician within the 48 hours prior to the hour of death. We must investigate any deaths for which the attending physician refuses to certify on the grounds that the patient has not been seen recently.

*Threat to public health.* If a medical examiner becomes aware of a death apparently from disease, he shall investigate it as a death from a disease constituting a threat to the public health if:

The investigation is requested by an appropriate official of the Department of Public Health.

The medical examiner determines that additional information concerning the cause and mechanism of death, beyond that available in the decedent's medical history is needed to protect the public health.

Asbestosis, mesothelioma and other diseases related to employment. Whether the diagnosis of a work related disease has been made by the decedent's physician during life, or, the family is newly asserting a workplace exposure, jurisdiction is accepted and the body is brought in.

*Deaths in a mental health facility.* A death in a mental health hospital, detoxification unit, or the mental health wing of a general hospital tends to generate suspicion that the death was caused by improper administration of prescribed neuroleptics, by suffocation during restraint, or by intoxication by contraband drugs smuggled into the unit. Such a death should be considered to have occurred in unusual circumstances for the purposes of section MCL 52.202 and therefore requires jurisdiction to be assumed by the medical examiner.

# **BODIES TO BE CREMATED OR DISSECTED**

## **POLICY**

- (1) Not until the medical examiner has autopsied the body, or has determined the cause of death by inquiry, shall the medical examiner relinquish jurisdiction for cremation or anatomic dissection. The medical examiner may, absent information to the contrary; rely on the information on a signed death certificate as being true and accurate.
- (2) A record of each investigation in sufficient detail to allow a review of the circumstances is kept in the electronic database.
- (3) Approval (confirmation of no jurisdiction) is made by the medical examiner representative on call.

## **PROCEDURE**

- (1) The initial report is made to the medical examiner department by the funeral director who faxes the physician's death certificate to the Medical Examiner office (usual practice), or who brings the original certificate and transit/burial permit to the medical examiner office. The later can be done any time during the day; the designated hour when a medical examiner representative shall be on the premises has been established between 7:30 a.m. and noon. (On Fridays, arrangements must be made in advance for cremations that will be needed past noon).
- (2) The investigation is usually limited to having the on-call medical examiner representative read the physician's death certificate and telephonically follow-up as necessary.
- (3) Approval is indicated by signing and dating the space on the faxed certificate reserved for medical examiner signature
- (4) Telephone notification to the funeral home of approval to cremate is made by administrative personnel. Notification that the body is to be brought in for examination is made by a medical examiner representative.
- (5) Cremations approvals are done on weekdays only between the hours of 7:30 a.m. and Noon there are no exceptions for these times during the week. Exceptions are made on Friday or in the rare occasion weekends only on special request of the funeral director.
- (6) Copies of the cremation approval are taken to the county clerk's office and the cremation fee is paid directly to the clerk's office.



# **BODIES TO BE REMOVED FROM THE STATE**

## **POLICY**

- (1) Approval (confirmation of no jurisdiction) request for further information or acceptance of case is made by the medical examiner on call.
- (2) Investigation of bodies to be shipped out of state takes priority over in-house cases. If medical history cannot be confirmed in a few hours, immediate autopsy may be necessary to help a funeral director meet a booked flight.

## **PROCEDURE**

- (1) The referral is made by the funeral director who faxes or brings in a copy of the death certificate.
- (2) The investigation is usually limited to reviewing the cause of death on the signed death certificate.
- (3) Notification to the funeral home of approval to transport is given directly to the funeral director or faxed to the funeral home. Notification that the body is to be brought in for examination is made by medical examiner representative.
- (4) Ship-out approvals are processed in the same manner as cremations. Special arrangements are made for weekends per the request of the funeral director.

# **FETAL DEATHS**

## **POLICY**

- (1) The Department investigations selected fetal deaths as a courtesy to law enforcement agencies, physicians and hospitals.
- (2) Fetal deaths are investigated by this department if:  
the stillbirth is unattended, OR  
the death is being investigated by the police
- (3) All fetuses that come to the medical examiner office are autopsied unless the next-of-kin objects AND there is no criminal investigation
- (4) Fetuses over the gestational age of 20 weeks require a fetal death certificate.
- (5) To qualify for a medical examiner case number, a fetus must be delivered while the mother is alive. (a fetus which dies when the mother dies and which is removed at autopsy, does not need a fetal death certificate). Such fetuses are considered to be part of the mothers' remains.

# **INVESTIGATION OF DEATHS OF INDIGENT PERSONS**

## **POLICY**

- (1) The county provides body storage and death certificates for indigent decedents.  
Once an indigent body has been brought to the Medical Examiner facility, it is processed in the same manner as bodies brought in pursuant to statute. If no medical examiner jurisdiction exists pursuant to MCL 52.202 the medical examiner conducts an inspection of the body and provides a death certificate
- (2) If no next-of-kin is available refer to section on “UNCLAIMED BODIES” and follow appropriate procedures.
- (3) If next of kin is available and there is lack of funding the family is referred to St. Clair County FIA for burial assistance.
- (4) Funeral directors on occasion pick up a body, later assert that the family has no funds for burial and seek to bring the body to the medical examiner facility. The County takes the position that it does not exist to indemnify funeral directors for bad business judgments, but in practice works with the funeral directors on a case-specific basis to avoid traumatizing the families.
- (5) The medical examiner department will not accept the return of bodies previously released from the department. Adequate time is available to complete financial arrangements prior to picking up the body from the refrigerated storage of the Medical Examiner Department. Subsequent difficulties are between the family and the funeral director or direct disposer.

## **AUTOPSIES REQUESTED BY FAMILIES, PHYSICIANS OR HOSPITAL POLICY**

- (1) If the family alleges that a decedent was poisoned by illicit drugs or abused in a nursing home, then the M.E. will take jurisdiction without making any judgment as to the validity of the suspicions held by the family.
- (2) *Request by family, body in a hospital, family unhappy with care. (QUALITY OF CARE CASES)* Medical Examiner will **NOT** perform the autopsy. Jurisdiction will be declined (*unless the case falls under circumstances in MCL 52.202*) Investigators should tell the family members that the hospital has pathologists, and suggest that they ask the attending physician to request an autopsy through the hospital pathology department. It is permissible to state that private pathologists are available and numbers can be found through the telephone directory.
- (3) The Chief Medical Examiner will not perform private autopsies on declined medical examiner cases.
- (4) *Request by family, body in nursing home not indigent.* Medical examiner will not perform the autopsy. Jurisdiction is declined. It is permissible to state that private pathologists are available and numbers can be found through the telephone directory.
- (5) *Request by family, body not at Medical Examiner officer, not in institution.* Autopsy at **discretion of Chief Medical Examiner.** Investigators will refer all such requests to the medical examiner
- (6) *All requests by hospital risk managers or physicians.* The referral should be handled personally by the on-call medical examiner.

## **INFORMATION**

*All requests by hospital risk managers or physicians.* Some physicians simply want an autopsy and do not realize that the hospital pathologist can provide the service. Some physicians think that all cases of therapeutic complication are medical examiner cases. Some cases are of no public interest, but the physician or hospital is nervous because of the high profile of the death. We have the option of bringing in any case where the death is related to a therapeutic complication by using the umbrella of "accident". We also have the option of not bringing cases where the death is from severe disease, and a minor therapeutic complication merely hastened an otherwise inevitable death. Such deaths are best considered natural. In some cases we will accept jurisdiction merely to foster goodwill with the physician or hospital. All the foregoing considerations require the personal involvement and judgment of the on call Medical Examiner.

# **SUDDEN UNEXPLAINED INFANT DEATH PROTOCOL**

## **POLICY**

(1) The state of Michigan mandates that a scene investigation, review of medical history and an autopsy must be done in order to classify a death as “SIDS”. *MCL 52-205a*

(2) “SIDS” is defined as the sudden death of an infant less than one year of age which remains unexplained after a negative thorough case investigation, including performance of a scene investigation, complete autopsy, and review of the clinical history. SIDS deaths are considered natural deaths.

(3) *Scene investigation.* The medical examiner investigating a potential SIDS case must be familiar with the place of discovery of the infant in terms of sleep site, bed clothes, position at the time of discovery, sharing of the bed with others, and environmental hazards such as fumes or extreme temperature hazards. Familiarity with the scene may be determined by personal inspection of the part of the medical examiner or by a police investigator. The results of the scene investigation must be included in the medical examiner case file. The diagnosis of SIDS should not be made if it is apparent that a hazard such as overlaying by an adult, fall from bed, suffocation from dangerous coverings or other environmental hazards played a role in the death.

(4) *Circumstantial Investigation.* The clinical history review shall attempt to include determination of prenatal, delivery and postnatal medical information relevant to a proper diagnosis of SIDS and should include history of familial disease, mental illness and social setting pertinent to exclusion of illnesses or child abuse.

(5) *Michigan Department of Consumer and Industry Services (Protective Services).* Upon notification of an infant death the Medical examiner investigator should contact the Department of Children and Family services which agency is required to furnish to the medical examiner information in its records of abuse or neglect of children within the family or family setting.

(6) *Autopsy.* An autopsy is necessary whenever an infant death is under investigation as a potential SIDS. The gross narrative shall consider external features including integrity of all orifices, status of internal organs and tissues and hollow viscera content. Serosal and membrane petechiae and presence of absence of blood clot in the heart and great vessels should be mentioned. A skeletal X-ray survey and appropriate photographs are part of the protocol. Histological slides should include major viscera sufficient to exclude readily diagnosed diseases. Bacterial cultures and viral cultures should be performed when needed to document or exclude suspected infectious agents. Appropriate tissues and fluids should be preserved for toxicological study when indicated. The brain should be fixed for dissection. A sample of blood is taken for specific screening.

(7) *Follow Up.* As soon as the diagnosis of SIDS is made, the public health unit must be notified and furnished the names and addresses of the parents or guardians.

## **IDENTIFICATION OF REMAINS: ROUTINE**

### **POLICY**

- (1) *Evidence acquisition.* The medical examiner department shall be aware of all clothing and evidence pertinent to the identification of an unknown body, by means of:
  - Taking custody of items on or near the body at the scene, and
  - Maintaining photographs and records of such evidence and of the body
- (2) *Fingerprints.* All bodies needing to be fingerprinted will be done by the investigating law enforcement agency.
- (3) *Photographs.* In **ALL** cases Polaroid and digital photographs of the face are obtained.
- (4) *Presumptive Identification.* Also known as *putative or non definitive identification.* Presumptive identification, which rests on the judgment of the police officer at the scene, or on hospital identification, is acceptable for viewable bodies when the death is not caused by criminal agency (most natural deaths suicides and accidents.) including bodies for which there is no initial putative identification.
- (5) *One body per van.* The body removal contractor is permitted to remove more than one body in one trip only with the permission of the on-call medical examiner or Manager of operations.

# IDENTIFICATON OF REMAINS: UNVIEWABLE OR CRIMINAL POLICY

- (1) In the case of apparent criminal homicide, the medical examiner shall take all actions necessary so that he can testify to the identity of the deceased.
- (2) *Definitive* identification. Definitive identification of a body is required before release of the remains when the death is by *criminal agency*, the body is *un-viewable* by putrefaction or wounds, or the decedent used an *alias*. Viewable bodies from small (four for fewer bodies) *multiple fatality incidents* require definitive identification when they are of the same race, sex and general age range (child, young adult, elderly). An investigator may opt to definitively identify all viewable victims from a small multiple fatality incident. Definitive identification is required for all bodies form large multiple fatality incidents.
- (3) Exceptions. Exceptions to the policy on definitive identification are made only by the Chief Medical Examiner. A common exception involves decedents who were viewable on admission to the hospital but who subsequently became un-viewable from edema fluid.
- (4) Agents making identification. Medical Examiners should differentiate among:
  - Decedent identification made to hospital employees. All such identifications must be regarded as presumptive even if the method identification is by itself definitive.
  - Decedent identification made to agents of the medical examiner, is regarded as definitive if the method of identification is definitive.
  - (Note- the body identified at the hospital or the scene may not be the body transported. In a non-criminal case, a body rendered un-viewable by edema, which developed subsequent to admission, might be reasonably identified for routine office proposes by the hospital identification bracelet placed at the time of admission, if identity was reasonably ascertained at the time of admission)

## PROCEDURE

- (1) *Definitive Identification*: Acceptable means of definitive identification include:
  - Family members identify by view of remains or photograph of face
  - Comparison of antemortem and postmortem somatic radiographs
  - Comparison of antemortem and postmortem dental records and radiographs
  - Fingerprints
  - DNA
  - Dental Records

# **IDENTIFICATON OF REMAINS: UNKNOWN IDENTITY**

## **POLICY**

(1) The body shall be identified as soon as possible. If necessary to make identification; the medical examiner shall determine and record the following information:

- A detailed physical description, including a clothing and personal effects inventory
- Complete skeletal x-rays
- Thorough dental charts and x-rays
- blood groupings
- Fingerprints

(2) Exclusion of identification. Examples of examinations used to narrow the field of putative decedents or to exclude decedents include:

- Description of personal effects
- Anthropological examination for physical traits such as length, age, sex and race

## **PROCEDURE**

(1) Law enforcement Notification: The investigating law enforcement will enter the information regarding the deceased into LEIN.

(2) When an unidentified body is not identified until after the autopsy report is signed will be manually edited by lining out the word "unidentified" writing the decedent's name nearby and initialing and dating the change. No new report is created.



# SCENE INVESTIGATIONS

## POLICY

- (1) *Police at scenes.* In St. Clair County it is the custom and the policy of all law enforcement agencies and the medical examiner office to have police respond to all death scenes unless the death is attended by a qualified Hospice agency. A police officer trained in death investigation will act as the “eyes and ears” for the medical examiner.
- (2) *Scene Response by Medical Examiner Representative.* The Medical Examiner Department is most commonly represented on death scenes by the MESI (Medical Examiner Special Investigator) of the investigating law enforcement agency. An MESI must be present on all suspected Suicide, Homicide, Accidental and Non-natural death scenes.
- (3) *Scene Response by M.E. Coordinator.* The MEC will respond to any scene when requested by an MESI (most commonly all Homicide and Child death scenes.)
- (4) *Scene Response by Chief Medical Examiner.* The Chief Medical Examiner will respond to any scene when requested by the MEC. (Homicide scenes and deaths in custody).
- (5) Hospice agencies must complete the Medical Examiner paper work; report the death and obtain a medical examiner release number prior to releasing the body to the funeral home. If any questions on the medical examiner sheet are answered yes a MESI may be requested to respond to the scene. Usually police officers do not respond to hospice deaths, if requested by either the hospice nurse or the family a MESI will respond.

## **SCENE INVESTIGATION: LIASION, INQUIRY AND ENVIRONMENT**

### **POLICY**

- (1) A report of scene investigation by a medical examiner investigator must include the following information
  - A summary of any background information provided by witnesses
  - An account of further inquiries conducted by the investigator
  - A description of the physical environment in which the body lies or injury occurred
  - A description of the inspection of the body
  - A description of evidence and personal effects recovered by the investigator and impounded by law enforcement
- (2) *Reports.* Report of scene investigation should be dictated as soon as possible preferably at the scene or prior to the autopsy.
- (3) Law enforcement has the overall control and responsibility for the scene while the Medical Examiner has jurisdiction of the dead body at the scene. For scenes involving environmental hazards, the fire department is in charge until the hazard has been brought under control.
- (4) Hazardous scenes. If a scene is hazardous, the investigator and medical examiner should delay their arrival until the hazard has been reasonably mitigated.
- (5) Unmarked Graves. If the medical examiner determines that human remains constitute an unmarked grave that is probably more than 75 years old, and that the remains involve no legal investigation, the medical examiner must cease further disturbance of the site and discuss the case with a St. Clair County Prosecutor.

### **PROCEDURE**

- (1) Procedures for scene investigation are as follows but not limited to:
  - Document the time and date of arrival and the location of the scene
  - Documentation the following
    - The date and time the decedent was last know to be alive
    - Time the decedent was found dead or was witnessed to die
    - Name and relationship of person who found deceased
    - Terminal circumstances
    - An account of what objects have been added to or subtracted from the scene or moved or searched, whether windows were opened; whether air conditioning / televisions/ lights etc. were turned on or off by responders
  - Wear gloves and foot covers when deemed necessary
  - Investigate by inquiry
  - Tour the scene to learn the location of relevant physical evidence
  - Photograph the general scene and the body in the position it was found
  - Interview witnesses as needed to develop medical history and circumstances of the death

- Document the weather and general temperature at the time of the scene investigation and when needed for the preceding day encompassing the estimated postmortem interval
- Document by writing and photographing the location of the scene and the general physical environment.
- Inventory medications; the medical examiner assumes responsibility for impounding the medications.
- Assure that an identification tag has been placed on the body or the body bag
- Arrange for removal and transport of the body. For cases where fiber evidence is sought wrap the body in a clean white sheet and then place body in the body bag.
- Law enforcement officers should take possession of all valuables or personal effects by logging them in using their department policy.
- Arrange to remove all personal equipment from the scene including used gloves, feet covers and film packaging.
- Decide how definitive identification might be achieved, so that search of exemplar fingerprints, a treating dentist, or somatic radiographs, if required, can be undertaken promptly
- Inform family that an investigation of the death and examination of the body will be conducted by the medical examiner; what reports might be available to them; when the body will likely be released and what support agencies are available.
- Fill out the MESI report form and send the “*pink*” copy with they body to the morgue or funeral home.

### Other procedures

*Hospice cases:* The Hospice nurse at a scene provides a copy of the Medical examiner “*pink*” form to the funeral home when picking up a body. Funeral Homes do not have the authority to remove a body from a scene without the proper paperwork. Upon arriving at a scene and finding no paperwork the Funeral Home Representative is required to contact the Medical Examiner Department to receive permission to remove such body.

# SCENE INVESTIGATION: EXAMINATION OF BODY

## POLICY

- (1) Procedures for body examination are to be documented by photograph or writing:
  - The position of the body (supine, prone, lateral recumbent, etc)
  - Any pertinent patterns or fluid drainage or spatter, trace evidence, weapon locations or derangement of clothing
  - Items placed in police custody
  - Evidence of animal or insect predation
  - Evident of insect activity or the presence of animals which may have had access to the body
  - Putrefaction, mummification, skeletonization or other pertinent postmortem changes
- (2) Search for and remove trace evidence such as fibers, if indicated before removing clothing and jewelry.
- (3) In cases where trace evidence is critical:
  - Roll the body onto a new white sheet during the examination of the body
  - Leave the clothing on for later examination at the autopsy facility
  - Placing paper bags on the hand and feet
- (4) Law enforcement agency is the impounding agency and originates the property receipt
- (5) Determine:
  - The presence or absence of rigor, if present, determining whether it is oncoming, full or passing and whether it is consistent with the position of the body
  - The presence or absence of livor and is it unfixed, fixed or putrefying and whether it is consistent with position
  - The presence or absence of algor, by palpation
  - The presence of wounds, if possible with preliminary observations, detailed wound description at the scene is unnecessary

# ANCILLARY AUTOPSY PROCEDURES

## POLICY

### (1) *Radiography*

- a. *Unviewable bodies: Charred or decomposed.* AP radiographs of the head, neck, chest abdomen and pelvis are prepared before the autopsy on all un-viewable bodies
- b. *Victim of blunt Impact:* Only on the request of the on call Medical examiner
- c. *Victims of stab wound to the neck or head:* AP Chest radiographs for the purpose of detecting venous air emboli of the heart are prepared before autopsy on all victims of penetrating trauma of the head or neck, who are dead at the scene or who never regain pulse or respiration before being pronounced dead in the emergency room
- d. *Gunshot wounds.* AP x-rays are taken of all body regions involved in gunshot wounds or other penetrating wounds such as knife wound. If a bullet or foreign body is found a lateral film is also taken.
- e. *Infants.* Total body radiographs are taken of all infants.
- f. *Laterality.* Each radiograph must be labeled with the case number and a right left designation.

### (2) *Toxicology*

- a. Specimens for toxicology will be drawn at all autopsies. Standard specimen collection at autopsy includes but is not restricted to heart blood, peripheral blood, bile, urine, ocular fluid, gastric contents, liver and brain. Most of the blood containers have fluoride preservative
- b. A blood sample will be distributed on a FTA Card for future DNA testing, the card is to be placed in the appropriate storage pouch and kept with the file.
- c. When stomach contents are retained for toxicological analysis, the total volume should be measured and recorded.
- d. Samples are forwarded to National Medical Services for processing.
- e. A urine drug scene dip can be done in the morgue for immediate results when requested by the on-call Medical Examiner

### (3) *Histology Specimens*

- a. Tissue samples from major organs should be preserved in formalin.
- b. The extent of histological examination is left to the discretion of the medical examiner

### (4) *DNA Testing*

- a. If such testing is indicated, blood samples for serologic or DNA testing should be collected as anticoagulated specimens or as air dried samples. If decomposition is advanced, bone marrow, teeth, or hair may be used. Turn these samples over chain-of-custody to the Michigan State Police Crime Lab.

# REMAINS AND EVIDENCE

## POLICY

### *Collection of Specimens, Evidence and Property: GENERAL*

- (1) The medical examiner shall seize such physical evidence as shall be necessary to determine the cause and manner of death, presence of disease, injury, intoxication and identification of the deceased, or to answer questions arising in criminal investigation and shall label, prepare, analyze, examine and catalog such evidence as needed.
- (2) General Procedure
  - Specimens and evidence must be:
    - Collected to avoid contamination
    - Collected into clean containers adequate to hold solids, liquids or foreign bodies as required
    - Properly preserved in a secure area if not immediately released to law enforcement or the crime laboratory
    - Containers should be labeled with the following minimum information: Name and case number; type of sample collected
    - Containers for non-specimens evidence, and containers for histology and toxicology specimens collected at a time other than the stated time of autopsy or not by the autopsy pathologist should be additionally labeled with: date collected; initials or other identifier of person collecting specimen
    - Evidence collection must be documented by database inventory.

### *Collection of specimens, Evidence, and property*

- (1) Responsibility for Specimen/Evidence Collection at Autopsy: Some evidence collected at the autopsy will be retained by the medical examiner while other evidence will be turned over to the law enforcement agency - Collaboration and cooperation between the medical examiner and law enforcement investigators is mutually beneficial. Following are examples of evidence that may be collected: (*but not limited to*)
  - Blood for serology in all homicides
  - Bullets, shot and wadding from autopsy in all firearm cases, fresh or remote
  - Rape kit at discretion of medical examiner
  - Hair and fingernail exemplars in strangulation, bludgeoning and all other homicides
  - Specimens for toxicology, histology and blood for the crime lab are collected and labeled in accordance with the *instructions* in the *Morgue section chapter on Handling of toxicology and histology specimen*.
  - Fibers and paint chips
  - Hair exemplars in traffic deaths when requested by police
  - Blood spot on filter paper for retention in file for possible later DNA testing
  - Clothing and other personal effects
  - Large implements and ligatures accompanying or on the body
  - Items impounded at the scene as toxicological evidence, such as baby feeding bottles, baby formula, suspicious substances, poison, peanuts, air duster cans, etc.
  - Fingerprints

## COLLECTION OF SPECIMENS, EVIDENCE AND PROPERTY: SPECIFICS

### POLICY

- (1) Labeling of dry evidence
  - For any evidence that goes in a paper collection envelope, the person who collects the evidence signs the front of the envelope with name or initials
  - Evidence tape is used to seal envelopes
- (2) Labeling of wet evidence
  - Specimens for toxicology, histology and blood for the crime lab are labeled in accordance with the *instructions* in the *Morgue section chapter on handling toxicology and histology specimens*.
- (3) Clothing
  - Clothing should be removed carefully without unnecessary tearing or cutting and inventoried along with personal effects. Described in detail sufficient to correlate with wounds and provide evidence for identification when necessary.
  - Clothing from hospitalized decedents: In selected cases at the discretion of the medical examiner, investigators arrange for clothing removed in a hospital to be brought to the medical examiners office for examination
  - Clothing from Decedents dead at the scene. Autopsy technicians remove clothing from victims of homicide only after it has been examined by the medical examiner. Autopsy technicians remove clothing from victims of apparent natural death before examination by the medical examiner. In other cases, the autopsy technician only removes clothing with the permission of the medical examiner.

### PROCEDURE

- (1) *Labeling of toxicology specimens.* The labeling is ordinarily done by the technicians. For specimens taken by the medical examiner, the label is checked by the medical examiner at the time the container is filled. Technicians are responsible for the correctness of labels on specimens they take (peripheral blood and nasal swabs)
- (2) *Specimens of Tissue and Body Fluids.* Unfixed tissue and body fluids must be refrigerated as soon as it is practical.
- (3) *Dried blood specimens:* Autopsy technician label paper with case number and drip the blood onto the paper, the paper is then dried and packaged in the appropriate envelope.
- (4) *Scalp Hair Exemplars:* In cases of homicide by bludgeoning, strangulation or any modality involving victim-attacker contact; and in cases of suspected sexual assault, samples of scalp hair are collected by plucking representative hairs from several areas of the scalp, especially adjacent to wounds. The hairs are folded in a sheet of paper, placed in a labeled evidence envelope, and voucher to police for transport to the crime lab.
- (5) *Pubic Hair Combing.* In cases of suspected sexual assault, pubic hair is lightly combed and the collected loose hairs are placed in a folder paper, and then in a labeled evidence envelope for transport to the crime laboratory. ( Pubic Hair Exemplars - In cases of suspected sexual assault, samples of pubic hair are collected by plucking AFTER the collection of combed hairs. The pubic exemplars are packaged separately from the combings).

Continued **COLLECTION OF SPECIMENS, EVIDENCE AND PROPERTY: SPECIFICS**

- (6) *Swabs of Body Orifices.* The mouth, vaginal vault and rectum are swabbed with dry cotton swabs. The samples are allowed to dry, then separately packaged in labeled evidence envelopes for transport to the crime lab.
- (7) *Rape Kit.* A rape kit consists of evidence envelopes swabs and a comb, for the collection of scalp and pubic hair exemplars pubic combings, and swabs of the mouth, vagina and rectum.
- (8) *Fibers and Trace Evidence.* In a case in which fiber evidence may be important, use directed lighting at the scene to collect all identifiable significant fibers on presenting body surfaces and hands before the body is turned. Turn the body onto a clean, new bed sheet and search the newly exposed surfaces for fibers. Bag the hands with paper bags; wrap the body in the sheet for transport. At the autopsy room, unwrap the sheet, remove the bags, re-examine for fibers, collect same, and save the sheet as an evidence item.
- (9) *Arson and Toxic Gases.* When requested by the Fire Marshal -place clothing, one lung and esophagus into clean #10 metal can with lids. **Never put these items into plastic bags.**



# **MEDICATIONS**

## **POLICY**

- (1) Policy on impounded medications serves two purposes: integrity of the chain of custody and reduction of the risk of misappropriation of controlled substances.
- (2) Medications are controlled by:
  - MESI counting and destroying medication on scene when the death is natural and body is being released directly to the funeral home
  - MESI taking possession of medication by placing them in a sealed transport bag and logging them in as evidence through their departmental procedures.
- (3) When medications are confiscated they are retained beyond the day of receipt only until the cause of death has been determined or at the specific direction of the medical examiner.
- (4) Medication can be destroyed by flushing down the drain after the appropriate document has been done.

# **TRANSPORTATION OF DEAD BODIES**

## **POLICY**

- (1) Employees of the Medical Examiner Department and the drivers for the body removal contractor must conduct themselves in a manner which indicates respect for the remains and for the families of the dead.
- (2) One body per van, unless a specific exception is granted by the medical examiner (see identification section)
- (3) No valuables are transported
- (4) In cases of homicides, the body is to be placed on a new unopened sheet for use in wrapping bodies in which fiber evidence is sought. Use of the sheet is at the discretion of the medical examiner.
- (5) The contractor providing removal of dead bodies must use clean vehicles. Repairs and scheduled maintenance of transport vehicles are the responsibility of the contractor
- (6) Non-indigent bodies not referable under MCL 52-202 are brought in only if the body is not at a hospital or nursing home, and the intent is to relieve the police patrolmen at the scene.
- (7) The organ procurement organization is **NOT** permitted to return two bodies to the Medical Examiner Department in the same vehicle.
- (8) Body transport agencies enroute to the morgue should contact Port Huron Hospital Security to get access to the morgue. The body should be logged in the morgue log book with the name of deceased, the number from the body bag lock (which must also be documented on the MESI report and the EMS report), time of arrival at morgue and persons signature who is delivering the body. Any paper work the agency obtained from the MESI on scene should be left in the medical examiner drop box in the morgue.

# REMAINS, SPECIMENS, AND EVIDENCE: DEFINITIONS AND RATIONAL FOR RETENTION

## POLICY

(1) *Definitions*, The following definitions apply to this section

- “body part”. The entire head, and entire extremity, a portion of an extremity that includes a hand or foot, or the torso, of a dead human body. For human skeletal remains a body part is defined as a nearly complete skull, or most of the bones or extremity, or most of the bones of the torso.
- “Organ”. An entire internal viscus, such as a brain, heart, larynx, lung, stomach, or uterus of a dead human body.
- “Tissue”. A representative sample of a body part or organ, constituting a minority of the volume or mass of the part or organ
- “Embedded tissue. Tissue which has been embedded in paraffin blocks, or the like, for the purpose of histological study
- “Sections” Tissue mounted on glass slides for the purpose of histological staining
- “Stained Sections”. Sections which have been stained for the purpose of microscopic examination.
- “Fluid”. Liquid from a blood vessel, body cavity, hollow viscus, hematoma, or abscess of a dead human body. Fluids include blood, vitreous humor, bile, gastric content, urine, cerebrospinal fluid and effusions.
- “Specimens” A body part, organ, tissue, fluid, embedded tissue, section or stained section; or a swab from a body part, organ, tissue or body surface.
- “Physical Evidence” An item or items taken during an investigation which is believed to be pertinent to the determination of the cause of death, manner of death, identification of the deceased, determination of disease, injury or intoxication, or which is taken to answer anticipated questions in any investigation. Includes specimens.
- “Research” Any one of the following:
  - Procedures designed for therapy or resuscitation, performed on a dead human body for experiment or practice, unrelated to the determination of cause of death, mechanism of death, manner of death, presence of disease, injury, or intoxication, or identification of the deceased
  - Testing of body parts or organs for purposes unrelated to the determination of cause of death, manner of death, presence of disease, injury, intoxication or identification.
  - Testing of tissues or fluids by an experimental scientist that results in no report to the medical examiner
- “Next of Kin” Legally authorized person

## **Continued REMAINS, SPECIMENS, AND EVIDENCE: DEFINITIONS AND RATIONAL FOR RETENTION**

### **(2) *Rationale***

- The next of kin have a common-law right to claim a body for the purpose of burial
- The medical examiner has a statutory right to perform autopsies and retain organs and tissues for the purposes of determination of cause of death, identification of the deceased, presence of disease and preservation of evidence.
- Because of the customs of viewing, wakes and funeral rites, most next of kin in Western cultures have stronger emotional objections to postmortem dissections involving the externally visible parts of the body than to the dissection of viscera. Therefore, as specimens, the head and extremities should be treated differently from the viscera.

# **RETENTION AND DISPOSITION POLICY FOR REMAINS AND SPECIMENS FOR DIAGNOSIS**

## **POLICY**

### **(1) Body Parts**

- Human remains released by a medical examiner to the next-of-kin shall include all body parts unless the next-of-kin explicitly agree to claim an incomplete body.
- If human remains recovered by the medical examiner are incomplete owing to dismemberment or decomposition, and there is a possibility that further body parts will be discovered subsequently, the next-of-kin shall be given the choice of claiming incomplete remains, or waiting to claim the remains until further parts are recovered.
- If a body part such as a skull requires special examination, release of the remains should be delayed until the special examination is complete unless the next-of-kin explicitly choose to claim incomplete remains.
- Body parts retained by the medical examiner shall be subsequently released to the next-of-kin or disposed of pursuant to the wishes of the next-of-kin.
- Body parts not claimed by the next-of-kin are considered biomedical waste and shall be destroyed by legally prescribed means, at the expense of the medical examiner
- Evidentiary aspects of retained body parts shall be preserved by documentation by writing, photography, radiography or other indirect means or by retention of tissue samples. Body parts themselves shall not be retained as evidence for legal proceedings.
- Permission of the next-of-kin is not required to retain organs, tissues, sections, or fluids for the determination of cause of death, manner of death, disease, injury, intoxication or identification of the deceased.
- Permission of the next-of-kin is not required to destroy retained organs, tissues, sections or fluids.

### **(2) Organs**

- Organs are retained in selected death investigations to document cause of death or presence of disease. Most retained organs are fixed in formalin for subsequent special examination. Organs commonly retained for fixation and special study are the heart, brain, eyes and spinal cord. Organs are retained less frequently.
- Retained organs are not customarily returned to the body for burial.
- Retained organs are biomedical waste and should be destroyed by the medical examiner by any legal means when the examination of the organs has been completed and/or when no further testing is contemplated. Samples of tissue are customarily retained from organs to be destroyed.

**Continued RETENTION AND DISPOSITION POLICY FOR REMAINS AND SPECIMENS FOR DIAGNOSIS**

**(3) Tissues and Fluids**

- Representative tissue samples from major organs are customarily retained in formalin in all autopsies from which viscera are available even if no microscopic slides are prepared. Formalinized tissue is retained so that other tests can be performed or additional microscopic slides can be prepared if the later becomes necessary for diagnosis of disease, for determination of the cause and/or manner of death or for quality control of the histology laboratory.
- Fluids and tissue samples from some organs are often retained in the refrigerated or frozen state, at the option of the medical examiner, even if no toxicological or other testing is immediately contemplated.
- Tissues and fluids are not customarily returned to the body for burial

# LOCAL RETENTION AND DISPOSITION POLICIES FOR EVIDENCE AND PROPERTY

## POLICY

- (1) *Minimize long term storage of Evidence and Property.* “The goal of the Department is to have no evidence or personal property stored on the medical examiner premises on a long-term basis. This goal is approached but never fully met by vouchering physical evidence to the police. Because the police and the medical examiner define evidence differently, there are some items that the medical examiner must retain as evidence but which have no value to the police. The most common examples are ligatures from suicidal hangings. These must be retained for a year. Clothing is rarely pertinent to the determination of cause or manner of death in non-criminal cases, and is vouchered to the police, released to the funeral home or discarded. Some other items may be retained for their teaching value if they are not suitable for release to the next-of-kin.
  
- (2) *Long term storage of DNA exemplars.* Two specimens of dried blood on filter paper are collected on all autopsied decedents including non-criminal deaths. They are saved in the case folder for the purpose of clearing unsolved crimes or exonerating wrongly charged defendants. Because such specimens are subject to seizure by court order in civil cases for paternity testing, the second specimen is taken for the purpose of protecting the first for criminal case purposes
  
- (3) *Evidence Determination of Evidentiary Value and Disposition.* Certain items are considered to have evidentiary value as a matter of policy and are handled as follows:
  - All clothing from homicides and hit and run cases is vouchered to police
  - All firearm projectiles are vouchered to police
  - All firearms and all other weapons deemed to have evidentiary value are vouchered to police
  - Weapons of no evidentiary value such as Swiss army knives in drug suicides are released with the remains
  - Serology blood samples are taken on all homicide and hit and run pedestrian fatalities, and on other traffic fatalities at the discretion of the case medical examiner.
  - Medications (see separate chapter by this title) are received by the investigative section and inventoried to the degree required by the investigation. Unless the medical examiner gives specific instructions to the contrary, medications are retained only until a cause of death has been determined. Except for pending cases, most medication is discarded as soon as they are inventoried.
  - For other items the judgment of what has evidentiary value rests with the investigating medical examiner.
  
- (4) *Property: retention and disposition.* Personal (other than medications, which are described elsewhere) property of no evidentiary value is vouchered out to the funeral home, or directly to the next of kin, or destroyed in accordance with departmental procedures described in the Morgue Section.

- (5) *Tissue retained by consent of Next of Kin or for private testing by next of kin.* Tissue retained for private testing is ordinarily discarded one year from the date of autopsy if the tissue has not been taken for testing, that is, if there has been no follow up to the initial expression of interest.
- (6) Retention of and Release of Body Fluids and Tissue to Private Persons. The departmental policy is that a court order is required before ordinary body fluid or tissue specimens are released to any private person other than next of kin. Request in this category are usually for paternity testing or asbestos testing. Upon request of next of kin, the Department will release a specimen directly to the lab selected by the next on kin to conduct the test. Exceptions to this policy are made only by the Chief Medical Examiner.
- A written request may contain a notarized affidavit that states the requestor's relationship to the decedent and states that the requestor is the legally authorized next-of-kin.
  - If the request is made in person at the medical examiners office, medical examiner personnel must request and examine a photo ID card of the requestor and have the requestor write the authorization, including the statement of relationship.



# RELEASE OF REMAINS

## POLICY

### (1) *Authorization to Claim remains*

*Funeral Homes:* A release form, signed by the next-of-kin, surviving spouse or friend who is claiming the body, must be presented in order for a funeral director to take possession of a dead body. The ranking of priority for next of kin (so-called “legally authorized person”) with respect to the right to claim the remains is defined as follows:

- i. Surviving Spouse
- ii. Son or daughter who is 18 years of age or older
- iii. Parents
- iv. Brother or sister who is 18 years of age or older
- v. Grandchild who is 18 years of age or older
- vi. Grandparent
- vii. Any person in the next degree of kinship
- viii. The guardian of the decedent at the time of death
- ix. The personal representative of the decedent
- x. A public health officer

If the person seeking to claim the remains is not the highest living person in the list above, Department policy is to document the acquiescence of the higher person

Bone Bank – Likewise remains cannot be released to the organ procurement organization without a Harvest Authorization Form.

## PROCEDURE

*Person seeking to claim the remains is not the highest priority “legally authorized person”*

*Example:* A sister wants to claim the body but there is a living husband who is not interested. Call the husband and document to the file his agreement with this arrangement or document that you could not locate the husband with a reasonable effort.

# **DISPOSITION OF UNCLAIMED REMAINS**

## **POLICY**

Medical Examiner Investigator on behalf of the County Medical Examiner makes application to FIA for burial assistance as soon as it becomes apparent that private arrangements are not likely to be made. A local funeral director is contacted to handle the burial arrangements.

## **PROCEDURE**

A investigator with the assistance of the assigned policing agency investigates the financial resources of next of kin.

*Authority to Exhume unidentified remains.* The Medical Examiner is the “legally authorized person” who retains all legal rights to unidentified remains buried by the county, including the right to exhumation, should further examination be necessary.

*Non-human remains disposition.* Non-human remains are disposed of, either by incineration at Port Huron Hospital or placing in a red bio-hazardous waste bag and disposing in company dumpster.

## **INFORMATION**

*Types of unclaimed and non-jurisdictional bodies.* The bodies which linger at the medical examiner facility, or which arrive for reasons unrelated to medical examiner jurisdiction fall into four categories

- Indigent decedent with no funds for burial
- Decedent with no next of kin to claim remains
- Decedent with no available attending physician
- Autopsy requested by next of kin

# **DISPOSITION OF UNIDENTIFIED BODIES**

## **POLICY**

The Medical Examiner retains and preserves by refrigeration on the premises until all leads are exhausted, and then retains and preserves by burial in a county plot.

Excepting medical specimens, fetal remains or other dead human tissue for which a regular death certificate is not required, unidentified human remains shall not be cremated or donated for anatomic dissection.

Before burying or cremating unidentified remains, the following must be performed and in the appropriate file. The investigator is responsible for ensuring that all necessary radiographs and other tasks are performed before such a body is released for burial

- Full body x-rays
- Dental charts and dental x-rays
- A specimen is retained for future DNA analysis
- Fingerprints
- Photographs of the face
- Photographs of tattoos and scars
- Photographs are taken of all clothing and personal effects, with a full description of all labels and sizes, before same is released to police or discarded
- Registration with the FBI's Nations Crime information Center (NCIC)

The Manager of Operations is responsible for:

- Referring unclaimed un-autopsied bodies without mutilating trauma, contagious disease, or decomposition to one of the predetermined Medical Schools in Michigan.
- Referring deaths of veterans of the armed forces of the United States or National Guard units are referred to the U.S. Veterans Administration for possible burial in a national cemetery
- Re-contacting the next-of-kin
- Investigating the financial resources of the decedent to identify assets such as personal accounts, prepaid burial services, plots, vaults and caskets to minimize public expense.
- Managing contracts with funeral homes, casket suppliers and cemeteries

Method of Disposition:

- Unidentified corpses are buried.
- Unidentified dry skeletons are retained in the Medical Examiner facility
- Largely skeletonized remains are completely skeletonized and stored dry
- Unidentified remains cannot be cremated

# **FILES, DOCUMENTS AND THE COMPUTER DATABASE**

## **FILE CONTENT: PRIMARY RECORDS**

### **POLICY**

The Medical Examiner shall keep among the official records

- A log or registry of all cases referred to the Medical Examiner's office. The electronic database is considered the log
- Records of all investigations performed. Including findings, laboratory results, photographs and autopsy reports
- Copies (typed) of all death certificates signed by Medical Examiner. Here, "death certificate" is taken to mean the death certificate form completed by the medical examiner, absent the information supplied subsequently by the funeral director. Any death certificate signed by a medical examiner shall show the address of the medical examiner office
- All other notes or documentation forming a record of an investigation

A uniquely identified record must be maintained for each death investigation

Each record should contain at minimum

- Identifying information
- Chronology and location data
- Place, date and time of any injury that contributed to death
- Places, dates and institutions of hospitalization pertinent to determination of cause of death
- Place where death occurred or place where body was found
- Date and time found dead or date and time witnessed to die or date and time pronounced dead
- Place, date and time of scene investigation response
- Place date time and type of examination of body
- Chain of custody documents
- A description of the method of identification
- Narrative investigative information
- Reports of postmortem examinations and tests
- Consultative reports
- Summaries of reports and records from other agencies utilized in determining the cause and manner of death
- Copy of the death certificate as completed by the medical examiner.
- Note to the file from contact or discussions with the family, medical personnel, law enforcement officers, attorneys, and other parties when applicable

Antemortem medical records obtained in the context of the death investigation retain their confidentiality

Continued **FILES DOCUMENTS AND THE COMPUTER DATABASE**

Body Logs: The following date should be maintained in medical examiner records OR at the Morgue

- Date and time body logged into morgue
- Date and time body logged out of morgue

The autopsy report shall be typed and shall only include the objective results of the examination of the body and all the toxicological samples. The circumstantial history and toxicological correlations shall constitute a separate portion of the investigative report

Each record for a death reported for which no jurisdiction was found including cremation and removal from state cases must contain at minimum

- Case number and name of decedent if known
- Place, date and time of death
- Notes from the initial reporting of death

*Electronic database.* The database is the primary archive for investigation for bodies to be cremated or removed from the state.

## **INFORMATION**

*Duplicate Copies of Hospital and Ambulance Records.* Copies of hospital records are routinely provided by hospitals to the Medical Examiner Department. The Department takes the position that it is not the custodian of these records, and does not make them available as public records. Because such copies are routinely destroyed at the time the autopsy report is signed, issues concerning legal discovery of the duplicate records rarely if ever arise

# **CASE NUMBERING SYSTEM**

## **POLICY**

(1) Case numbers are given suffixes as follows:

A-SCC-05-##	Autopsy-St.Clair County-Year – Number assigned
P#####	First Initial of Last name of MEC and case number
E-SCC-05-##	External Exam-St.Clair County-Year- Number assigned
CP ##	Cremation Permit
X ##	Non Human Remains

Case number for mass fatalities incidents will differ. See section on “Mass Fatalities” for the proper procedure.

# **UNPENDING AND AMENDING DEATH CERTIFICATES**

## **POLICY**

The autopsy report is not finalized or signed until the final cause and manner of death opinions are prepared.

Whenever a case is unpended or amended, a correspondingly updated initial case summary with the new cause and manner of death is sent to the law enforcement agency. The new initial case summary is accompanied by a brief cover not calling attention to the amended nature of the opinion

The number of pending cases and the duration for which they are pending, shall be minimized through efficient case investigation and by managerial oversight including the generation of a weekly list of pending cases.

## **PROCEDURE**

Once a death certificate is ready to be signed but the cause of death is pending a pending form is filled out by the Medical Examiner. The pending information is entered into the database. Once the final cause of death has been determined a BLUE unpending form will be issued by the Medical Examiner and the cause of death can be changed,.

## **INFORMATION**

**Definition.** A pending case is a death investigation case for which the Medical Examiner has not issued both a final cause of death opinion and a final manner of death opinion for the death certificate.

**Problems with Pending case:** Life insurance policies generally do not pay out until the insurance company has a final death certificate, If the certificate indicates that an autopsy was performed payout may be delayed until the report is received, in the event of an unnatural death.

# **STANDARD LETTERS SENT**

## **POLICY**

- (1) Next of kin receive an informational letter explaining the Medical Examiner Department and informs families what to expect.
- (2) Parents of babies who die of sudden infant death syndrome are sent a letter explaining the diagnosis and stating that the Health Department will contact them.
- (3) For a body to be shipped out of the United States: at the request of consulates and shipping agents, the Department supplies a letter to the funeral director stating that the autopsy showed no contagious disease.
- (4) Physicians are obligated by law to sign a death certificate within 48 hours from the time of death, a letter is sometimes sent to physicians who refuse to sign or if there is an unnecessary delay in signing the death certificate.
- (5) Certain causes of death require further investigation. Physicians must be aware of the acceptable causes of death and which causes require additional documentation.

## **PROCEDURE**

- (A) *Next of Kin letter.* The MESI on scene will provide the family with a copy of the ME letter.
- (B) *SIDS letter.* Investigator prepares the SIDS letter for the family whenever the case is unpendent and the cause of death is determined to be SIDS.
- (C) *No-contagion letter.* Investigators write the no-contagion letter for the signature of the Medical Examiner whenever requested and usually attach the letter to the death certificate for pickup by the funeral director.
- (D) *Physician Obligation Letter.* Letter may need to be mailed to physician explaining their Obligation to sign a death certificate and their refusal to do so may result in a fine.
- (E) *Physician letter.* Explaining causes of death that require supporting documentation.





**COUNTY OF ST. CLAIR**



**OFFICE OF THE MEDICAL EXAMINER**

**Daniel J. Spitz, M.D., Chief Medical Examiner**

**1221 Pine Grove Ave., Port Huron, MI 48060**

**(810) 982-4111**

**Fax (810) 982-5253**

We recognize that the loss of a loved one brings deep sorrow. We wish to express sincere sympathy to you in your loss.

The St. Clair County Medical Examiner's Office is authorized by the laws of the State of Michigan and St. Clair County to conduct investigation of sudden unexpected, unnatural, suspicious or violent deaths.

The investigation may include taking of pictures from the scene of death, gathering any evidence at the scene, and questioning the family or next of kin. From the scene of death, the body is taken to the morgue at Port Huron Hospital. Due to Medico-legal requirements, viewing at this time is not permitted. The investigation will continue, including the examination of the decedent, which may or may not include an autopsy. . If you specifically want an autopsy, please make this request to the investigator and every effort will be made to accommodate your request. If the death does not meet medical examiner criteria for an autopsy a private autopsy can be arranged for you. If you do not want an autopsy performed, tell the investigator and your feeling will be taken into account. Keep in mind, however, that the State of Michigan authorized us to perform autopsies and permission from the family is not required.

When you have decided on a funeral home, please notify us and we will make the necessary arrangements for transfer.

Generally, all personal effects that accompany the body to our office will be released with the body to the funeral home. In some cases, some of the personal effects are taken by the police department as evidence. You must contact the investigating agency for those items.

If an autopsy is performed, you may obtain a copy by submitting a written request along with payment of the processing fee (\$25.00) to the above address. The report will be mailed directly to the address on the request.

Again we would like to express to you our sympathy. If you have any questions or if we can be of any help to you, please feel free to call us at (810) 982-4111.

Daniel J. Spitz, M.D.  
Chief Medical Examiner

Mary Palmateer, F-ABMDI  
Chief Forensic Investigator



COUNTY OF ST. CLAIR



**OFFICE OF THE MEDICAL EXAMINER**

Daniel J. Spitz, M.D., Chief Medical Examiner

1221 Pine Grove Ave., Port Huron, MI 48060

(810) 982-4111

Fax (810) 982-5253

**Affidavit of Mary M. Palmateer**

Mary M. Palmateer, states as follows:

1. I am an Investigator for the St. Clair County Medical Examiner's Office
2. I certify the following with the respect to the death of *Jane/John Doe*
  - a. That *Jane/John Doe* died on *(date month/day,year)* at *(place of death)*
  - b. That *Jane/John Doe* died from *(Cause of death)*
  - c. That the death was of a non contagious nature.
  - d. At the time of death there was no illness of an epidemic nature existing in St. Clair County, Michigan.

\_\_\_\_\_ Date

\_\_\_\_\_ Mary M. Palmateer, F-ABMDI  
St. Clair County Medical Examiner's Office

STATE OF MICHIGAN}

)SS

COUNTY OF ST. CLAIR}

Subscribed and sworn to me before this \_\_\_ day of \_\_\_\_\_, 2006

\_\_\_\_\_  
Notary Public  
County of St. Clair, Michigan  
My commission Expires \_\_\_\_\_



## COUNTY OF ST. CLAIR



Office of the Medical Examiner, Dr. Daniel J. Spitz,  
1221 Pine Grove Ave. , Port Huron, MI 48060  
(810) 982-4111 Fax (810) 982-5253

Dear Physician:

State law mandates that the attending physician or his designee is responsible for completing a death certificate within 48 hours after the death of a patient. Failure to comply when a death certificate is presented to you may result in a fine of \$1000.00 and/or imprisonment for 30 days. (please read fine print on the bottom of the death certificate). Failure to complete a certificate in a timely fashion (within 48 hour of death) creates a hardship for the family and the attending funeral home, preventing a timely disposition.

The **cause of death** entered on the death certificate should be **YOUR opinion based on the medical history you have available**. Once a death is reviewed by this office and determined not to be a Medical Examiner's case, the responsibility for completing that certificate becomes that of the primary care and/or attending physician. If there are any suspicious circumstances (homicide, suicide, accident etc.) our office will sign the death certificate following the investigation. The St. Clair County Medical Examiner's Office is not a repository for completion of death certificates refused by the attending physician. Attending physicians who refuse to issue the cause of death based on medical history are putting this office in a position to complete said certificate and will be charged a \$250.00 fee; since we must obtain your medical records/ information, review these records and in fact perform your duties.

Please fulfill your obligation to your patient by completing death certificates within the allowed time frame. Also, please note our office has moved and we are now located at Port Huron Hospital (next to the new physicians lounge); for your convenience you may stop in our office so we can assist you with obtaining death certificates. If you have any questions, please do not hesitate to contact our office at (810) 982-4111.

Daniel J. Spitz, M.D.  
St. Clair County Medical Examiner



## COUNTY OF ST. CLAIR

Office of the Medical Examiner, Dr. Daniel J. Spitz, 1221 Pine Grove Ave., Port Huron, MI 48060



Dear Doctor

Because the following terms are merely complications or non-specific immediate causes, they cannot stand alone on the death certificate.

Aspiration  
Cardiogenic shock  
Cardiac Arrhythmia  
Cardiac Dysrhythmia  
Cardiorespiratory arrest  
Cardiac Failure  
Congestive Heart Failure (CHF)  
Encephalopathy  
Chronic Renal Failure  
Hemorrhage  
Hemorrhagic shock  
Hepatic failure  
Liver Failure  
Metabolic Acidosis  
Multisystem Failure

Respiratory Failure  
Respiratory Arrest  
Sepsis  
Septic shock  
Shock  
Intracranial Hemorrhage  
Gastrointestinal Hemorrhage  
Pneumonia  
Aspiration Pneumonia  
Bronchopneumonia  
Pneumocystis Pneumonia  
Pulmonary embolus  
Pulmonary Thromboembolus  
Paraplegia/Quadriplegia  
Renal Failure

If any of the above causes are used, supporting documentation must also be listed on the certificate. Keep in mind that the cause of death is an opinion and is determined by reviewing the patient's medical history. (Hypertensive Cardiovascular Disease, Arteriosclerotic Heart Disease, Coronary Artery Disease are examples of acceptable causes of death) Deaths reported that do not meet the criteria to become a medical examiner case will be issued a case release number in box 32 of the certificate. The certificate is then presented to the attending physician for completion (E.R. physicians DO NOT sign death certificates). State law mandates that the attending physician sign the death certificate within 48 hours after the death of a patient. Be sure to comply with this law and avoid untimely delays for the families. If you have any questions feel free to contact our office at (810) 982-4111.

Sincerely,

Daniel J. Spitz, M.D.  
Chief Medical Examiner, St. Clair County

# TYPES AND COMPOSITION OF REPORTS

## POLICY

### *Autopsy Cases*

- The final diagnosis format is used for the front sheet of the autopsy report, rather than the autopsy findings format
- Microscopic descriptions are a part of the signed autopsy report and are typed
- The Toxicology report is a separate report, but is always appended to the autopsy report copy. If specimens are retained but no toxicology tests are performed, a report is issued, stating that “testing was not indicated” If no specimens are retained, a report is issued stating that no specimens were retained.
- Descriptions of fixed organs are customarily made an integral part of the autopsy report and are titled, for example, *Examination of fixed brain*.
- The scene investigation report, (mesi form) filled out on scene by the MESI, is not part of the autopsy report. The full investigation report is kept at the investigation law enforcement agency for our review.

### *External Inspection Cases*

- A summary and opinion is composed by the Medical Examiner for suicidal, accidental, homicidal or undetermined deaths for which examination was limited to external inspection and for which the decedent was pronounced dead in a hospital
- Toxicology reports are done exceptionally for external inspections
- A report of external examination is dictated and transcribed

### *Telephone Cases*

- Summary and opinion. A prose opinion is written for all telephone cases with a manner of death other than natural

### *Addenda and revisions*

- Once an autopsy or toxicology report has been signed no revised report is to be issued
- If an important opinion or finding has changed, the department will issue an addendum report to known recipients
- For addenda to autopsy reports the medical examiner will write an explanatory note to the file
- The addendum report must prominently include the word *addendum* in the header
- *Minor opinion changes are handled only with a note to the file*

### Notes to the file

A note to the file must be written whenever a conference or telephone conversations of substance occurs.

*Notice of impending death.* Referrals of persons thought to be about to die are not entered into the database

Continued **TYPES AND COMPOSITION OF REPORTS**

*Inquire concerning missing person.* An inquiry form someone concerned about a missing person, who wished to know if any body in the medical examiner cooler corresponds to the missing person, should be recorded in the database.

*Signatures*

*Dating signatures.* All signatures made by employees on any document or note must be dated by writing the date beside the signature.

*Rubber signature stamps* cannot be used for death certificates, autopsy reports, scene reports or toxicology reports.

*Ink Color* Signatures of formal reports are rendered in black ink.

*Style for Decedent Name.* Full names including spelled-out middle names are to be used for death certificates, file jackets, initial case summaries, autopsy reports, scene investigation and opinions, unless the full name cannot be ascertained.

## OTHER AGENCIES

### PUBLIC RECORD LAW AND REQUESTS FOR COPIES OF DOCUMENTS AND PHOTOGRAPHS

#### POLICY

(1) *Public Records Defined:* All records, written notes, E-mail and voice mail generated by any employee of the Medical Examiner Department are considered public records, unless the case is under active criminal investigation.

(2) *Subpoena for Confidential Criminal Case Records:* For cases still under active criminal investigation, when a subpoena is issued in a civil suit, the Medical Examiner will contact the Prosecuting Attorney and deny the request to release such records until the criminal investigation is complete.

(3) *Request for copies:* Request for copies of hospital or police records must be referred to the originating agency unless subpoenaed.

(4) *Physical Possession of Case Folder.* No original file document will leave the Medical Examiner facility except:

- Court testimony by medical examiner
- Duplication of photographs and X-rays.
- Local medical conferences by Medical Examiner
- Microfilming
- Storage at county Records Retention Center

#### PROCEDURE

(1) *Determination of Activity of Investigation.* The determination of which cases are still under active criminal investigation may be made by contacting the MESI responsible for the case or the Prosecuting Attorney's office.

(2) Response to request for autopsy reports and other public records

- State that the final autopsy reports are ordinarily ready in approximately 6 weeks after the performance of the autopsy
- If a physician personally calls and asks for a copy of an autopsy report, do not make him or her send a written request. They provide information to us, so we owe them the courtesy of taking care of the paperwork. Take the name and address and place in the file. Once the final report is complete forward a copy to the requestor.
- Give the requestor instructions as to the appropriate cost and them to send the fee along with a written request and the report will be forwarded once it is complete.
- All payments should be made payable to St. Clair County. We prefer check or money order and try to avoid accepting cash.

# **PUBLIC RELATIONS AND THE PRESS**

## **POLICY**

- (1) The Medical Examiner and the Manager of Operations respond to press inquiries concerning death investigations.
- (2) Under no circumstances is an employee of this department permitted to state to the next of kin or anyone else not in the department that a particular case warrants a civil lawsuit.
- (3) *Family notification of release of information to the press.* If one releases a cause of death to the press in a case where there is a reasonable expectation of privacy it is a kindness to call the family to inform them of the release. Unless the death or injury occurred as a publicly witnessed event there is a reasonable expectation of privacy for natural deaths and suicides.

## **PROCEDURE**

- (1) To minimize the disruption of the office routine on high profile cases, a medical examiner can do one or more of the following:
  - Issue a press release
  - Hold a press conference
  - Designate the Manager of Operations as press officer to handle telephone inquiries
- (2) The standard reply to the questions “should I sue?” or “Do I have a case?” should be to state that you are not an attorney and cannot answer that question.
- (3) Pend the cause of death when the case detectives do not want to release the cause of death.

## **INFORMATION**

- (1) Criminal suspects do not ordinarily identify themselves as such when call the Department for information. They identify themselves (accurately in many instances) as family members, friends, or business acquaintances. In some instance it may be smart to take the callers name and number and pass that on to the investigating agency.



# **TESTS ON DEAD BODIES PERFORMED FOR RESCUERS**

## **POLICY**

- (1) Requests by Good Samaritans for HIV Tests. Requests by rescue personnel (fire, EMS, police, bystanders) for HIV antibody testing, hepatitis profile testing or other testing on dead bodies will be performed only at the request of the requestor's personal or employment physician, and not directly on the request of the rescuer. Exceptions may be made only by the Chief Medical Examiner or designee on a case-by-case basis.

## **INFORMATION**

- (1) HIV Tests for Samaritans. A negative test for HIV Ab does not guarantee lack of infectivity because a recently infected person may not yet have antibodies. Test results ought to be rendered to the patient in the context of suitable counseling. Such counseling does not fall within the scope of medical examiner duties. Some requests by rescuers are driven by uninformed concern over trivial exposures to intact skin, or to clothing.

## **HOSPITALS**

- (1) PORT HURON HOSPITAL: 1221 Pine Grove, Port Huron, MI
- (2) MERCY HOSPITAL: 2601 Electric Ave., Port Huron, MI
- (3) RIVER DISTRICT HOSPITAL: 4100 River Road, East China, MI

## **HEALTH DEPARTMENT**

ST CLAIR COUNTY HEALTH DEPARTMENT. 3415 28<sup>TH</sup> St., Port Huron, MI

## **POLICE AGENCIES**

PORT HURON POLICE DEPARTMENT; 201 McMorrان Blvd. Port Huron, MI  
ST. CLAIR COUNTY SHERIFF DEPARTMENT, 1170 Michigan Rd., Port Huron, MI  
MICHIGAN STATE POLICE; 36725 Division, Richmond, MI  
CLAY TOWNSHIP POLICE DEPARTMENT; 4710 Pte Tremble, Clay Twp. MI  
ALGONAC POLICE DEPARTMENT; 805 St. Clair River Drive, Algonac, MI  
CAPAC POLICE DEPARTMENT; 131 N. Main, Capac, MI  
MARINE CITY POLICE DEPARTMENT; 6282 King Rd., Marine City, MI  
MARYSVILLE POLICE DEPARTMENT: 1355 Delaware, Marysville, MI  
ST. CLAIR POLICE DEPARTMENT: 547 N. Carney Drive, St. Clair, MI  
YALE POLICE DEPARTMENT; 111 W. Mechanic, Yale, MI

## THE DEATH CERTIFICATE AND VITAL RECORDS

The following list is provided to the local and state vital records office by this department to assist in detection of incomplete certifications:

If one of the following terms appear  
In the cause-of-death opinion, the  
Death is violent or work-related, and  
Must be investigated by the Medical  
Examiner

Accident (except Cerebrovascular accident)  
Asbestosis  
Blunt  
Closed Head Injury  
Contusion  
Drowning  
Electrocution  
Fall  
Fell  
Fracture  
Gunshot Wound  
Homicide  
Injury  
Intoxication  
Laceration  
Mesothelioma  
Motor Vehicle  
Near-drowning  
Overdose  
Stab  
Suicide  
Trauma  
Traumatic

Because of the following terms are merely  
Complications or non-specific  
Immediate causes, they cannot stand  
alone on the death certificate. Because  
the true underlying cause may be an  
injury, certificates listing these terms  
with no underlying condition should be  
referred to the Medical Examiner

Aspiration  
Cardiogenic shock  
Cardiac Arrhythmia  
Cardiac dysrhythmia  
Cardiorespiratory arrest  
Cardiac failure  
Congestive Heart Failure  
CHF  
Chronic Renal Failure  
Hemorrhage  
Hemorrhagic shock  
Hepatic Failure  
Liver Failure  
Metabolic Acidosis  
Multisystem Failure  
Respiratory Failure  
Respiratory arrest  
Sepsis  
Septic Shock  
Shock  
Encephalopathy  
Intracranial hemorrhage  
Gastrointestinal hemorrhage  
Pneumonia  
Bronchopneumonia  
Pneumocystic pneumonia  
Pulmonary embolus  
Pulmonary thromboembolus  
Rupture viscus  
Quadriplegia  
Paraplegia  
Renal Failure

## **EXPOSURE CONTROL PLAN**

### **PURPOSE OF THE PLAN**

- (1) The exposure control plan is written to provide each employee with information necessary to ensure safe working conditions in an environment containing blood borne pathogens.
- (2) The plan is written to comply with OSHA standard 29CFR Part 1910.1030 (Code of Federal Regulations) and State of Michigan.
- (3) Employment at the Medical Examiner Department carries with it an obvious involvement with deceased human remains. The potential for any one of these cadavers to be a carrier of infectious disease must be assumed; to do otherwise is to risk transmission of diseases to employees.
- (4) Universal precautions. All bodies and all specimens are treated as if they were infected with blood borne pathogens. No bodies or specimens are specially labeled to indicate the presence of an infectious disease. Employees are expected to follow all procedures designed to protect their safety when dealing with potentially infectious materials
- (5) The plan is designed to protect employees from exposure to blood borne pathogens such as human immunodeficiency (HIV), hepatitis B/C virus (HB/CV) and others by evaluating and identifying job classifications subject to occupational exposure, by implementing engineering controls, modifying work practices and providing commonly used personal protective equipment.

***The Office of the Medical Examiner will follow the guidelines of the Port Huron Hospital Exposure control plan. A copy of the plan is available at the Medical Examiner's office.***

# **MASS FATALITIES PLAN**

## **CONCEPT OF OPERATIONS**

**Principle.** The medical examiner is responsible for the medicolegal investigation of the incident, including human factor considerations (e.g., toxicology). A mass fatality incident does not diminish this responsibility. Ultimate responsibility and legal authority for the collection, examination, identification, recovery, disposition, and certification of all remains as well as morgue operations lies with the St. Clair County Medical Examiner. Additional assistance from other organizations and agencies is subject to the discretion and approval of the medical examiner.

- (1) After a single localized incident that results in a large number of fatalities, such as a commercial airliner crash or hotel fire, the normal procedures and resources of the department will be overwhelmed.
- (2) This plan delineates general rather than specific responsibilities of Department personnel, anticipates response requirements and identifies potential sources of goods and services required to respond to such an incident in a timely manner without degrading the quality of death investigations.
- (3) The underlying presupposition of this plan is that the incident has triggered a response by the St. Clair County Emergency Operations Center (EOC) which has resulted in the designation of an incident commander and implementation of the Incident Command System (ICS).
- (4) Timely notification of the Department by the EOC of a potential mass fatality incident is important if death investigations are to be handled in a manner which satisfies both the medicolegal requirements and the needs of surviving family and friends.
- (5) Under the ICS it is reasonable to assume that, by the time the Medical Examiner Department begins its recovery operations, the initial site survey has been conducted, security of the site and access procedures have been established, recovery of survivors is nearing completion, a reasoned estimate of the number of fatalities has been made, and community resources have been mobilized.
- (6) This plan may also be implemented in whole or in part to respond to a large number of deaths over a wide spread area and, perhaps a longer duration of time or a small number of fatalities for which scene investigation, recovery and identification of remains is problematic (e.g., a crash of a 6-8 passenger aircraft with mutilation, fragmentation and scattering of remains). Implementation of the plan as a result of the latter scenario is at the discretion of the Medical Examiner and will be coordinated with the Chief Forensic Investigator to ensure the required portions of the County's emergency response system are notified and necessary resources are available.

## **MASS FATALITIES PLAN cont'd**

### **NOTIFICATION**

As much of the following information as possible will be gathered by the individual receiving the initial call and relayed to the Medical Examiner

- a. The type of incident: eg. aircraft crash, hotel fire, chemical spill, etc.
- b. Location of incident
- c. Time of occurrence
- d. Status of the recovery of survivors, if any (e.g., not yet begun, ongoing, initial or latter stages, complete)
- e. The approximate number of the dead
- f. Known hazards to the responders
- g. If established, location of the ICS command post and identity of the ICS commander.

## **MASS FATALITIES PLAN cont'd**

### **RESPONSIBILITIES**

The *Chief Medical Examiner* is responsible for the conduct of the entire investigation. Specific responsibilities include the following:

- Will report to the scene, incident command post, Emergency Operations center, or Department facility as he believes the situation dictates.
- The Chief Medical Examiner, or his designee, shall be in charge of all Departmental personnel at the scene and shall direct them as necessary
- Will coordinate with County and other agencies and direct the investigative response.
- Will initiate or approve all requests for assistance from outside agencies (e.g. assistance from other medical examiner offices, State or Federal assistance or the Michigan Funeral Director's Association - MFDA.)
- Will designate a staff member to assist and act as a liaison to the County Administrator's Director of Communications. The Communications Director will handle all news releases and media request. Press releases shall first be approved by the Chief Medical Examiner, or in his absence the Program Coordinator.
- In the event the Chief Medical Examiner is not immediately available, the Program Coordinator will coordinate execution of the plan. The Program Coordinator will ensure that the Chief Medical Examiner is notified as soon as possible.
- Will supervise the scene investigation and document the location of remains by survey/sketching, video, photography (aerial – to achieve overhead view – possibly by using fire dept. hook and ladder)
- Coordinate transportation requirements with the removal service and the investigative unit.

The *Program Coordinator* under direction of the Chief Medical Examiner is responsible for the following:

#### **Morgue Operations:**

- Contacting autopsy technicians (both employees and trained Volunteers) and establish work shifts as required to provide required operational Coverage while providing adequate rest
- Conducting an inventory of non incident remains and coordinate with funeral homes expeditious removal of all remains ready for release
- Ensuring adequate supplies are available and notifying the Chief Medical Examiner of any shortages
- Assisting in the layout of the temporary morgue, if established
- Obtaining FAA Toxicology kit for aircraft incident

## **MASS FATALITIES PLAN cont'd**

### **RESPONSIBILITIES cont'd**

#### **Forensic Investigation Operations:**

- Contacting investigators (both employees and trained volunteers) and establish work shifts as required to provide required operational coverage while providing adequate rest
- Requesting, through the EOC, a list of potential victims of a single incident event.
- Requesting, through the EOC, blueprints of the structure or diagram of the incident aircraft, ship etc.
- Conducting the investigation of incident and preparing a standard "history and Circumstance: synopsis (e.g. Decedent was a passenger on XXX Airlines' flight \_\_\_ which crashed at \_\_\_ : \_\_\_ (location).
- Conducting (or coordinating, as required) interview of family and friends to obtain specific information to aid in the identification of the deceased.
- Conducting (or coordinating, as required) interviews of incident survivors to determine the last known location of victims prior to the incident (e.g., standing in line at the third window from the right....)
- Annotating blueprint or diagram with last known location of each potential victim.
- Coordinate all laboratory activity, including orderly transfer of specimens to off site testing facilities, as required by the Chief ME to provide expeditious completion of the incident investigation.

#### **Administrative Operations:**

- Recalling personnel and establishing a schedule which provides adequate manning for telephone services
- Coordinating security of the medical examiner facility, temporary morgue and family reception locations with law enforcement agencies
- Maintaining an accounting of all incident related expenses to include overtime cost, non-County personnel expenses, supplies, etc.
- Coordinating the Family Reception Center with the National Transportation Safety Board, Red Cross, MFDA, National Foundation for Mortuary Care and other agencies through the EOC.
- Providing clerical support, including augmenting the investigative section as capable.

#### **Implementation of the plan in absence of Chief Medical Examiner.**

- Based upon the information available, shall determine if temporary refrigerated storage units are required and coordinate delivery to the building or, if activated, a temporary morgue site.



## **MASS FATALITIES PLAN cont'd**

### **RESPONSIBILITIES con't**

- Will, in conjunction with the Chief Medical Examiner, determine if personnel will be designated to conduct investigations of deaths not related to the mass fatality incident.
- Arranges through the EOC logistics personnel, for food and drink to be delivered to the building, temporary morgue and scene as required.
- Reports to the Medical Examiner facility or to the temporary morgue for duty
- Shall monitor the case status and identification process to ensure thorough investigation and completed identification prior to release of the remains and to provide accurate information to the press through the county spokesperson.

## **MEDICAL EXAMINER RESPONSE: GENERAL CONSIDERATIONS**

- (1) Each incident which results in the use of this plan will encompass a number of circumstances which will define the nature of the response by the department. The following factors, by no means exhaustive list, should be evaluated during the initial response to the situation. As the response unfolds, changing circumstances may result in modification of the response.
- (2) Has the Incident Command System been activated?
  - > Where is the command post located? Is there a separate assembly area?
  - > What communications and other support exist without an ICS?
  - > How will workers be cared for? (Hot food, drinks, handicap portable lavatories, rest and relaxation area, etc)
- (3) Does the terrain at the scene present any particularly difficulties (accessibility by four wheel drive only?).
  - > Will special equipment be required for investigation (e.g. crane, helicopters, etc?)
  - > Heavy duty work gloves, boots, etc?
- (4) What is the estimate of the number of dead?
  - > Does the department have sufficient supplies on hand to cope with the incident: body bags, stakes, x-ray film, metal toe tags, etc.?
  - > Are refrigerated trucks required to augment existing cooler capacity?
  - > Is there a list of potential victims?
  - > Does either the condition of the remains or the number of victims portend an identification problem?
  - > Do we need to request support for other agencies: MFDA, NFMFC, Federal State and local agencies?
- (5) Is the scene secure (form the curious, the press and the looters)?
  - > How is entrance to the scene controlled?
  - > How is access to the site guaranteed for authorized personnel?
- (6) Is the scene safe for recovery operations?
- (7) Will the scene require a "team sweep" to locate and document locations of remains?
  - > What is the source of the personnel who will conduct the sweep?
  - > Is overhead photography required/available?
  - > Is video taping of the scene required?
  - > Is a grid survey of the scene required?
  - > Will dogs trained to locate the deceased be required?

## **MEDICAL EXAMINER RESPONSE: GENERAL CONSIDERATIONS cont'd**

- (8) Will recovery of the dead be conducted during darkness? If so, will the recovery include all bodies or only those exposed to the public?
  - > Special hazards to the crews?
  - > Is there a risk of destroying evidence or further damaging remains caused by night operations? Is the risk acceptable?
  
- (9) Will the transportation contractor require augmentations?
  - > Is control of the flow of the remains from the site to the morgue required to prevent overwhelming the body processing capability of the morgue?
  - > Have all driver been briefed on procedures to be followed and the route to be followed?
  
- (10) Is a temporary morgue site (4000 sq ft, no wood floors, AC, water/drainage, parking for refrigerated trailers) activated (or expected to be activate)?
  - > Is the site secured by law enforcement to limit access to authorized individuals only? How are authorized individuals recognized for entry Colored badges – which change daily, vest, a photo ID and access list)
  - > Will non-incident cases and incident related cases be brought to the same facility? If so, will they be kept separate from one another? How?
  - > Will routine investigation: autopsies, externals, cremations and ship-outs be affected? How?
  - > Set up of the morgue area: portable work space dividers, portable x-ray machine, administrative area ( a body processing matrix), etc.
  
- (11) Is a family assistance site required?
  - > Is the site separated from morgue operations and worker accommodations and secured by law enforcement to limit access to family, volunteers and investigators?
  - > Is the NTSB responding to the incident? If NTSB is not involved, are Red Cross, funeral directors, clergy and other volunteers available to staff the facility: counsel and interview family members?
  - > Is the site comfortable: privacy (grief, photo IDs, etc.) telephone and refreshments available?
  - > Is a medical unit on-site to aid families?
  - > Are Victim Identification and Personal History Information Forms available to conduct interviews of families and friends?
  
- (12) What is the level of media interest?
  - > Is the Director of Communications or another spokesman available to be the single source of information for the media?

## **MEDICAL EXAMINER RESPONSE: GENERAL CONSIDERATIONS cont'd**

- (13) Body processing:
- > Use checklists to ensure completion of all morgue stations and identification prior to release of body. Assign one person as Morgue Manager to ensure efficient use of workstations and monitor checklist completion.
  - > Use of a matrix for central tracking of the situation.
  - Id Teams required? Separate teams to track and acquire ante-mortem x-rays? Dental Augmentees? DNA specimens from relative and deceased?
  - > Infant and children prints from a favorite toy, bottles, sliding glass door, TV screen, etc.
  - > Use a separate trailer for each of the following (1) remains not yet processed through the morgue (2) remains processed through the morgue, but awaiting ID, (3) remains processed through the morgue, ID completed, awaiting release to funeral home.
- (14) Disposition of unidentified fragmented human remains
- > When investigation of the incident has been completed, if unidentified body parts remain, consideration should be given to burial in a common grave with a memorial service offered for surviving family members and friends. An inventory of all buried remains will be kept with the incident files
  - > The option of long-term storage of such remains, when all attempts at identification have failed, needs to be evaluated on the basis of the public good. Should the determination be made to store the fragments, the appropriate means of storage will be determined in large measure by the amount of remains to be stored.

## **MEDICAL EXAMINER RESPONSE: AIRCRAFT CRASH**

- (1) Coordinate with investigative agencies, military, National Transportation Safety Board (NNSB), airline, local agencies.
- (2) NTSB has absolute authority over aircraft wreckage and legal authority to investigate and to determine the cause(s) of air crashes. The dead are the sole responsibility of the medical examiner. Determine the following:
  - A. Location of investigative team headquarters
  - B. Time of organization meeting
  - C. Name of Chief Investigator
- (3) The Chief Medical Examiner's objective include the following:
  - A. Identification of the deceased
  - B. What, if any, human factors caused or contributed to the initiation of the crash.
    - a. Chemical: drugs, alcohol, CO, etc.
    - b. Physical disease, cardiac, CNS, etc.
    - c. Psychological factors
  - C. The Human factor effect resulting from the crash kinetics
  - D. Modifications of aircraft design or rescue procedures to minimize death and injury in future crashes.
- (4) Has the passenger list and seating chart been received? Were infants carried onboard without a ticket?

## **MEDICAL EXAMINER RESPONSE: LARGE STRUCTURAL DISASTER**

1. Obtain a blueprints and floor plan of structure
2. Obtain information of occupants and their probable location within the structure.
  - A. Work schedules
  - B. Inquiries from friends or family
  - C. Interviews with survivors to determine last known location of occupants.
3. Number probable victims and annotate the floor plan with likely last locations. X out the victim number on the floor plan only after positive identification of the deceased (or survivor) or determination that the individual was incorrectly identified as being involved in the incident.

## **MEDICAL EXAMINER RESPONSE: CHEMICAL INCIDENT**

1. *Chemical or Biological Incident*: If the agent has been identified before Medical Examiner Investigation has begun, decontamination will be conducted in accordance with the information compiled from the *Handbook of Chemical and Biological Warfare Agents*. (D.Hank Ellison, Boca Raton, CRC Press, 2000) in section 3) below, If the agent is unknown, the most restrictive procedures, those listed for C01 will be followed.
2. The following general guidelines are designed to contain contamination.
  - A. Only decontaminated remains and personal effects will be transported from the scene to the Medical Examiner Facility or mobile morgue site. Bodies and personal effects will be processed one at a time; personal effects will accompany the body to the morgue.
  - B. Bodies will be photographed and clothing and valuables removed at the scene.
  - C. If possible, decontaminated valuables will be returned to the next-of-kin or personal representative of the decedent. If decontamination of valuables is not possible (which might be the case for wallets, purses and other porous items), the items will be inventoried, photographed and destroyed. Destruction will be conducted by a least two individuals.
3. After evaluating the risk of contamination to personnel, the number of victims, and the need for autopsy to determine the cause of death; the decision to autopsy all, none, or a portion of the dead will be made by the Chief Medical Examiner or his representative.
  - A. At a minimum, unless risk to personnel is determined to be unacceptable, all victims will be examined externally and specimens collected for toxicology and serology.
  - B. If the decision has been made not to autopsy all victims, but risk of contaminations is not considered unacceptable; victims presenting evidence of trauma (such as might result from trampling during a panic evacuation of an incident locations) will be autopsied.
4. Decontamination Categories. (A list of agents belonging to each class is available in the *Handbook of Chemical and Biological Warfare Agents*).
  - A. C01 – Nerve Agents –“G”: Series
  - B. C02 – Nerve Agents –“V” Series
  - C. C03 – Nerve Agents – “GV”Series
  - D. C04 – Nerve Agents –Norvichok
  - E. C05 – Nerve Agents –Binary and Components
  - F. C06 – Nerve Agents – Carbamate
  - G. C07 – Vesicants – Sulfur Based
  - H. C08 – Vesicants – Arsenic Base
  - I. C09 – Vesicants - Nitrogen Based
  - J. C10 – Versicants – Mixture of Sulfur and Arsenic
  - K. C11- Urticants
  - L. C12 – Blood Agents – General
  - M. C13 – Blood Agents – Arsenic Based
  - N. C14 –Choking Agents
  - O. C15 – Choking Agents – Metal Fume
  - P. C16 – Incapacitating Agents

## **MEDICAL EXAMINER RESPONSE: CHEMICAL INCIDENT cont'd**

- Q. C17 – Tear Agents – Halogenated
- R. C18 – Tear Agents – Non Halogenated
- S. C19 – Tear Agents – In Solvents
- T. C20 – Vomiting Agents
- U. C21 – Corrosive Smoke
- V. C22 – Toxins
- W. C23 – Toxins-Dermally Hazardous
- X. C24 – Pathogens- Anti-Personnel
- Y. C25– Pathogens – Anti-Personnel/Vector
- Z. C26 – Pathogens – Anti-Personnel/Ingestion
- AA. C27 – Pathogens – Anti Animal
- BB. C28 – Pathogens – Anti Plant
- CC. C29 – Pathogens– Used as Simulants

### **5. Decontaminations Instructions:**

- A. C01-12, 16, 22 and 23: Remove all clothing; decontaminate with straight household bleach then incinerate at an appropriate facility. Wash remains with a bleach solution insuring the solution is introduced into the ears, nostrils, mouth and any wounds. Pay particular attention to hair, scalp pubic areas, fingernails and folds of skin where agents may get trapped. The solution should be no less than one part household bleach to one part water. Solution may be buffered with sodium bisulfate to a neutral pH in order to minimize the corrosive impacts on the remains. The bleach solution should remain in contact with the remains for a minimum of five (5) minutes. Wash with soap and water. Remains should be screened for volatile agents. Agents that have been absorbed into the remains pose minimal secondary risk; however, it is prudent to perform air monitoring during examinations. Latex gloves do not offer sufficient protection prior to decontaminations.
- B. C13-14 and 17-19: Removal all clothing: ship to appropriate hazardous waste disposal facility, if solid (reactive) agents have been released, care must be taken to remove as much solid agent as possible prior to decontamination. Wash remains with copious amounts of soap and water. Pay particular attention to hair, scalp, pubic areas, fingernails and folds of skin where agents may get trapped. Remains should be screened for volatile agents. Agents that have been absorbed into the remains pose minimal secondary risk; however, it is prudent to perform air monitoring during examinations.
- C. C20: Remove all clothing; ship to appropriate hazardous waste disposal facility. Wash remains with a bleach solution insuring the solution is introduced into the ears, nostrils, mouth and any wounds. Pay particular attention to hair, scalp, pubic areas, fingernails and folds of skin where agents may get trapped. The solution should be no less than one part household bleach to one part water. Solution may be buffered with sodium bisulfate to a neutral pH in order to minimize the corrosive impacts on the remains. The bleach solution should remain in contact with the remains for a minimum of five (5) minutes. Wash with soap and water. Remains should be screened for volatile agents. Remains pose no significant secondary hazards after decontaminations.



## **MEDICAL EXAMINER RESPONSE: CHEMICAL INCIDENT cont'd**

- D. C 21: Remove all clothing: decontaminate with an appropriate neutralizing agent. Wash remains with an appropriate neutralizing agent followed by soap and water. Pay particular attention to ears, nostrils, mouth, wounds, hair, scalp, pubic areas, fingernails, and folds of skin where agents may get trapped. Remains pose no significant secondary hazards after decontamination.
- E. C 24-26: If fatality was due to direct exposure to an aerosol cloud, removal all clothing and double bag in appropriate biological hazard containers. Wash remains with soap and water. Collect and disinfect all wash and rinse solutions. In many cases, there is an additional risk of secondary infection due to exposure of personnel to contaminated blood, bodily fluids, or fecal matter from remains. Some pathogens may be absorbed into fomites (e.g., clothing or bedding) causing these items to become infectious and capable of transmitting the disease. If fomites are hazardous, remove all items and double bag in appropriate biological hazard containers.
- F. C27-29: These pathogens represent a minimal threat to humans; thus medical examiner investigation is unlikely. In the event of a human death that is thought to be contaminated with an agent in any of these classes, cleaning with a soap and water solution is sufficient to eliminate further contamination. Contaminated personal effects are to be cleaned with the same solution.

## **MEDICAL EXAMINER RESPONSE: Biological Incident**

- 1) The procedure of these agents are included in section D: however, because of the incubation period associated with a biological agent, special attentions must be given to the epidemiology of the deaths in order to accurately diagnose the disease, identify the agent and establish the date/time and location of the incident. Close cooperation with hospitals and the Health Department is essential to properly investigate deaths resulting from this type of incident.
- 2) Following identification of the agent, providing prophylactic care to those exposed to the agent is the first priority this will require chronicling all contacts of exposed Department personnel with the public.
- 3) Deaths exhibiting the symptoms associated with the agent must be identified and appropriate decontaminations procedures completed prior to examination. Any unwitnessed and unexpected apparent natural death should be assumed to be the result of the biological incident and handled accordingly.
- 4) For either a chemical or a biological incident, Federal involvement in the investigation is likely.

## **MEDICAL EXAMINER RESPONSE: Natural Disaster**

- 1) Consider conditions of the infrastructure (e.g road signs, landmarks, roads).
- 2) Consider ability of employees to respond to work (roads, family concerns, etc).
- 3) Consider communications capability.



National Association of Medical Examiners

# ***Forensic Autopsy Performance Standards***

***Prepared by:***

***Garry F. Peterson, M.D. (Committee Chair)  
Steven C. Clark, Ph.D. (N.A.M.E. Consultant)***

***Approved October 17, 2005  
N.A.M.E. Annual Meeting, Los Angeles, California***

# The National Association of Medical Examiners

## Officers

Fred B. Jordan, M.D.  
*President*

John C. Hunsaker, M.D., J.D.  
*Vice-President*

Michael A. Graham, M.D.  
*Chairman of the Board*

John D. Howard, M.D.  
*Secretary-Treasurer*

Susan Carr, J.D.  
*Executive Vice-President*

Denise McNally  
*Executive Director*

## Board of Directors

Thomas A. Andrew, M.D.

Jonathan L. Arden, M.D.

Elizabeth K. Balraj, M.D.

Christopher Boden, B.S.

Ellen G. I. Clark, M.D.

Tracey S. Corey, M.D.

Gregory G. Davis, M.D.

J. Scott Denton, M.D.

Vincent J.M. DiMaio, M.D.

James C. U. Downs, M.D.

Ljubisa J. Dragovic, M.D.

John E. Gerns, MFS, APO, AE

Jan C. Garavaglia, M.D.

Julia C. Goodin, M.D.

Amy P. Hart, M.D.

Donald R. Jason, M.D., J.D.

Jeffrey M. Jentzen, M.D.

Mitra B. Kalelkar, M.D.

Bruce P. Levy, M.D.

Kurt B. Nolte, M.D.

Joseph A. Prahlow, M.D.

Lakshmanan Sathyavagiswaran, M.D.

Gregory A. Schmunk, M.D.

## Executive Offices

430 Pryor Street, SW  
Atlanta, GA 30312

Phone: (404) 730-4781 Fax: (404) 730-4420

E-Mail: [name@thename.org](mailto:name@thename.org)

# Table of Contents

<b>PREFACE</b> .....	iii
<b>COMMITTEE AND PANEL MEMBERSHIP</b> .....	iv
<b>SECTION A: MEDICOLEGAL DEATH INVESTIGATION</b> .....	1
Standard A1 Responsibilities .....	1
Standard A2 Initial Inquiry .....	2
<b>SECTION B: FORENSIC AUTOPSIES</b> .....	3
Standard B3 Selecting Deaths Requiring Forensic Autopsies .....	3
Standard B4 Forensic Autopsy Performance .....	4
Standard B5 Interpretation and Opinions .....	4
<b>SECTION C: IDENTIFICATION</b> .....	5
Standard C7 Standard Identification Procedures .....	5
Standard C8 Procedures Prior to Disposition of Unidentified Bodies .....	6
<b>SECTION D: EXTERNAL EXAMINATIONS: GENERAL PROCEDURES</b> .....	7
Standard D9 Preliminary Procedures .....	7
Standard D10 Physical Characteristics .....	8
Standard D11 Postmortem Changes .....	8
<b>SECTION E: EXTERNAL EXAMINATIONS: SPECIFIC PROCEDURES</b> .....	9
Standard E12 Suspected Sexual Assault .....	9
Standard E13 Injuries: General .....	10
Standard E14 Photographic Documentation .....	10
Standard E15 Firearm Injuries .....	10
Standard E16 Sharp Force Injuries .....	11
Standard E17 Burn Injuries .....	11
Standard E18 Patterned Injuries .....	11
<b>SECTION F: INTERNAL EXAMINATION</b> .....	12
Standard F19 Thoracic and Abdominal Cavities .....	12
Standard F20 Internal Organs and Viscera .....	12
Standard F21 Head .....	13
Standard F22 Neck .....	13
Standard F23 Penetrating Injuries, Including Gunshot and Sharp Force Injuries .....	13
Standard F24 Blunt Impact Injuries .....	14

# Table of Contents

<b>SECTION G: ANCILLARY TESTS AND SUPPORT SERVICES .....</b>	<b>15</b>
Standard G25 Radiography .....	15
Standard G26 Specimens for Laboratory Testing .....	15
Standard G27 Histological Examination .....	16
Standard G28 Forensic Pathologists' Access to Scientific Services and Equipment .....	16
Standard G29 Content of Toxicology Lab Report .....	16
Standard G30 Evidence Processing .....	17
<b>SECTION H: DOCUMENTATION AND REPORTS .....</b>	<b>18</b>
Standard H31 Postmortem Examination Report .....	18
<b>TERMS AND DEFINITIONS .....</b>	<b>19</b>

# Preface

Efforts by the National Association of Medical Examiners (NAME) to promulgate practice standards began in the 1970s. These early efforts subsequently became focused on the operational aspects of medical examiner offices, resulting in the well-known NAME Office *Accreditation Checklist*. More recently, some members suggested that the time was ripe for standards that address the professional aspects of individual death investigations. Then-president Michael Bell appointed this committee to draft such standards.

The principal objective of these standards is to provide a constructive framework that defines the fundamental services rendered by a professional forensic pathologist practicing his or her art. Many forensic pathologists will exceed these minimal performance levels and are encouraged to do so.

NAME recognized that certain standards may not be applicable where they conflict with federal, state, and local laws. Deviation from these performance standards is expected only in unusual cases when justified by considered professional judgment.

National Association of Medical Examiners  
Standards Committee  
August 12, 2005



# N.A.M.E. Standards Committee

Vernard I. Adams, M.D.  
Michael D. Bell, M.D.  
Vincent J. M. Di Maio, M.D.  
Mary H. Dudley, M.D.  
Karen L. Gunson, M.D.\*\*  
Charles M. Harvey, M.D.  
Mary I. Jumbelic, M.D.\*  
Yvonne I. Milewski, M.D.  
Joe A. Prahlow, M.D.  
Victor W. Weedn, M.D., J.D.  
Garry F. Peterson, M.D., J.D. (chair)

Tom A. Andrew, M.D.  
Stephen J. Cina, M.D.\*  
Edmund R. Donoghue, M.D.  
Marcella F. Fierro, M.D.  
Randy L. Hanzlick, M.D.  
John C. Hunsaker, M.D., J.D.  
Bruce P. Levy, M.D.  
Robert R. Pfalzgraf, M.D.  
Gregory A. Schmunk, M.D.

\* Completed initial survey instruments - unable to attend meetings.

\*\* Nominated to the committee - unable to attend meetings.

Steven C. Clark, Ph.D. served as project director and Denise McNally, N.A.M.E.'s Executive Director, provided administrative support.

## External Review Panel

Mary E. S. Case, M.D.  
Tracy S. Corey, M.D.  
Michael A. Graham, M.D.  
Jeffery M. Jentzen, M.D.

Stephen D. Cohle, M.D.  
Joseph H. Davis, M.D.  
Amy P. Hart, M.D.  
Patricia J. McFeeley, M.D.

# A SECTION

## Medicolegal Death Investigation

**The purpose of this section is to define responsibility for medicolegal death investigation and to outline the types of cases that are to be investigated by such systems. Investigations can be conducted by inquiry with or without examination. Inquiries are typically conducted via telephone interview, personal interview, or review of records. Examination may include scene investigation, external inspection, and forensic autopsy.**

### **Standard A1    Responsibilities**

Medicolegal death investigation officers, be they appointed or elected, are charged by statute to investigate deaths deemed to be in the public interest—serving both the criminal justice and public health systems. These officials must investigate cooperatively with, but independent from, law enforcement and prosecutors. The parallel investigation promotes neutral and objective medical assessment of the cause and manner of death.

#### **To promote competent and objective death investigations:**

- A1.1 Medicolegal death investigation officers should operate without any undue influence from law enforcement agencies and prosecutors.
- A1.2 A forensic pathologist or representative shall evaluate the circumstances surrounding all reported deaths.

## **Standard A2 Initial Inquiry**

Medicolegal death investigators assess each death reported to the office to determine whether it falls under their jurisdiction as outlined by statutes, rules, and regulations. The categories below are those which should receive further investigations to protect the public safety and health, and determine the cause and manner of death.

### **The forensic pathologist or representative shall investigate all:**

- A2.1 deaths due to violence.
- A2.2 known or suspected non-natural deaths.
- A2.3 unexpected or unexplained deaths when in apparent good health.
- A2.4 unexpected or unexplained deaths of infants and children.
- A2.5 deaths occurring under unusual or suspicious circumstances.
- A2.6 deaths of persons in custody.
- A2.7 deaths known or suspected to be caused by diseases constituting a threat to public health.
- A2.8 deaths of persons not under the care of a physician.

# B SECTION

## Forensic Autopsies

**The purpose of this section is to establish minimum standards for the selection of cases requiring forensic autopsy, who should perform the autopsies, need for special dissection or testing, and who is responsible for interpretations and formation of opinions.**

### **Standard B3     Selecting Deaths Requiring Forensic Autopsies**

Medicolegal death investigation officers are appointed or elected to safeguard the public interest. Deaths by criminal violence, deaths of infants and children, and deaths in the custody of law enforcement agencies or governmental institutions— can arouse public interest, raise questions, or engender mistrust of authority. Further, there are specific types of circumstances in which a forensic autopsy provides the best opportunity for competent investigation, including those needing identification of the deceased and cases involving bodies in water, charred or skeletonized bodies, intoxicants or poisonings, electrocutions, and fatal workplace injuries. Performing autopsies protects the public interest and provides the information necessary to address legal, public health, and public safety issues in each case. For categories other than those listed below, the decision to perform an autopsy involves professional discretion or is dictated by local guidelines. For the categories listed below, the public interest is so compelling that one must always assume that questions will arise that require information obtainable only by forensic autopsy.

**The forensic pathologist shall perform a forensic autopsy when:**

- B3.1 the death is known or suspected to have been caused by apparent criminal violence.
- B3.2 the death is unexpected and unexplained in an infant or child.
- B3.3 the death is associated with police action.
- B3.4 the death is apparently nonnatural and in custody of a local, state, or federal institution.
- B3.5 the death is due to acute workplace injury.
- B3.6 the death is caused by apparent electrocution.
- B3.7 the death is by apparent intoxication by alcohol, drugs, or poison.
- B3.8 the death is caused by unwitnessed or suspected drowning.
- B3.9 the body is unidentified and the autopsy may aid in identification.

- B3.10 the body is skeletonized.
- B3.11 the body is charred.
- B3.12 the forensic pathologist deems a forensic autopsy is necessary to determine cause or manner of death or collect evidence.

## **Standard B4 Forensic Autopsy Performance**

Performance of a forensic autopsy is the practice of medicine. Forensic autopsy performance includes the discretion to determine the need for additional dissection and laboratory tests. A forensic autopsy must be conducted by a licensed physician who is a forensic pathologist or by a physician who is a forensic pathologist-in-training (resident/fellow). \* Responsibility for forensic autopsy quality must rest with the forensic pathologist, who must directly supervise support staff. Allowing non-forensic pathologists to conduct forensic autopsy procedures without direct supervision and guidance is fraught with the potential for serious errors and omissions.

### **Autopsies shall be performed as follows:**

- B4.1 the forensic pathologist or residents in pathology perform all autopsies.
- B4.2 the forensic pathologist directly supervises all assistance rendered during postmortem examinations.
- B4.3 the forensic pathologist or residents in pathology performs all dissections of removed organs.
- B4.4 the forensic pathologist determines need for special dissections or additional testing.

## **Standard B5 Interpretation and Opinions**

Interpretations and opinions must be formulated only after consideration of available information and only after all necessary information has been obtained. As the person directing the investigation, the forensic pathologist must be responsible for these activities, as well as the determination of cause of death and manner of death (for the death certificate).

### **Autopsies shall be performed as follows:**

- B5.1 the forensic pathologist reviews and interprets all laboratory results the forensic pathologist requested.
- B5.2 the forensic pathologist reviews all ancillary and consultative reports the forensic pathologist requested.
- B5.3 the forensic pathologist determines cause of death.
- B5.4 the forensic pathologist determines manner of death.

\* Elsewhere in these standards, where the word "pathologist" appears, it means a physician who is a pathologist or a pathologist-in-training (resident/fellow), as defined by the ACGME.

# C SECTION

## Identification

**The purpose of this section is to establish procedures for sufficient identification of the deceased, to document information needed to answer questions that may later arise, and to archive information needed for putative identification before burial of unidentified remains.**

### **Standard C7    Standard Identification Procedures**

Methods of identification are determined on an individual case basis, but can include viewing of the remains, either directly or by photograph, and comparison of dentition, fingerprints, or radiographs. A photograph of the face, labeled with the case number, documents and preserves the appearance at the time of identification. The same photograph can also be used to minimize and prevent potential errors when multiple fatality incidents occur. When more traditional methods fail in the determination of identification, a routinely-obtained DNA sample may be used to link the remains either to a known antemortem or kindred sample. In addition, a DNA specimen is particularly important for later questions of identity as well as for potential familial genetic analysis and criminalistic comparisons. Preservation of all data used to determine identification is necessary to address future questions and can provide the opportunity for a second objective determination of identification.

#### **In support of identification of the body:**

- C7.1 the forensic pathologist assesses the sufficiency of presumptive identification.
- C7.2 the forensic pathologist or representative takes identification photographs with case number in photograph.
- C7.3 the forensic pathologist or representative obtains and archives specimen for DNA on all autopsied cases.

## **Standard C8 Procedures Prior to Disposition of Unidentified Bodies**

Prior to disposition of the unidentified remains, inventory and archiving of potentially useful objective data are required. A forensic autopsy can disclose medical conditions useful for identification. Full-body radiographs document skeletal characteristics and radio-opaque foreign bodies such as bullets, pacemakers, and artificial joints. Dental charting and radiography preserve unique dental characteristics. The documentation of a decedent's clothing and personal effects archives details that are familiar to the next-of-kin. Careful preservation and archiving provide an objective basis for future identification and thereby avoid the need for exhumation.

### **Prior to disposition of an unidentified body the forensic pathologist shall:**

- C8.1 perform a forensic autopsy.
- C8.2 take or cause to be taken radiographs of head, neck, chest, extremities, and torso in their entirety.
- C8.3 cause the dentition to be charted and x-rayed.
- C8.4 document or cause to be documented decedent's clothing and personal effects.

# D SECTION

## External Examinations: General Procedures

**The purpose of this section is to establish minimum standards for the external examination of all bodies.**

### **Standard D9 Preliminary Procedures**

These standards underscore the need for assessment of all available information prior to the forensic autopsy to (1) direct the performance of the forensic autopsy, (2) answer specific questions unique to the circumstances of the case, (3) document evidence, the initial external appearance of the body, and its clothing and property items, and (4) correlate alterations in these items with injury patterns on the body. Just as a surgeon does not operate without first preparing a history and physical examination, so must the forensic pathologist ascertain enough history and circumstances and may need to inspect the body to decide whether a forensic autopsy is indicated and to direct the forensic autopsy toward relevant case questions.

#### **Preliminary procedures are as follows:**

- D9.1 forensic pathologist reviews the circumstances of death prior to forensic autopsy.
- D9.2 forensic pathologist or representative measures and records body length.
- D9.3 forensic pathologist or representative measures and records body weight.
- D9.4 forensic pathologist examines the external aspects of the body before internal examination.
- D9.5 forensic pathologist or representative photographs, or forensic pathologist describes decedent as presented.
- D9.6 forensic pathologist documents and correlates clothing findings with injuries of the body in criminal cases.
- D9.7 forensic pathologist or representative identifies and collects trace evidence on clothing in criminal cases.
- D9.8 forensic pathologist or representative removes clothing.
- D9.9 forensic pathologist or representative photographs or lists clothing and personal effects.



## **D10 Physical Characteristics**

The external examination documents identifying features, signs of or absence of disease and trauma, and signs of death. Recording identifying features provides evidence for or against a putative identification. Recording signs of disease and trauma is a primary purpose of the forensic autopsy.

### **The forensic pathologist shall:**

- D10.1 document apparent age.
- D10.2 establish sex.
- D10.3 describe apparent race or racial characteristics.
- D10.4 describe hair.
- D10.5 describe eyes.
- D10.6 describe abnormal body habitus.
- D10.7 document prominent scars, tattoos, skin lesions, and amputations.
- D10.8 document presence or absence of dentition.
- D10.9 inspect and describe head, neck, thorax, abdomen, extremities, and hands.
- D10.10 inspect and describe posterior body surface and genitals.
- D10.11 document evidence of medical or surgical intervention.

## **Standard D11 Postmortem Changes**

Recording *rigor mortis* documents a sign of death that cannot be captured by photography. Recording *livor mortis* helps to answer later questions about bruises and body position. Notation of postmortem artifacts is useful for interpretation of subsequent forensic autopsy findings. Each of these may be useful in estimation of the postmortem interval.

### **The forensic pathologist shall:**

- D11.1 describe *livor mortis*.
- D11.2 describe *rigor mortis*.
- D11.3 describe postmortem changes.
- D11.4 describe evidence of embalming.
- D11.5 describe decompositional changes.

# **E** SECTION

## External Examinations: Specific Procedures

**The purpose of this section is to establish minimum standards for external examination of bodies with documentation of injuries or suspected sexual assault.**

### **Standard E12 Suspected Sexual Assault**

Collection of swabs, combings, clippings, and trace evidence may be necessary to 1) determine if sexual assault occurred; 2) link multiple, apparently unrelated deaths; or 3) link the death to an assailant. DNA analysis is now the test of choice on swabs, hair, and fingernail clippings. These collections shall be performed in accordance with the requirements of the crime laboratory procedures.

**The forensic pathologist or representative shall, prior to cleaning the body:**

- E12.1 collect swabs of oral, vaginal, and rectal cavities.
- E12.2 collect pubic hair combings or tape lifts.
- E12.3 collect fingernail scrapings or clippings.
- E12.4 collect pubic and head hair exemplars.
- E12.5 identify and preserve foreign hairs, fibers, and biological stains.

## **Standard E13 Injuries: General**

Documentation of injuries may be necessary to determine the nature of the object used to inflict the wounds, how the injuries were incurred, and whether the injuries were a result of an accident, homicide, or suicide. Written, diagrammatic, and photographic documentation of the injuries may be used in court. Observations and findings are documented to support or refute interpretations, to provide evidence for court, and to serve as a record.

### **The forensic pathologist shall:**

- E13.1 describe injuries.
- E13.2 describe injury by type.
- E13.3 describe injury by location.
- E13.4 describe injury by size.
- E13.5 describe injury by shape.
- E13.6 describe injury by pattern.

## **Standard E14 Photographic Documentation**

Photographic documentation complements written documentation of wounds and creates a permanent record of forensic autopsy details. Photographic documentation of major wounds and injury shall include a reference scale in at least one photograph of the wound or injury to allow for 1:1 reproduction.

### **The forensic pathologist or representative shall:**

- E14.1 photograph injuries unobstructed by blood, foreign matter, or clothing.
- E14.2 photograph major injuries with a scale.

## **Standard E15 Firearm Injuries**

Documentation of firearm wounds as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

### **The forensic pathologist shall:**

- E15.1 describe injuries.
- E15.2 measure wound size.
- E15.3 locate cutaneous wounds of the head, neck, torso, or lower extremities by measuring from either the top of head or sole of foot.
- E15.4 locate cutaneous wounds of the head, neck, torso, or lower extremities by measuring from either the anterior or posterior midline.
- E15.5 locate cutaneous wounds of the upper extremities by measuring from anatomic landmarks.
- E15.6 descriptively locate cutaneous wounds in an anatomic region.
- E15.7 describe presence or absence of soot and stippling.
- E15.8 describe presence of abrasion ring, searing, muzzle imprint, lacerations.

## **Standard E16 Sharp Force Injuries**

Documentation of sharp force injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

### **The forensic pathologist shall:**

- E16.1 describe wound.
- E16.2 measure wound size.
- E16.3 locate wound in anatomic region.

## **Standard E17 Burn Injuries**

Documentation of burn injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

### **The forensic pathologist shall:**

- E17.1 describe appearance of burn.
- E17.2 describe distribution of burn.

## **Standard E18 Patterned Injuries**

Documentation of patterned injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation. Bite marks should be swabbed to collect specimens to use for DNA comparison with putative assailants.

### **The forensic pathologist shall:**

- E18.1 measure injury size.
- E18.2 describe location of injury.
- E18.3 describe injury pattern.
- E18.4 swab recent or fresh bite mark.

# **F** SECTION

## Internal Examination

**The purpose of this section is to establish minimum standards for internal examinations.\***

### **Standard F19 Thoracic and Abdominal Cavities**

Because some findings are only ascertained by *in situ* inspection, the thoracic and abdominal cavities must be examined before and after the removal of organs so as to identify signs of disease, injury, and therapy.

**The forensic pathologist shall:**

- F19.1 examine internal organs *in situ*.
- F19.2 describe adhesions and abnormal fluids.
- F19.3 document abnormal position of medical devices.
- F19.4 describe evidence of surgery.

### **Standard F20 Internal Organs and Viscera**

The major internal organs and viscera must be examined after their removal from the body so as to identify signs of disease, injury, and therapy.

**Procedures are as follows:**

- F20.1 the forensic pathologist or representative removes organs from cranial, thoracic, abdominal, and pelvic cavities.
- F20.2 the forensic pathologist or representative records measured weights of brain, heart, lungs, liver, spleen, and kidneys.
- F20.3 the forensic pathologist dissects and describes organs.

\* The Committee recognizes that some circumstances may justify a "limited" internal examination, in which case the rationale for such shall be documented.

## **Standard F21 Head**

Because some findings are only ascertained by *in situ* inspection, the scalp and cranial contents must be examined before and after the removal of the brain so as to identify signs of disease, injury, and therapy.

### **Procedures are as follows:**

- F21.1 the forensic pathologist shall inspect and describe scalp, skull, and meninges.
- F21.2 the forensic pathologist shall document any epidural, subdural, or subarachnoid hemorrhage.
- F21.3 the forensic pathologist shall inspect the brain *in situ* prior to removal and sectioning.
- F21.4 the forensic pathologist shall document purulent material and abnormal fluids.
- F21.5 the forensic pathologist or representative removes the dura mater and the forensic pathologist inspects the skull.

## **Standard F22 Neck**

The muscles, soft tissues, airways, and vascular structures of the anterior neck must be examined to identify signs of disease, injury, and therapy. A layer-by-layer dissection is necessary for proper evaluation of trauma to the anterior neck. Removal and *ex situ* dissection of the upper airway, pharynx, and upper esophagus is a necessary component of this evaluation. A dissection of the posterior neck is necessary when occult neck injury is suspected.

### **The forensic pathologist shall:**

- F22.1 examine *in situ* muscles and soft tissues of the anterior neck.
- F22.2 remove and examine neck organs and airways.
- F22.3 dissect the posterior neck in cases of suspected occult neck injury.
- F22.4 perform anterior neck dissection in neck trauma cases.

## **Standard F23 Penetrating Injuries, Including Gunshot and Sharp Force Injuries**

Documentation of penetrating injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation. The recovery and documentation of foreign bodies is important for evidentiary purposes. Internal wound pathway(s) shall be described according to organs and tissues and size of defects of these organs and tissues.

### **The forensic pathologist shall:**

- F23.1 correlate internal injury to external injury
- F23.2 describe and document the track of wound
- F23.3 describe and document the direction of wound
- F23.4 recover foreign bodies of evidentiary value
- F23.5 describe and document recovered foreign body

## **Standard F24 Blunt Impact Injuries**

Documentation of blunt impact injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

### **The forensic pathologist shall:**

- F24.1 describe internal and external injuries with appropriate correlations.
- F24.2 describe and document injuries to skeletal system.
- F24.3 describe and document injuries to internal organs, structures, and soft tissue.



# Ancillary Tests and Support Services

**The purpose of this section is to establish minimum standards for the use of scientific tests, procedures, and support services. This section also addresses the need for certain equipment and access to consultants. For toxicology reports, it also specifies the report content needed by the forensic pathologist for interpretation and establishes minimum standards for handling and documenting evidence.**

## **Standard G25 Radiography**

Radiographs of infants are required to detect occult fractures which may be the only physical evidence of abuse. Radiographs detect and locate foreign bodies and projectiles. Charred remains have lost external evidence of penetrating injury and identifying features.

**The forensic pathologist or representative shall:**

- G25.1 X-ray all infants.
- G25.2 X-ray explosion victims.
- G25.3 X-ray gunshot victims.
- G25.4 X-ray charred remains.

## **Standard G26 Specimens for Laboratory Testing**

Specimens must be routinely collected, labeled, and preserved to be available for needed laboratory tests, and so that results of any testing will be valid. The blood specimen source should be documented for proper interpretation of results.

**The forensic pathologist or representative shall:**

- G26.1 collect blood, urine, and vitreous.
- G26.2 collect, package, label, and preserve biological samples.
- G26.3 document whether blood is central, peripheral, or from cavity.



## **Standard G27 Histological Examination**

Histological examination may reveal pathologic changes related to the cause of death.

**The forensic pathologist shall:**

- G27.1 perform histological examination in cases with no gross anatomic cause of death unless remains are skeletonized.

## **Standard G28 Forensic Pathologists' Access to Scientific Services and Equipment**

The forensic pathologist requires access to special scientific services, equipment, and expertise. Radiographs, body weights, and organ weights are needed for evaluation of pathologic processes. These procedures need to be available during the forensic autopsy. Also, it is not reasonable, practical, or safe to carry bodies or organs to other locations for weighing or imaging.

**The forensic pathologist shall have access to:**

- G28.1 a histology laboratory.
- G28.2 a radiologist.
- G28.3 a forensic anthropologist.
- G28.4 a forensic odontologist.
- G28.5 toxicology testing.
- G28.6 on-site radiographic equipment.
- G28.7 on-site body and organ scales.
- G28.8 a clinical chemistry lab.
- G28.9 a microbiology lab.

## **Standard G29 Content of Toxicology Lab Report**

For correct interpretation, understanding, and follow-up of toxicology reports, the forensic pathologist requires specific knowledge of the items listed below.

**The forensic pathologist shall require the toxicologist or the toxicology report to provide the:**

- G29.1 source of sample.
- G29.2 type of screen.
- G29.3 test results.

## **Standard G30 Evidence Processing**

Custodial maintenance and chain of custody are legally required elements for documenting the handling of evidence.

**The forensic pathologist or representative shall:**

G30.1 collect, package, label, and preserve all evidentiary items.

G30.2 document chain of custody of all evidentiary items.

# H SECTION

## Documentation and Reports

**The purpose of this section includes standards for the content and format of the postmortem record.**

### **H31 Postmortem Examination Report**

Postmortem inspection and forensic autopsy reports must be readable, descriptive of findings, and include interpretations and opinions to make them informative. The report typically includes two separate parts of the forensic pathologist's work product, (1) the objective forensic autopsy with its findings including toxicological tests, special tests, microscopic examination, etc., and (2) the interpretations of the forensic pathologist including cause and manner of death.

#### **The forensic pathologist shall:**

- H31.1 prepare a written narrative report for each postmortem examination.
- H31.2 include the date, place, and time of examination.
- H31.3 include the name of deceased, if known.
- H31.4 include the case number.
- H31.5 include observations of the external examination, and when performed, the internal examination.
- H31.6 include a separate section on injuries.
- H31.7 include a description of internal and external injuries.
- H31.8 include descriptions of findings in sufficient detail to support diagnoses, opinions, and conclusions.
- H31.9 include a list of the diagnoses and interpretations in forensic autopsy reports.
- H31.10 include cause of death.
- H31.11 include manner of death.
- H31.12 include the name and title of each forensic pathologist.
- H31.13 sign and date each postmortem examination report.

# Terms and Definitions

## **1. Autopsy**

An examination and dissection of a dead body by a physician for the purpose of determining the cause, mechanism, or manner of death, or the seat of disease, confirming the clinical diagnosis, obtaining specimens for specialized testing, retrieving physical evidence, identifying the deceased or educating medical professionals and students.

## **2. Cause of Death**

The underlying disease or injury responsible for setting in motion a series of physiologic events culminating in death.

## **3. Direct Supervision**

Supervision of personnel performing actions in the immediate presence of the supervisor.

## **4. Forensic Autopsy**

An autopsy performed pursuant to statute, by or under the order of a medical examiner or coroner.

## **5. Forensic Pathologist**

A physician who is certified in forensic pathology by the American Board of Pathology or who, prior to 2006, has completed a training program in forensic pathology that is accredited by the Accreditation Council on Graduate Medical Education or its international equivalent or has been officially “qualified for examination” in forensic pathology by the ABP.

## **6. Manner of Death**

A simple system for classifying deaths based in large part on the presence or absence of intent to harm, and the presence or absence of violence, the purpose of which is to guide vital statistics nosologists to the correct external causation code in the International Classification of Diseases. The choices are natural, accident, homicide, suicide, undetermined, and in some registration districts for vital statistics, unclassified.

## **7. Medicolegal Death Investigator**

An individual who is employed by a medicolegal death investigation system to conduct investigations into the circumstances of deaths in a jurisdiction.

## **8. Forensic Pathologist's "Representative"**

Any individual who carries out duties under the direction or authority of the forensic pathologist. Individuals performing these various duties may range from technicians to licensed physician medical examiners, and may be law enforcement or crime laboratory technicians.

# **A Guide For Manner of Death Classification**

**First Edition**



**National Association of Medical Examiners ®**

**Prepared by  
Randy Hanzlick, MD  
John C. Hunsaker III, MD, JD  
Gregory J. Davis, MD**

**Approved by the NAME Board of Directors  
February 2002**

## **Preface and Caveats**

If reading this Guide results in a given certifier of death deciding to change his/her approach to classifying manner of death in certain types of cases, there is no need to amend or change certifications that have already taken place. Starting the new approach at a given point in time is acceptable, with the caveat that one may occasionally need to explain differences between newer and older certifications involving similar or identical circumstances.

If changes in manner-of-death classification procedures are undertaken, it may be prudent to discuss them with appropriate vital records registrars so they are not surprised, and that they understand the reasons for the change.

This book is a Guide. The recommendations contained herein are not standards and should not be used to evaluate the performance of a given certifier in a given case. Death certification and manner-of-death classification require judgment, and room must be allowed for discretion on a case by case basis.

It must be realized that when differing opinions occur regarding manner-of-death classification, there is often no "right" or "wrong" answer or specific classification that is better than its alternatives. When promulgating guidelines, however, one of the available options needs to be selected as the one recommended for use. Thus, the recommendations herein are ones selected to foster a consistent approach amongst certifiers, not because the recommended approach is the "right" or the "better" one.

The "arguments," principles, and foundations used to support certain recommendations in this Guide cannot be applied uniformly to every conceivable death scenario because issues sometimes vary with the manner of death being discussed. As a result, there will be obvious, apparent "inconsistencies" in the rationale discussed for making some of the recommendations in this Guide. This problem is unavoidable because of the nature of the subject at hand. Thus, in some cases, one simply must select an available manner-of-death classification as the preferred one for use in a given scenario while recognizing that the logic used to select that option may not be applicable or directly transferable to other situations (and, in fact, may seem inconsistent with the logic employed in other scenarios). In short, it is sometimes necessary to simply select an approach and use it for the purpose of consistency, recognizing that other approaches may be "just as good."

Finally, a draft publication of this Guide was made available for review and comment by the NAME membership. All comments were reviewed and considered. Discussion of the nature of the comments and the way they were addressed is included as an Appendix to this Guide. This revised version of the Guide was approved as an official publication of NAME by the Board of Directors at its Interim Meeting in Atlanta, Georgia on February 12, 2002.

It is anticipated that supplements to, or revisions of this Guide will occur in the future.

## **Introduction:**

All states have a standard death certificate that is based upon a model certificate called the US Standard Certificate of Death. Although the official death certificate in each state varies from the model and the death certificates used in other states, there are numerous similarities in form and content. The *certifier of death* is the physician, medical examiner, or coroner who completes the cause-of-death section of the certificate that also includes details about the circumstances surrounding death. *Manner of death* is one of the items that must be reported on the death certificate and a classification of death based on the circumstances surrounding a particular cause of death and how that cause came into play.

In most states, the acceptable options for manner-of-death classification are:

- Natural
- Accident
- Suicide
- Homicide
- Undetermined (or “Could not be Determined”)

Whether manner of death is indicated by checking an appropriate box on the death certificate or by writing or typing the manner in a designated space depends on the state and how its standard death certificate form is designed. Familiarity with state death certification procedures and the death certificate form are required.

Manner of death is an American invention. A place to classify manner of death was added to the US Standard Certificate of Death in 1910. Manner of death is not addressed directly in the International Classification of Diseases as promulgated by the World Health Organization. It was added to the death certificate by public health officials to assist in clarifying the circumstances of death and how an injury was sustained—not as a legally binding opinion—and with a major goal of assisting nosologists who code and classify cause-of-death information from death certificates for statistical purposes.

Medical examiners and coroners have debated for decades about how the manner of death should be classified in certain situations, and more recently, whether certifiers should be required to classify manner of death at all. The debate continues and is a frequent subject of discussion.

This Guide has been written with the assumptions that, for the foreseeable future, manner-of-death classification will continue to be recorded on the death certificate—and differences in opinions about how to classify manner of death shall persist. The major impetus for preparing this Guide is the premise that, for consistency’s sake, there can be a common thought and decision-making process upon which manner-of-death classifications can be based reproducibly in the great majority of cases.

Medical Examiners and Coroners reached the point that for personal, interpersonal, and inter-jurisdictional consistency, we as death certification professionals should be able to



recognize the recurrent debates about manner-of-death classification and arrive at a consensus approach for the commonly encountered manner of death dilemmas. We can “agree to disagree-- but to not be disagreeable,” to quote New York City Medical Examiner Charles Hirsch. All agree, however, on the fundamental premise that manner of death is circumstance-dependent, not autopsy-dependent. To that end, the suggestions in this Guide are made based on experience, the literature, and a goal for greater consistency.

### **Other Background Information:**

The death certificate is used for several major purposes. One purpose is to serve as legal documentation that a specific individual has died. In general, the death certificate serves as legal proof that death has occurred, but not as legal proof of the cause of death. Other major purposes of the death certificate are to: (a) provide information for mortality statistics that may be used to assess the Nation’s health; (b) systematically catalogue causes of morbidity and mortality; and (c) develop priorities for funding and programs that involve public health and safety issues.

In general, the *certifier of death* completes the cause-of-death section and attests that, to the best of the certifier’s knowledge, the person stated died of the cause(s) and circumstances reported on the death certificate. It is important to remember that these “facts” only represent the certifier’s opinion and are not written in stone or legally binding. Information on the death certificate may be changed, if needed. In general, states require that the certifier of death be a licensed physician, a medical examiner, or a coroner. In some states, lay coroners may serve as certifier, but such certifiers can and should rely upon physician input and guidance when completing the death certificate.

Because the cause and manner of death are opinions, judgment is required to formulate both for reporting on the death certificate. The degree of certainty required to classify the manner of death depends sometimes on the circumstances of the death. Although such issues will be discussed in further detail below, a general scheme of incremental “degrees of certainty” is as follows:

- Undetermined (less than 50% certainty)
- Reasonable medical or investigative probability (Greater than a 50:50 chance; more likely than not)
- Preponderance of medical/investigative evidence (For practical purposes, let’s say about 70% or greater certainty)
- Clear and convincing medical/investigative evidence (For practical purposes, let’s say 90% or greater certainty)
- Beyond any reasonable doubt (essentially 100% certainty)
- Beyond any doubt (100% certainty)

Seldom, for the purpose of manner-of-death classification, is “beyond a reasonable doubt” required as the burden of proof. In many cases, “reasonable probability” will suffice, but in other instances such as suicide, case law or prudence may require a

“preponderance” of evidence—or in homicide—“clear and convincing evidence” may be required or recommended. Further references to these principles will follow on the discussion of specific scenarios, as appropriate, below.

The certifier’s responsibilities include professional, administrative, and quasi-judicial elements. The conclusions that lead to manner-of-death classification are drawn at some point during an ongoing investigation. Cases are seldom, if ever, truly “closed” because the conclusions regarding manner of death may be changed (amended) anytime based on new relevant and material information. It is also important to remember that the conclusions reached for the purpose of manner-of-death classification may not be the same as those of other entities and officials. Such differences are expected because of the different roles and viewpoints of those entities and officials. In virtually all instances, explanations for such differences are usually apparent and readily offered. It is also important to remember that new developments in medicine and forensic science may provide the relevant and/or material information that leads to a need for reclassification of manner of death.

Manner-of-death classification has, to a significant degree, an element of history and tradition. When asked why manner of death is classified in a specific way, a not-uncommon response is “that’s the way I was trained” or “that’s the way its always been done where I have worked.” Tradition, history, training, and local idiosyncrasies in the criminal justice and law enforcement communities can have impact upon manner-of-death classification strategy. This phenomenon is recognized and is taken into account during the development of principles in this Guide.

Finally, one cannot escape the need to consider **intent** when classifying manner of death. However, the definition of, or need to consider “intent” may vary depending on the case. One basic consideration is beyond dispute: the concept of intent differs when manner-of-death classification issues are compared with other paradigms such as legal code and public health strategies. These issues will be addressed in various scenarios below. The take-home point devolving from contemporary practice is that a singular definition and application of “intent” does not work in the context of manner-of-death classification.

### **General Principles:**

There are several General Principles that may guide manner-of-death classification for the purposes of the death certificate. It is important to recognize that the death certificate has unique uses which dictate a special set of guidelines for manner-of-death classification.

**A. There are exceptions to every “rule,” but every rule holds true most of the time.** Therefore, rules can be modified or broken in exceptional circumstances but can, and should be followed most of the time.

**B. There are basic, general “rules” for classifying manner of death.**

- Natural deaths are due solely or nearly totally to disease and/or the aging process

- Accident applies when an injury or poisoning causes death and there is little or no evidence that the injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self harm or cause the death of one's self.
- Homicide occurs when death results from a volitional act committed by another person to cause fear, harm, or death. Intent to cause death is a common element but is not required for classification as homicide (more below). It is to be emphasized that the classification of Homicide for the purposes of death certification is a "neutral" term and neither indicates nor implies *criminal* intent, which remains a determination within the province of legal processes.
- Undetermined or "could not be determined" is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death in thorough consideration of all available information.
- In general, when death involves a combination of natural processes and external factors such as injury or poisoning, preference is given to the non-natural manner of death.

There are challenging aspects and exceptions related to each of the above classifications and concepts. These will be addressed in the various sections that follow.

**C. Certifiers of death should avoid, to the extent possible, interpretation of specific statutes as they may apply to a specific case in question.** For example, if a state defines a fatal vehicular hit-and-run incident as a type of "vehicular homicide," the certifier may classify manner as accident if the fatal injury seems to have been unintentional without clear intent to harm or cause death. Prosecution for vehicular homicide is not precluded if the legal requirements are met. This principle minimizes the need for the certifier to rely upon reported, often circumstantial third party or hearsay information and evaluate these data in the context of applicable criminal law, a function better suited to others in the criminal justice system.

**D. In general, the time interval between an injury/poisoning event and death is of little relevance in regard to manner of death classification** if death resulted from the effects or complications of the injury/poisoning and there is no clear supervening cause. For example, if a person dies 10 years after being intentionally shot by another person, with death resulting from pneumonia and systemic sepsis as a result of quadriplegia caused by the gunshot wound, the manner of death would still be classified as homicide. By reliance on this approach, legal interpretations are not required of the certifier and the criminal justice system's duties are not precluded.

**E. Manner of death certifications should be objective and based on simple, established criteria.** Manner-of-death classification should not be formulated on the basis of trying to facilitate prosecution, avoiding challenging publicity, building a political base, or promoting a personal philosophy or agenda.

**F. Regardless of how the certifier classifies the manner of death, the certifier may later address whether the findings are consistent with a proposed hypothetical situation.** For example, if the proper legal foundation is laid, the certifier may explain in court why the manner of death was certified as accident when told that the defendant has been charged with vehicular homicide. Whether the certifier is permitted to testify in court about the certified manner of death rests upon the law and practice of the relevant jurisdiction.

**G. The “but-for” principle is commonly applicable.** “But-for the injury (or hostile environment), would the person have died when he/she did?” This logic is often cited as a simple way to determine whether a death should be classified as natural or non-natural (homicide, suicide, accident). When an injury or poisoning is involved in the cause of death, an answer of “yes” supports a natural death and an answer of “no” should prompt due consideration to be given to a non-natural manner of death. The certifier needs to recognize, however, that the intermingling of natural and non-natural factors presents a set of complex considerations in assigning a manner of death. Regardless of whether the non-natural factor (a) unequivocally precipitated death, (b) exacerbated an underlying natural pathological condition, (c) produced a “natural” condition that constitutes the immediate cause of death, or (d) contributed to the death of a person with natural disease typically survivable in a non-hostile environment, this principle remains: the manner of death is unnatural when injury hastened the death of one already vulnerable to significant or even life-threatening disease.

**H. Most jurisdictions do not provide for manner of death to be classified as “Complication of Therapy.”** Although there are advocates for such an approach, acceptance of the approach is not widespread. To be sure, the death certificate should indicate when a death results from complications of medical diagnosis or treatment--whether such indication is given in the cause-of-death statement itself, the “how injury occurred” section, or in some other way. This Guide indulges the presumption that “Complication of Therapy” is not an accepted category for manner of death, and that a decision will have to be made for classification as one of the standard manners of death.

**I. Risk-taking behavior poses challenges when classifying manner of death.** More and more, people are engaging in risky sports, recreational activities, and other personal behaviors. Injury or death, when it occurs during such activities, is not entirely unexpected, prompting the argument that such deaths may not truly be “accidents.” Further, relevant differences in the nature and extent of risk, when comparing risky activities, are difficult to clearly identify. For example, how does placing an “unloaded” gun to the head and pulling the trigger (Roulette) differ from jumping from a bridge on an elastic cord, engaging in sexual acts with a noose around the neck, or participating in a sport in which blows to the head are part of the “game.”? These are challenging questions. In subsequent sections of this Guide, an attempt is made to provide a system of defensible logic to classify the manner of death in such cases.

**J. Volition versus Intent.** In evaluating the manner of death in cases involving external causes or factors (such as injury or poisoning), injuries are often categorized as

“intentional” (such as inflicted injury in child abuse or shooting a person during a robbery) or “unintentional” (such as falling from a building). Thus, assessment of “intent” does relate to manner-of-death classification: it necessarily underlies the quasi-judicial responsibility derived from the enabling law in the relevant jurisdiction of the death certifier. However, the legal view of intent may differ from the death investigator’s viewpoint. It is sometimes agonizingly difficult, and occasionally impossible, for the unbiased investigator to infer a victim’s or “perpetrator’s” intent. Intent is also much more apparent in some cases than others. For this reason, the concept of “voluntary acts” or “volition” may be useful. In general, if a person’s death results at the “hands of another” who committed a harmful volitional act directed at the victim, the death may be considered a homicide from the death investigation standpoint. For example, consider the case of a variation of firearms “roulette” in which the game is played as usual (one bullet in the revolver’s cylinder) except that another person holds the gun to the “player’s” head, spins the cylinder, pulls the trigger, and the gun discharges and kills the “player.” All acts (loading the gun, spinning the cylinder, placing the gun to the head, and pulling the trigger) were both volitional and intentional. Although there may not have been intent to kill the victim, the victim died because of the harmful, intentional, volitional act committed by another person. Thus, the manner of death may be classified as homicide because of the intentional or volitional act—not because there was intent to kill.

### **Principles and recommendations for specific types of cases.**

**1. To classify a death as Suicide,** the burden of proof need not be “beyond any reasonable doubt,” but it should exceed “more likely than not” (that is, the burden of proof should be more compelling than 51%, which barely exceeds chance). In general, requiring a “preponderance of evidence” is a reasonable practice when deciding whether to classify a death as suicide. In some states, case or other law requires that a preponderance of evidence exist to classify death as suicide. In short, if classification as suicide is little more than an informed guess or mere speculation, accident or undetermined are deemed to be better options.

**2. When a natural event occurs in a hostile environment,** as when someone has a myocardial infarct while swimming, and there is a likelihood that the person was alive when the face became immersed (i.e., the person was still alive while in the hostile environment), preference is usually given to the non-natural manner unless it is clear that death occurred before entry into the hostile environment. In the example cited (drowning because of a myocardial infarct while swimming), the manner of death would be appropriately classified as **Accident**. In this instance, a modified “but-for” test can be applied. “But-for” the hostile environment, death would have been considerably less likely to occur when it did and may not have occurred at all.

**3. Consequences of chronic substance abuse,** such as alcoholic cirrhosis, alcohol withdrawal seizures, endocarditis secondary to chronic IV drug abuse, and emphysema associated with smoking, have been traditionally designated as **Natural** manner. The

argument is often made that these deaths are chronic poisonings or that they result from continuous exposure to external agents and are, therefore, not natural deaths. Further, some argue that there is a “sub-intent” to do self-harm. However, the classification of such deaths as natural has a long history, widespread acceptance, and recognition that such behaviors result in “diseases” and become part of the person’s “normal” lifestyle which often includes psychiatric elements such as a dependency or addictive disorder. For these latter reasons, classification as natural seems most appropriate.

**4. Deaths directly due to the acute toxic effects of a drug or poison (i.e., poisoning),** such as acute alcohol poisoning, excited delirium from acute cocaine intoxication, or cardiac dysrhythmia due to tricyclic antidepressant toxicity have been traditionally classified as **Accident** (assuming there was no intent to do self-harm or cause death). In general, these are adverse acute events involving external factors, and the occurrence of the adverse event is not planned, reasonably expected, or reliably predictable as to time, place, or person. The difficulty often encountered is whether the drug or substance detected represents an acute exposure. For example, if benzoylecgonine only is detected in blood, does that constitute an “acute exposure”? The issues involved are highly dependent on the substance involved, are beyond the scope of this Guide, and are better left to other publications. Suffice it to say that if death results from an acute intoxication and the death was “unintentional,” tradition and logic indicate that the manner of death is best classified as “accident.” Further discussion (and exceptions) are discussed in #6 below in reference to some deaths involving medications and treatments.

**5. “Natural” disorders precipitated by an acute intoxication,** such as cerebral hemorrhage associated with acute cocaine intoxication, or rupture of a coronary atherosclerotic plaque during acute cocaine intoxication, for the purpose of consistency, may be classified as **Accident** if toxicology tests are supportive of an acute intoxication. The problem is, however, as in #4, deciding upon how “acute” such an intoxication is or must be to classify the manner of death as accident—and how acute effects of the drug relate to more chronic effects, if present. A convincing argument could be offered that preference should be given to the natural event while citing the intoxication in Part II and classifying the death as natural. It is recommended, however, to remain consistent with General Principle B (last bullet) that such deaths be classified as accidents. It is also recommended that “acute” be interpreted liberally, perhaps even as “recent.” That is, if the circumstances appear to link the death and a very recent intoxication, that the intoxication be considered when classifying manner of death.

**6. Deaths due to predictable, essentially unavoidable toxicity related to accepted treatment of a medical disorder,** such as digoxin toxicity in severe congestive heart failure, or bone marrow suppression with fatal infection secondary to chemotherapy (a poison), may be classified as **Natural**. In such cases, the treatment may have prolonged the life of the individual. Because such deaths are “poisonings,” some advocate classification as accident. However, tolerance, the need for high doses, and other factors can make interpretations difficult. For these reasons, natural is the preferred classification.

**7. Hunting “accidents”** in which a hunter intentionally fires a weapon (but may not intend to shoot at a human), may, for consistency’s sake, be classified as **Homicide** because the decedent died at the hands of another who volitionally fired the weapon. Each step but one involved intent and volition: loading the weapon, aiming it at a target, and pulling the trigger. The only intent absent was that of striking a human. The intent to hit a target was fulfilled.

**8. Firearms deaths in which a gun is shown to be capable of discharge without pulling the trigger, and, based on investigation, did so** (as when a gun fires when dropped on the ground, or discharges when it is picked up), may be classified as **Accident** if circumstances and investigation indicate that the gun was not fired by intentionally pulling the trigger (lack of a volitional act).

**9. Death of one who is struck by a ricochet from a firearm fired legally and without disregard for safety or human life** may be classified as **Accident**. To classify this as homicide, critical elements are missing: an intent to harm or kill, and an intentional or volitional pointing of the weapon in a way that the victim was the intended target. Often, if bullets ricochet, wound morphology allows analysis of possible ricochet before bullet entry, allowing the forensic pathologist to assess the possibility or likelihood of ricochet.

**10. Russian roulette or similar variants** may be classified as **Suicide** because the act of placing a loaded gun to the head and pulling the trigger is inherently dangerous, carries a high risk of death, and implies a “subintent” to do self-harm or accept the risk of serious injury or death. Guns are generally regarded as lethal weapons and are inherently lethal if misused. Knowledge of this fact is part of the reason the game is played. Thus, playing the game connotes an acceptance of possibly fatal outcome. Attempting to determine the victim’s state of mind and intent are extremely difficult. Classification of such deaths as suicide provides for a consistent approach and reflects the most common practice.

**11. Motor vehicle fatalities** in general, may be classified as **Accident** (assuming no suicidal or homicidal intent), even if by law the death may be regarded as vehicular homicide—and, there is no evidence from reasonable investigative inference that the at-fault person was using the vehicle as a weapon with an intent to kill the victim (in which case homicide would apply.)

**12. Deaths due to vector-borne disease**, even though the result of a bite or puncture such as rabies, Rocky Mountain Spotted Fever, and malaria, may be classified as **Natural**. These vectors transmit disease, and humans become ill or die from the disease processes. Typically, the deaths are less sudden than those due to envenomization and idiosyncratic responses to the agents are less variable than the individual response to envenomization.

**13. Deaths due to toxic envenomization**, such as spider bites, snake bites, and anaphylactic reactions to bee stings may be classified as **Accident**. These episodes are typically acute and the fatal human pathophysiologic response involves reaction to a toxin. Granted, the distinction between this type of death and those described in #12 is

somewhat arbitrary, but the line of distinction, thus drawn, is also fairly clear and easy to establish.

**14. Deaths due to drug or food induced anaphylaxis or anaphylactoid reaction** may be classified as **Accident**, even if there is a previous history of allergic reaction to the putative agent. Some argue that anaphylaxis represents an idiosyncratic pathophysiologic response and should therefore be considered natural. However, such deaths are often sudden, unpredicted, “premature,” and involve an external factor. Thus, classifying the manner as accident is preferred. It matters not whether the agent is food, drug, contrast dye, or other.

**15. Unintentional deaths from drug toxicity/poisoning in which the drug is administered by someone with the consent of the decedent** may be classified as **Accident**, as long as there is no evidence by reasonable investigative inference that the drug was given with the intent to kill the victim. Prosecution may still occur, if appropriate. This approach may seem inconsistent with some other scenarios, but it is reasonable on the basis that severe injury or death is not near as likely as, for example, when a loaded gun is placed to the head and the trigger is pulled.

**16. Deaths due to positional restraint induced by law enforcement personnel or to choke holds or other measures to subdue** may be classified as **Homicide**. In such cases, there may not be intent to kill, but the death results from one or more intentional, volitional, potentially harmful acts directed at the decedent (without consent, of course). Further, there is some value to the homicide classification toward reducing the public perception that a “cover up” is being perpetrated by the death investigation agency.

**17. Deaths of athletes due to injuries sustained in organized sports** may be classified as **Accident** because the participants accept inherent risks of the sport, unless the nature of the injury clearly falls outside that which normally occurs during the activity. Another way to regard this issue is that the “volitional or intentional act” that causes harm is inherent in participating in the game, and the game or sport requires the participant to commit potentially harmful acts. Thus, an untoward event is not solely attributable to the participant, and the potential risks have been sanctioned and accepted. Examples might include death from a “legal” head blow during boxing, or a broken neck from a tackle during a football game. However, death resulting from an altercation might be considered homicide if there were clear, unwarranted aggression outside the bounds of normal activities related to the rules of the sport—chasing down a baseball pitcher and striking him with the bat, for example. Judgment and informed discretion are required.

**18. Death of a law enforcement officer from cardiovascular or other natural disease while in pursuit of a criminal, felon, or suspect** may be classified as **Natural**, assuming there is no aggression or battery on the part of the person fleeing. Physical exertion may be listed as a contributory factor. Sample wording for use in Part II might be “Physical exertion while apprehending a fleeing suspect.” Such wording is appropriate for Part II because no injury occurred, thus, the “how injury occurred” item is not applicable.



**19. Deaths due to reasonably foreseeable complications of an accepted therapy for natural disease** may be classified as **Natural**. Examples include bone marrow suppression from chemotherapy (a “poisoning,” actually) and digoxin toxicity in someone who had intractable heart failure and required digoxin to maintain cardiac function and life. Numerous other analogous examples exist.

**20. Deaths due to improper use of medical equipment (without evidence of intentional misuse) or defective or malfunctioning medical equipment** may be classified as **Accident**. Some examples are: instilling of air instead of water during an endoscopic procedure, causing air embolism; connecting an oxygen cannula to an IV line; malfunction of a morphine drip pump; cutting an artery during surgery and failing to recognize and adequately repairing the “injury.”

**21. Deaths resulting from grossly negligent medical care** (such as inducing anesthesia without resuscitative equipment/supplies available) may be classified as **Accident** unless there is clear indication of intent to do harm, in which homicide might apply. The criminalization of medical malpractice is of great concern to both the legal and medical professions, and whether or not medical acts of commission or omission meet a legal definition of negligent or other homicide is better left to others more familiar with the legal issues involved.

**22. Deaths due to undesirable outcomes of diagnostic or therapeutic procedures and which involve circumstances outside the realm of reasonably acceptable risk and expected outcome** may be classified as **Accident** if a traumatic or toxic cause is shown (such as inadvertently cutting a major artery or overdosing with anesthetic), and **Undetermined** if a cause cannot be established (such as a young healthy man who dies during surgery for a inguinal hernia and a cause cannot be determined).

**23. High risk surgical patients who die while undergoing (or after) high risk procedures** may be classified as **Natural** if it appears that the normal and unavoidable stress of the surgery and underlying disease resulted in death. Using the ASA surgical risk classification to evaluate manner of death, as described by Reay, is a useful approach. An approach to periprocedural deaths is contained in the CAP manual on death certification. Both references are listed in suggested readings at the end of this Guide.

**24. When a person commits suicide by forcing the police to shoot**, the death may be classified as **Homicide**. In “How injury occurred,” language such as “decendent forced police to shoot him” may be used. The accuracy of reported details in such cases is not always known, and classification as homicide seems to be the best approach. Public perceptions of a “cover up” are also minimized using this approach.

**25. Judicial executions** may be certified as **Homicide**. In “How injury occurred,” language such as “judicial electrocution” or “judicial lethal injection” may be used

**26. When a young child shoots another child by pointing a gun and pulling a trigger**, the death may be classified as **Homicide** even though the child may not be subject to

prosecution. Undetermined may be appropriate if the circumstances are not well clarified, or Accident may apply if investigation shows a faulty/malfunctioning weapon.

**27. Traffic fatalities in which a pedestrian is killed and the driver has shown negligent behavior, probable intoxication, or fleeing of the scene** may be certified as **Accident** even though these features may meet a legal definition of vehicular homicide, and assuming that there was no intent to kill the individual. Whether or not the case meets a legal definition of vehicular (or some other form) of homicide/manslaughter is better left to the criminal justice system.

**28. Deaths resulting from fear/fright induced by verbal assault, threats of physical harm, or through acts aggression intended to instill fear or fright** may be classified as **Homicide** if there is a close temporal relationship between the incident and death. Examples include someone who has an acute cardiac death while being verbally assaulted; someone who dies in an auto crash while being chased by another to instill fear or panic; someone who dies suddenly immediately after being bitten; and someone who dies suddenly when someone scares them by popping up in a window and yelling “BOO!” with an apparent intent to scare or instill fear. In general, the time interval to establish the causal relationship between “minor injury” and collapse followed by death or those involving acute cardiac deaths following fright must be very short—during the stress inducing episode or immediate emotional response period-- a few minutes or less.

**29. Post-traumatic seizure disorders** may be classified in accordance with the nature of the injury that resulted in the seizure disorder—regardless of the time interval between the injury and death. Thus, post-traumatic seizure disorder that caused death 10 years after the auto accident that caused the disorder may still be classified as **Accident**.

**30. Failure to prescribe needed medication for natural disease, if there is no indication of willful failure to prescribe with intent to do harm,** may be classified as **Natural**.

**31. When a person has clearly committed a suicidal act, then apparently changes his/her mind, but dies as a result of the act,** the manner of death may be classified as **Suicide**.

**32. Café coronary** in its classic form of upper airway obstruction by food (that hasn't made it to or through the esophagus) in an otherwise healthy person may be classified as **Accident**. Typically, there is historical, anatomic, or toxicologic evidence accounting for compromised deglutition. Agonal aspiration of gastric contents or GE reflux do not fall into this category and, in general, should not be classified as an accidental manner of death.

**33. Deaths due to aspiration of oral secretions or gastric contents in those with dementia or other chronic debilitating central nervous system disease** may be classified as **Natural**.

- 34. Death involving obstruction of a tracheostomy site or tube by mucous plugs** or other secretions may be classified in accordance with the nature of the condition that required the tracheostomy to be performed. If performed for throat cancer, the manner would be natural. If performed because of an old accidental head injury, the manner would be accident, for example.
- 35. Deaths due to work-related infections resulting from job-related injury**, such as HIV infection acquired through an accidental needle stick, may be classified as **Accident** if investigation shows no other compelling, competing causes, and the details of the incident are reasonably well documented.
- 36. Deaths involving active euthanasia or actively assisted suicide** may be classified as **Homicide** unless state law dictates otherwise.
- 37. Assisted suicide involving passive assistance** may be classified as **Suicide** unless otherwise required by state law, and assuming that the assistance goes no further than supplying one or more items (or information needed) to complete the act.
- 38. Deaths in which infants/young children die because of placement in a potentially hostile environment** (such as in a bath tub with water, or being left in a locked car) may be classified as **Accident** if there is no evidence of intent to harm the child.
- 39. Deaths due to environmental hypothermia or hyperthermia** may be classified as **Accident** if there is no intent to kill or harm the victim via the act of placing or leaving a person in such environment with apparent intent to do harm.
- 40. Deaths in which hot weather or cold weather seem to precipitate death primarily caused by underlying disease** such as cardiovascular or respiratory illness may be classified as Natural. In Part II of the cause-of-death statement, "Hot weather" or "Cold Weather" may be listed as contributory factors. Life consists of having to live within the realm of natural conditions imposed by the weather and climate, and if the individual's underlying ill-health is a major factor in causing death, the adverse impact of natural changes in weather, even if regarded as extreme, does not warrant classification as Accident. For example, if a person's emphysema/bronchitis are aggravated by a high pollen count and death results, are we to classify the death as an Accident? What about high and low humidity that may contribute to death by aggravating severe respiratory disease? The potential cause and effect relationships are too vague and difficult to establish to allow for non-natural classification in such cases. Similarly, deaths related to exertion brought about by adverse weather may also be classified as natural, such as a myocardial infarction brought about by shoveling snow.
- 41. Deaths of those with major disease and minor accidental trauma** may be classified as natural if it is thought that death was about as likely to have occurred when it did had the trauma not existed. For example, a person in sickle cell crisis might sustain a minor injury that could exacerbate the crisis, yet the crisis is severe enough that it may well have been fatal on its own.

**42. Pregnancy-related deaths such as those due to eclampsia, air embolism, amniotic fluid embolism** and other well-recognized complications of pregnancy may be classified as natural if there is no indication that the complication resulted from inappropriate use of a medical device or an inappropriate or unlawful procedure.

**43. Death resulting from an act of aggression with a chemical or biological agent** released or activated to cause fear or harm may be classified as homicide. Bioterrorism events are included in this category which would also include smaller scale events such as intentionally poisoning the food at a salad bar, or tainting a commercial drug with a poison.

**44. Fatalities resulting from autoerotic behavior or consensual atypical sexual behavior** may be classified as accident in manner. Examples include autoerotic asphyxia with hanging or deaths involving bondage with asphyxia in which the person being bound did so voluntarily as far as investigation can show. As dangerous behaviors, one could argue that these are not dissimilar from Russian Roulette. The perceived risk of death, however, may not be as great and the "weapon" or agents involved are, in general, not as inherently dangerous.

**45. Natural deaths occurring during the exertion of intercourse** or other sexual activity such as masturbation may be classified as natural in manner. An example would be rupture of a berry aneurysm shortly after coitus.

**46. Self-inflicted deaths committed while under the influence of a mind-altering drug** may be classified as **Suicide**. Assuming that the mind-altering drug was taken voluntarily, the victim assumes the risk of the adverse effects of the drugs on behavior. A pathologist can rarely, if ever, determine that a suicidal act would not have occurred if a given drug were not in the victim's "system," or that an intoxication caused an "accident" rather than suicide.

### **Sudden Infant Death Syndrome and related infant deaths**

Infant deaths pose special problems when classifying manner of death and stating the cause of death. Changing trends in causes of infant mortality, increased recognition of fatal infant and child abuse, and changing concepts about pathogenesis and injury mechanisms all have served to complicate the certification of infant deaths. For these reasons, they are discussed as a group below.

Deaths presenting as possible Sudden Infant Death Syndrome, after thorough autopsy and investigation, tend to fall into one of the following Groups:

Group 1. A specific disease, injury, or other condition is identified as the cause of death

Group 2. The case meets the criteria for the diagnosis of sudden infant death syndrome (no cause of death identified after complete autopsy, including toxicology and other lab

tests, scene investigation, and review of the medical/clinical history) and there is no information which brings the SIDS diagnosis into question (toxicology tests are negative, histology is negative, and there are no unusual scene findings or sleeping conditions—in essence, a “classic” and uncomplicated SIDS case)

**Group 3.** The case substantially meets the criteria for sudden infant death syndrome but evidence of a disease condition (such as focal bronchiolitis) is found but the role of the condition in causing or contributing to death is not truly known or is difficult to rule in or out as a causative or contributory finding

**Group 4.** The case substantially meets the criteria for sudden infant death syndrome but evidence of an external condition or risk factor exists (such as bedsharing with adults, sleeping face down on a soft pillow or adult mattress, etc) but the role of the external condition or risk factor in causing or contributing to death is not truly known or is difficult to evaluate, prove, or disprove.

**Group 5.** Something in the investigation precludes a diagnosis of SIDS, but the cause and manner of death have not been determined.

To complicate matters, within the recently (2001) published Position Statement by The American Academy of Pediatrics (AAP) on infant death investigation there is a list of findings which, if found at autopsy, should preclude a diagnosis of SIDS according to the AAP. This list includes factors like drugs (even medications) and old skeletal trauma (such as an isolated healing rib fracture). If the diagnosis of SIDS is to be avoided in such cases, the question of true cause of death arises which, in turn, raises the question of manner-of-death classification. Based on these considerations, the following guidelines are offered based on the five Groups as described above:

- **Group 1.** These are cases in which a specific cause of death is apparent (such as pneumonia, meningitis, congenital heart defect, overlaying, asphyxia from plastic bag, head trauma, etc). The cause of death should be reported and the manner of death classified as indicated based on the circumstances.
- **Group 2.** These “classic” SIDS cases may be certified as “Sudden Infant Death Syndrome” or “Consistent with Sudden Infant Death Syndrome,” or “Consistent with the Definition of Sudden Infant Death Syndrome.” The manner of death may be classified as either natural or undetermined, depending on the certifier’s philosophy and approach. “Undetermined” is probably the most objective approach since the cause is, by definition, undetermined. From the statistical coding standpoint, either option would be ICD-coded to R95—Sudden Infant Death Syndrome. Whichever method is used, consistency within a given death investigation jurisdiction is recommended. Based on currently available information and concerns about infant deaths, however, “undetermined” manner is the recommendation of this Guide. If the manner is certified as undetermined in such cases, the injury information may be listed as unknown or not applicable if the local registrar requires those death certificate items to be completed. Also, if the “undetermined” option is used for this Group of cases, the medical examiner may explain to the parents (and others, as

needed) that the death may have been due to natural causes but our ability to know for sure is limited.

- Group 3. The cause of death in this Group may be stated as “Consistent with Sudden Infant Death Syndrome” or similar terminology. The condition(s) causing interpretive difficulties may be listed in Part II as an “other significant condition” (such as “focal bronchiolitis”). The manner may be classified as natural or undetermined using the same logic as described for Group 2 cases, with “undetermined” being the recommended option.
- Group 4. The cause of death in this Group may be stated as “Consistent with Sudden Infant Death Syndrome” or similar terminology. The condition(s) causing interpretive difficulties may be listed in Part II as an “other significant condition” (such as “face down on soft pillow”). The manner may be classified as undetermined because the external factor poses the distinct possibility of a non-natural death. In essence, these would be cases in which all findings point to SIDS except that there is one or more factors (bed sharing, face down on soft bedding, etc) that significantly heighten the possibility of an external cause being involved. If the case involves a decision whether to certify the cause of death as SIDS or back off from SIDS because of the presence of a possibly significant external factor, it is recommended that the cause of death be listed as “Consistent with Sudden Infant Death Syndrome,” the external risk factors be listed in Part II as other significant conditions, and the manner of death be classified as undetermined. This approach allows for an objective report of the findings.
- Group 5. The cause of death may be simply stated as “Unexpected and Undetermined Cause” or similar wording. Terms such as “sudden unexplained infant death” should be avoided because the wording may cause confusion with sudden infant death syndrome and result in inappropriate ICD coding. Complicating factors such as bed sharing may be reported in Part II, as needed. The manner of death may be classified as undetermined. The injury items may be listed as unknown if the local registrar requires completion of the injury items in such cases.

In addition, there are several other scenarios related to infant deaths. Recommendations for these follow:

**S1. Simultaneous, apparent SIDS deaths** may be classified as **Undetermined**. The odds of simultaneous deaths due to natural causes is extremely low, making non-natural causes (accidental or homicidal) likely enough to use the undetermined classification. The cause of death may also be listed as undetermined or employ wording other than sudden infant death syndrome.

**S2. Second and subsequent apparent SIDS deaths** among siblings or common caregiver(s) may be classified as **Undetermined** (assuming there is insufficient information to classify them otherwise). The odds of a second SIDS is low, justifying

the undetermined classification. The cause of death may also be listed as undetermined or employ wording other than sudden infant death syndrome.

**S3. Illegal termination of pregnancy may be classified as homicide if live birth occurred or as feticide if stillborn**, regardless of length of gestation, and assuming that fetal demise was caused by the attempt to terminate pregnancy. . The criminal justice system can make decisions about which cases meet the criteria for prosecution.

**S4. Death of fetuses and infants possibly due to maternal drug intoxication** may be certified as accident unless there is a preponderance of investigative information indicating that the mother intended to terminate the pregnancy or life. In essence, the same manner would apply to the fetus/infant as if the mother died under the same circumstances.

## Index

<u>Subject</u>	<u>Page(s)</u>	<u>Item(s)</u>
Acute toxicities	9	4
Acute intoxications precipitating "natural" cause	9	5
Anaphylaxis	11	14
Aspiration	13	33
Athletic injuries	11	17
Autoerotic fatalities	15	44
Background information	4,5	
Biological/chemical aggression	15	43
But-for principle	7	G
Café coronary	13	32
Preface/Caveats/disclaimers	2	
Chronic substance abuse	8	3
Complications of therapy	12	19-23
Degree of certainty	4	
Disease and trauma combined	14	41
Drug overdose given by other	11	15
Envenomization	10	13
Environmental hyper/hypothermia	14	39
Euthanasia/assisted suicide	14	36,37
Failure to prescribe	13	30
Fear/fright	13	28
Firearms fatalities: accidental	10	8
Firearms deaths committed by children	12	26
Forcing police to shoot to commit suicide	12	24
General principles	5-8	
Hostile environments and children	14	38
Hunting "accidents"	10	7
Infant/Fetal deaths	15-18	
Infection following injury	14	35
Intercourse	15	45
Introductory Remarks	3,4	
Judicial execution	12	25
Motor vehicle fatalities	10,13	11,27
Natural death in hostile environment	8	2
Positional restraint: law enforcement	11	16
Pregnancy related deaths	15	42
Pursuit, death during	11	18
References (Suggested reading)	29	
Ricochet	10	9
Risk taking behavior	7	I
Rules of thumb	5	B
Russian Roulette	10	10
Seizures	13	29
Suicide	8,13,15	1,31,46
Toxicity from medical treatment	9	6
Tracheostomy obstruction	14	34
Vector-borne disease	10	12
Volition versus intent	7	J
Weather related deaths	14	40



## Appendix: The Review and Comment Process

After the draft of this Guide was completed in late September 2001, it was posted on the NAME web site for a 6-week period of review and comment by the NAME membership. The membership was notified of the review and comment process via NAME-L, NAME NEWS, and at the annual meeting in Richmond. All comments that were received have been reviewed and considered. Most feedback was positive, supportive of the concepts expressed, and without significant suggestions for modification of the guide. A few comments from other reviewers did raise important or controversial issues. This Appendix reports those comments and describes how the comments and issues were addressed. Editorial responses to the comments are [bracketed].

The authors wish to thank all of the individuals who took the time to provide comments about this Guide.

Scenario 9 (Ricochet). One reviewer felt that some deaths involving ricochet might better be classified as homicide, as might occur when a prison guard fires a warning shot that goes awry, then ricochets and kills an inmate. [Cases such as this require judgment and room is allowed for judgment. The scenario and suggestion offered in this Guide was directed more at an instance in which there are no law enforcement issues involved, as might occur at a firing range, while hunting, or around the home or on personal property. Further, some ricochets may actually occur when a person is aiming at and intending to strike a victim. In such cases, classifying the manner of death as homicide may be appropriate. Judgment is needed in each case because subtle differences in circumstances may have major impact on case interpretation, decision making, and classification].

Scenario 14 (anaphylaxis). Two reviewers felt that anaphylaxis, when there is no “mistake” made in exposing the decedent to the allergen—and if the exposure does not involve a trauma and toxin such as a bee sting and venom, should be classified as natural. [An example might be a reaction from eating shellfish or other food, and the argument for natural manner in such cases is compelling. However, deaths from anaphylaxis are rare, and they are usually unexpected, unanticipated, and involve some exogenous exposure (including substances in food) that causes death. For these reasons, this Guide recommends that the manner be classified as accident as a matter of routine so the subtle differences in allergens and exposure routes need not be weighed. Of course, another manner of death might be applicable in some cases, such as homicide if it were known that a person intentionally exposed another individual to the causative antigen with intent to do harm].

SIDS cases. One reviewer felt that a specific recommendation for manner of death in classic SIDS cases should be made rather than stating that either natural or undetermined is acceptable. [This section has been altered to recommend that the manner in classic SIDS cases be classified as undetermined since, by definition, the cause of death in SIDS cases is unknown and could involve external and non-natural factors. It is acknowledged that considerable evidence points to natural causes in such cases, but because the classification of manner of death does not impact coding in cases certified as SIDS, the

undetermined classification seems to be the most objective—at least on the basis of currently available information. One reviewer indicated agreement, in principle, with an undetermined manner in SIDS cases, but in practice, classifies the manner as natural because of the traditional view that a natural manner is less likely to adversely impact upon the parents/family.]

Concept of “Unclassified” Manner of Death. One reviewer pointed out that having the option of “unclassified” as a manner of death might be useful, for example, in some cases involving complications of therapy or for certain types of drug deaths and other scenarios. For example, the reviewer argued that chronic substance abuse involves intentional self-destructive behavior and has suicidal elements in addition to what might be argued as unintentional or accidental components (or even homicidal components if the drug were injected by someone else), and that the best option for manner of death would be “unclassified.” The reviewer pointed out that “unclassified” differs from “undetermined” which actually means “could not be determined.” [Although the federal standard death certificate (upon which the state death certificates are modeled) does not include an option for “unclassified,” there may be one or more states in which such an option does exist. As a practical matter, however, it is recommended that “undetermined” and “unclassified” be used synonymously until such time that additional standard options are provided for manner-of-death classification. It is felt that in most instances, a given death can be reasonably placed into one of the existing categories (natural, homicide, suicide, accident, or undetermined) using the principles in this Guide. The “unclassified” option would not add much value to the classification system, although admittedly, it might make some deaths easier to “classify” by not having to make a decision].

A second reviewer also brought up the concept of “unclassified,” and reported to use it as the manner of death in some cases in which none of the other categories seem appropriate-- for example-- a mental patient who thinks he can fly and jumps off a building. Or, as another example, the death of an infant from immaturity who was born alive after a legal attempt at abortion—in which arguments could be made for accident, homicide, or natural. [This seemingly rare sequence does make a good point, but again, the other available options for manner of death could be used in such cases].

Drunk driving. One reviewer pointed out that the death of a drunk driver in some respects fulfills the criteria for suicide (i.e., self destructive behavior), although such deaths are classified as accidents as a matter of convention. The same reviewer, however, reported the practice of classifying the manner of death as homicide when a person is killed by a drunk driver. [The recommendation in this Guide for such cases has been discussed elsewhere, and for the reasons stated (which include issues of intent and the law), that such deaths are more appropriately classified as accidents because doing so does not bar or obstruct applicable vehicular homicide laws or prosecution, if appropriate].

Volitional versus intentional. One reviewer requested clarification of these terms in reference to Section J on Page 7. [Webster’s New World Dictionary defines “volition” as “using the will,” deciding what to do,” or “a conscious or deliberate decision or choice.”

In contrast, one definition of “intent,” and probably the best for the purposes of this Guide, is “the purpose at the time of doing an act.” In the case of a straightforward suicidal gunshot wound of the head, the volitional acts include deciding to load a gun, putting it to the head, and pulling the trigger. The “intent” or purpose of the volitional act is to end one’s life. In some cases, the intent to end one’s life is less clear, although the volitional element of the act (such as placing a loaded gun to the head and pulling the trigger in Russian Roulette) is quite clear. The issue, then, is whether “intent” to die (the purpose of the volitional act) is inclusive of employing a recognized, potentially lethal weapon and accepting a definite and known risk of death during the action under consideration. Acceptance of this premise seems reasonable for one simple reason: why else would the victim have committed the act in the first place? It is accepting or even desiring the risk that serves as the purpose of the volitional act. One might state it as “but for the volitional act—the will, decision, and deliberate choice and the clear and present danger and risk of death brought about by the volitional act—a fatal outcome would not have been expected.” It could be argued that other “sport” such a parachuting or rock-face climbing might fulfill the same criteria. However, the practical difference is that the “weapon” in these latter cases is not something normally regarded and widely recognized as a lethal weapon. The same “but for” statement can be applied in the context of volition when supporting the classification of a hunting “accident” as a homicide. “But for the volitional act of aiming the gun and pulling the trigger, the death would not have occurred.” A major and unavoidable consideration is the type of weapon or agent involved and the likelihood of its use being lethal when employed toward a human being].

Scared to death. One reviewer was concerned that a death during an exclusively verbal argument (such as acute cardiac death) might be classified as homicide based on the principles in this Guide. [That was not the intent of the principles. Solely verbal arguments tend to escalate because of mutual participation of the parties. That situation differs from one in which one party commits a volitional act (such as yelling “boo” at a frail elderly person) with the apparent intent to scare or become alarmed—which constitutes assault. In this latter type of case, classification as homicide may be appropriate. Acute cardiac death precipitated by the stress of “normal” activities and events of daily life, such as vigorous verbal argument, is regarded as **Natural**, akin mechanistically to sudden death after consensual conventional sexual activity.]

Death during a struggle. One reviewer thought that death during a struggle with another person should be ruled homicide if there was physical contact. [In some cases, this is certainly appropriate—especially if the struggle was precipitated by a physical assault or battery initiated by the other person. There are, however, cases in which cardiac deaths occur from exertion that is job related (such as running after a suspected bank robber, or putting out a fire) in which a natural manner of death is appropriate. If such a death occurs during a felony committed by the second party (not the deceased), that death may be regarded as a homicide or felony murder by law enforcement authorities and the courts, but the medical classification of manner need not be based on an interpretation of such laws].

Car chases. One reviewer broached the subject of “innocent bystanders” killed during car chases, such as pedestrian struck and killed while the police are chasing a fleeing felon. Some regard the manner as homicide in such cases. [This situation is analogous to many others in that definition of the crime (such as felony murder) and legal responsibility for such deaths are defined in law. From the medical certification standpoint, unless there was convincing evidence that there was intent to kill the victim, the principles in this Guide would result in such deaths being classified as accidents. The manner would be the same regardless of whether the innocent bystander were struck and killed by the fleeing felon or by the police who were in pursuit of the felon].

Hostile environment. Regarding Scenario #38, two reviewers raised concern that some such deaths (e.g., infant inadvertently left in a hot car and dying of hyperthermia, or in a bathtub and dying of drowning) might be classified as homicide to differentiate such cases from those of lesser degrees of negligence. [This certainly is an option, but the principles in this Guide suggest that such cases be classified as accident unless there is clear evidence of intent to harm the child. In essence, ignorance or an untoward oversight would not, in and of themselves, result in classification as homicide. Classification of such deaths as accident would not preclude legal proceedings and criminal charges if the case met legal criteria of criminal neglect, abandonment, or some other crime. These deaths can be very circumstance dependent, and the degree of “neglect” does need to be considered. For example, the manner of death may be different in a case in which an infant was left in a hot car for 8 hours while the mother played slot machines compared with a case in which an infant was left for 30 minutes while the mother went shopping for baby food. A major problem occurs in interpreting the degree of neglect and just how much and what type of neglect are needed to classify the death as a homicide. This is why the more generic approach of “accident” is recommended for most cases. See also Principle #2, page 8].

Degrees of certainty. Three reviewers had concerns about the various degrees of certainty as discussed on Page 4. [Each suggested that the “beyond a reasonable doubt” (the wording used in the original draft) be changed to “beyond any reasonable doubt,” and that change was made].

Regarding the certainty of the cause of death (compared with manner of death), a classification system was offered by one reviewer and drawn from Charles Hirsch’s “A Cause of Death versus The Cause of Death:”

---

Class I. Absolute certainty, because pathological findings are inconsistent with continued life and the mechanism is obvious (such as rupture of the heart or bilateral massive pulmonary embolism);

Class II. Pathologic findings competent to explain death but without the development of complications that would promote them to Class I. The degree of certainty is determined by history and circumstances.

Class III. Marginal pathologic findings, compelling history, and exclusion of other causes.

Class IV. Pathologically negative but a positive history and exclusion of other causes (epilepsy would be an example of a natural condition in this Class, and electrocution without cutaneous burns is an example of a non-natural death in this Class).

Class V. Cause of death undetermined.

---

A second reviewer had additional comments about degree of certainty and offered the following scheme:

<50% may be viewed as "possible"  
>50% may be viewed as "probable"

"Preponderance of evidence" is equivalent to "more likely than not" or "probable (>50%)," permits reasonable doubts, and is the degree of certainty used when making a determination of cause of death in natural deaths. [This point is well-taken in that arriving at a conclusion or establishing facts by a "preponderance of evidence" in civil actions, for example, means that something is more likely so than not so.]

"Certainty beyond a reasonable doubt" equates to "reasonable degree of medical certainty"-- this far exceeds 50%-- and is the degree of certainty required when considering homicide versus other, or accident versus suicide. It is the degree of certainty when there is no good reason to believe otherwise, or, that you would require to make the most important decisions in your life, or, the degree of assurance that a reasonable person relies upon in his/her most important business.

"Certainty beyond a possible doubt" is 100% or absolute certainty and is a degree of certainty that we cannot achieve because it means that there are no other possibilities.

---

A third reviewer offered the following definitions and concepts:

Speculation: the hypothetical is possible only in the sense that the scenario does not violate the laws of physics, but cannot be taken seriously by a reasonable person. Not admissible in civil or criminal court.

Reasonable possibility. A possible scenario that is admissible in court. It may be correct, but in the expert's mind, does not rise to the level of "more likely than not."

Opinion to a reasonable degree of medical certainty (or probability). In civil court, this means that the scenario is more likely than not, and essentially is synonymous with "preponderance of evidence." In criminal court, this means two things: The scenario is more likely than not, and there are no other reasonable possibilities (another reasonable possibility translating in the jury room to reasonable doubt). The former may be regarded as the "civil standard" for and the latter as the "criminal standard." The reviewer prefers to meet the "criminal standard" in order to classify a death as homicide, and if only the "civil standard" is met, will classify the manner as undetermined or, on rare occasion, classify the manner as homicide but comment that the classification meets only the "civil standard." To classify a death as suicide, the reviewer feels that only the civil standard need be met, but as a practical matter to avoid family complaints, a desirable level of certainty for classification as suicide is "way more likely than not."

The same reviewer points out that "clear and convincing evidence" is not easily defined, and to some, equates with "reasonable degree of certainty."

[The concepts presented by the three reviewers above seem workable and fall within those presented in this Guide on Page 4. However, the categories on Page 4 seem to provide a clearer conceptual progression of “degrees of certainty.” The major point is that the degree of certainty needs to be higher when classifying a death as homicide or suicide than it might need to be in determining a natural cause of death].

Degree of certainty and suicide (Principle #1, Page 8.) One reviewer thought the recommendations for degree of certainty were confusing in the context of suicide classification, and emphasized that the burden of proof should be beyond a reasonable doubt but need not be beyond a possible doubt (or beyond any reasonable doubt). [These distinctions are subtle but important, and the principle is consistent with those in this Guide. The point is that absolute certainty is not needed to classify a death a suicide, but that the degree of certainty should exceed “more likely than not.” In the context of this Guide, the burden of proof would be a preponderance of evidence, clear and convincing evidence, or beyond any reasonable doubt.]

Death in a hostile environment (Principle #2, Page 8). One reviewer suggested that classification of manner of death which occurs in a hostile environment depends on whether the disease itself is life threatening. Thus, because most seizure disorders are not life threatening, a fatality from seizure in water would be classified as accident (assuming there was immersion and/or drowning), while someone with severe cardiac rhythm disturbances who collapses in water might be better classified as natural. A second reviewer agreed and also stated the he does not regard a bathtub as a hostile environment for an adult—not like a swimming pool in some circumstances. The second reviewer also feels that most cardiac deaths in water do not significantly involve increased risk of death (because the mechanism is most likely irreversible V-fib as opposed to cardiac syncope or some other reversible mechanism) and would have been as likely to be fatal out of water. [There is obviously a difference in opinion among medical examiners on this point, and selection of manner as accident or natural in such cases does not reflect competence. The principles and recommendations in this Guide indicate that preference should be given to the non-natural manner of death if the hostile environment is thought to have accelerated death or significantly decreased the chances of survival. Thus, the severity and pathophysiology of underlying disease do play a role in decision making, but if the hostile environment played a role, preference is given to the non-natural manner of death. Certainly, there are instances in which role of the hostile environment is non-contributory, and a natural manner of death in such cases is appropriate].

Job-related cardiovascular death (Scenario #18). One reviewer suggested that the fatal heart attack of a firefighter putting out a fire at the scene of an arson should be classified as a homicide. [The principles and recommendations in this Guide indicate that natural death (if no smoke inhalation was involved) is the preferred option. Certain types of jobs are responsive in nature and potentially stressful from the physiologic exertion standpoint, and certain risks are accepted. If the fire were accidental in origin, the death would probably not be classified as an accident (again, assuming that death was due solely to exertion and ASCVD, not smoke inhalation), so why classify the death as homicide if the fire were the result of arson? By extrapolation, one could then argue that

the death of any law enforcement officer from ASCVD while chasing an alleged criminal or suspect could be classified as a homicide, which does not seem appropriate and opens up cans of worms regarding job-related and other types of death.]

Therapeutic complications (Scenario #23). One reviewer pointed out that at least one jurisdiction has the option of listing the manner of death as “therapeutic complication” and the “but for” question is used in decision making. “But for the treatment, would the patient likely died at his time?” For example, a person who dies on the operating table during surgery for a ruptured abdominal aneurysm would be regarded as natural in manner. A person who dies of postoperative pneumonia following an elective cholecystectomy would be classified as a therapeutic complication. [The principles in this Guide would result in both deaths being classified as natural. The option of therapeutic complication is not available in most states. The important point is that the cause-of-death statement reflect the complication of treatment and the underlying disease or condition being treated. Therapy-related deaths and their classification of manner as accident, natural, or undetermined are covered elsewhere in this Guide and other publications].

Forcing the police to shoot to commit suicide (Scenario #24). One reviewer pointed out that these deaths can be very circumstance-dependent and some are suicides. [The principles in this guide provide room for judgment, although, in general, the recommendation is to certify such deaths as homicide—for the reasons stated in Scenario #24].

Disease and intoxication/injury (Scenario #41). One reviewer emphasizes that if an injury or intoxication plays a role in causing death, whether cited in Part I or Part II of the cause-of-death statement, death cannot be certified as natural, and that the natural classification is reserved for deaths that are exclusively (100% natural). [In general, these advisories are true. Generally, anytime an injury or poisoning is mentioned in Part I or Part II of the cause-of-death section of the death certificate, the injury or poisoning should be regarded as having contributed to death, and the manner of death should be classified as other than natural. There are rare instances, however, in which a very minor accidental trauma may exacerbate a very significant disease, as described in Scenario #41, or as might occur in a hemophiliac who is having an episode of serious bleeding that is exacerbated by what would be otherwise considered as trivial trauma. This discussion pertains to accidental trauma only. To be sure, if an accidental injury is cited in Part I or Part II, the date, time, place, and how injury occurred items must be completed. There is some debate, however, even among registrars and nosologists, whether completion of these items always requires a manner of death other than natural, especially if the injury is cited in Part II. The discussion in Scenario #41 simply suggests that this option is available on the very rare instance in which it may be needed].

Other Comments. Various other comments were offered, and they are listed here, along with editorial comments in response [bracketed]:

- Two manners of death should not be listed in a given case. For example, if an elderly person has heart disease that is exacerbated by a fall with hip fracture, one should

## Suggested Reading

Note: Upon reading the referenced articles, you will discover that opinions and approaches vary regarding the practice of manner-of-death classification—and may vary from the recommendations in this Guide. The references are provided as background information and as resources, when needed.

Davis GG. Mind your manners part 1: History of death certification and manner-of-death classification. *Am J Forensic Med Pathol* 1997;18(3): 219-223

Goodin J, Hanzlick R. Mind your manners part II: General results from the National Association of Medical Examiners Manner of Death Questionnaire, 1995. *Am J Forensic Med Pathol* 1997;18(3):224-227.

Hanzlick R, Goodin J. Mind your manners part III: Individual scenario results from the National Association of Medical Examiners Manner of Death Questionnaire, 1995. *Am J Forensic Med Pathol* 1997;18(3):228-245.

Hirsch CS, Flomenbaum M. Problem solving in death certification. ASCP Check Sample FP95-1.(FP 202). 37(1), 1995. ASCP, Chicago.

Rosenberg ML, Davidson LE, Smith JC et al. Operational criteria for the determination of suicide. *J Forensic Sci* 1988;33:1445-1456. Also see corresponding Letter to Editor: Donohue ER, Lifschultz BD. Discussion of operational criteria for the determination of suicide. *J Forensic Sci* 1989;34(5):1056-8.

Hanzlick R (ed) and the Autopsy and Forensic Pathology Committees of the College of American Pathologists. Cause-of-death statements and certification of natural and unnatural deaths: protocol and options. College of American Pathologists. Northfield, IL. 1997. Take special note of Sections 5 and 10.

Reay DT, Eisele JW, Ward R, Horton W, Bonnell HJ. A procedure for the investigation of anesthetic/surgical deaths. *J Forensic Sci* 1985;30(3): 822-7.

Virginia State Health Department Office of the Chief Medical Examiner. The philosophy of classification of deaths. *Medico-Legal Bulletin*. 1977;26(2), March-April 1977 (5 pages). Published in conjunction with the Department of Legal Medicine, Medical College of Virginia. Richmond, Virginia.

Massello W. The Proof of law in suicide. *J Forensic Sci* 1986;31:1000-08.

Wiecking DK. "Natural" death under non-natural circumstances. *Medico-Legal Bulletin [VA]* 1976;25(9):1-5.

Petty CS. Multiple causes of death: the viewpoint of a forensic pathologist. *J Forensic Sci* 1965;10:167.

Most standard forensic pathology texts have some discussion of cause and manner of death (Spitz and Fisher's *Medicolegal Investigation of Death* has always contained a good discussion of the issues). There have also been more than 250 postings on NAME-L regarding manner of death issues and commentary. These can be viewed by NAME-L members by searching the NAME-L archives at [www.listserv.emory.edu](http://www.listserv.emory.edu)