

## MEIOI



## IOWA ASSOCIATION OF COUNTY MEDICAL EXAMINERS ANNUAL MEETING, FALL 2022

JONATHAN THOMPSON, MD

MARK BETHEL, F-ABMDI

KATIE BEJES, MS



#### ME-101 OUTLINE

- Katie
  - ME-101 Basics
- Mark
  - Case studies (who what when where why)
- Dr. Jon Thompson
  - All about death certificates

### PART 1: GOING BACK TO BASICS



- What is an ME case?
- Identification
- Basic death scene investigation
- Completing ME-1's

#### IOWA'S MEDICAL EXAMINER SYSTEM

#### Who?

- Must be an MD or DO
- Most are not Forensic Pathologists
- Appointed by the county board of supervisors
- Deputy Medical Examiners

#### Medical Examiner Investigators (MEIs)

- Education and training are variable
- Must be approved by the Iowa Office of the State Medical Examiner (IOSME)

#### IOSME

Provides consultation, training, and autopsy services



### JURISDICTION... Who's is it, anyway?



Determined by where the decedent is <u>pronounced</u> dead

- What qualifies as an ME case? (lowa Code 331.802)
  - ALL unwitnessed deaths
  - MOD other than natural
  - Unknown circumstances

# JURISDICTION DECLINED



 Must occur in a hospital, nursing home, or under hospice care

<u>AND</u>

Be natural



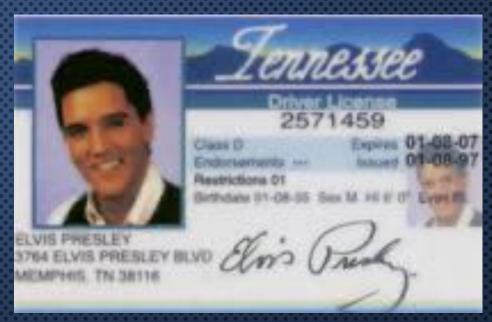
#### IDENTIFICATION

- Identifying the decedent is the first major step in the death investigation process and can be the most difficult.
- Appropriate identification also assists in:
  - Death notification to next of kin.
  - Proper completion of the death certificate.
  - · Settlement of affairs.

## CLASSIFICATION OF DECEDENT IDENTIFICATION

- 1. Direct **visual** or photographic
- 2. Circumstantial
- 3. Scientific







## DIRECT VISUAL OR PHOTOGRAPHIC IDENTIFICATION

- Only use if decedent's face is recognizable.
  - Limited use with disfiguring injuries (e.g. burn victims, shotgun wounds of the head) and severe decomposition.
- Methods:
  - Have a friend or relative directly view the body.
  - Obtain a photograph of the decedent (e.g. driver's license, student I.D., passport) for comparison.



#### **CIRCUMSTANTIAL IDENTIFICATION**

- Body habitus
- Tattoos/scars
- Circumstances placing them at the scene
- Surgical history

Least desirable method of identification







#### SCIENTIFIC IDENTIFICATION

- Dental records
- Fingerprints
- X-rays/medical imaging
- DNA

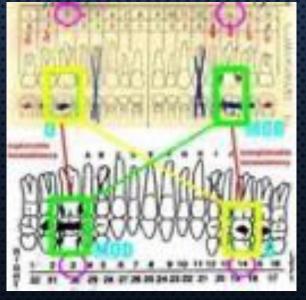




# REQUESTING DENTAL RECORDS

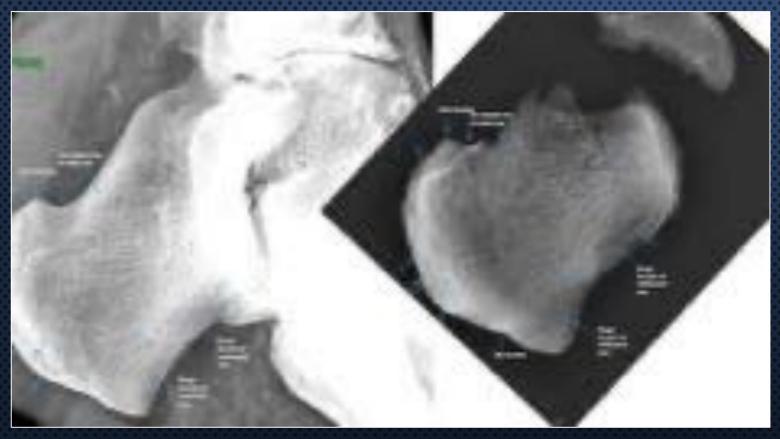
- Records to request:
  - Bitewing X-Rays
  - Panorex Film
  - Dental charts





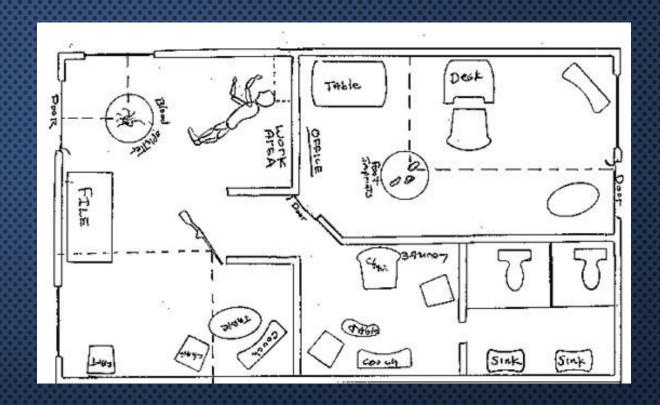


### INNOVATIVE ID METHODS





### SCENE PHOTOGRAPHY



- Scene photos are indispensable
- In motor vehicle crashes, scene is often distorted by attempts to extricate the body
- Photographs to take:
  - Condition and position of the vehicle in its environment
  - Position of the body (especially if still in the vehicle)
- Diagrams may also prove useful









#### SCENE PHOTOGRAPHY

- Scene photographs can be essential for a medical examiner when determining cause and manner of death.
- Photographs should:
  - Emphasize the relationship of the decedent to the scene
  - Record physical evidence as it is first encountered
  - Document any other objects or evidence that may be pertinent in the investigation process



### PHOTOGRAPHS FOR EVERY SCENE

- Big picture
- Mid-range
- Close-up

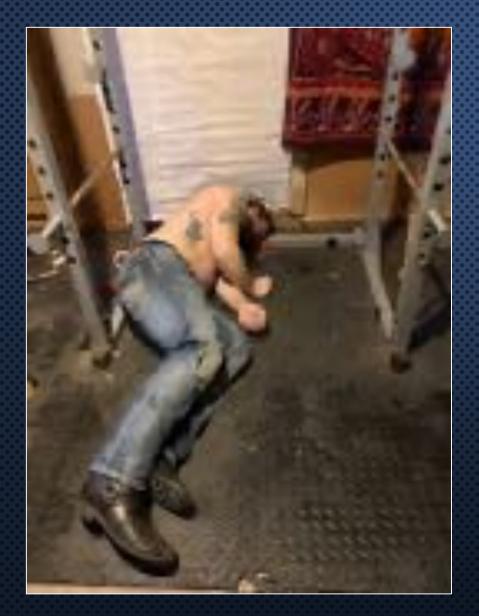
#### BIG PICTURE PHOTOGRAPHS

- Wide-angle photographs depicting the general scene and relationships between the decedent and various pieces of evidence.
  - Depending on the type of scene, this can be accomplished in one or a few photos.



#### MID-RANGE PHOTOGRAPHS

- Photographs showing the position of the body and greater detail of its relationship to relevant evidence present at the scene.
- If the decedent is found lying on top of any objects, a
  photograph of the area where the decedent was lying after
  they have been moved is helpful in interpreting any artifacts
  seen at autopsy.





#### **CLOSE-UP PHOTOGRAPHS**

- Detailed photographs emphasizing important pieces of evidence:
  - Firearm
  - Drug paraphernalia (do not send with decedent)
  - Prescription medication bottles (do not send with decedent)
  - Suicide note
- Do not need to take multiple close-up photographs of decedent.
  - Unless they contain evidence that might be distorted during transportation such as:
    - Livor mortis pattern (babies)
    - Presence of soot or gunpowder

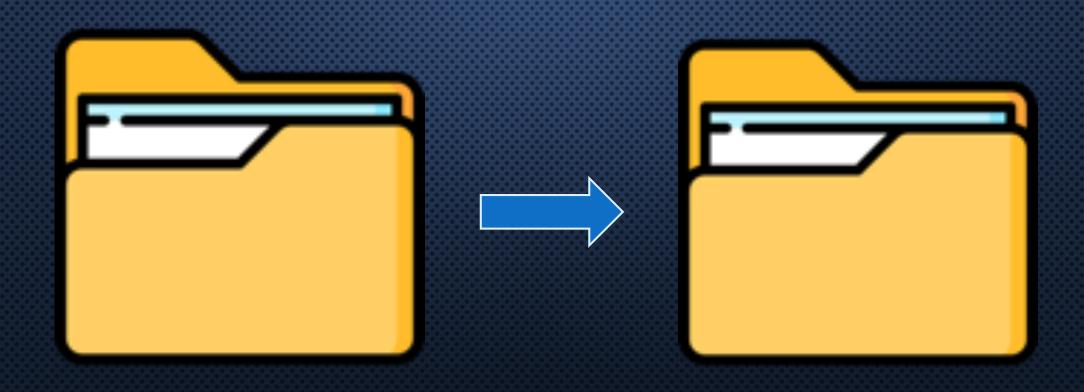








# FILECLOUD ASK AND YOU SHALL RECEIVE



# WHO CAN PRONOUNCE?



#### Iowa Code 702.8

- Physicians
- Physician Assistants
- Registered nurses & licensed practical nurses
- EMS under medical control

#### **NEXT OF KIN**



- a. Designee
- b. Spouse, if not legally divorced from decedent
- c. Adult child
- d. Parent
- e. Grandchild
- f. Sibling
- g. Grandparent
- h. Other relative
- i. Anyone who knows the decedent and is willing to accept responsibility for disposition
- j. County medical examiner

#### **CONSIDERATIONS FOR AUTOPSY**

- Iowa Code mandatory autopsies
- IOSME recommendations for autopsy
- Decedent's medical history, social history and all circumstances surrounding their death
- No magical age cutoff



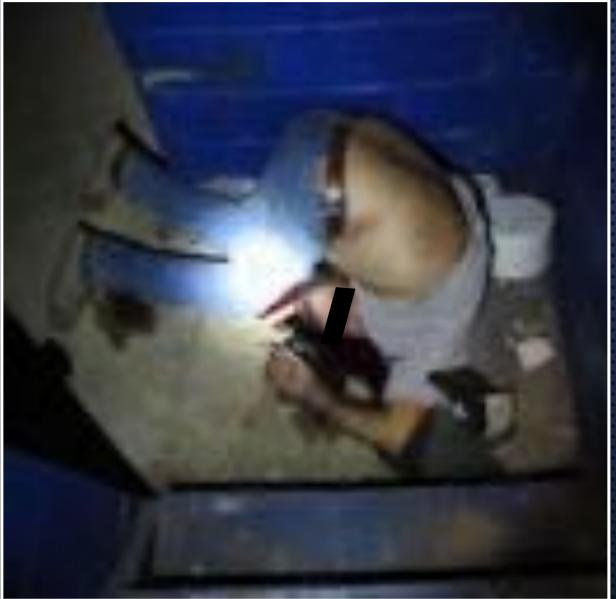
#### WHO MUST HAVE AN AUTOPSY?

- Homicides
- MOD undetermined
- ID undetermined
- Children under 2
- Deaths due to poisoning
- Natural disasters
- Drownings
- Pilots
- In-custody deaths
- On-the-job deaths
  - Truck drivers & farmers included



# WHO SHOULD HAVE AN AUTOPSY?





#### ORDERING AN AUTOPSY

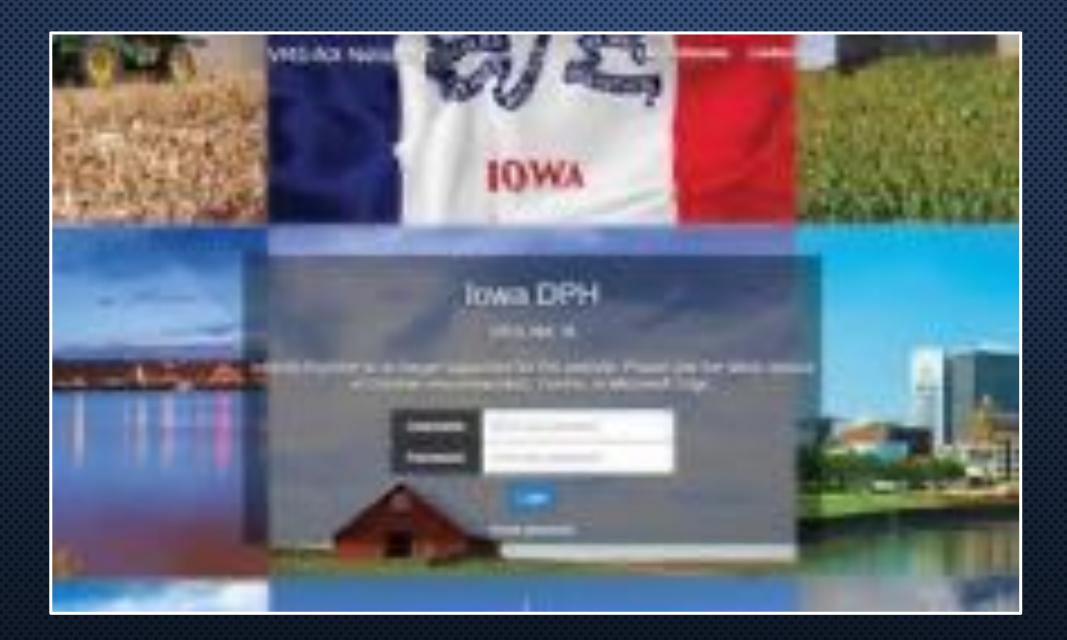
- If sending to IOSME:
  - Inform next of kin, if available, on next clear steps
  - Call 515-725-1400 with preliminary case information
  - Bag, tag x2, and seal
  - Arrange transportation

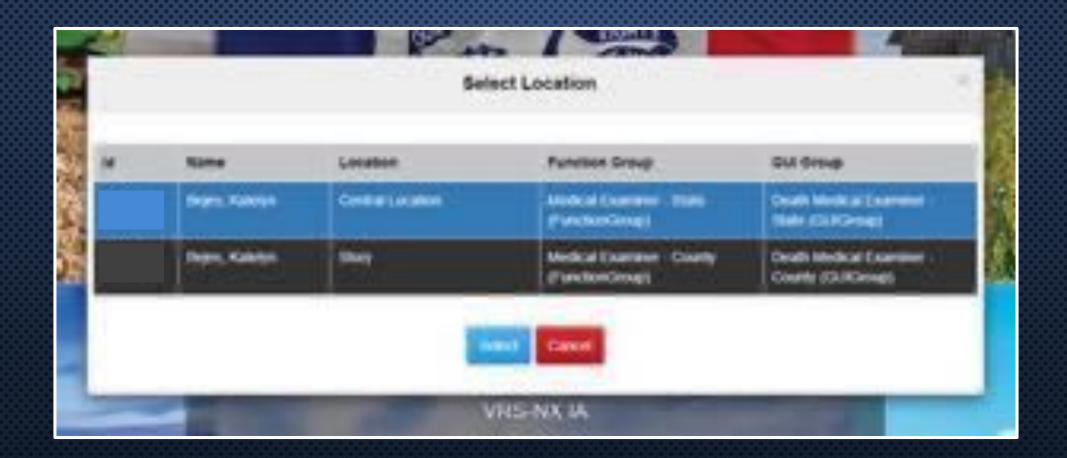


## WHO CAN TRANSPORT BODIES?

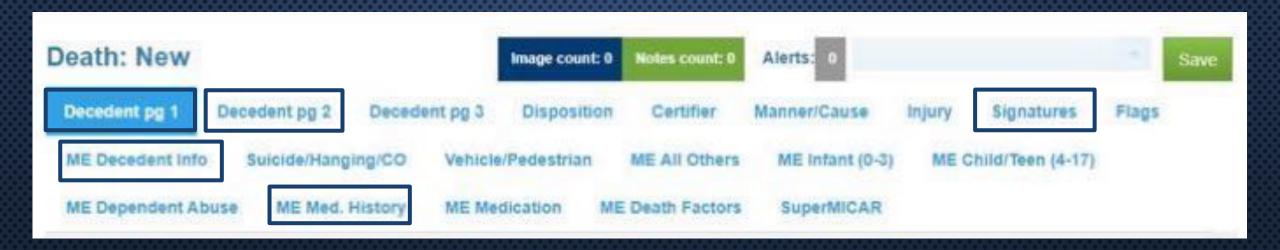
- Transportation to or from the Medical Examiner's office can be performed by anyone under the direction of the County Medical Examiner.
  - Funeral home
  - Ambulance/EMS
  - Private vehicle







#### WHAT'S REQUIRED OF YOU?



## MEANS OF DEATH





Natural

Fire/Thermal

Means Of Death Other

Suicide

Pedestrian

Falling

Specify

Hanging

Firearm

Asphyxiation

Carbon Monoxide - Vehicle

Instrument

Drug/Alcohol/Poison

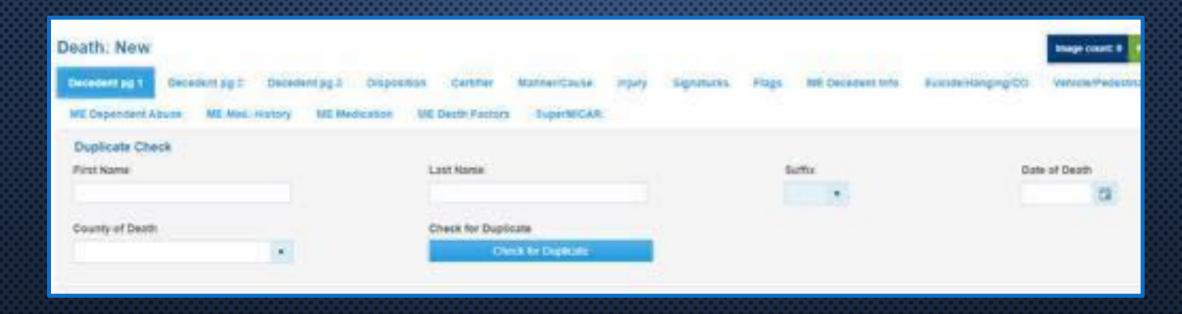
Carbon Monoxide - Dwelling

Drowning

Suspected Abuse/Neglect



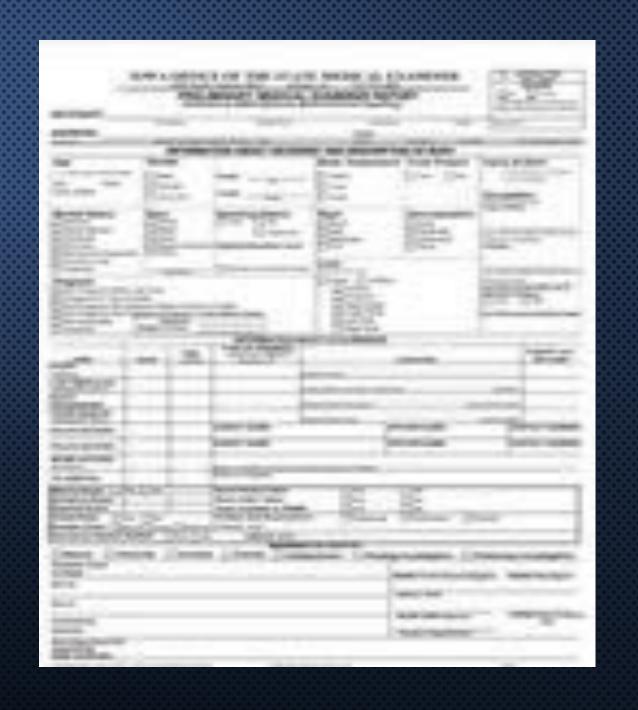
#### WHEN TO INITIATE A RECORD IN IVES



- Always do a duplicate check
- Funeral homes start death records for non-ME deaths
- Medical examiners/investigators start death records for ALL ME deaths

## **EMER WORKSHEET**

 Available under Forms on the CME tab at iosme.iowa.gov (password: CME)



#### ME DECEDENT INFO TAB

Medical Examiner Info							
Natural Death Occurring in Hospital, Nursing Home, or Under Hospice Care - Jurisdiction Declined		Autopsy - No, IOSME, County, Private/Hospital					
			•				
ME Case Number	Bag Lock #	‡		Facility Autopsy Performed			
					•		

## ME MED HISTORY TAB



## ME MED HISTORY TAB



#### SIGNATURES TAB





## ADD FUNERAL HOME TO IVES

- Using either the ME Med History tab or the Disposition tab, enter the family selected funeral home.
- The funeral home can only access the record if assigned



# RETENTION OF RECORDS

- Download EMER from IVES on each case to retain indefinitely
- Develop a place to store records that can be accessed by multiple people
- Copy of EMER must be sent to the county attorney
- Do not send EMER to IOSME (can be accessed by the IOSME in IVES)

# END OF PART 1



# SCENE INVESTIGATIONS

#### TODAY'S OBJECTIVES

- Your time, efforts and quality of work matter
- Cause of Death, Manner of Death 

  Scene History
- Who, What, When, Where, Why, How → MOD
- Scene Investigation
  - Agencies Involved
  - Process + Routine = Procedure
  - Autopsy Findings + Scene Investigation = MOD
  - Document Scene Findings → IVES/ME1
- Case Study: Firearm

#### YOUR WORK MATTERS

- Cause of Death = IOSME Pathologists/Autopsy
- Manner of Death = County ME, MEI
  - Circumstances leading up to or at time of death
    - Who, what, when, where, why, how
    - These are not found in the autopsy suite
    - The heart of the Investigation → The Scene

## HOUSE KEEPING

## PLACE OF DEATH

- Place of Death (Primary Scene): location at which death is pronounced, may also be the place of injury.
  - Emergency Department
  - Roadway
  - House, apartment
  - Field, pond, river
  - Ditch, sidewalk, alley, parking lot



## PLACE OF INJURY

Place of Injury (Secondary Scene): location at which the injury occurred, may also be the Place
of Death.

- Creation preceeds the place of death
- When separate from POD → Is often overlooked, underappreciated and not fully investigated
- Where "Heart of Investigation" is located
  - Who, what, where, when, why, how → ALL RESIDE AT POI
- House, Apartment
  - bedroom, living room, bathroom, garage
    - Bed, floor, bathtub, closet, couch



#### CAUSE OF DEATH

- Cause of Death: disease, injury, abnormality, or chemical disturbance that started the chain of events that lead directly to death
- Examples:
  - Multiple blunt force injuries
  - Gunshot wound of head
  - Stab wound of chest
  - Hanging

#### MULTIPLE BLUNT FORCE INJURIES

MVC - SUICIDE



MVC - ACCIDENT



### GUNSHOT WOUND

SELF INFLICTED - SUICIDE



SELF INFLICTED - ACCIDENT



#### SHARP FORCE INJURY

SELF INFLICTED - SUICIDE



SELF INFLICTED - ACCIDENT



#### MANNER OF DEATH

- Manner of Death: explanation of how the cause of death arose using investigative and autopsy findings.
- Examples:
  - Natural
  - Accident
  - Suicide
  - Homicide
  - Undetermined

#### MANNER OF DEATH

- Key Takeaway #1: determination of MOD is often not straightforward
- **Key Takeaway #2:** determination of MOD is highly dependent upon your scene investigation at the County level.
  - The circumstances, event(s), actions and intentions leading up to and at the time of death gets us to MOD.

#### AGENCIES INVOLVED

- Law Enforcement
  - Police Department
  - Sheriffs Office
  - DCI
- EMS
  - First Responders
  - Paramedics
  - Fire Department/Fire Rescue

# INTERACTION WITH EMS/LAW ENFORCEMENT Who's scene is it anyways?

- ME/MEI has jurisdiction of the body
- LE has jurisdiction of the scene
  - Without scene investigation MOD = Often impossible to Determine
- EMS often on scene before LE
- EMS, LE almost always on scene before ME/MEI
- Must be a TEAM effort between all three parties

#### FIRST SET OF EYES

- First Responders, Law Enforcement, Paramedics, Fire Rescue
  - Initial, trained observers

  - Years of combined experience, different perspectives
    - Environmental conditions
    - Scene appearance
    - Location of decedent
    - Behaviors → "gut feeling"

### PROCESS, ROUTINE, PROCEDURE

#### Process

 A series of actions or steps taken in order to achieve a particular end.

#### Routine

Sequence of actions which are repeatedly completed.

#### Procedure

An established or official way of doing something.

#### **ADVANTAGES**

- Systematic Process → Established Routine → Defined Procedure
  - More efficient
  - More consistent results
  - More focused scene investigations
  - Partner Agencies understand ME/MEI Role
  - Better quality ME1 Reports
  - Makes your job easier
  - Families are better served

# SCENE INVESTIGATION PROCESS

~ FIVE MAIN CATEGORIES

USUALLY COMPLETED IN ORDER

EVENTUALLY BECOME YOUR PROCEDURE

Notified and Arrive at Scene

Complete Scene Investigation

Document and Evaluate Scene

Establish Decedent Profile Document and Evaluate Decedent

#### INITIAL NOTIFICATION/ARRIVE AT SCENE

- Arrive at Scene
  - Ensure scene safety
  - Introductions, Roles, Responsibilities
    - Lead LE Official
    - First Responders, Paramedics
    - Must Be A Team Effort

#### **ARRIVE AT SCENE**

- Known Case History → "What's The Story?"
  - Who? What? Where? When?
  - Concerns?
  - First Responders, Paramedics, Law Enforcement,
     Nurses, ER Provider(s) -> Who arrived first?
  - Scene Artifacts/Alterations -> what has been moved?

#### **ARRIVE AT SCENE**

- Complete Scene Walk-Thru
  - Done \*with\* LE
  - They've already been there
  - Gives you their perspective
- Confirm or pronounce death
  - Who pronounced? Date/Time?
  - Via Medical Control → Emergency Department

#### DOCUMENT/EVALUATE SCENE

- Two Primary Methods
  - Photography, video
  - Written Notes
- Process + Routine = Your County's Procedure

#### PHOTOGRAPHS

- PROVIDE A PERMANENT HISTORICAL RECORD OF THE SCENE
- BEST PERMANENT DOCUMENTATION OF THE SCENE
- SCENE, DECEDENT & SURROUNDINGS
  - REMOVE ALL NONESSENTIAL PERSONS
- "PAINT A PICTURE" OF THE CASE AS A WHOLE
- OUTWARDS WORKING INWARD
  - OVERALL → INTERMEDIATE → CLOSE UP

#### PHOTOGRAPHS

- DIFFERENT ANGLES → LIGHTING WILL BE A FACTOR, INDOORS/OUTDOORS
- PHOTOGRAPH THE SCENE AS YOU FIND IT
  - CHANGES MADE BY LE, EMS → DOCUMENT "ORIGINAL POSITION" IN REPORT
  - REMOVE ALL NONESSENTIAL PERSONEL
- "OUTWARDS WORKING INWARD
  - OVERALL → INTERMEDIATE → CLOSE UP



PHOTOGRAPHS



OVERALL



CLOSE UP

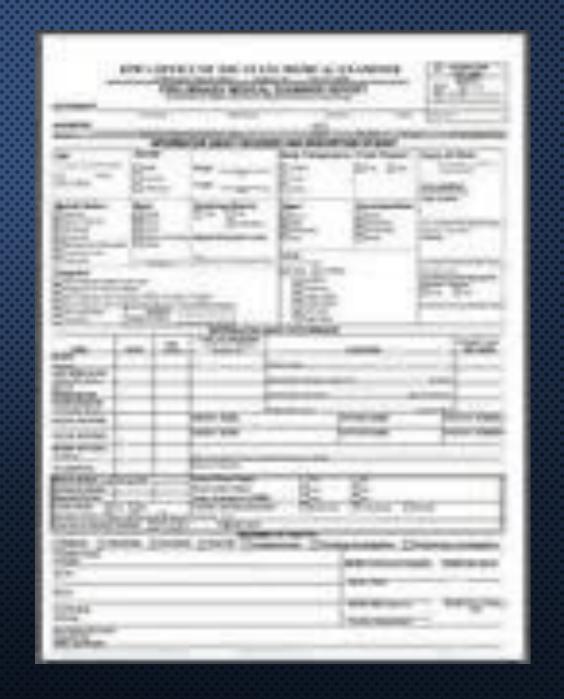
INTERMEDIATE

# WRITTEN DOCUMENTATION -> THE SCENE

- PROVIDES A PERMANENT RECORD → CORRELATES WITH PHOTOGRAPHS
- "IF IT ISN'T DOCUMENTED IT DIDN'T HAPPEN. PERIOD.
- ME1 REPORT DATA
- Possible Location of Illness or Injury
  - PLACE OF INJURY (POI) AND PLACE OF DEATH (POD)
    - OFTEN ENTIRELY DIFFERENT LOCATIONS

# ME1 REPORT

- PRINTED HARD COPIES
  - ORGANIZED BY PRELIMINARY MOD
- Taken to Scene
  - LITERAL GUIDE FOR ALL REQUIRED DATA IN IVES



# ME1 REPORT

- PAGE 10
- SOCIAL/MEDICAL HX
- MEDICAL PROVIDERS
- NOK
- FH



# ME1 REPORT

- PAGES 11-12
- WRITTEN NARRATIVE
- BRIEF, CONCISE
- NO NEED TO REPEAT PRIOR DOCUMENTED HISTORY





### SCENE WALK THRU

- Completed with Law Enforcement (their scene)
- Provides "Big Picture" of immediate surroundings
- Initial viewing of body -> relation to surroundings
- Identify evidence > Jurisdictions? Collection?
- Establish game-plan for examination and documentation

# **EXTERNAL EXAMINATION**

- Ideally completed at place of death (primary scene)
- Visual examination → on paper → IVES electronic EMER → IOSME
- Hard Copies of ME1 Report = Template used at scene
- Develop a routine → Follow the process → Own your procedure
  - ER Provider/nurse, LE or EMS present if possible
  - Begin at the same side of examination table
  - Begin at head of decedent each time
  - Move counter clockwise around examination table
  - Same process for both supine and prone positions

# **EXTERNAL EXAMINATION**

#### Document

- Position Found: Supine, Prone, Recumbent
- Rigor/livor → locations, fixed/non-fixed
- Body Temperature, Ambient Temperature
- Decomposition
- Physical characteristics: temperature, height, weight
- Presence/absence of clothing, diaper, etc.
- Scars, marks, rash, burn, bite → "APPEARS" "DEFECT"
- Resuscitative equipment and artifacts
- Dates, Times, Locations, Person: LSA, FOUND BY
  - Preliminary at best, official data available by Agency upon completed reports



#### ESTABLISH DECEDENT PROFILE

- EMS, LE
- ROOMATES, NOK, EXTENDED FAMILY
- TAILORED BY PRELIMINARY COD/MOD

SOCIAL HISTORY → PER IMMEDIATE NOK
Marital status: [*]
Children: [*]
Occupation: [*]
Alcohol Use: [*]
Tobacco: [*]
Vaping: [*]
Other drugs: [*]
MEDICAL HISTORY → PER IMMEDIATE NOK
PCP: [*]
Physical Problems: [*]
Mental Health Counselor: [*]
Problems: [*]
Medications/Compliance: [*]
Surgeries: [*]
Allergies: [*]
Recent Complaints Physical/Mental: [*]
Recent Illness: [*]
Recent Falls/Injuries/Trauma: [*]
Stressors Acute/Chronic: [*]
Funeral Home: [*]
Own weapon(s)?
Used before?
Date/Timeframe Purchased?
Where is it stored?
Significance of this date?
Family/friends/coworkers have a history?
What do you think happened?

# COMPLETION OF SCENE INVESTIGATION

- Maintain Jurisdiction
  - You are still responsible until decedent leaves your custody
  - Bag, Tag, Seal
    - Photograph the tag/seal on body bag
- Release Jurisdiction
  - To funeral home, livery service
- Post removal walk through
  - Leave no trace of your presence: gloves, paperwork, camera

# COMPLETE SCENE INVESTIGATION

- Next clear steps with LE, FH
  - Dates, times, location of Autopsy
- Next clear steps with family
  - General process and expectations of next 48 hours
    - Funeral Home
    - Autopsy/IOSME
    - Timelines

# WHO WHAT WHEN WHERE WHY

- Age/Gender/Identification
- Circumstances surrounding and/or leading up to the death
- Physical and mental health history
- Social history (tobacco/alcohol/other drugs/frequent flyer LE)
- Absence or presence of external injury
- Concerns from LE/family (residence secure, items out of place, LE knowledge of certain drugs in the area)

# CASE STUDY

- At approximately 0238 HRS, 911 received a call from an individual requesting medical attention at the entrance of a cornfield.
- The caller stated they had a possible broken leg and needed help.
- The caller provided their address.
- The caller stated they would be located on the east side of the field and would have a flashlight at the entrance.

Notified and Arrive at Scene

# SCENE INVESTIGATION PROCESS

FIVE MAIN STEPS

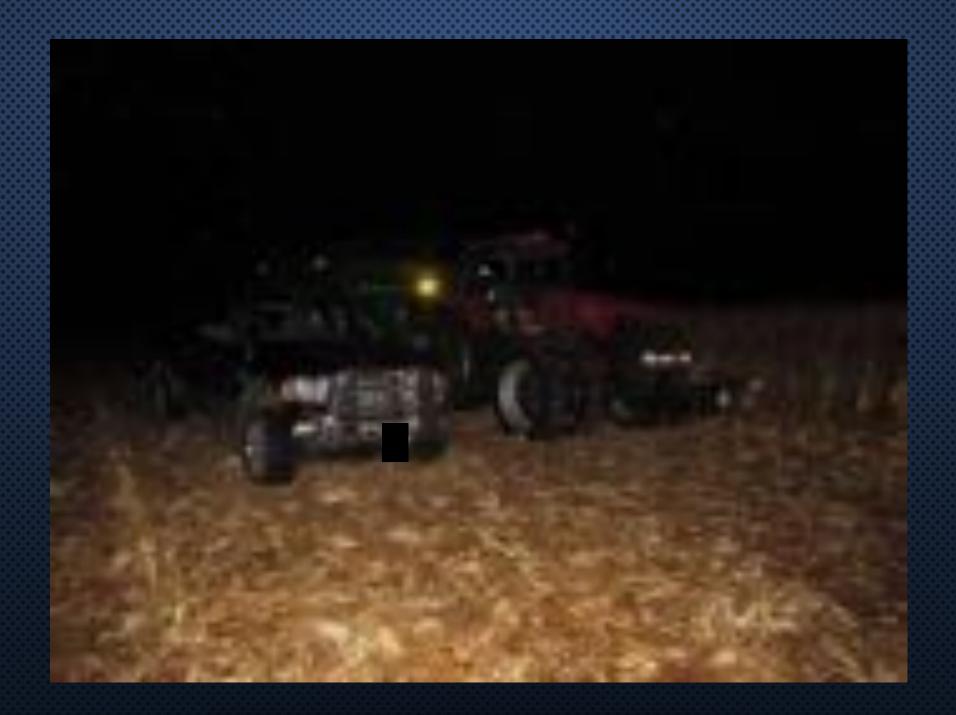
COMPLETED IN ORDER

EVENTUALLY BECOME YOUR PROCEDURE

Complete Scene Investigation

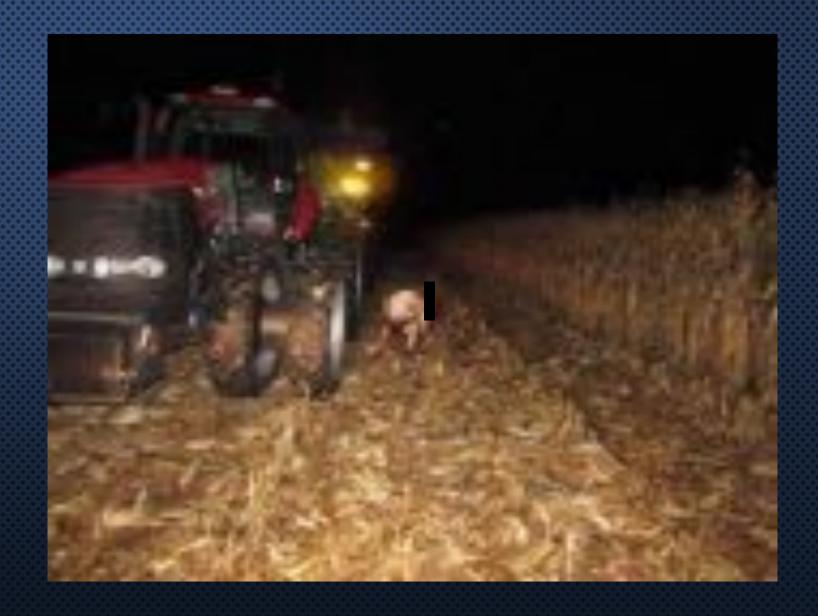
Document and Evaluate Scene

Establish Decedent Profile Document and Evaluate Decedent

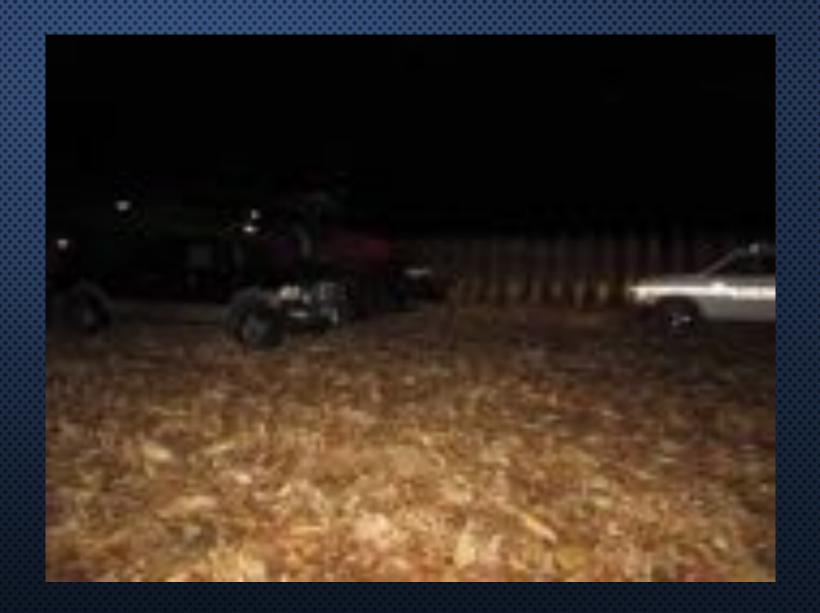


#### UPON EMS ARRIVAL

- SITTING IN LAWN CHAIR
- SLUMPED OVER
- BLOODY
- Possible Weapon in Hand

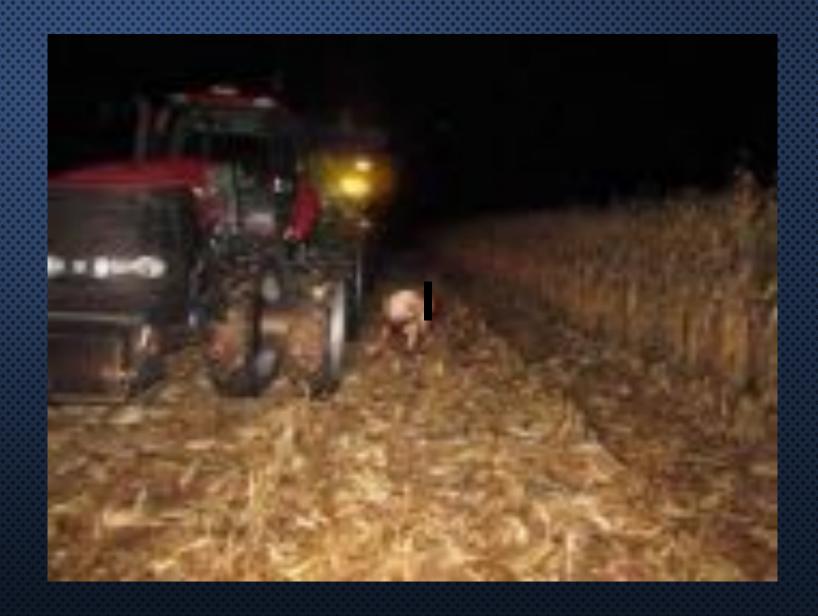


- EMS BACKED AWAY
- REQUESTED LE SUPPORT
  - AT SEPARATE MVC FATALITY
- ME/MEI WAS NOTIFIED

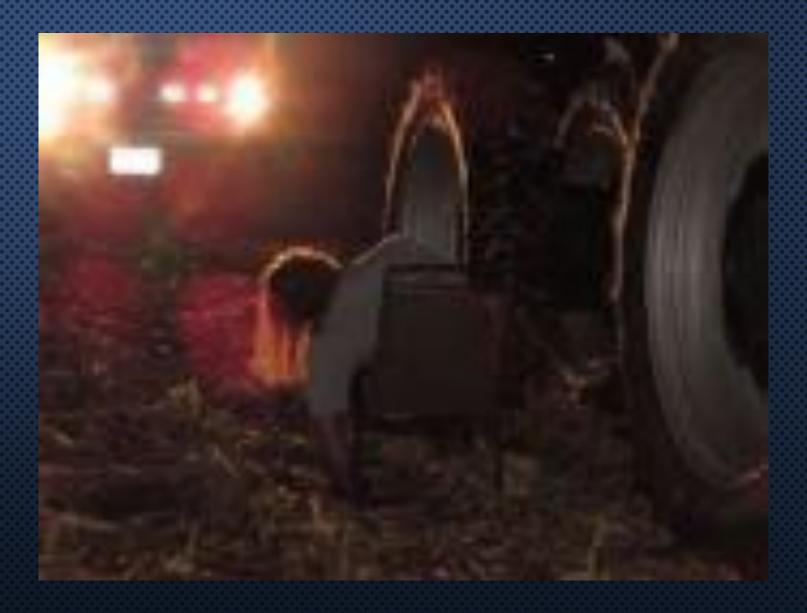


# UPON ME/MEI ARRIVAL

- EMA/LE CASE BRIEFING
  - OBVIOUS SIGNS OF DEATH
  - BODY WAS NOT MOVED
  - WEAPON IN RIGHT HAND
  - SCENE PROCESSED **WITH** LE

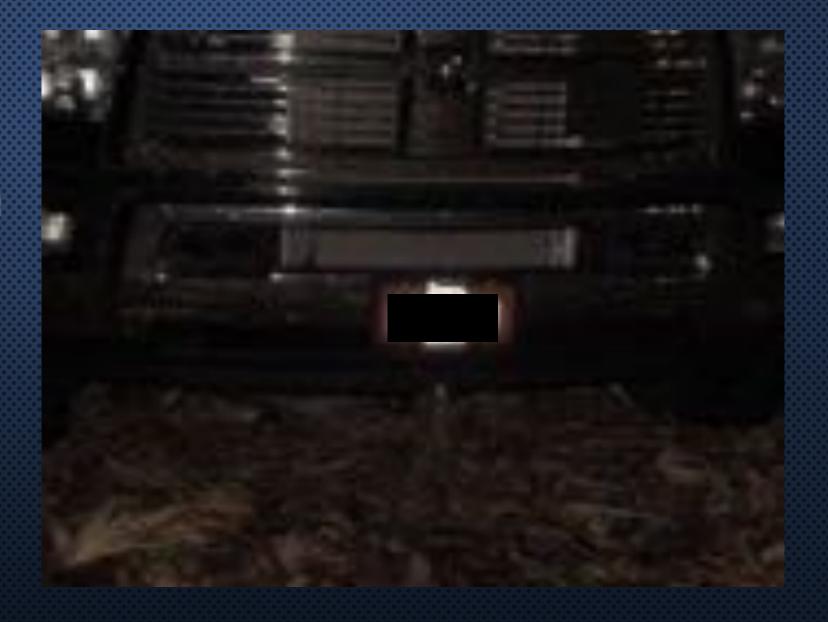


# FIREARM DEATHS WHY AUTOPSY? HOMICIDE VS ACCIDENT VS SUICIDE



# PLATES/REGISTRATION

- GREAT STARTING POINT
- INITIAL DEMOGRAPHICS
- REGISTERED OWNER
- Name, dob, address
- PROCESSED **WITH** LE







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# WHO WHAT WHEN WHERE WHY HOW

- Age/Gender/Identification
- Physical Address
- Circumstances surrounding and/or leading up to the death
- Physical and mental health history
- Social history (tobacco/alcohol/other drugs/frequent flyer LE)
- Absence or presence of external injury
- Concerns from LE/family (residence secure, items out of place, LE knowledge of certain drugs in the area)

# MEANS OF DEATH

- Select all appropriate preliminary means of death
- Selecting these boxes allows fields in additional tabs to open

Means of Death				
□Natural	✓Suicide	Hanging	Carbon Monoxide - Vehicle	Carbon Monoxide - Dwelling
□Vehicles	Pedestrian	<b>▽</b> Firearm	□Instrument	Drowning
_Fire/Thermal	Falling	Asphyxiation	Drug/Alcohol/Poison	Suspected Abuse/Neglect
Means Of Death Other				
	Specify:			

# FIREARM DEATHS - WHY AUTOPSY?

- Confirm Identity
- Establish MOD → Scene Findings + Autopsy
- Establish ROF (Range of Fire)
  - Contact, Close, Intermediate, Indeterminate
- Establish Trajectory
  - (R—>L, F—>B, Upwards)
  - Does trajectory match scene investigation?
- Document Other Injuries
  - Laceration to hand from slide → supports SIGSW
- Toxicology
  - Drugs/alcohol could be contributing factor



# ME1 DESCRIPTION?

- Do use: "Defect"
- DO NOT USE:
  - "ENTRY WOUND"
  - "EXIT WOUND"









THE WEAPON WILL LIKELY
HAVE BEEN MOVED PRIOR TO
YOUR ARRIVAL.

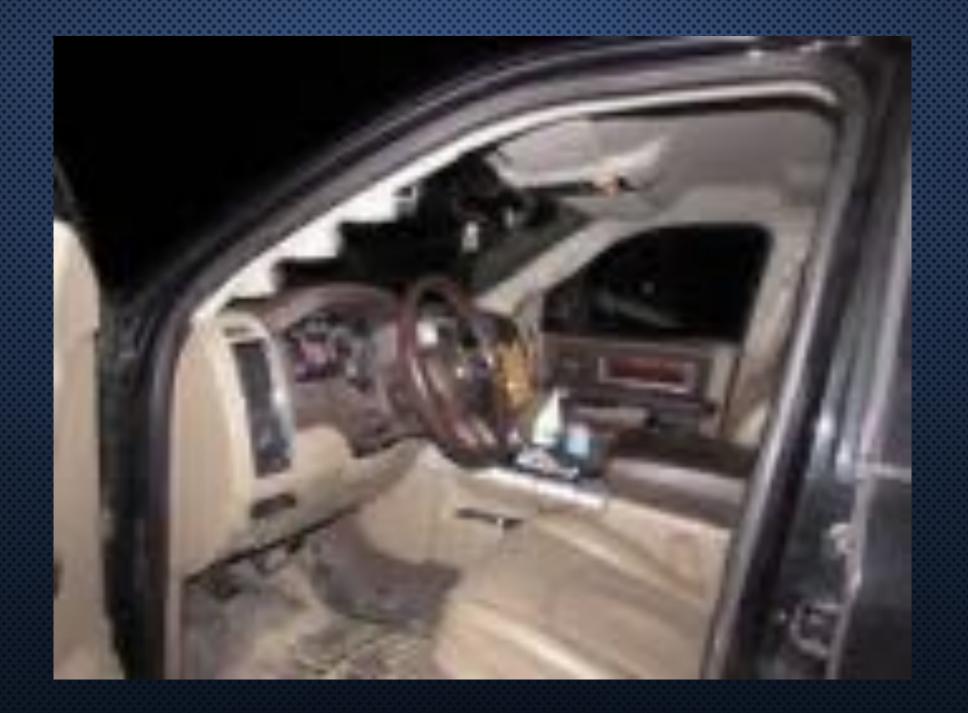
- DO NOT RECREATE THE SCENE.
- PHOTOGRAPH THE WEAPON (IF POSSIBLE)
- DOCUMENT ORIGINAL LOCATION IN YOUR REPORT.
- DOCUMENT MAKE, MODEL, CALIBER AND TYPE

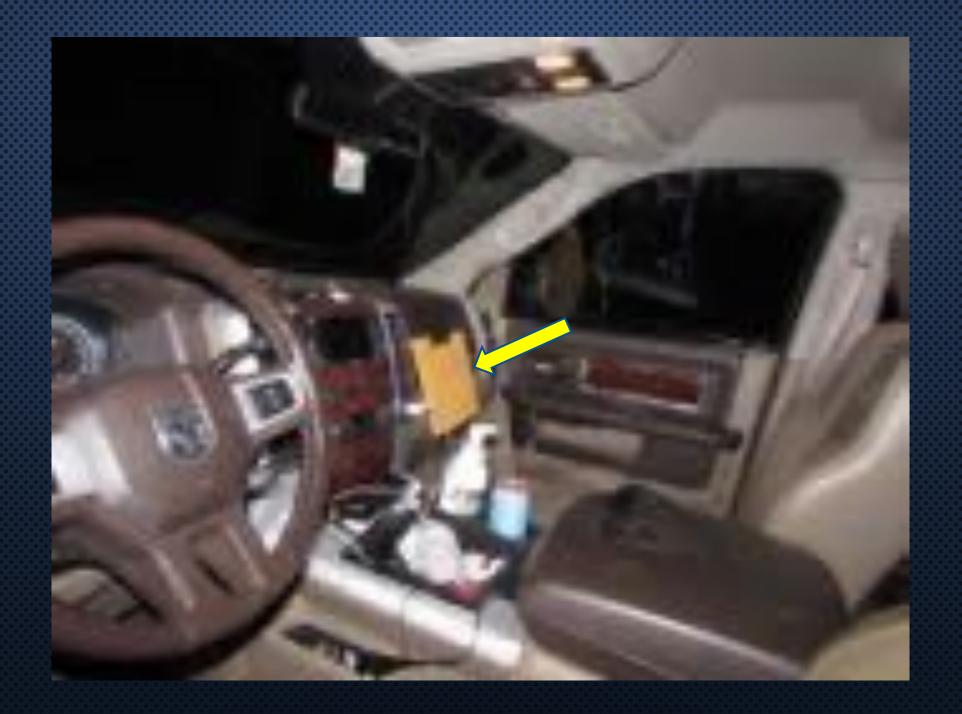


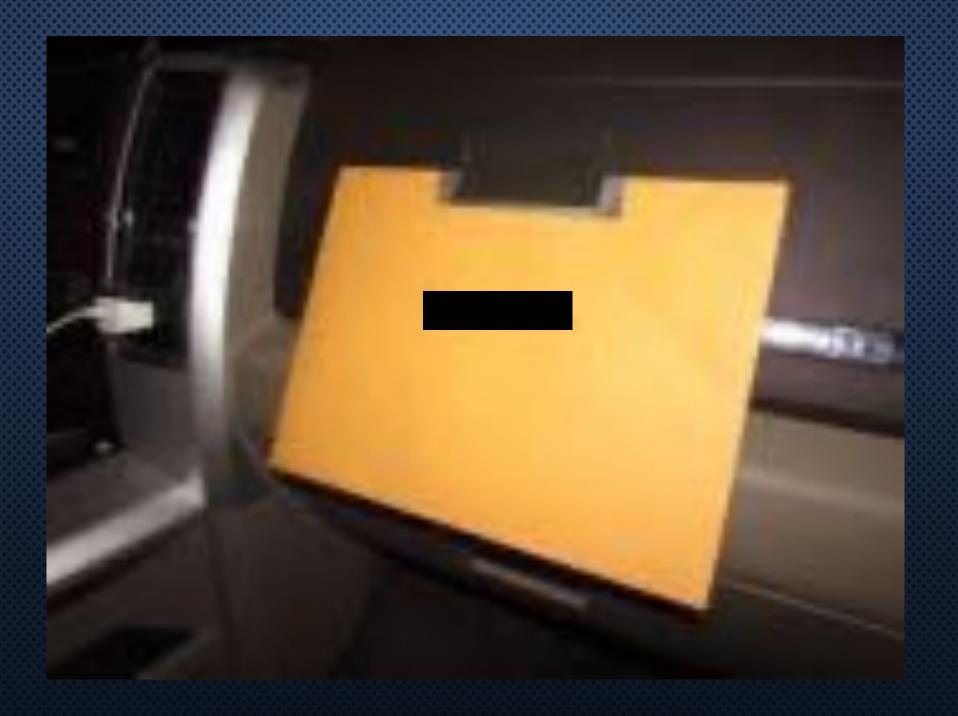


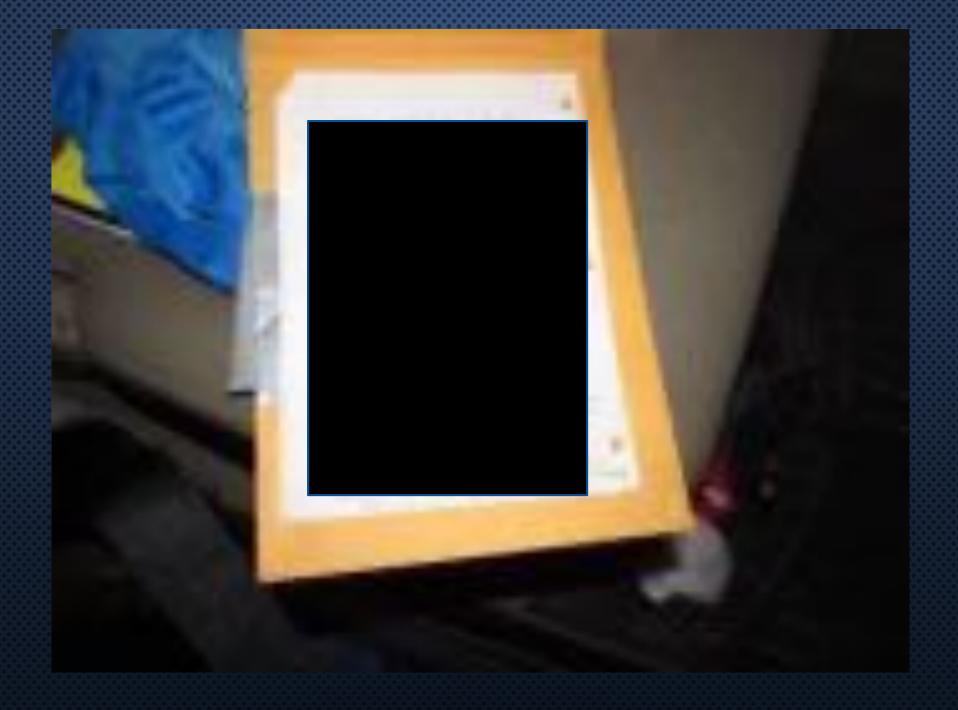


FIREARM	Music Model CaliborGauge Firearm (Barrel) Langth  Owner of Firearm Type of Firearm Narrative (Description):	Activity:   Hunting	Cause Nerrative:	
		If Salf-Indicted Suspected		

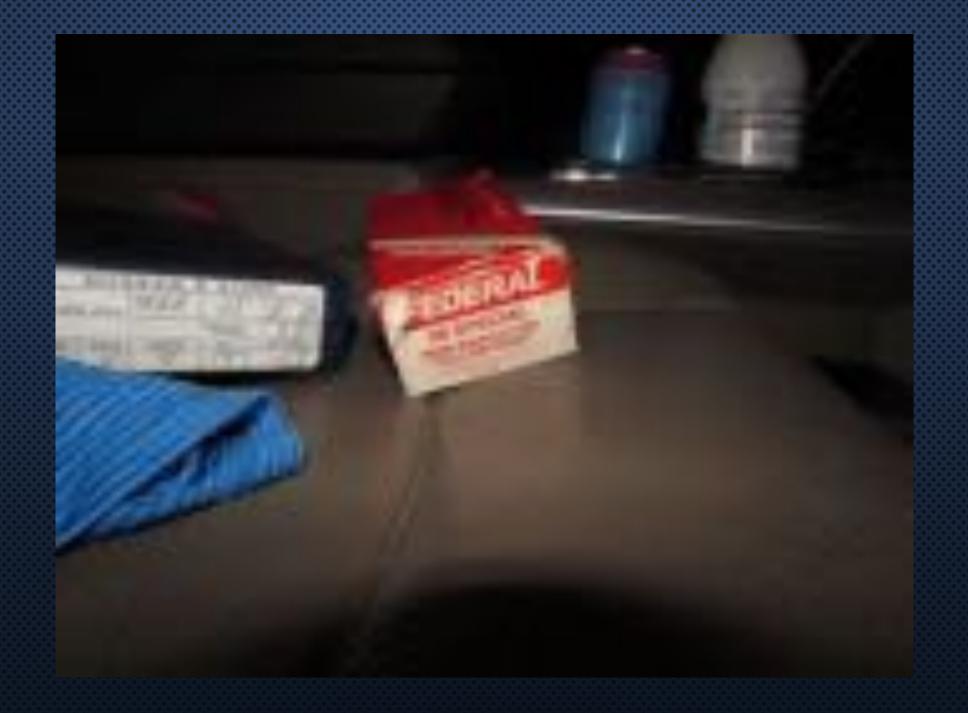












## MEANS OF DEATH

- Select all appropriate preliminary means of death
- Selecting these boxes allows fields in additional tabs to open

Means of Death				
□Natural	✓Suicide	Hanging	Carbon Monoxide - Vehicle	Carbon Monoxide - Dwelling
_Vehicles	Pedestrian	<b>▽</b> Firearm	□Instrument	Drowning
_Fire/Thermal	Falling	Asphyxiation	Drug/Alcohol/Poison	Suspected Abuse/Neglect
Means Of Death Other				
	Specify:			

FIREARM	Music Model CaliborGauge Firearm (Barrel) Langth  Owner of Firearm Type of Firearm Narrative (Description):	Activity:   Hunting	Cause Nerrative:	
		If Salf-Indicted Suspected		

# AT AUTOPSY





# AT SCENE



# PLACED PRONE AT SCENE -> ALWAYS PLACE SUPINE





#### **AUTOPSY FINDINGS**

#### PATHOLOGIC DIAGNOSES

- I. Reported history.
  - A. Found unresponsive in chair adjacent to tractor on farm property.
  - B. Previous call to 911 for help with "possible broken leg".
  - C. Firearm taped to hand.
  - D. Dead at the scene.
  - E. Suicide note at the scene.
- II. Gunshot wound.
  - A. Contact range entrance wound, right temporal scalp.
  - B. Path through right cerebral cortex, mid brain, left cerebral cortex, left temporal bone and scalp.
  - C. Exit Wound: Left temporal scalp.
  - D. Recovery: None.
  - E. Associated Findings: Thin film subdural hemorrhage, subarachnoid hemorrhage, cerebral edema, cerebral contusions, periorbital ecchymosis and edema, hemoaspiration.
  - F. Trajectory: Right to left, slightly back to front.
- III. Postmortem tissue donor (long bones and soft tissue, left eye, heart [See Jesse E. Edwards Registry of Cardiovascular Disease report]).
  - A. Heart.
    - 1. Aortic and pulmonic valves previously removed.
    - 2. Structurally normal heart.
- IV. Toxicology-femoral blood (See NMS Labs report).
  - A. Hydrocodone-free: 26 ng/mL.
  - B. Oxycodone-free: 120 ng/mL.
  - C. Oxymorphone-free: 1.8 ng/mL.

Page 2 of 6

CAUSE OF DEATH: Gunshot wound of head.

MANNER OF DEATH: Suicide.

#### THANK YOU

#### Mark.Bethel@IDPH.IOWA.GOV

(515) 725-1440 desk

(515) 203-9415 cell



# DEATH CERTIFICATION

#### CERTIFICATION OF DEATH

- Importance
  - Permanent record of fact of death.
  - Provides closure for family.
  - Required to close decedent's affairs.
  - Source for mortality statistics
    - Used to reduce mortality.
    - Guides clinical practice.
    - Provides guidance for research and funding.
    - Legislative changes, public health strategies and public safety initiatives.

#### WHO CAN CERTIFY A DEATH CERTIFICATE?

- Iowa code 144.28 Medical certification
- Deaths due purely to natural disease
  - Any MD or DO (including MEs)
  - PA or ARNP (if in charge of care)
  - Should be completed within 72 hours after DC received from Funeral Director
- Non-natural deaths
  - County ME
  - State ME
  - Should be completed within 72 hours after COD/MOD is known

# CERTIFIER'S RESPONSIBILITY

DATE/TIME OF DEATH

09/15/2021 (Found) 04:17 PM (Found) PLACE OF DEATH FACILITY ADDRESS Decedant's Home 2050 S Anteny Blud Anteny York 50007

#### MEDICAL CAUSE OF DEATH INFORMATION

INTERVAL UNITS

IMMEDIATE CAUSE OF DEATH: DUE TO OR AS A CONSEQUENCE OF DUE TO OR AS A CONSEQUENCE OF

UNDERLYING CAUSE IF ANY OTHER EIGHIFICANT CONDITIONS Forte dag /fenterult interroachi

Chlorow

MANNER OF DEATH

Abother

AUTOPSY PERFORMED/FINDINGS: YES YES

DATE/TIME OF INJURY.

PLACE OF INJURY: HI

Home

LOCATION OF INJURY:

2250-5 Ansany BIVE

Ankeny, Josep 50023

DESCRIPTION OF INJURY Ingested dug.

TOBACCO CONTRIBUTED TO DEATH: No.

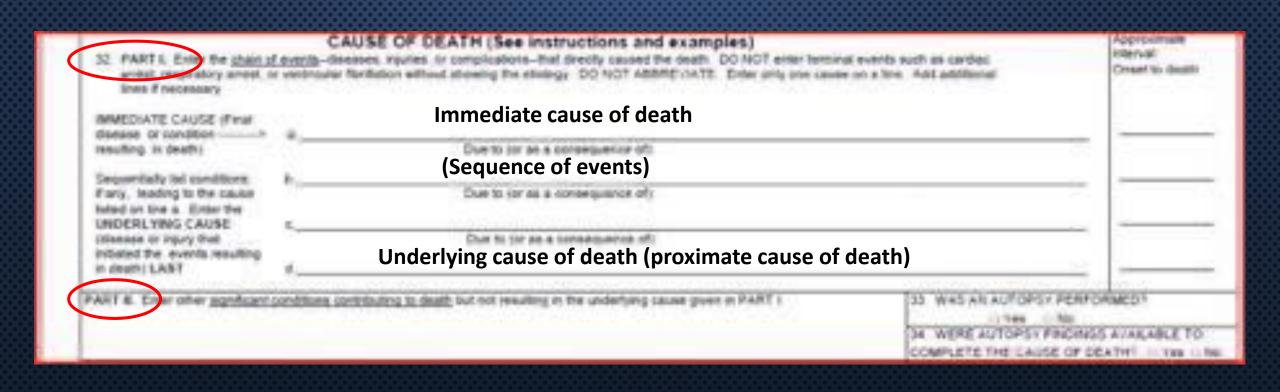
M.E. CONTACTED: Yes

ME CASE #: 1999-999

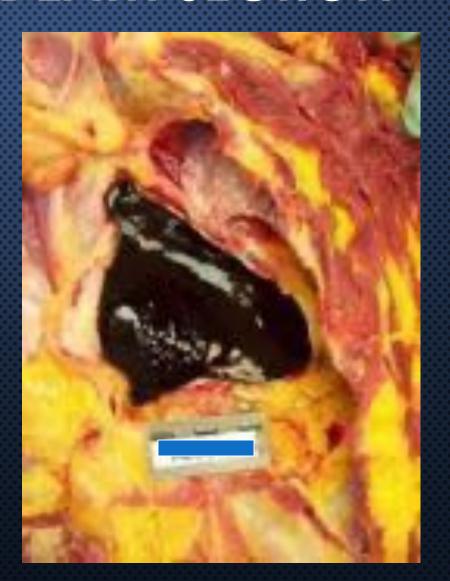
INJURY AT WORK:

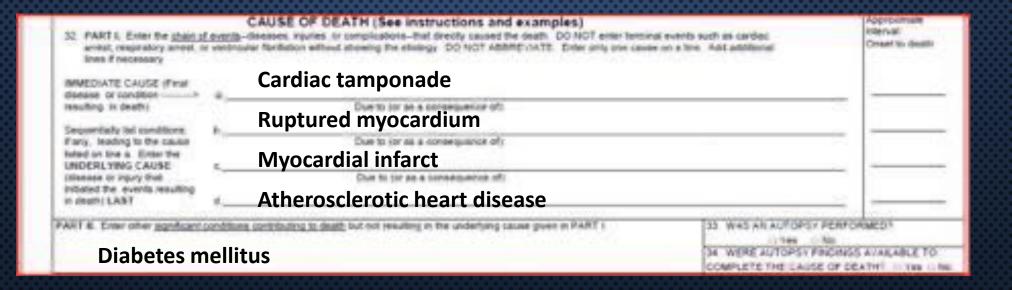
TRANSPORTATION NUMBER 1/4

 The injury or disease responsible for initiating the chain of physiological disturbances which produced death. "But for" this, the person would still be living.



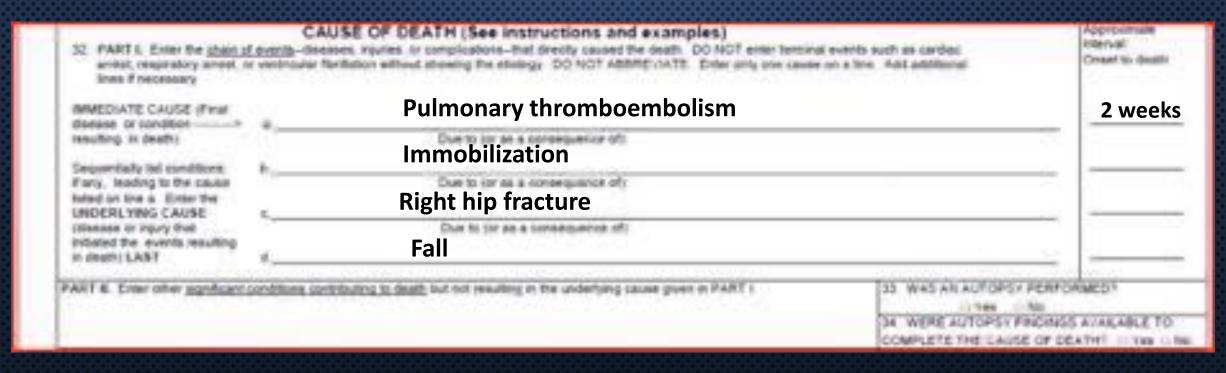
• EX: 55 YO WM FOUND DEAD AT HOME; H/O DIABETES MELLITUS





 78 yo BF admitted to hospital with right hip pain after fall. X-ray revealed right hip fracture and she was admitted to hospital. Two weeks after admit, found dead in bed. Autopsy performed.

Pulmonary thromboembolism



#### **Manner is ACCIDENT**

Cardiorespiratory complications of right hip fracture  fall  Fary Hadde to the Cause Complication of the Cause Complete		fracturo	ardiarospiratory complications of right hip		Sines if necessary.  MMEDIATE CAUSE (Final	
		nacture		4,	deeade or condition	
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FART E. Enter other <u>algorithmer conditions contributing</u> to death but not resulting in the underlying cause given in PART I.  33. WAS AN AUTOPSY PERFORMED.				-	in (heart) LAST	
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	7.21	11749 1170		1 1	No. of the second second	
34. WERE AUTOPSY FINDINGS AVAI	ALABLE T	34. WERE AUTOPS! FAICHUS				

**Manner is ACCIDENT** 

 55 yo WM with history of chronic alcohol abuse, cirrhosis, ascites, hyponatremia, hepatic encephalopathy, acute pancreatitis, and alcohol withdrawal syndrome with seizures. Found dead on couch at residence.

	2500000
Complications of chronic alcohol abuse	
Dive to (or as a consequence of):	
Due to jur as a consequence of:	
Oue to (or se a consequence of)	
to to death but not resulting in the underlying cause given in PART I 33. WAS AN AUTO-	OPSY PERFORMED?

#### MECHANISM OF DEATH

- Physiological derangement produced by a cause of death that results in its lethal effect
  - Exsanguination
  - Cardiac arrest
  - Respiratory arrest
  - Cerebral hypoxia

• 65 yo BM with history of severe three vessel coronary artery disease, status post stent placement of the left anterior descending coronary artery, and hypertension. Found dead in bed.

Atherosclerotic heart disease, status post stent placement		clerotic heart disease, status post stent placement	25 years
resulting is death)		Due to sor se a consequence of:	
Sequentially tel conditions			
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Name of the Owner,		(/144 (/No	
Hyperten	sion	COMPLETE THE LAUSE OF	DEATH THE

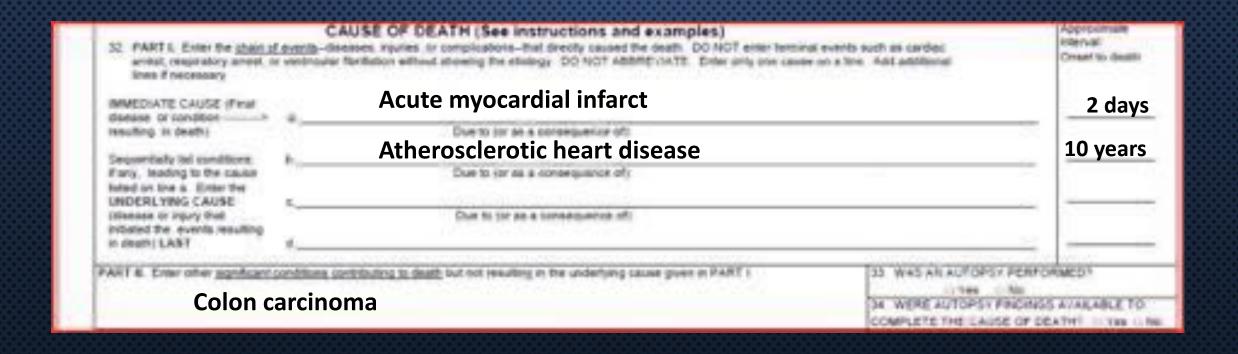
52 PART I, Extend the <u>chairs a</u> arrest, respiratory arrest, is lines if necessary	CA Leverity-dise r ventrouler fi	USE OF DEATH (See instructions and examples) sees, injuries or complications—that directly caused the death. DO NOT enter terminal britistion eithout aboveing the elistings. DO NOT ABBITEVIATE. Enter sing one cause	events such as cardioc on a line. Add additional	Appropriate interval Oreant to death
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Sequentially tel conditions: Fany, leading to the cause federal on line a. Einter the	b	Due to yor as a consequence of:		_
UNDERLYING CAUSE (Steened or injury that (nitrated the events resulting in clean) LAST	5	Due to ser se a sensequence of:		
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32 PART I. Enter the <u>chain of</u> arrest, respiratory arrest, or lines if necessary.	Leverity-diseases.	E OF DEATH (See instructions and examples) injuries, or complications—that directly couled the death. DO NOT enter terminal events such as cardial from without showing the etimings. DO NOT ABBREVIATE. Enter any one cause on a time. Add addition	er Creet to death
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PART R. Ever other agenture:	conditions contribut	SH. WERE A	AUTOPSY PERFORMED?  OTOPSY PRIORISS AVAILABLE TO THE GAUSE OF DEATH! IN YES IN THE

#### OTHER SIGNIFICANT CONDITIONS

- Other significant conditions that contributed to the death, but did not lead to the underlying cause of death.
  - E.g. diabetes mellitus with atherosclerotic heart disease
- If contributory condition is non-natural, manner cannot be natural.
  - E.g. illegal stimulant use (methamphetamine, cocaine) with heart disease
  - E.g. fall/fracture in elderly person who did not return to baseline
- Opportunity to include factors that may be important in the future
  - E.g. genetic mutations

 78 yo WF with history of colon cancer and atherosclerotic heart disease (x 10 years), admitted to hospital with chest pain. Troponin levels elevated, EKG changes suggestive of ischemia. Expired 2 days later. No autopsy performed.



### DEFERRING A DEATH CERTIFICATE

- If a case falls within your jurisdiction and you are comfortable a death is natural after your investigation, you may <u>DEFER</u> the death certificate to the decedent's primary care physician (PCP)
  - You are letting the PCP know you have investigated and ruled out any non-natural factors
  - If PCP is still uncomfortable certifying the death certificate, it ultimately becomes the medical examiner's responsibility

## DEFERRING A DEATH CERTIFICATE



**NOT** synonymous with jurisdiction declined.

 92 yo WF found dead in bed. No significant PmHx. No concerns of drug or alcohol use. No concerns of foul play or traumatic injuries at scene.

# CASE HISTORY NO. 5

32 PART I, Extend the <u>shain of</u> arrest, respiratory arrest, or lines if necessary	CAUSE C verib-diseases, rip rednaviur florifiction	F DEATH (See instructions and examples) ries or complications—that directly caused the death. DO NOT enter terminal e- efford aboveing the eliminary. DO NOT ABBREVIATE. Enter sinks one causes on	vents such as cardec a silve. Add additional	Approximate interval Crean to death
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32 PARTS, Enter the ghain of arrival, respiratory arrest, or lines if necessary	CAUSE OF DEATH (See instructions and examples)  overla-diseases, ripries or complications—that directly caused the death. DO NOT enter terminal events such as carded sentimolar floribation eithers allowing the elistings. DO NOT Attitute (ART. Enter and, one cause on a line. Ast attitional	Approximate interval Creant to death
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#### CAUSE OF DEATH

 63 yo WM with long history of chronic EtOH, cirrhosis, and recent diagnosis of widely metastatic, poorly-differentiated, heptocellular carcinoma. Found dead at home. No evidence of recent drug or EtOH use or traumatic injuries at scene.

#### CAUSE OF DEATH SECTION

- Neoplasms as a cause of death
  - Include
    - Primary site or that the primary site is unknown
    - Benign or malignant
    - Cell type or that the cell type is unknown
    - Grade of neoplasm (well-differentiated, poorly differentiated, etc)

## CAUSE OF DEATH

SC PART 6. Extent the ghain p arrison, respiratory amond, is lines if necessary.	CAUSE OF DEATH (See instructions and examples)  Enter the <u>chain of overith</u> —diseases, injuries or complications—that directly caused the death. DO NOT enter terminal events such as carded expiratory amount for vendmanur fluidation without aboveling the etiology. DO NOT ABBRECIATE. Enter any one cause on a time. Add additional recessary			Approximate interval Creant to death
IMMEDIATE CAUSE (Final disease or condition resulting in death)	/letastat	cic, poorly-differentiated, hepatoc	cellular carcinoma	1 month
Sequentially lied conditions. Farry, leading to the coulor listed on time a. Einter the LINDERL YING CAUSE.	-	Due to for six a consequence of:		
(disease or injury that indicated the events resulting in death) LAST	4	Char to sor an a consequence of:		
Cirrhosis, Chronic alcohol		33 WAS AN AUTOPSY PERFORMED?  34 WERE AUTOPSY PRICHES AVAILABLE TO		

abuse

The circumstances that surround the death.

- 5 categories
  - Natural
  - Accident
  - Suicide
  - Homicide
  - Undetermined

- Natural
  - Deaths resulting solely from disease.
    - If a violent or unnatural act contributes in any way towards the death, it should not be classified as natural.
    - Example
      - 75 yo WF breaks her hip, goes to the hospital, has her hip replaced, and suffers a myocardial infarct due to the stress of her stay, the manner of death is Accident.

#### Accident

- An event occurring by chance with a lack of intention; an unintended and usually sudden and unexpected happening.
  - MVC [unless driver intentionally injures himself (suicide) or another person (homicide)
  - Drug or alcohol intoxication [unless intentional (suicide)]
  - Anaphylactic reaction (drugs, food, bee stings)
  - Death from infectious or other medical complications of chronic substance abuse (chronic alcoholism; HIV related to IVDA) are classified as <u>natural</u>.

- Suicide
  - Act of intentionally causing one's own death.

- An autopsy is generally recommended; if no autopsy requested:
  - Positive identification
  - Clear suicide ideation (history, note, etc.)
  - Family and LE agree
  - Retained bullet(s)

#### Homicide

 Death at the hands of another individual or a death that occurs during the commission of a felony (may be intentional or unintentional).

- Homicide does not equal murder.
  - Ex: Police officer shoots and kills an individual who shot a number of students at a local school.
    - Manner of Death: Homicide
    - Probably will not be charged with murder

- Undetermined
  - Insufficient data to establish manner
  - Mandatory autopsy



- If manner of death is non-natural:
  - Case must be reported to the Medical Examiner.
  - Medical examiner is required to sign death certificate.
  - "How Injury Occurred" must be filled out.

#### "HOW INJURY OCCURRED"

- "Passenger in a car that collided with another car".
- "Pedestrian struck by a pickup truck".
- "Shot himself in head with a pistol."
- "Dec'd was shot by another person."
- "Dec'd self-administered an excess amount of opiates."
- "Dec'd hanged himself."

# EXAMPLES

#### **Arteriosclerotic coronary vascular disease**



## **Smoke Inhalation due to Residential Fire**



**Accident or Homicide** 

## **Gunshot wound of the Head**



## **Shotgun wound of the Chest**



# MANNER: COMMON CONVENTIONS

- Chronic alcohol abuse vs. acute alcohol intoxication
- Autoerotic asphyxia
- Russian roulette
- Natural disease exacerbated by intoxication
- Complications of medical therapy vs. outside reasonable risk of medical procedure ("OMG" test)



#### CAUSE OF DEATH SECTION

- Medical misadventure
  - If immediate cause of death arose as a complication of surgery or treatment:
    - Report what condition was being treated (underlying cause).
    - What medical procedure was being performed.
    - What the complication was.
    - What the result of the complication was (immediate cause).

#### CAUSE OF DEATH SECTION

SC PART 6. Enter the ghain planning couper story arrest, in times if necessary	CAUSE OF DEATH (See instructions and examples)  [overlib-diseases injuries to complications—that directly caused the death. DO NOT enter termin  overlinular fluidation efficiel attenting the etiology. DO NOT ABBREVIATE. Enter only one cause	ot events such as carded e on a line. Add additional	Approximate interval: Creant to death
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Securitals tel conditions	Perforated superior vena cava		
Farry, leading to the cause falled on time a. Einter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LASY	Placement of subclavian catheter		
	Management of IgA Nephropathy and venous thrombosis		
PART 6. Ereir other agriduant	conditions contributing to death but not resulting in the underlying cause given in PART I	33 WAS AN AUTOPSY PERFORMED?  34 WERE AUTOPSY PRICHASS AVAILABLE TO	
		COMPLETE THE LAUSE OF	POCATHE MOTHS CITIES

Manner of Death may still be NATURAL.

## QUESTIONS?

#### Contact information:

General email: iosme.me1@idph.iowa.gov

General phone number: 515-725-1400

mark.bethel@idph.iowa.gov

katelyn.bejes@idph.iowa.gov

jonathan.thompson@idph.iowa.gov