

1 **UTAH DEPARTMENT OF HEALTH**

OFFICE OF THE MEDICAL EXAMINER

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2 **ABOUT US**

Chief Medical Examiner

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3 **OME JURISDICTION**

- Defined in Section 26-4-7
- 26-4-7 (1) Deaths due to violence, gunshot, suicide or accident

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5 **OME JURISDICTION**

Suicide defined as "death caused by an intentional and voluntary act of a person who understands the physical nature of the act and intends to accomplish self-destruction"

6 **OME JURISDICTION**

- 26-4-7 (2) Sudden death while in apparent good health
- Majority of cases investigated by OME fall in this category

7 **OME JURISDICTION**

- Death in apparent good health defined as:
 - Instantaneous death without obvious natural cause
 - Death during or following an unexplained syncope or coma
 - Death during an acute or unexplained rapidly fatal illness

8 **OME JURISDICTION**

- 26-4-7 (3) Unattended deaths
 - "Unattended" defined as death of a person who has not been seen by a physician within 30 days of the date of death
 - An individual who is receiving treatment by prayer or spiritual means under the tenets of a well-recognized church or religious denomination is not considered "unattended" under the M.E. Act
 - Majority of cases reported under this provision of M.E. Act are released to attending physician for certification
 - Approximately 1500 cases/year

9 **OME JURISDICTION**

- 26-4-7 (4) Deaths under suspicious or unusual circumstances
 - No specific definition in law as to what constitutes "suspicious or unusual"
 - Cases evaluated on an individual basis by OME staff

- Clinical uncertainty concerning specific pathophysiology causing death is not sufficient to make the death “suspicious” or “unusual”.

10 **OME JURISDICTION**

- 26-4-7 (5) Deaths resulting from poisoning or overdose of drugs
 - Fastest growing category of deaths investigated
 - Approximately 25% of autopsy caseload
 - Approximately 70% due to prescription medications and 30% due to illicit drugs

11 **OME JURISDICTION**

- 26-4-7 (6) Deaths resulting from diseases that may constitute a threat to the public health
 - Diseases where there is potential of spread through casual contact
 - Bioterrorist attack

12 **OME JURISDICTION**

- 26-4-7 (7) Deaths resulting from disease, injury, toxic effect or unusual exertion incurred within the scope of the deceased’s employment

13 **OME JURISDICTION**

- 26-4-7 (8) Deaths due to Sudden Infant Death Syndrome
 - Definition of SIDS requires autopsy, investigation of circumstances surrounding death and review of medical history

14 **OME JURISDICTION**

15 **OME JURISDICTION**

- Violent deaths may have no external signs of the lethal injuries inflicted

16 **OME JURISDICTION**

- 26-4-7 (9) Deaths resulting while the deceased was in prison, jail, police custody, in the state hospital, or in a detention or medical facility operated for the treatment of the mentally ill or emotionally disturbed or delinquent persons

17 **OME JURISDICTION**

- 26-4-7 (10) Deaths associated with diagnostic or therapeutic procedures
 - Therapeutic misadventure
 - Bad outcome of a correctly performed procedure, i.e.; death a recognized potential complication not under OME jurisdiction
 - Threat of civil litigation not grounds for OME jurisdiction

18 **OME INVESTIGATION**

- Two main activities
 - Investigation of the circumstances surrounding death
 - Determination of the physical abnormalities that caused and/or contributed to death
 - Autopsy
 - Histology
 - Toxicology
 - Other testing methodologies

19 **OME INVESTIGATION**

- OME investigators available 24 hrs a day, 7 days a week to take reports and go to death scenes
 - 7 full-time investigators
 - 70+ part-time and vendor investigators around state
- Investigators collect information about:
 - Circumstances surrounding death
 - Scene findings
 - Medical and psychosocial history
 - Other pertinent history & findings

20 **OME INVESTIGATION**

- Scene findings may be crucial in understanding how the death happened
- OME pathologist may respond to the scene in homicide cases

21 **OME INVESTIGATION**

- Alteration of scene by paramedics/first responders, law enforcement personnel and others may compromise the ME's ability to offer opinions
- Preservation and documentation of initial conditions is critical

22 **OME INVESTIGATION**

- Six basic questions in all cases
 - Who are you?
 - When did you die? When were you injured?
 - Where did you die? Where were you injured?
 - What is your cause of death?
 - How did your death occur?
 - If someone killed you, is there evidence that would identify that individual?

23 **OME INVESTIGATION—WHO?**

- Identification
 - Circumstantial
 - Tattoos
 - ID comparison
 - Scientific
 - Dental comparison
 - Fingerprints
 - Radiographs
 - Implanted hardware
 - DNA

24 **OME INVESTIGATION—WHEN?**

- No such thing as a "deathometer"!
- The most scientifically accurate thing that can be said is that the person died sometime between when they were last known to be alive and when they were found dead
- Everything else is an estimate based on the observation of various postmortem changes in the body
- Circumstantial evidence often much more helpful

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- 25 **TIME OF DEATH**
 - Rigor mortis -- Stiffening of the body after death
- 26 **TIME OF DEATH ISSUES**
 - Livor mortis: the color of death
 - Due to settling of blood with gravity
- 27 **TIME OF DEATH**
- 28 **OME INVESTIGATION – WHERE?**
 - May or may not be the same location
 - Indicators of “when” may also help with answers to “where”
 - Requires close examination of rigor mortis, livor mortis, blood stains/drips/spatter
 - Body position and examination at scene is crucial to understanding this question
- 29 **OME INVESTIGATION – WHERE?**
 - Special circumstances
 - Bodies in water
 - Decomposed bodies
 - Discrepancies and inconsistencies are keys
 - Violence to body at undisturbed scene
 - May be key to “masked” homicide or otherwise “staged” scene
- 30 **OME INVESTIGATION--AUTOPSY**
 - 26-4-13. Autopsies -When authorized.
 - (1) The medical examiner shall perform an autopsy to:
 - (a) aid in the discovery and prosecution of a crime;
 - (b) protect an innocent person accused of a crime; and
 - (c) disclose hazards to public health.
- 31 **MEDICOLEGAL AUTOPSY**
 - Background investigation
 - Historical events
 - Reports and records
 - Scene inspection
 - Photographs and diagrams
 - Examination of clothing
- 32 **MEDICOLEGAL AUTOPSY**
 - Detailed external examination
 - Identification
 - Injuries
 - Complete autopsy (internal examination)
 - Necessary special studies
 - Toxicology
 - X-rays
 - Photographs

33 ☐ OME INVESTIGATION -- AUTOPSY

- Preliminary photography : document the condition of the body as received
- Pattern of blood staining on body may be crucial in understanding events surrounding death
- Clothing should be removed, examined and photographed if necessary
- Document injuries and preserve as evidence

34 ☐ OME INVESTIGATION -- AUTOPSY

- Postmortem radiographs
 - Document the presence/absence and location of projectiles or foreign bodies
 - Assist in retrieval of projectiles
 - Aid in identification of the decedent
 - Document natural disease and/or injuries

36 ☐ OME INVESTIGATION -- AUTOPSY

- Collection of trace evidence
 - Fingernail scrapings
 - GSR samples
 - Rape kit
 - Hairs, fibers
 - Fingerprints
 - Alternate light exam

37 ☐ OME INVESTIGATION -- AUTOPSY

- Body should be re-photographed in undressed state prior to washing.
- Injuries should be photographed again after cleaning and/or shaving

38 ☐ OME INVESTIGATION -- AUTOPSY

- Internal examination
 - Body opened with standard "Y" shaped incision
 - Documentation of internal injury and disease processes
 - Organs removed as a block or individually
 - Photographs of relevant findings taken
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39 ☐ OME INVESTIGATION -- AUTOPSY

- Toxicology
 - Collection of toxicologic samples: blood, urine, bile, vitreous, liver, and gastric = standard
 - Additional samples if needed (brain, fat, muscle, kidney, spleen, etc.)
 - Only blood available is from cavities in some cases

40 ☐ OME INVESTIGATION -- AUTOPSY

- Autopsy findings documented on body diagrams
- Serves as a back-up to photography
- Useful for courtroom presentation of evidence and findings

41 ☐ OME INVESTIGATION -- CAUSE OF DEATH?

- That injury or disease that produces the physiologic derangement resulting in death
- Examples

- Gunshot wound of head
- Stab wound of chest
- Hanging
- Blunt force craniocerebral injuries

42 CAUSE OF DEATH

- May be established with varying degrees of certainty
- Determination consists of two steps:
 - Identification of anatomic and physiologic abnormalities
 - Elucidation of the resulting mechanism of death
- May be evident at scene, at time of autopsy, or not until ancillary studies complete

43 MECHANISM OF DEATH

- The physiological derangement produced by the cause of death that results in death
- Examples
 - Hemorrhage
 - Septicemia
 - Cardiac arrhythmia
 - Asphyxia

44 OME INVESTIGATION -- MANNER OF DEATH (HOW)?

- Explains how the cause of death came about
- Examples
 - Natural
 - Homicide
 - Suicide
 - Accident
 - Could not be determined

50 MANNER OF DEATH

- The chain of events leading to death dictates the manner of death
 - Assault → brain injury → time delay (years) → seizure disorder → death = homicide
 - Childhood meningitis → seizure disorder → death = natural
 - Alcoholic → altercation → delayed treatment → acute and chronic subdural hematoma → death = undetermined
- Even the 'experts' may not agree

51 OME INVESTIGATION -- WHO DID IT?

- Evidence in a homicide may consist of any or all of three basic types:
 - Injury patterns (constellation of injuries)
 - Weapon (patterned injuries)
 - Trace evidence on body (fluids, fibers, prints)

52 REPORTING RULES

- R448-10-3. Reporting Requirement.
- (1) If a death occurs and the individual's care within 30 days prior to death was not directly supervised by a physician or if the individual was not seen by a licensed nurse whose activity is directly supervised by the individual's treating physician, then the death must be reported as

required under Utah Code Section 26-4-8.

- (2) All other deaths that meet the criteria in Utah Code Section 26-4-7, must be reported as required by Utah Code Section 26-4-8.
- (3) As required by R432-750-29, a hospice is required to report all deaths supervised by the hospice if the death was a result from injury, accident, or other possible unnatural cause.

53 **WHAT IS CONSIDERED AN INJURY?**

- 1 Trauma from external forces
 - Other adverse physical effects of externally-caused events
 - Fractures and hematomas from falls or other external forces
 - Poisoning, toxicity or overdose of any substance, including medication
- 2 Aspiration, suffocation, strangulation, mechanical obstruction of breathing *Including from food, vomitus, secretions (unless reported due to disease)*
 - Exposure to natural and environmental forces such as weather
 - Anaphylactic shock and other allergic reactions
- 3 Errors and accidents during surgery and other medical care
 - Starvation, neglect, privation
 - Overexertion
 - Contact with venomous or nonvenomous animals, insects, plants

54 **MOST COMMON UNREPORTED CASES**

Delayed Trauma Deaths

falls, choking, overdoses
 motor vehicle accidents,
 assaults, suicides

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55 **WHO CAN REPORT A DEATH ?**

any person

who has knowledge of the death or who finds the dead body

56 **IMPORTANCE OF REPORTING DEATHS PROMPTLY**

- 1 Is a scene investigation necessary?
 - Do Police need to become involved?
- Is an autopsy necessary?
 - Doctors acting as Designated Representatives
- How not reporting affects families
 - Delay of cremation/burial/removal
- 2 Things to consider

58 **COMMON RED FLAG WORDS**

UTI
Pneumonia
Sepsis
Traumatic Brain injury
Hemorrhage
Pulmonary Embolism
Asphyxia
Encephalopathy
Toxicity
Undetermined/Unknown

64 **(801)816-3850**

TO REPORT A DEATH, CALL:

65 **QUESTIONS?**