Overview of Forensic Pathology: Challenges and Opportunities (Training, Practice, Standards, and Resources)

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Connecticut Office of the Chief Medical Examiner
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April 2, 2024

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"Taceat colloquia. Effugiat risus. Hic locus est ubi mors gaudet succurrere vitae."

Inscription at the New York City OCME

2

Outline

- Overview of Medicolegal Death Investigation
  - Medical Examiner/Coroner, Forensic Pathology, Death Certification
- Challenges with In-Custody Investigations
  - Tracking, Asphyxia/Restraint, Circumstances
- What is the forensic community doing about these deaths?
- Other Concerns

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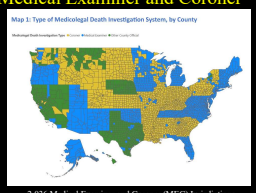
Medical Examiner and Coroner



2,036 Medical Examiner and Coroner (ME/C) Jurisdictions
Coroner: 1,630 (34% of population); Medical Examiner 406 (66%)

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Medicolegal Death Investigation System Needs:

- Mandated reporting of certain deaths
- Authority to take charge of the body
- Autopsy without permission
- Subpoena power

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Reportable Cases

- Accidents, Suicides, Homicides.
- Poisoning, Drug Abuse, Addiction.
- Disease with potential public health threat (e.g., meningitis).
- Deaths resulting from employment.
- Sudden and unexpected deaths not caused by a readily recognized disease.
- Dead on arrival or within 24 hours of admission to hospital.
- Death under anesthesia, in operating or recovery room, following transfusions, or during diagnostic procedures.
- Any other death, not clearly the result of natural causes, that occurs while the deceased person is in the custody of a peace officer or a law enforcement agency or the Commissioner of Correction.

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Table 1: Selected Characteristics of Death Requiring Investigation by State

Selected characteristic of deaths requiring investigation	No. states	AL	AK	AZ	AR	CA
Drug use/abuse/overdose	12					x
Fire/explosion	9				x	x
Drowning	9				x	x
Alcoholism	7					x
Gun/firearms	6					x
Motor vehicle accident (including pedestrians)	4				x	
Motor vehicle accident, no external evidence of lethal traumatic	2				x	
Other public conveyance/transportation	2					
In the public interest, not otherwise specified	1					
Hit and run	1					
Custody of others						
Jail/police custody	40		x	x	x	x
State facility/custody or care of state	17		x			x
Mental health institution	9		x			x
Foster care	4		x			
Execution	1					

https://www.cdc.gov/phlp/docs/coroner/table1-investigation.pdf

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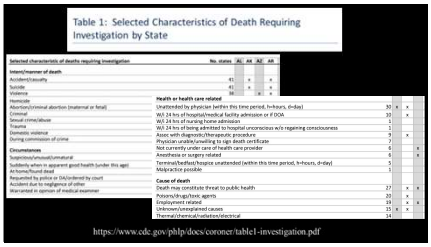
Table 1: Selected Characteristics of Death Requiring Investigation by State



https://www.cdc.gov/phlp/docs/coroner/table1-investigation.pdf

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Forensic Pathology

Subspecialty in pathology that investigates unexpected, suspicious, and unnatural deaths

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Physicians in USA

- >1,000,000 Physicians
- ~750 Practicing, Board-Certified Forensic Pathologists
  - 4 years College
  - 4 years Medical School
  - 3-4 years Residency in Pathology
  - 1 year Fellowship in Forensic Pathology
  - Two National Board Examinations

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Forensic Pathologists

- Investigate Reportable Deaths (Autopsy)
- Certify Cause and Manner of Death
- Testify: Homicides, Civil Actions
- Public Health Role (meningitis, vital records)
- Family Bereavement
- Teach

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The "Litany"

Who are you?
When did you die?
Where did you die?
Why did you die?
What happened?
Who did it?

12

Clinical Medicine

History: Form Hypotheses

⬇

Physical Exam Confirm/refute Hypotheses

⬇

Laboratory Tests

Forming, testing, refining, and rejecting hypotheses

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CAUSE of DEATH
vs.
MANNER of DEATH

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Cause of Death

The disease and/or injury responsible for the fatality.

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CAUSE of DEATH =

Mechanism/Immediate Cause
due to
Proximate Cause

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Proximate Cause

That which in a natural and continuous sequence, unbroken by any efficient intervening cause, produces the fatality and without which the end result would not have occurred (etiologically specific).

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Mechanisms

Non-specific, physiologic events that connect the "cause" of death with the moment of death.

- Cardiac Arrhythmia
- Asphyxia
- Metabolic Acidosis
- Exsanguination

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Proximate Causes of Death

Gunshot Wound

Atherosclerotic Cardiovascular Disease

Lung Adenocarcinoma

Acute Cocaine Intoxication

Drowning

Compression of Neck

Chronic Alcohol Use Disorder

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20

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MANNER of DEATH:

Explanation of how the cause arose.

Should forensic pathologists give their opinion about the manner of death at trial?

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Manner of Death

- Natural
- Unnatural
  - Homicide
  - Suicide
  - Accident
  - (Therapeutic Complication)
- Undetermined

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Natural

Death caused exclusively (100%) by disease (or old age)

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Types of Injuries

- Blunt
- Sharp
- Gunshot Wounds
- Chemical (intoxication)
- Asphyxial
- Electrical
- Thermal
- Barotrauma
- Bites

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Homicide

Violent death at the hand of another person or deaths due to the hostile or illegal acts of another person.

[In most instances, intent has nothing to do with classification of a death as a homicide. Justification also is not considered by the ME/C]

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Homicide by Heart Attack
The role of stress/pain/fear

J Forensic Sci, May 2004, Vol. 49, No. 3
Paper ID JFS2003343
Available online at: www.astm.org

CASE REPORT

Staci A. Turner,[1] M.D.; Jeffrey J. Barnard,[1] M.D.; Sheila D. Spotswood,[1] M.D.; and Joseph A. Prahlow,[2] M.D.

"Homicide by Heart Attack" Revisited*

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TABLE 1. Cases With History and Circumstances Surrounding Death

Demographics	Clinical History	Circumstances	Physical Contact With Assailant	EMS/ER Intervention
62-year-old man	HTN	Was robbed and called 911, found unresponsive by police	No	Yes
35-year-old woman	HTN	Was being choked and became unresponsive	Yes	Yes
47-year-old man	HTN, CAD	Security guard became unresponsive while breaking up a fight	Yes	Yes
71-year-old man	HTN, CAD	Building manager who called police before interrupting a robbery and was found unresponsive by police	No	No
69-year-old man	HTN, CAD	Had a witnessed collapse while interrupting a home invasion	No	No
57-year-old man	HTN, CAD	Collapsed during a fistfight	Yes	Yes
91-year-old man	HTN, CAD, CABG, AVR	Was robbed, ran for a short distance, and collapsed in front of police	No	Yes
73-year-old man	CAD, HTN	Was robbed and called 911, found unresponsive by police	No	No
54-year-old man	HTN, CAD	Collapsed in a nearby restaurant after being assaulted on the street	Yes	Yes
41-year-old man	HTN	Collapsed during an altercation with a neighbor in a backyard	Yes	No
52-year-old man	None	Collapsed during a fistfight	Yes	Yes
44-year-old man	CAD	Collapsed during a fistfight	Yes	Yes

AVR indicates aortic valve replacement; CABG, coronary artery bypass graft; CAD, coronary artery disease; EMS/ER, Emergency Medical Services/emergency room; HTN, hypertension.

Am J Forensic Med Pathol. 2016 Jun;37(2):112-7.

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Homicide by Neglect

- Elder Abuse
- Pediatric Neglect
- Imprisoned/Institutionalized People

$5.75 Million Payout in Death of Rikers' Prisoner Denied Medical

NYC jail captain found guilty of negligent homicide over inmate's suicide

Rebecca Hillman faces up to four years in prison after a jury convicted her of denying help to an inmate who hanged himself in a cell

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Accident

Death caused by violent means that is not an intentional or criminal act of another

(Ex: Drug intoxications, motor vehicle collisions, etc.)

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Suicide

Violent death caused by an act of the decedent with the intent to kill oneself. Must be a preponderance of evidence showing an intent to die

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DEGREES of CERTAINTY

The COD and MOD are opinions not scientific facts.

- Possible (>0%)
- Probable (>50%)
- Reasonable degree of medical certainty (Far exceeds 50%)
- Certainty beyond a possible doubt (100%)

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"No insurance company, religious authority, state or district attorney, judge, jury, or individual party is bound by the opinions expressed on the death certificate."

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Tracking Custody Deaths (DCRA)

Public Law 113–242
113th Congress

An Act

Dec. 18, 2014
[H.R. 3492]

Death in Custody Reporting Act of 2014.
34 USC 10101 note.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Death in Custody Reporting Act of 2014".

SEC. 4. STATE INFORMATION REGARDING INDIVIDUALS WHO DIE IN THE CUSTODY OF LAW ENFORCEMENT.

1. Detained by Law Enforcement
2. Under Arrest
3. In the process of being arrested
4. En route to being incarcerated or detained
5. Incarcerated

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National Violent Death Reporting System
NVDRS

Public Health Authority
All Suicides
All Homicides
All Unintentional Firearm Deaths
All Legal Intervention Deaths
All Undetermined Deaths

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Transparency

- Ensure DCs have information that reflects it is a death in custody:
  - Check box
  - Location of injury (prison) vs. location of death (hospital)
  - How injury occurred: "Shot" vs. "Shot by police"
- Autopsy Reports: Public Record
- In-Custody Mortality Review Panels (similar to maternal mortality, child fatality panels)
- Connecticut: Inspector General investigates and decides whether use of force was justified.
- New York: Attorney General investigates these deaths.

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Re-Design a Death Certificate (DC)

- Contents of DC ultimately up to the local jurisdiction
  - 57 US jurisdictions (50 States, NYC, Wash DC, 5 Terr.)
  - The CDC can promote a "death in custody" checkbox on the standard US death certificate (the model on which states base their DCs)
- Majority of Country has Electronic Death Registration Systems
  - Additional fields can easily be added

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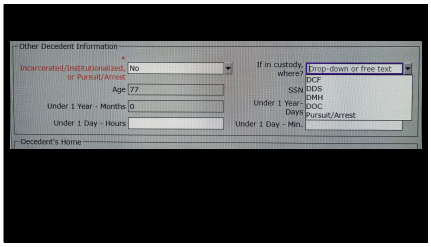

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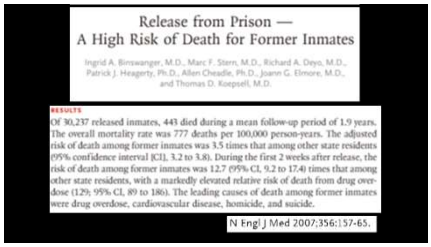
Three Stages of "In-Custody"

- Pre-Apprehension
  - GSW, Motor Vehicle Collision, Blunt Force
- Apprehension
  - Restraint, Asphyxia (neck, chest)
- Incarceration
  - Natural (Neglect), Suicide, Restraint/Asphyxia, Homicide, Accident

39


Release from Prison —
A High Risk of Death for Former Inmates

Ingrid A. Binswanger, M.D., Marc F. Stern, M.D., Richard A. Deyo, M.D., Patrick J. Heagerty, Ph.D., Allen Cheadle, Ph.D., Joann G. Elmore, M.D., and Thomas D. Koepsell, M.D.

RESULTS

Of 30,237 released inmates, 443 died during a mean follow-up period of 1.9 years. The overall mortality rate was 777 deaths per 100,000 person-years. The adjusted risk of death among former inmates was 3.5 times that among other state residents (95% confidence interval [CI], 3.2 to 3.8). During the first 2 weeks after release, the risk of death among former inmates was 12.7 (95% CI, 9.2 to 17.4) times that among other state residents, with a markedly elevated relative risk of death from drug overdose (129; 95% CI, 89 to 186). The leading causes of death among former inmates were drug overdose, cardiovascular disease, homicide, and suicide.

N Engl J Med 2007;356:157-65.

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Asphyxia

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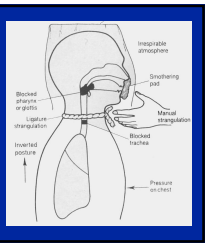
"Asphyxia"

- Environmental
- External airway obstruction
- Internal airway obstruction
- Neck compression (complex)
- Chest compression (complex)
- Positional



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How do we diagnose "Asphyxia" at autopsy?

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"Death may be due to a wide variety of disease and disorders, but in every case the underlying physiologic cause is a breakdown in the bodies oxygen cycle."

Dr. Milton Helpern
Former Chief Medical Examiner of New York City

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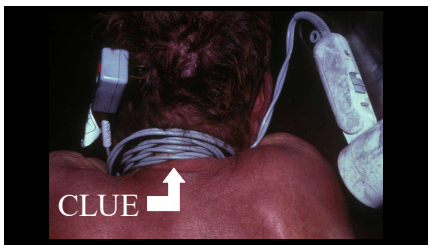
How do we diagnose "Asphyxia" ?

- Exclusion of other causes
- Signs supportive of an asphyxial mechanism
  - Petechiae, neck bruising, fractures
- Circumstances/Clues

45



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Case

- EMS responded to a 46-year-old man who was unresponsive on the street.
- Pronounced dead at the hospital.
- Should the medical examiner take jurisdiction?

47

Jurisdiction was accepted and an autopsy was performed

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Natural diseases

A. Arteriosclerotic heart disease, multifocal, severe

B. Hypertensive heart disease

1. Cardiomegaly (540 g) with mild biventricular dilatation
2. Clinical history of hypertension

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A. Blood drug and novel psychoactive substances screens:

1. Fentanyl 11 ng/mL
2. Norfentanyl 5.6 ng/mL
3. 4-ANPP 0.65 ng/mL
4. Methamphetamine 19 ng/mL
5. 11-Hydroxy Delta-9 THC 1.2 ng/mL; Delta-9 Carboxy THC 42 ng/mL; Delta-9 THC 2.9 ng/mL
6. Cotinine positive
7. Caffeine positive

B. Blood volatiles: negative for ethanol, methanol, isopropanol, or acetone

50

No life-threatening injuries identified

A. No facial, oral mucosal, or conjunctival petechiae

B. No injuries of anterior muscles of neck or laryngeal structures

C. No scalp soft tissue, skull, or brain injuries

D. No chest wall soft tissue injuries, rib fractures (other than a single rib fracture from CPR), vertebral column injuries, or visceral injuries

E. Incision and subcutaneous dissection of posterior and lateral neck, shoulders, back, flanks, and buttocks negative for occult trauma

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Blunt force injuries

A. Cutaneous blunt force injuries of the forehead, face, and upper lip

B. Mucosal injuries of the lips

C. Cutaneous blunt force injuries of the shoulders, hands, elbows, and legs

D. Patterned contusions (in some areas abraded) of the wrists

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Cause of Death

- Heart Disease?
- Intoxication?
- Injury?

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Next Steps?

Because the death occurred in the hospital, no medicolegal death investigator went to the scene.

- What further investigation is needed?
- Who should we ask for the information?
- What should we review?

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Additional History: He became unresponsive in police custody

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What is the cause and manner of death?

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Next Steps?

- What further investigation is needed?
- What should we want to review?

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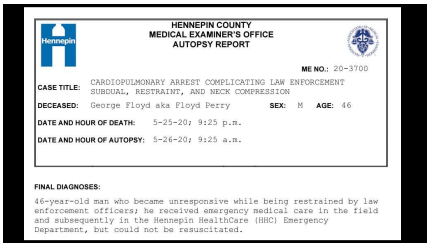

HENNEPIN COUNTY
MEDICAL EXAMINER'S OFFICE
AUTOPSY REPORT

ME NO.: 20-3700

CASE TITLE: CARDIOPULMONARY ARREST COMPLICATING LAW ENFORCEMENT SUBDUAL, RESTRAINT, AND NECK COMPRESSION

DECEASED: George Floyd aka Floyd Perry SEX: M AGE: 46

DATE AND HOUR OF DEATH: 5-25-20; 9:25 p.m.

DATE AND HOUR OF AUTOPSY: 5-26-20; 9:25 a.m.

FINAL DIAGNOSES:

46-year-old man who became unresponsive while being restrained by law enforcement officers; he received emergency medical care in the field and subsequently in the Hennepin HealthCare (HHC) Emergency Department, but could not be resuscitated.

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Autopsy

- George Floyd had no neck injury, internal injury, or petechiae.
- Based on the autopsy alone without considering "*non-medical information*" his death can be explained by a combination of heart disease and/or a drug intoxication.
- If all we knew was that he "died while in police custody" then the death likely would have been certified as "undetermined."

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Our diagnoses are only as good as the information on which they are based.

60

Refusal to consider circumstantial information can lead to a denial of reality in the name of objectivity.

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"Death is a functional event, not an anatomical event. The pathologist who searches for recent pathologic alteration to explain every death is doomed to failure."

Adams & Hirsch

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RESTRAINT

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Restraint without an Asphyxial Component

- Does restraint alone elevate the manner to a homicide?
- Does the use of pepper spray or conducted energy device ("TASER") alone elevate the manner to homicide?
- How does physical stress/pain affect the manner determination?
- How much chest compression is needed to cause death?

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National Association of Medical Examiners Position Paper: Recommendations for the Definition, Investigation, Postmortem Examination, and Reporting of Deaths in Custody

Roger A. Mitchell Jr., Francisco Diaz, Gary A. Goldfogel, Mark Fajardo, Stephany E. Flore, Tanisha V. Henson, Michelle A. Jorden, Sean Kelly, Scott Lutz, Megan Quinn, Dwayne A. Wolf

The more difficult cases are those where the individual is observed to be acting erratically due to a severe mental illness and/or acute drug intoxication. These cases have been defined in the literature as excited delirium and often result in a law enforcement response and the restraint of the decedent[19, 20]. It is not uncommon for the individual to die during or soon after restraint and/or altercation with law enforcement[19]. Manner of death in these instances can often be inconsistent from pathologist to pathologist and from office to office. Furthermore, manner of death in these cases have ranged from accidents due to the emphasis placed on drug toxicity, homicides due to the influence of the restraint and/or altercation, or undetermined due to the inability of the certifying physician to establish a definitive opinion.

Academic Forensic Pathology. 2017;7(4):604-18.

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"Consistency of classification is crucial if the medicolegal official is to be an unbiased participant in the criminal justice process."

Dr. Charles Hirsch

66

Physical restraint deaths in a 13-year national cohort of nursing home residents

Manual restraint of adult psychiatric inpatients: a literature review

Legal Issues in Medicine

THE LAST RESORT — THE USE OF PHYSICAL RESTRAINTS IN MEDICAL EMERGENCIES

New England Journal of Medicine. 1999;341:1408.

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What is the forensic pathology community doing about in-custody deaths?

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Studies by Forensic Pathologists

Deaths in Custody

Atlanta City Jail and Fulton County Jail, 1974–1985

Rosanne Frost, M.D. and Randy Hanzlick, M.D.

Investigation of Deaths Temporally Associated with Law Enforcement Apprehension

Michael A. Graham MD

Acad For Path. 2014;4(3):366-89.

National Association of Medical Examiners Position Paper: Recommendations for the Definition, Investigation, Postmortem Examination, and Reporting of Deaths in Custody

Academic Forensic Pathology. 2017;7(4):604-18.

Police custody deaths in Maryland, USA: An examination of 45 cases

J Forensic Leg Med. 2008 May;15(4):227-30.

Homicide Manner-of-Death Classification in Arrest-Related Deaths

Am J Forensic Med Pathol. 2024 Feb 27.

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Deaths in Custody

Barry D. Lifschultz, M.D.
Edmund R. Donoghue, M.D.

Leg Med. 1991:45-71.

DEATH IN CUSTODY

Donald T. Reay, MD

Clin Lab Med. 1998 Mar;18(1):1-22.

"A Prisoner Is Dead"

A Survey of 91 Sudden and Unexpected Deaths which Occurred While the Decedent Was in Either Police Custody or Penal Detention

By Lester Adelson, Robert W. Huntington III and Donald T. Reay

Police. 1968;Sept-Oct:49-58.

INVITED REVIEW

Manner of Death for In-Custody Fatalities

James R. Gill, Eloy Ennis-Lopez

Acad For Path. 2015;5(3):402-13.

Deaths in Custody

A 25-Year Review of Jail Deaths in Bexar County, Texas

Jason G. Lozano, MD, and D. Kimberley Molina, MD†*

Am J Forensic Med Pathol. 2015 Dec;36(4):285-9.

The Perils of Investigating and Certifying Deaths in Police Custody

James L. Luke, M.D., and Donald T. Reay, M.D.

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NATIONAL ASSOCIATION OF MEDICAL EXAMINERS

International Association of Coroners & Medical Examiners

NAME and the IACME

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Forensic Autopsy Performance Standards

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 non-natural 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, unless a significant interval has passed, and the medical findings and absence of trauma are well documented.
- 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 cleaned.
- B3.12 the forensic pathologist deems a forensic autopsy is necessary to determine cause or manner of death, or document injuries/disease, or collect evidence.
- B3.13 the deceased is involved in a motor vehicle incident and an autopsy is necessary to document injuries and/or determine the cause of death.

* unless sufficient antemortem medical evaluation has adequately documented findings and causes of concern that would otherwise have required autopsy performance.

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AD HOC DEATHS IN CUSTODY COMMITTEE
POSITION PAPER

National Association of Medical Examiners Position Paper: Recommendations for the Definition, Investigation, Postmortem Examination, and Reporting of Deaths in Custody.

Roger A. Mitchell Jr. MD, Francisco Diaz, MD, Gary A. Goldfogel MD, Mark Fajardo MD, Stephany E. Fiore MD, Tanisha V. Henson MFS, Michelle A. Jorden MD, Sean Kelly MD, Scott Luzi MD, Megan Quinn MD, Dwayne A. Wolf MD PhD

ABSTRACT: The National Association of Medical Examiners commissioned an ad hoc committee to provide recommendations for the investigation, examination, and reporting of deaths in custody. Deaths in custody, whether occuring in jail/prison or during an altercation with law enforcement, is a complex issue and requires the forensic pathologist to be knowledgable and deliberative about his/her diagnosis. This paper provides recommendations for the forensic pathologist as it relates to: 1) categorization of deaths in custody, 2) critical information required during investigation, 3) enhanced autopsy procedures, 4) guidance on death certification, 5) parameters for statistical reporting, and 6) release of information to the public. A uniform approach by medical examiners and coroners to the investigation and evaluation of deaths in custody is critical. The establishment of recommendations has the potential to ensure consistency and reliability to the definition, investigation, and certification of these cases. Such uniformity and consistency will instill confidence in the medical examiner/forensic pathologist/coroner's independence by the criminal justice system, the public health system and the community at large.

Renewed until 2027

https://www.thename.org/name-public-position-papers

Acad Forensic Pathol. 2017 Dec;7(4):604-18.

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NAME and IACME Office Accreditation

- About 17% of MEC offices were accredited as of 2018.
  - NAME has accredited 90 offices (population served is approximately 180,929,419).
  - IACME has accredited 40 offices (population 13,500,000).
  - US Population: ~333,000,000
- More than 1.3 million deaths were referred to MEC offices and 605,000 were accepted for further investigation.
  - 250 autopsies per FP/Year
- ~26,000 homicides per year (<5% of accepted cases)`

Brooks C. Medical Examiner and Coroner Offices, 2018. In: US Department of Justice Office of Justice Programs Bureau of Justice Statistics. 2021.

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OSAC

ORGANIZATION OF SCIENTIFIC AREA COMMITTEES FOR FORENSIC SCIENCE

OSAC was established in 2014, in collaboration with National Institute of Standards and Technology (NIST) and the U.S. Dept. of Justice (DOJ) to help the forensic science community address some of the issues identified in the NRC Report, specifically around the need to establish standards and best practices within and between disciplines related to terminology, methodologies, and training.

Strengthening Forensic Science in the United States: A Path Forward

Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council

ISBN: 0-309-13131-6, 352 pages, 6 x 9, (2009)

This PDF is available from the National Academies Press at: http://www.nap.edu/catalog/12589.html

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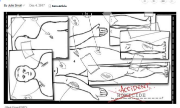
Concerns of Forensic Pathologists

- Independence
  - Sheriff-Coroner in California
- Interference with the practice of medicine
- Cognitive Bias vs. Pressure
  - "Sequential Unmasking"
- Hyperactive Delirium

Autopsy Doctor Resigns, Says Sheriff Overrode Death Findings to Protect Officers

By Julie Small Dec 4, 2017 Save Article



(Mark Fiore/KQED)

Updated 2 p.m. Wednesday:

San Joaquin County's chief forensic pathologist resigned Tuesday, one day after the release of memos alleging Sheriff-Coroner Steve Moore interfered with death investigations to protect law enforcement officers.

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The charge to the committee is to issue a report with findings and recommendations that will consider:
(1) the number of deaths while in custody throughout the criminal justice process and how those deaths are investigated, diagnosed, recorded, reported and made transparent;
(2) the distribution of diagnoses for deaths that occur in custody (cause and manner of death) and the scientific bases for attributing such diagnoses to those deaths;
(3) measures (and limitations thereof) that forensic pathologists should follow to conduct independent assessments of cause of death generally and in particular for deaths in custody;
(4) the proper range of attributions for cause and manner of death that should be made in a medicolegal death investigation and the scientific bases and associated evidence needed to justify a diagnosis related to any death in general and, in particular, to deaths in custody;
(5) mitigation strategies to be used to protect forensic pathologists from factors that may bias their diagnosis;
(6) an assessment of the dual role played by the medicolegal death investigation system as fact finders of manner of death (often relying on non-medical information) for public health as opposed to for the criminal justice system; and
(7) quality standards and regulations needed for improvement.

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Cognitive Bias vs. Outside Pressure

- Police
- Attorneys
- Families of Decedents
- Governmental Officials
- Professional Colleagues
- Academicians
- Press
- Public

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National Association of Medical Examiners Position Paper: Medical Examiner, Coroner, and Forensic Pathologist Independence

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ABSTRACT: Objective: Forensic pathologists play a vital role in the justice system in matters concerning questions of death. Science as applied in the justice system should be objective and neutral. Since the goals of medical examiners and coroners are to determine the cause and manner of death for certification and public health functions (goals different and distinct from the missions of law enforcement agencies), it is important that medicolegal death investigation be independent. Accurate investigation, examination, reporting, and testimony by forensic pathologists are important to determine the cause and manner of death of individuals who die under sudden, unexpected, or violent circumstances. These cases can become the focus of political or legal pressure by individuals or offices seeking to influence the pathologist's findings. This pressure, even if seemingly unsuccessful in an individual case, can introduce error, bias, and corruption into the medicolegal investigation process. This paper reinforces the principle that medical examiners, coroners and forensic pathologists should be allowed to perform medicolegal investigations free of these influences.

Evidence: Surveys of NAME members revealed that medical examiner independence was important to most members. Over 70% of survey respondents had been subjected to pressures to influence their findings, and many had suffered negative consequences for resisting those influences. In a separate study, over 30% of respondents indicated that fear of litigation affected their diagnostic decision-making. In 2009, the National Research Council of the National Academies published recommendations to strengthen the forensic sciences; they specifically recommended that medical examiner and coroner offices should be independent from law enforcement agencies and prosecutors' offices.

Acad Forensic Pathol. 2013;3(1):93-8.

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Dr. John F. Edland

Attica hostages died of gunshots, not cut throats as originally reported in 1971

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LOCAL NEWS ›

Medical Examiner Testifies He Wasn't Pressured When Making George Floyd Autopsy Report

WCCO NEWS February 1, 2022 / 4:00 PM CST / CBS Minnesota

"Baker said his office received "hundreds" of calls, some harassing and threatening."

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Sequential Unmasking

- Forensic Pathologists, as any physician, render a diagnosis on everything we see, not on isolated findings.
  - We know what information we need for our investigation.
  - We are Physicians, not Scientists.
- Who decides what information to withhold? Bias? Expertise?
- Attorney Tactic: "Doctor, you did not review this…"
- Document in our report: "Asked for witness statements but were denied access."
- Without the needed information: "Undetermined"

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"Deaths in custody that are precipitated by an altercation with law enforcement should undergo an exhaustive medicolegal investigation. These cases must incorporate all available investigative information to establish the final cause of death statement. Prior to developing the cause of death statement, the forensic pathologist should have access, for example, to all body-worn camera footage, civilian mobile phone video footage, and any stationary building surveillance footage. Reviewing witness statements, police reports, and emergency medical service run sheets is also critical to understanding the circumstances surrounding the death."

Death in Custody
R A Mitchell Jr. & JD Aronson

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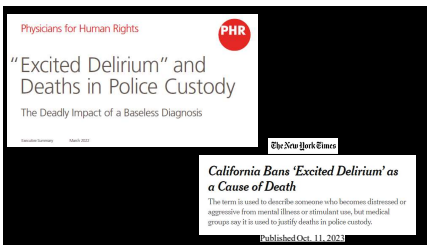

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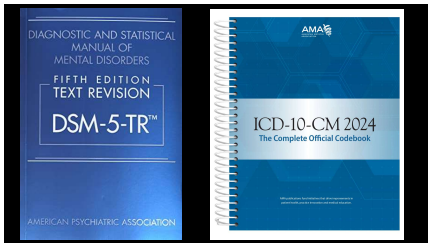

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Hyperactive Delirium due to Cocaine

Acute hyperactive cocaine-induced delirium is a well-recognized and accepted medical diagnosis included in the ICD-10 (2024 ICD-10-CM Diagnosis Code F14.121, Cocaine abuse with intoxication with delirium) and the DMS-5-TR.

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The DMS-5-TR describes stimulant use (e.g., Amphetamine, Cocaine)

"One extreme instance of stimulant toxicity is stimulant-induced psychotic disorder, a disorder that resembles schizophrenia, with delusions and hallucinations."

"Individuals with acute intoxication may present with rambling speech, headache, transient ideas of reference, and tinnitus. There may be paranoid ideation, auditory hallucinations in a clear sensorium, and tactile hallucinations, which the individual usually recognizes as drug effects. Threats or acting out of aggressive behavior may occur."

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DMS-5-TR

"The name of the medication-induced delirium begins with the specific substance that is presumed to be causing the delirium. The name of the disorder is followed by the course (i.e., acute, persistent), followed by the specifier indicating level of psychomotor activity (i.e., hyperactive, hypoactive, mixed)."

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Cocaine Delirium, Acute, Hyperactive

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How does Cocaine actually cause death?

- Primary Cardiac Arrythmia (Na^+ Channel blockage)
- Coronary Artery Vasospasm (myocardial ischemia)
- Ruptured Cerebral Artery Aneurysm
- Ruptured Aortic Dissection
- Intracerebral Hemorrhage (stroke)
- Seizure
- Hyperthermia/Rhabdomyolysis/Kidney Failure
- Hyperactive Delirium

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ACMT | American College of Medical Toxicology

ACMT Position Statement:
End the Use of the Term "Excited Delirium"

May 1, 2023

Authors: Andrew I. Stolbach, MD, MPH, FACMT; Paul I. Dargan, MB, BS, FACMT; Howard A. Greller, MD, FACMT; Richard J. Hamilton MD, MBA, FACMT; Kelly Johnson-Arbor, MD, FACMT; Brian Patrick Murray, DO; Daniel Ovakim, MD, MSc, FACMT; Laura Tormoehlen, MD, FACMT; and Lewis S. Nelson MD, MBA, FACMT

"Although we support discontinuing use of the term "excited delirium," we believe that it is useful to have terminology describing the clinical condition of a patient with dangerous psychomotor hyperactivity and agitation while the final etiology and diagnosis are being determined. We prefer the term "hyperactive delirium with agitation" to describe this initial undifferentiated presentation of patients with altered mental status who are aggressive or have vital signs suggestive of excessive adrenergic activity. "Hyperactivity," "delirium," and "agitation" are clear and established medical terms."

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Cal. Health & Saf. Code § 24401

(a) Excited delirium shall not be recognized as a valid medical diagnosis or cause of death in this state.

(b) A state or local governmental entity, or employee or contractor of a state or local government entity, shall not document, certify to, or otherwise use in any official capacity or communication excited delirium as a recognized medical diagnosis or cause of death.

(c) A coroner, medical examiner, physician, or physician assistant shall not state on the certificate of death, or in any report, that the cause of death was excited delirium. The term excited delirium and terms inclusive of excited delirium defined in Section [xxxx] shall not be listed anywhere on the death certificate.

Ca. Health and Saf. Code § xxxx

For the purposes of this chapter, "excited delirium" means a term used to describe a person's state of agitation, excitability, paranoia, extreme aggression, physical violence, and apparent immunity to pain that is not listed in the most current version of the Diagnostic and Statistical Manual of Mental Disorders, or for which the court finds there is insufficient scientific evidence or diagnostic criteria to be recognized as a medical condition. Excited delirium also includes excited delirium syndrome, excited delirium, hyperactive delirium, agitated delirium, and exhaustive mania.

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Acute Hyperactive Delirium

1. Hyperactive delirium is recognized in the DSM-5 TR and ICD-10 and has a variety of causes (including cocaine).
2. Hyperactive delirium is a potentially fatal condition.
3. The underlying etiology is the proximate cause of death.
4. Many patients do not die of it (Emergency Department).
5. Some deaths occur without police involvement.
6. Physicians make the diagnosis, NOT the police.
7. Important for first responders to recognize it (medical not criminal issue)
8. Just because a person may be in an *acute hyperactive delirium*, it does NOT mean that they died from it (choked, compressed, etc.).

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"Forensic pathologists practice in the finest tradition of preventative medicine and public health by making the study of the dead benefit the living."

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The National Association of Medical Examiners

POSITION PAPER: SECOND AUTOPSIES

Authors:
Sally S. Aiken, MD
Marcus Nashelsky, MD

- Should be performed in compliance with the NAME Forensic Autopsy Standards
- The pathologist should generate a complete autopsy report that includes external and internal examination observations, limitations of the examination, final diagnoses, opinions, and cause and manner of death, unless sufficient information is not available.
- Should fully describe the condition of the body as received (externally and internally) and note organs that are not in the body.
- Should include a list of all items requested from the first autopsy jurisdiction (e.g., investigative reports and photographs) and what was provided.
- Providing autopsy materials, especially when a criminal investigation is active, may be prohibited by jurisdictional

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Table 6.1 Causes of delirium/psychosis (according to [1, 10, 67])

Drug intoxications/withdrawals
Acute functional psychosis (schizophrenia, acute mania)
Endocrine/Metabolic disease
Hyperthyroidism, hypothyroidism ("myxedema madness")
Hypoglycemia
Pituitary disease with secondary endocrine effects
Postpartum psychosis
Porphyria
Liver and kidney failure (uremia)
Electrolyte disorders
Acid base imbalance,
Nutritional disorders
Thiamin/vitamin B12 deficiency ("megaloblastic madness")
Infections
Meningitis, encephalitis, sepsis
Neoplastic (brain tumors)
Seizure disorders
Complex partial seizures ("temporal lobe" or "psychomotor" epilepsy), postictal state
Vascular disorders
Hypertensive encephalopathy/cerebral infarcts
Systemic lupus erythematosus
Disseminated intravascular coagulation
Trauma
Concussion
Subdural, epidural, subarachnoid hematoma
Hypothermia/Hyperthermia
Hypoxia
Factitious psychosis/malingering

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Table 6.2 Drugs associated with acute psychosis

Ethanol
Ethanol intoxication
Ethanol withdrawal
Sympathomimetic drugs
Cocaine
Amphetamines
Tricyclic antidepressants
Monoamine oxidase inhibitors
Methylphenidates
Sedative drugs
Sedative drug withdrawal
Hallucinogens
Lysergic acid diethylamide (LSD)
Mescaline
Phencyclidine (PCP)
Psilocybin
Anticholinergic drugs
Includes drugs with anticholinergic side-effects, antipsychotic agents, antihistamine, etc.
Corticosteroids

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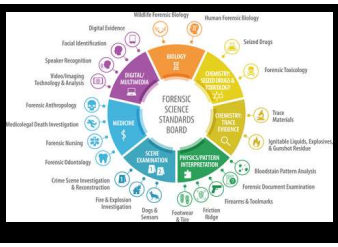

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OSAC

ORGANIZATION OF SCIENTIFIC AREA COMMITTEES

- OSAC strengthens forensic science by facilitating the development and promoting the use of high-quality, technically sound standards. These standards define minimum requirements, best practices, standard protocols and other guidance to help ensure that the results of forensic analysis are reliable and reproducible.
- OSAC was created to address a lack of discipline-specific forensic science standards. OSAC fills this gap by drafting proposed standards and sending them to standards developing organizations which further develop and publish them.
- OSAC's 800+ volunteer members and affiliates work in forensic laboratories and other institutions around the country and have expertise in 22 forensic disciplines, as well as scientific research, measurement science, statistics, law, and policy. OSAC drafts and evaluates forensic science standards via a transparent, consensus-based process that allows for participation by all stakeholders.

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OSAC Registry Updates

The OSAC Registry is a repository of selected published and proposed standards for forensic science. These documents contain minimum requirements, best practices, standard protocols, terminology, or other information to promote valid, reliable, and reproducible forensic results.

The standards on this Registry have undergone a technical and quality review process that actively encourages feedback from forensic science practitioners, research scientists, human factors experts, statisticians, legal experts, and the public. Placement on the Registry requires a consensus (as evidenced by 2/3 vote or more) of both the OSAC subcommittee that proposed the inclusion of the standard and the Forensic Science Standards Board.

OSAC encourages the forensic science community to implement the published and proposed standards on the Registry to help advance the practice of forensic science.

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Monitoring Deaths in Police Custody: Public Health Can and Must Do Better

Justin M. Feldman, ScD, and Mary T. Bassett, MD, MPH

ABOUT THE AUTHORS

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Am J Pub Health. 2021;111(52):S69-72.

RECOMMENDATIONS

We offer the following three recommendations to improve data collection on deaths in custody and strengthen efforts toward police accountability:

1. improve data collection and reporting practices,
2. establish mortality review committees for deaths in custody, and
3. reform death investigations.

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CT Sec. 51-277a. Investigation and prosecution of the use of physical force by a peace officer, the death of a person in custody…

- Whenever a peace officer…uses physical force upon another person and such person dies as a result thereof or uses deadly force…the Division of Criminal Justice shall cause an investigation to be made and the Inspector General (IG) shall have the responsibility of determining whether the use of physical force by the peace officer was justifiable.
- Whenever a person dies in the custody of a peace officer, law enforcement agency, Commissioner of Correction, the IG shall investigate and determine whether the deceased person may have died as a result of criminal action.
- The IG shall request the appropriate law enforcement agency to provide assistance to investigate.
- The IG shall file a report which shall contain: (1) The circumstances, (2) a determination of whether the use of physical force was justifiable and any recommended future action.
- The IG shall prosecute any case in which the use of force by a peace officer was not justifiable.

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