Iowa Office of the State Medical Examiner Update 2020

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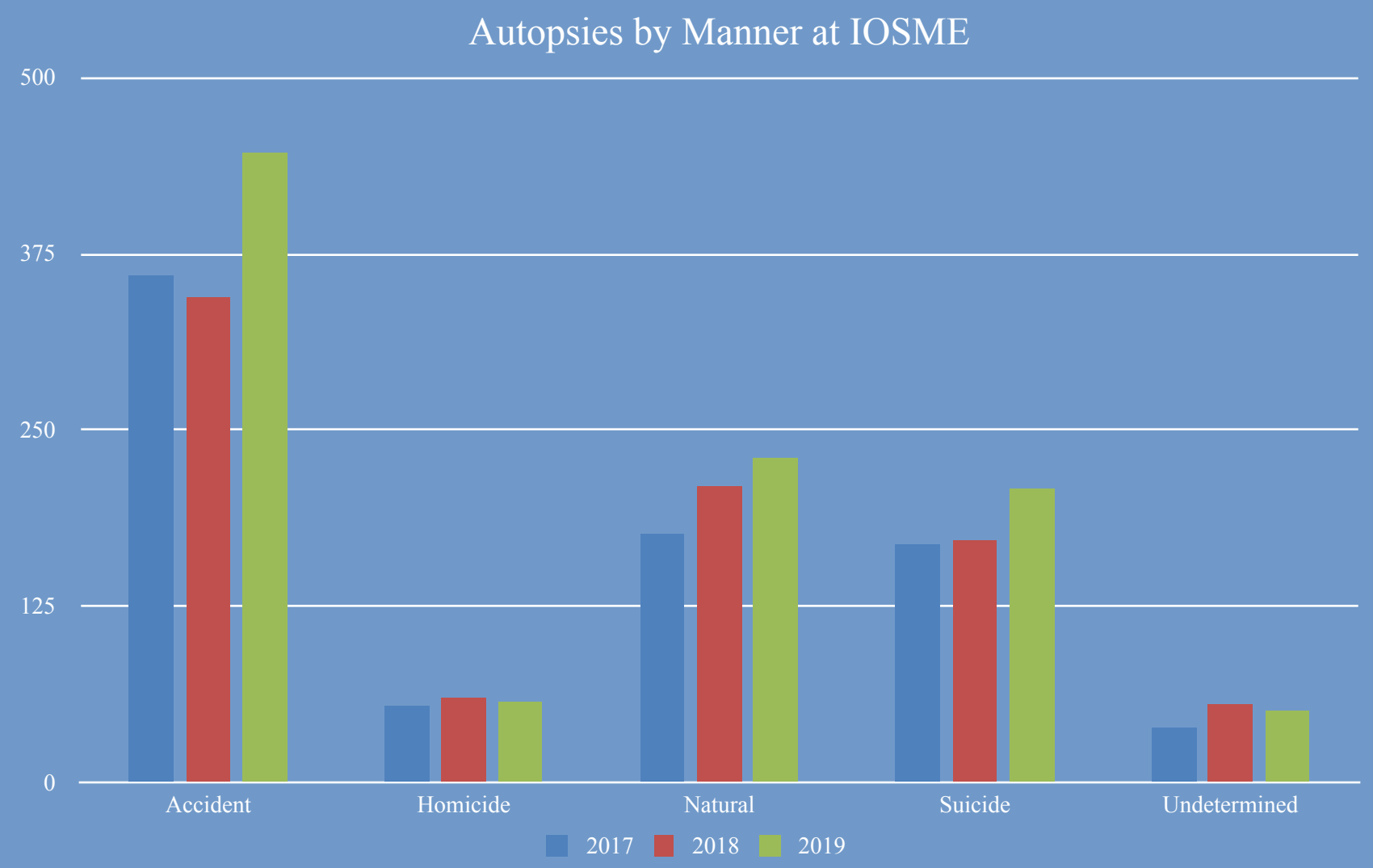
Mission Goals

- Conduct high quality and professional medical legal death investigations
- Provide and Protect credible and useful information
- Serve the public ethically and compassionately

	2019	Last 4 year ave	% autopsied in 2019
Total cases reported	7,308	5,522	
Autopsies	1,472	1,537	4.7% (all deaths)
Homicides	79	81	99%
Suicides	415	306	73%
Accidents	1,135	1,217	58%
Naturals	5,238	3,583	10%
Undetermined	85	93	92%

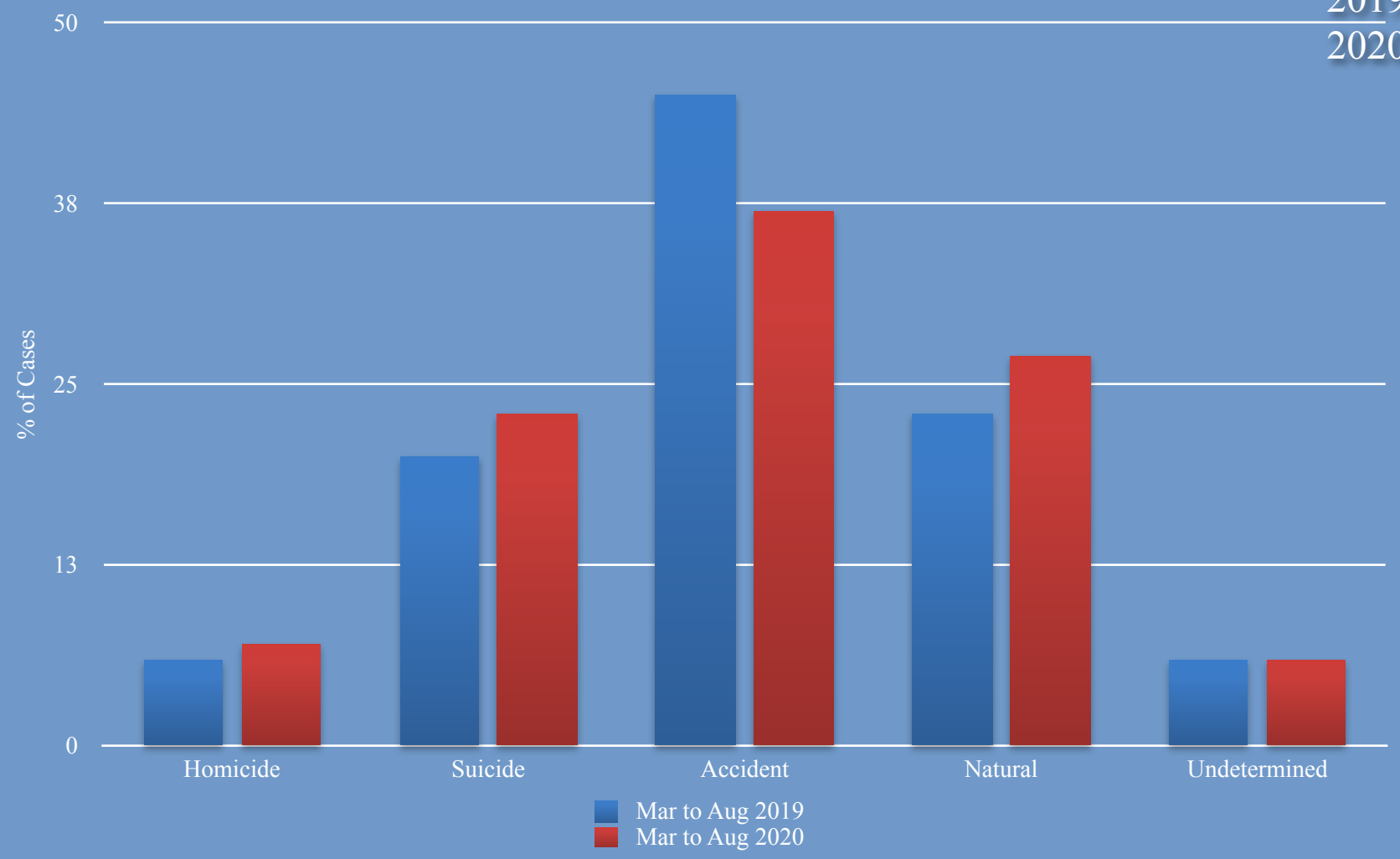

Autopsies by Manner at IOSME
500
375
250
125
0
Accident
Homicide
Natural
Suicide
Undetermined
2017
2018
2019

IOSME 2019 Top Categories

- **Homicide:** Firearm (39), Sharp force (7), BFI (5)
- **Suicide:** Firearm (96), Hanging (66), Drug (23)
- **Accident:** BFI transportation (165), Drug (111), BFI (37)

Impact on IOSME

Percentage of IOSME cases
Pre-COVID and Post-COVID



All Cases Mar to Aug

2019. 423

2020. 505 (7 COVID)

COVID cases at IOSME

Age	#	Cause of Death	*Other conditions
<10	1	C/O COVID 19	1
21-40	3	ARDS due to COVID 19 ARDS and multiorgan failure due to COVID 19	3
50-65	2	ARDS due to COVID 19	2
70-80	1	COVID 19	1

*Other conditions: Obesity, hypertension, diabetes, cardiomegaly, A fib, cyclic neutropenia

COVID Testing at IOSME

- 78 tests ordered through State Hygienic Lab
  - 68 Negative
  - 5 Positive (7%)
  - 5 Canceled
- 5 positive tests from outside lab
- 4 tests positive (IDN), COD not COVID.

COVID Safety

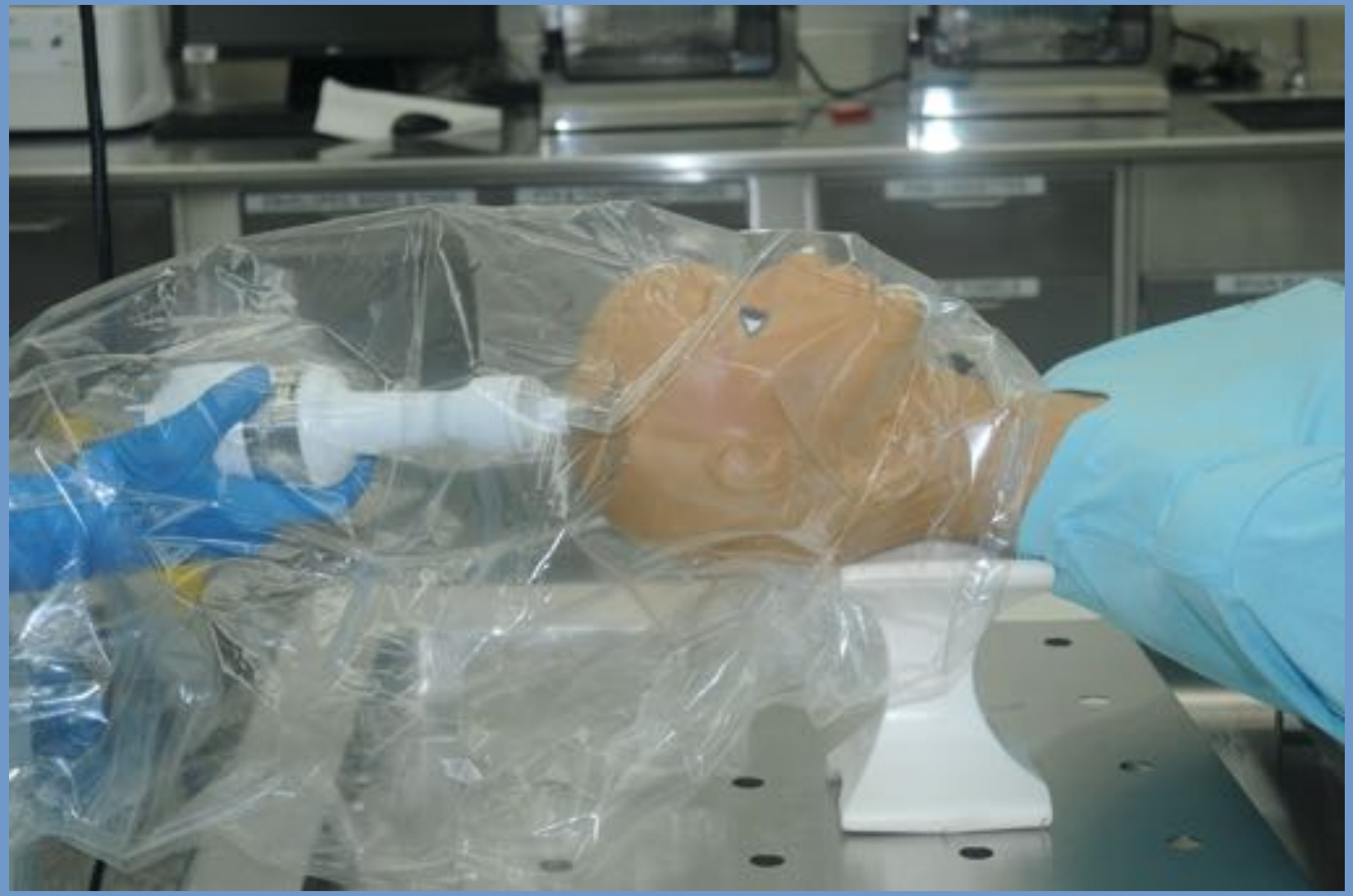
- Virus detection
  - Body fluids (sputum, feces, eye fluid)
  - Post mortem NP swab literature up to 27 hours (anecdotes 14 days)
  - Post mortem Lungs & GI up to 175 hours
  - Surfaces
    - Plastic 72 hours, Stainless steel 48 hours
  - Sewage
- Infectivity from cadaver
  - Unknown
  - No documented case of infection

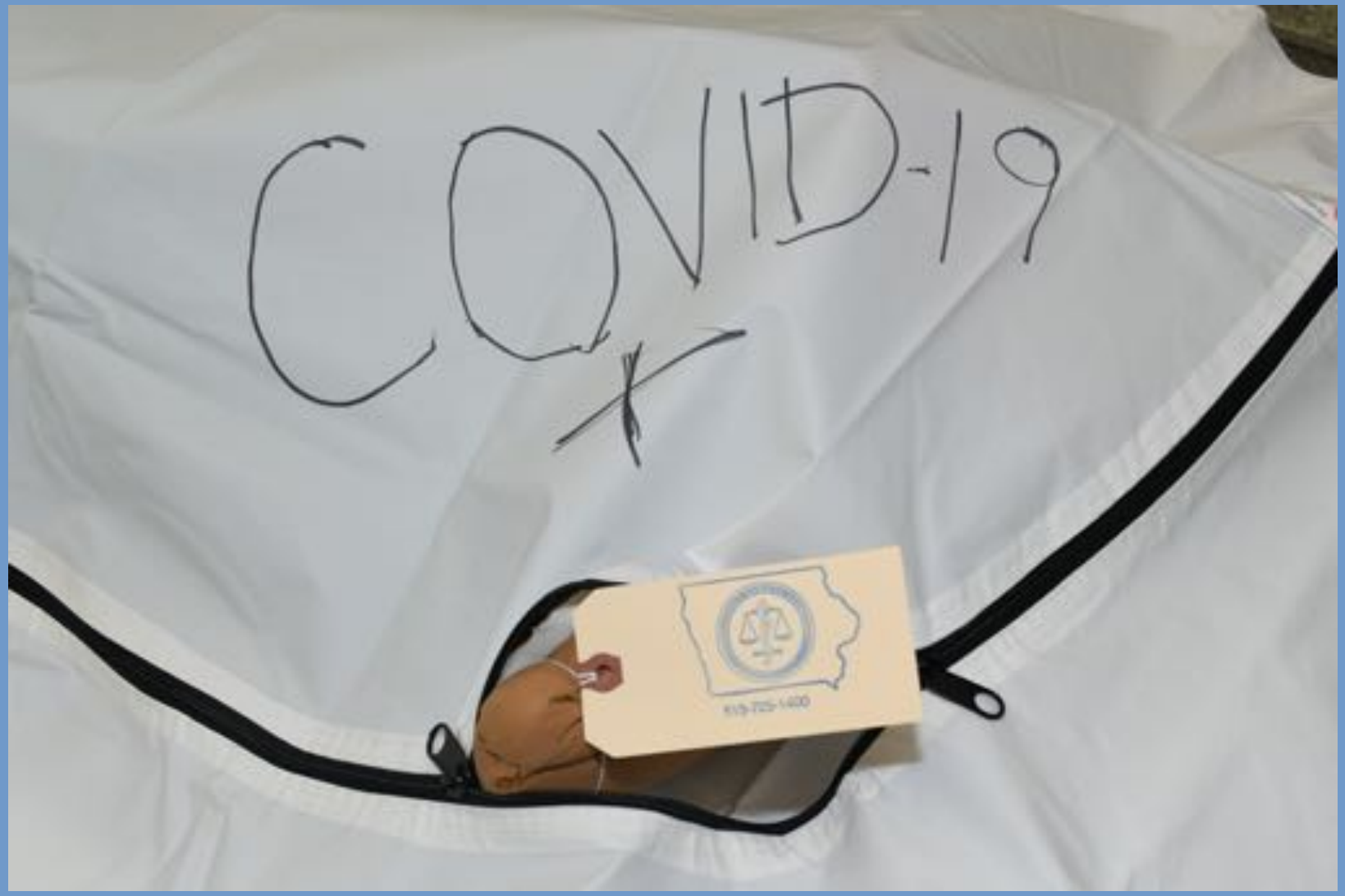
COVID Safety for ME

- Scene NP swab
  - Gloves
  - Long sleeve fluid resistant gown
  - Plastic face shield or face mask and goggles
- Transportation
  - Cover nose, mouth, exposed wounds
  - Disinfect outside body bag with disinfectant spray
  - Label COVID positive

Autopsy Safety

- Limit personnel
- Negative pressure room (at least 6 air exchanges/hr)
- N95 or PAPRS
- Scrubs, gowns, shoe covers, surgical cap, goggles
- Oscillating saw aerosolization mitigation
- Doffing procedure
- Approved disinfectant




COVID-19
515-725-1400

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container

2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

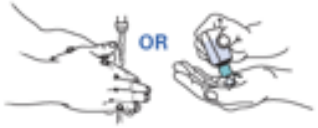
3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

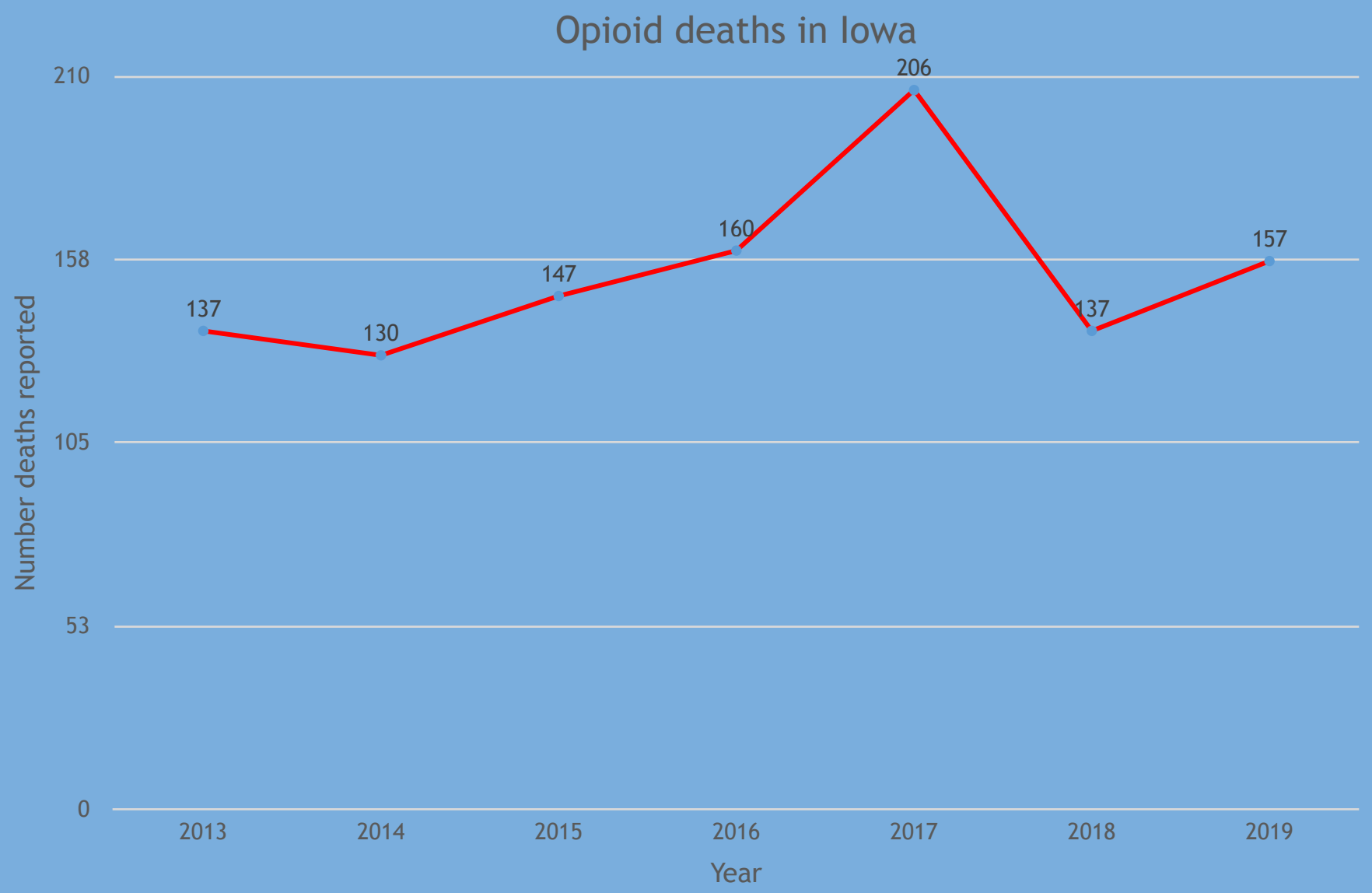
4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

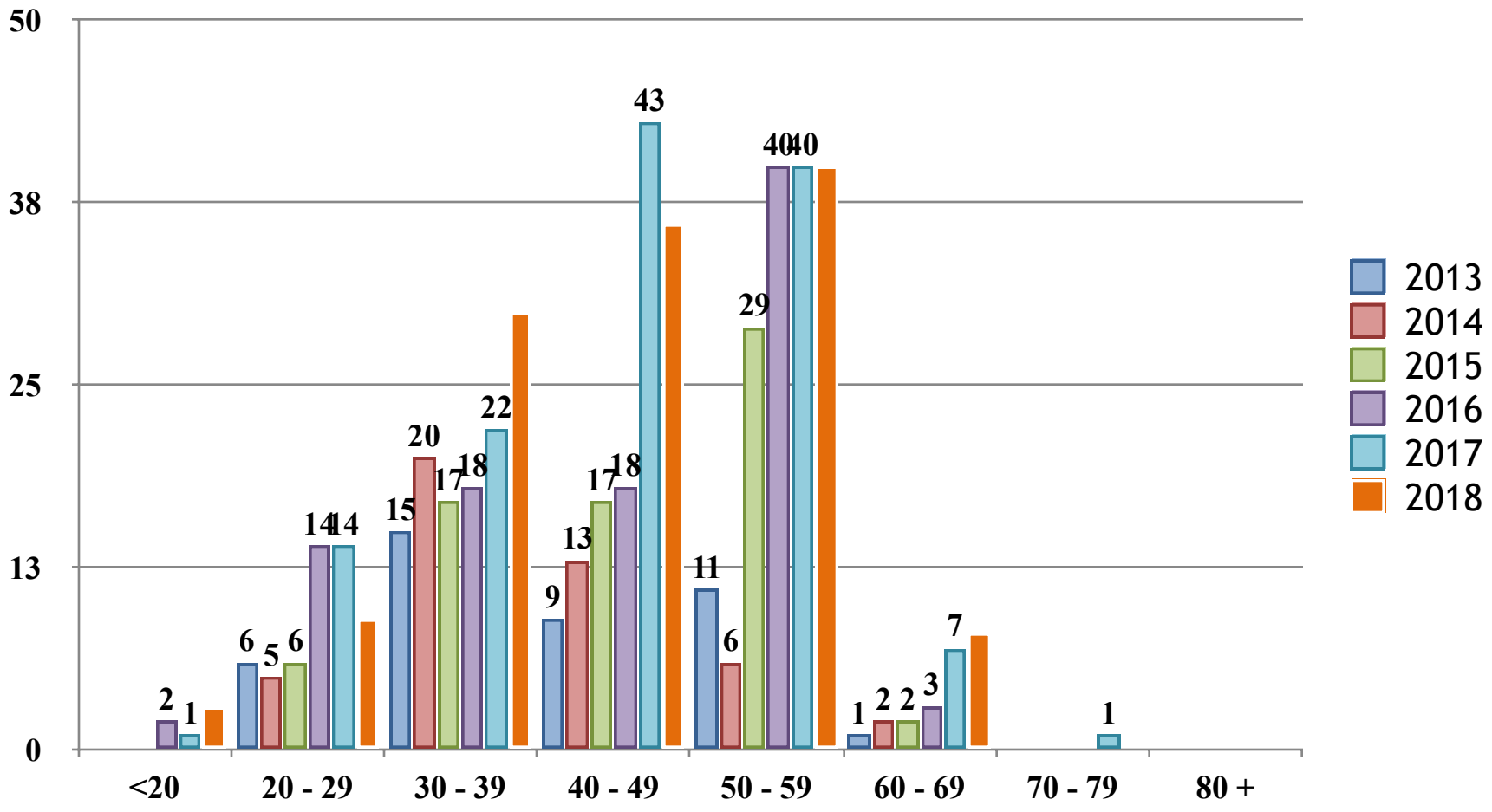


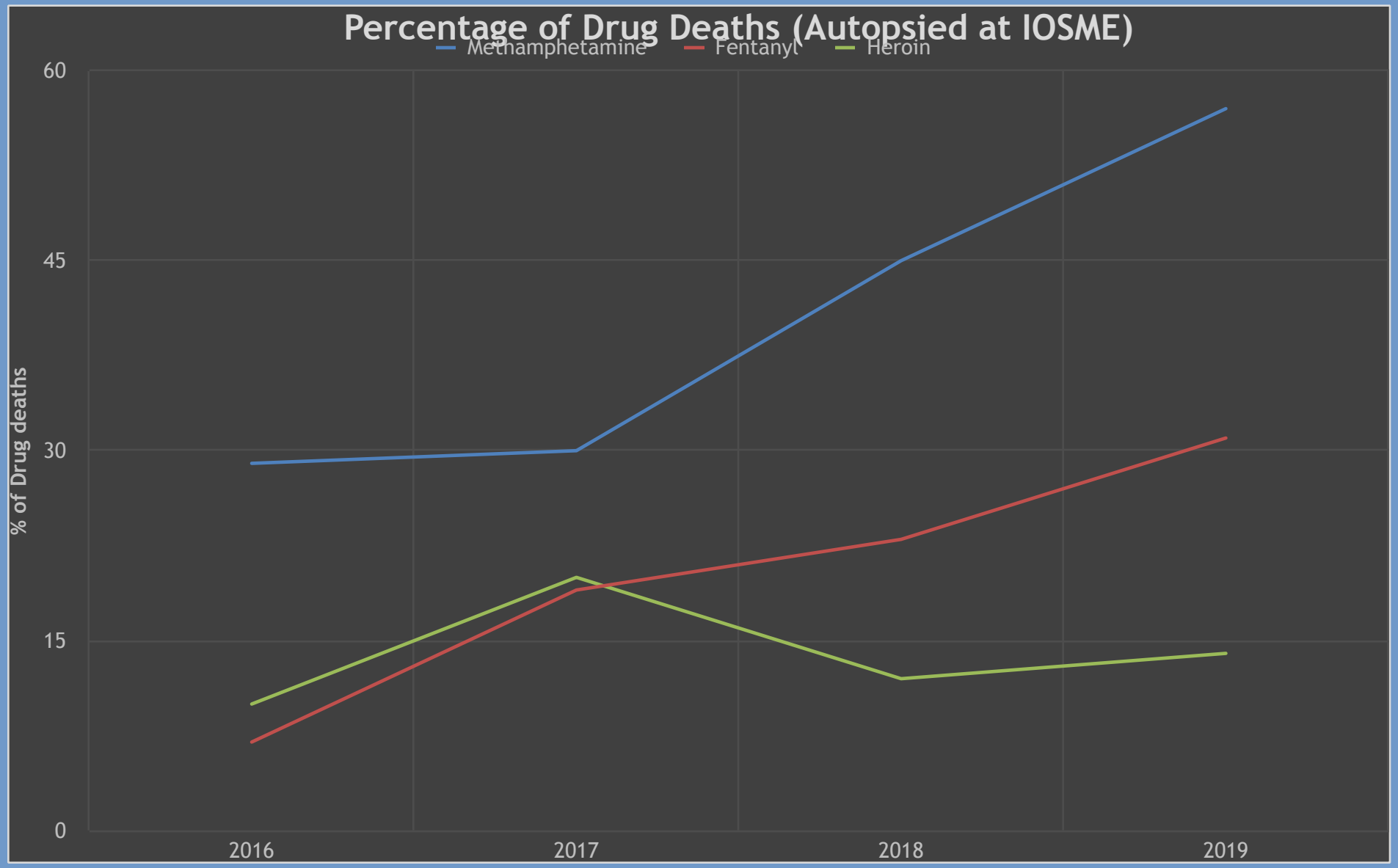
Opioid deaths

Iowa Opioid Overdose Deaths

Age Group	2016	2017	2018	2019
<24	23	26	16	10
25-34	39	40	47	48
35-44	41	45	28	35
45-54	47	57	19	27
55+	30	38	27	37

Meth Use by Age Group




Percentage of Drug Deaths (Autopsied at IOSME)
Methamphetamine
Fentanyl
Heroin
% of Drug deaths
60
45
30
15
0
2016
2017
2018
2019

August 2019 DCI lab

Heroin/fentanyl
Heroin/meth/buprenorphine (partial opioid agonist)
Heroin/fentanyl/cocaine
Heroin/fentanyl/tramadol
Heroin/fentanyl/flualprazolam
Heroin/fentanyl/flualprazolam/isotonitazine (novel synthetic opioid)
Fentanyl/cocaine
Fentanyl/meth
Fentanyl counterfeit blue M 30 tablets
Isotonitazine/flualprazolam/niacinamide

Synthetic Opioids
Isotonitazene & Etonitazene

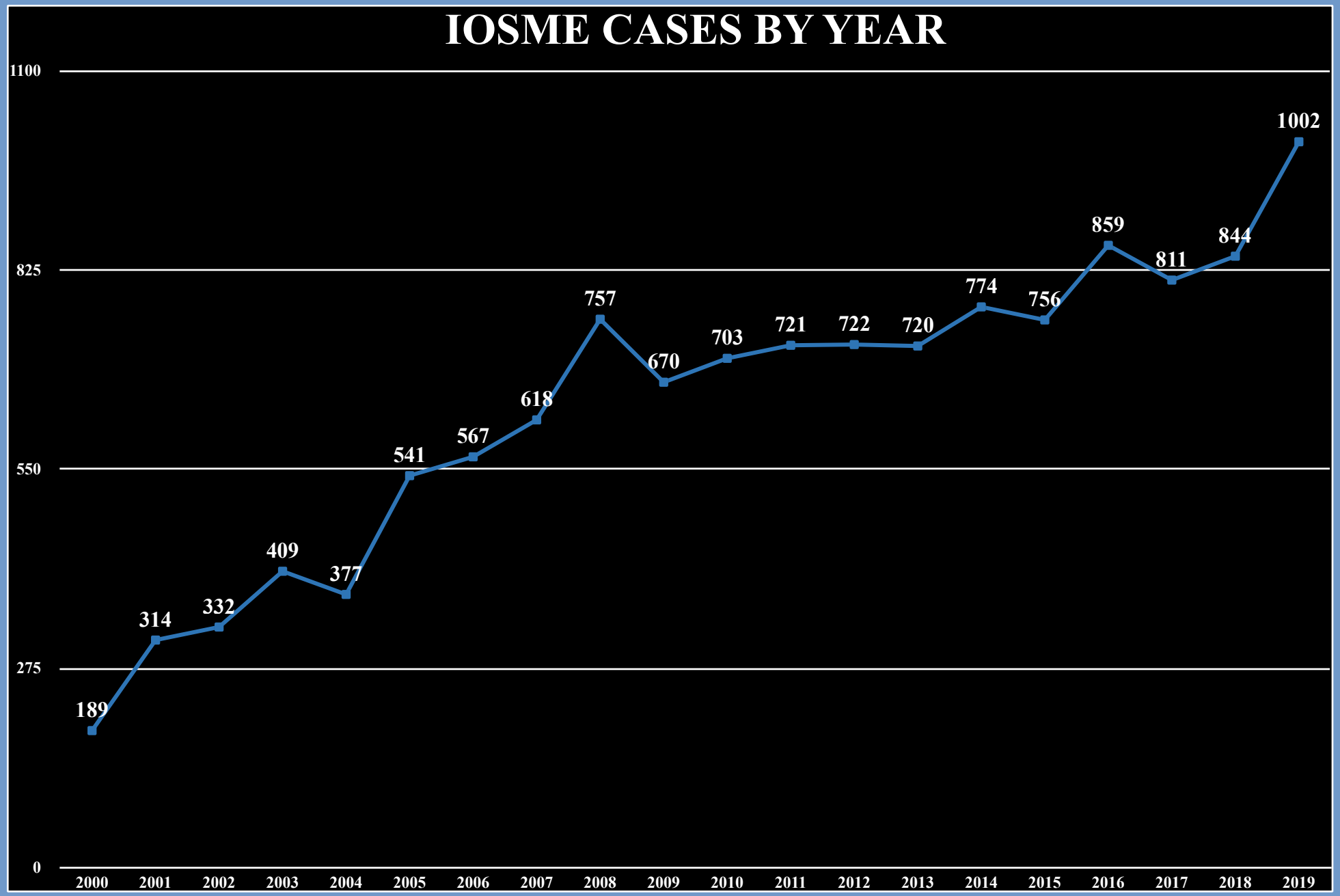
- Distributed powder or tablet form
- Tendency for high potency
- Can be missed on ELISA screening for opioids
- Detection limits can be below GC-MS sensitivity

Autopsy

- NAME standards-
  - The forensic pathologist shall perform a forensic autopsy when:
    - 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.
      - Interpretation
      - Prosecution
      - Sentinel novel drugs

Recommendations

- Opioids- Watching for increase
  - Fentanyl (+/- analogs) continue to be important
- Methamphetamine- Major Drug in Iowa
- Drug use and intoxication extending into 50's and 60's
  - Complex interpretation of Natural Disease and Toxicology
  - Increase index of suspicion in older age groups
  - Lower threshold for autopsy in 50-60 age group
  - Long $T_{1/2}$ in Methamphetamine - may not see drug at scene


IOSME CASES BY YEAR
1100
825
550
275
0
189
314
332
409
377
541
567
618
757
670
703
721
722
720
774
756
859
811
844
1002
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

IOSME Staffing

13 Full Time

- 4 Forensic Pathologists
- 1 MEI liaison
- 1 Medical Examiner Investigator
- 1 Office manager
- 3 Autopsy Technicians
- 2 Administrative Assistants
- 1 Radiology Technician

30 Part Time

- Autopsy technicians
- Morgue Attendants
- Administrative Assistants
- Investigators (2)
- Pathologists (3)

Partnership

- 2 IDN Liaisons/investigators

Challenges (Staffing)

Recommended staffing by NAME (29-33 FTEs):

# autopsies	Pathologists	Technicians	Investigators	Admin/clerical	Attendants
800	4	5	6	8	6
1,000	6	5	7	9	6
1,200	7	6	7	9	6

	# autopsies	Pathologists	Technicians	Investigators	Admin/clerical	Attendants
2019	**1,002**	**4**	**3**	**2**	**3**	**Part-time**
2020	**1,150**	**4**	**3**	**2**	**3**	**Part-time**

Current staffing at State ME Office (total 13 FTEs)


Gen Fund and Fees
$1,000
$1,200
$1,400
$1,900
Year
$ = fees/autopsy.

Challenges

- NAME accreditation pathologist ratio <250/pathologist
- Call, testimony, and vacation coverage
- Surge and Mass Fatality Capacity
- Facility capacity

Mitigation

- Pathologist coverage
  - Immediate- 2-3 part time pathologists
  - Recruitment- additional FTE for pathologist
- Investigator coverage
  - Immediate -2 part time investigators
  - Recruitment additional FTE for MEI liaison
- Administrative coverage
  - Increased work flow efficiencies and IT solutions- Electronic reports 2021
  - Immediate- part time clerical staff
  - Intermediate -additional FTE for admin assistance

Strategies

- Increase cooler capacity
  - Grant- high density racks and lifts for cooler
  - Purchased reefer trailer
  - Legal- time limit on storage of unclaimed bodies

- Increase throughput efficiency
  - IT solutions to maximize efficiency scene to autopsy to report
  - Staggered full time technician scheduling for 7 day coverage
  - Training
  - Help from County investigation
    - Complete EMER

ABMDI

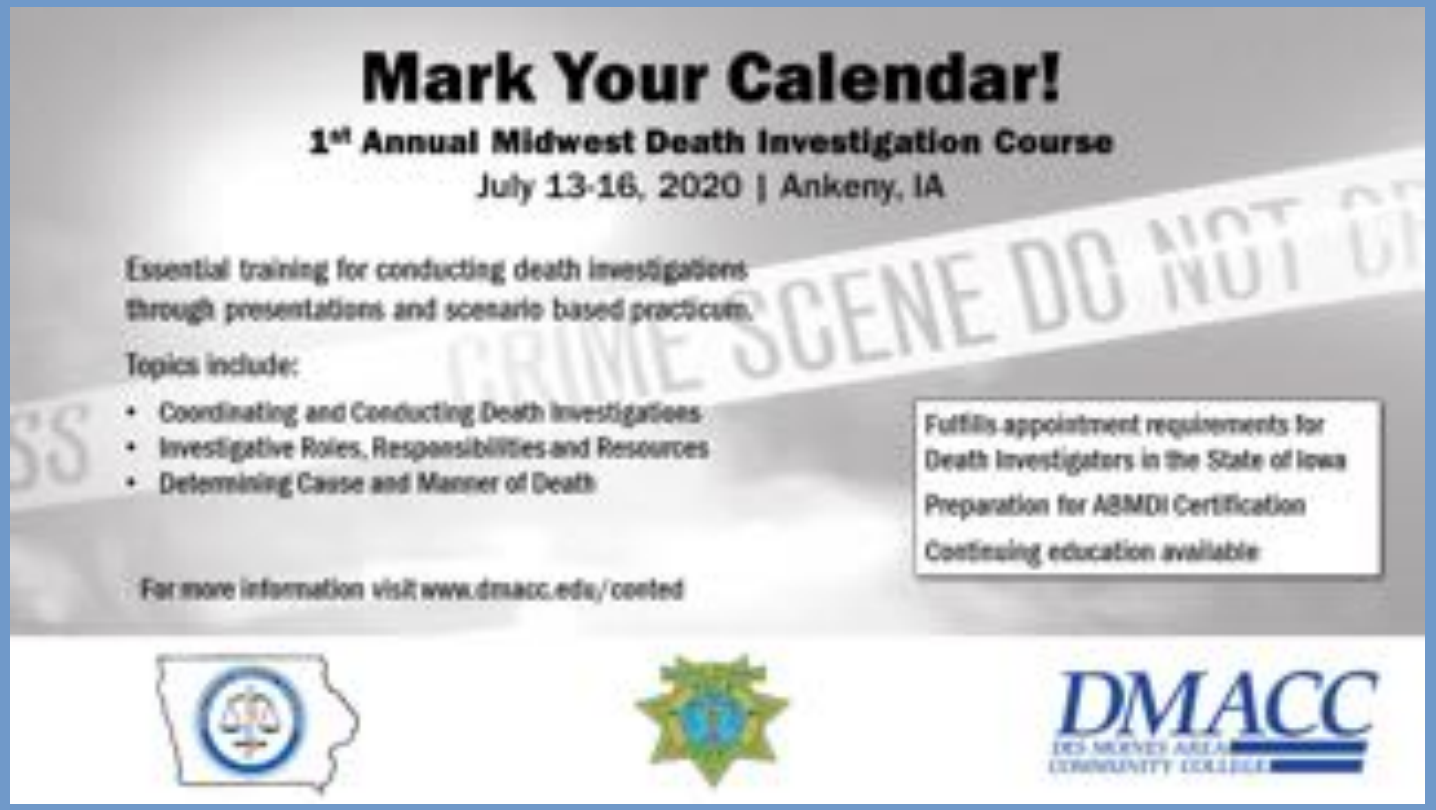
- Anticipate funds for 2021 St Louis course- COVID dependent
  - Paul Coverdell National Forensic Science Improvement Act
- 45 Registry Diplomates in Iowa
- 14 Board Certified Fellows in Iowa
  - 2019 -Jessica Jessen (IOSME), Matt Lively (IOSME), Carla Indelicato (Polk)
  - 2020- Mark Bethel (Marshalltown and ISOME).

MEI Qualifications –Admin rule

- At least 2 years experience nurse or medical care provider
- Within 3 years
  - St Louis Basic course or its IOSME-approved equivalent
  - Obtain ABMDI certification
- Waiver if above not able to be achieved

St Louis Course and MDIC

Look for funding in next NFSIA grant cycle



Look for rescheduling summer of 2021

Mass Fatality Planning

- Mass Fatality Response
  - County and State planning
  - IMORT Development
  - Leveraging existing services
    - 211
  - Exercise

"Plans are worthless, but planning is essential"

Dwight Eisenhower

MASS FATALITY- Identified Gaps

- IMORT team members-
- Communications
- GPS equipment and training
- Field body transportation
- Cooling equipment
- Scene body and remains tracking system
- Media and Family management

How do I volunteer for IMORT?

All volunteers for IMORT must be registered through the Iowa Statewide Emergency Registry of Volunteers (ISERV). Volunteers can register online and update their information 24/7/365.

In order to register on the I-SERV system, a volunteer must create an account at www.iaserv.org. Be sure to indicate a desire to join the "Iowa Volunteer For additional information about the team or for assistance in register
IMORT@

The Iowa Mortuary Operations Response Team (IMORT) is sponsored by:

Iowa Mortuary Operations Assistance Team (IMORT)

https://www.iaserv.org/

IMORT Membership considerations

- ICS 100, 200, 700, BBP
- Scene
  - MEI
  - Scribe
  - Photographer
- Able to participate in meetings and exercises

County Planning for Mass Fatality

- Know your county Emergency Management Coordinator
  - EMA must collaborate with local funeral homes, county medical examiners, IOSME, law enforcement, fire, EMS, public works, and elected officials
- Have a written Mass Fatality Plan
  - What defines a mass fatality
  - Who declares a mass fatality
- Family Assistance Center
- Temporary cool storage

Death Investigation System Objectives

- Accurate and Timely Death Certification
- Efficient and Secure Communication
- Accurate and Useful Data

System Goals

- Death Reporting
  - Appropriate deaths reported to CME
  - Reports completed in 14 days (Iowa Code)
- Standardized Drug Intoxication Certifications
  - Include specific drugs in COD statement
  - Index of suspicion
  - Include broad age range

Reporting ME Deaths

Population 3.12 M
Deaths 30,669

<u>Deaths reported</u>

- 2018 5,547 (18%)
- 2019 7,308 (23%)

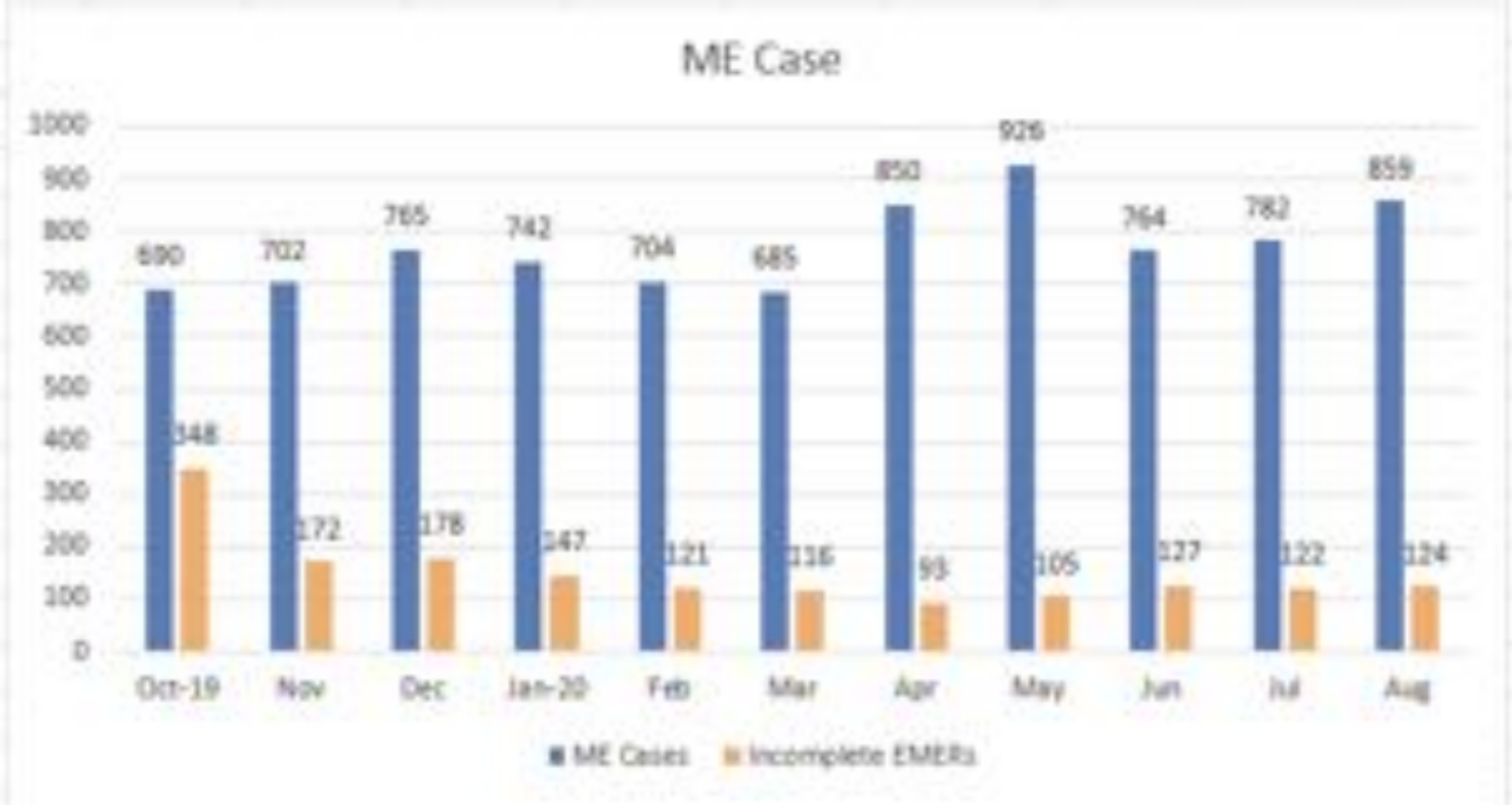
Evolution of ME Death Reporting

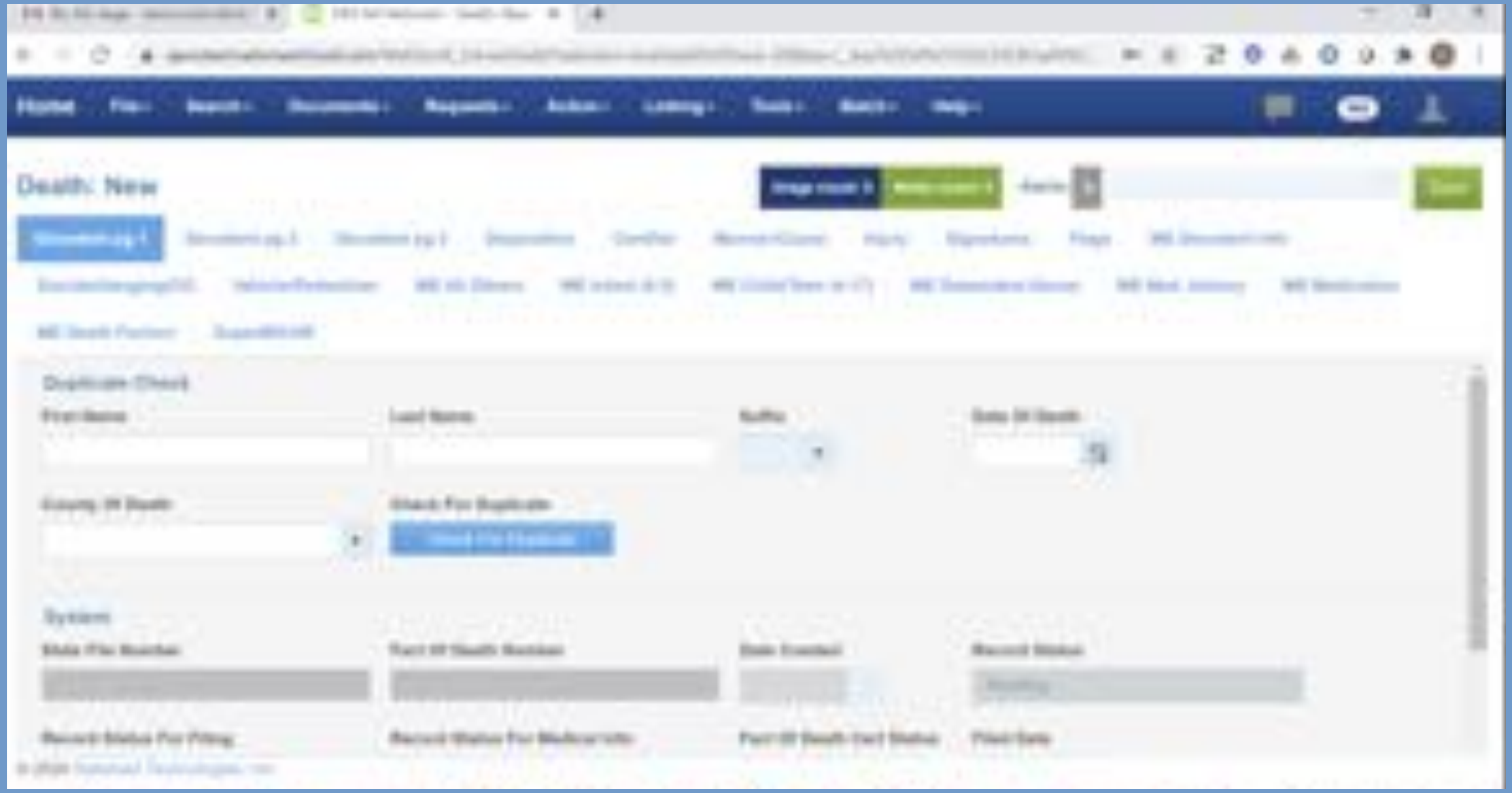
1983 -2019

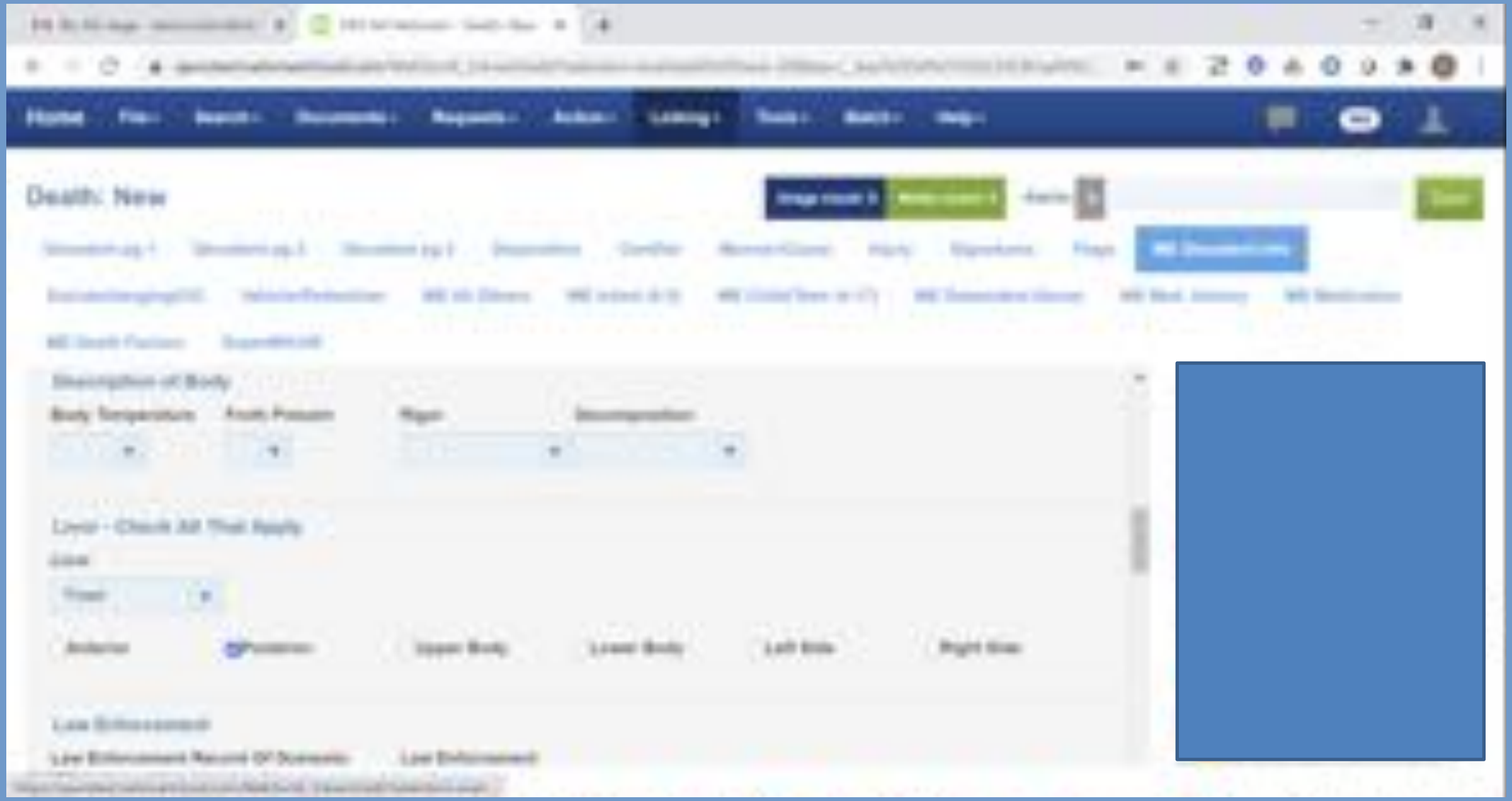
2019-2020

2021-

14 Day completion of EMER




Death: New
Duplicate Check
First Name
Last Name
Suffix
Date Of Death
County Of Death
Check For Duplicate
System
State File Number
Fact Of Death Number
Date Created
Record Status
Record Status For Filing
Record Status For Medical Info
Fact Of Death Card Status
Print Date


Death: New
Description of Body
Body Temperature
Rigor
Decomposition
Anterior
Upper Body
Lower Body
Left Side
Right Side
Law Enforcement

IVES NX

- Any Windows desk top or lap top
- Recommend Chrome browser
- Utilize current ID Password
- F5 key will reload site for saving printing
- Autosaves
- New Intra IVES users messaging capability
- Tabs don’t move!

Electronic Reporting

- Prelaunch training
  - Virtual training sessions
- Pre and Post launch online materials (IOSME website)
  - 24 online videos
  - User manual
  - 3 Quick reference guides

Reminders

- If appropriate indicate the “Means of Death”

Tabs for specific types of death

EMER Reminder to sign

Invitae Genetic Testing

- Arrhythmia and Cardiomyopathy Comprehensive Panel
- No fee with NOK waiver
- Major step in new tool for sudden death diagnoses
- Clinical significance for living relatives

Tissue Donation

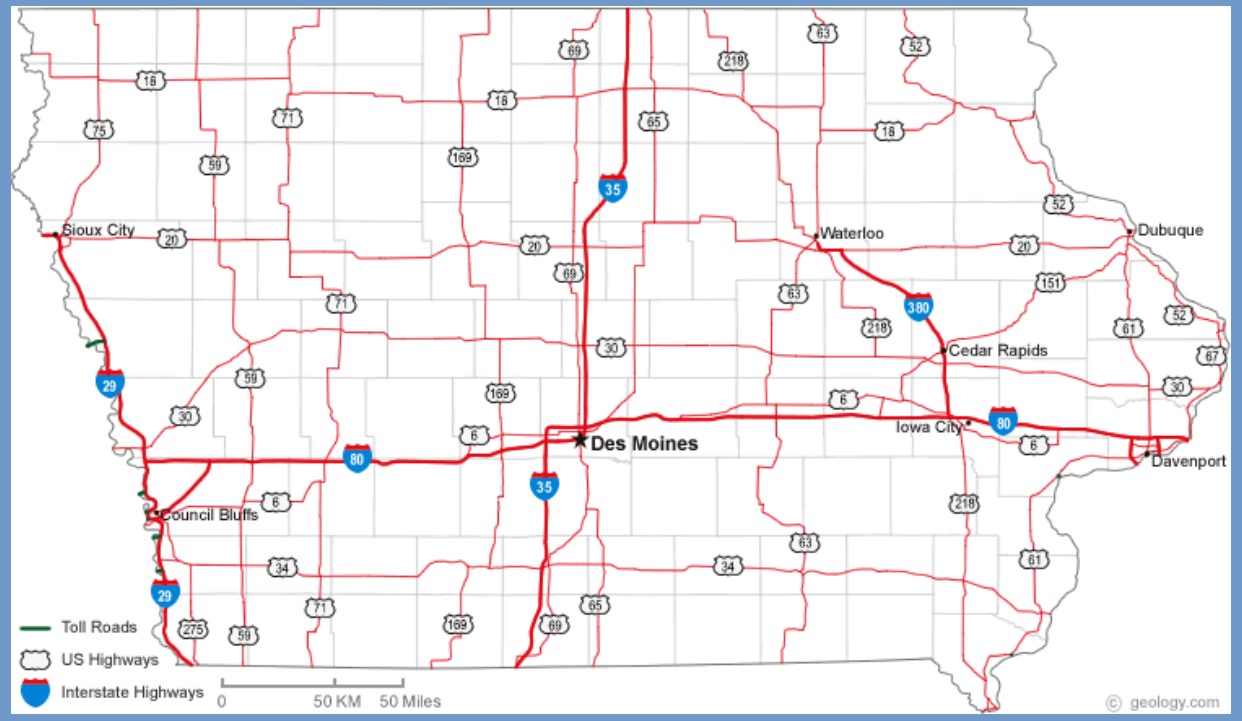
- Continue to refer EVERY death to IDN
  - Protocols are continuously changing
  - Case referred for possible corneal donation
  - Efficiency of information reporting
- Transportation
  - If challenges in timely transport
    - Ask to speak with Funeral Director donation specialists
- Identification tags on body (not clothing)

Child Death Review Team

- Multidiscipline team reviews ME LE DHS Edu records
- Sleep related deaths (35-40 deaths /year)
  - Preventable
  - Need thorough scene investigation with doll re-enactments
  - Autopsies r/o anatomical, tox, infectious, inflicted, molecular
  - Team subcommittee working with Soc Media PSA

Addressing Concerns

- Coverage and Budget
  - Cross jurisdictional (county) resource sharing
    - Experience
    - Timeliness and quality of service
    - Reduce costs



Parting Requests

- Scene photos are invaluable to correlating the scene to autopsy findings- High yield in documentation
- Complete the specialty sections and the narratives in EMER
- BOLO for drug deaths in the young and old
- Be careful and keep yourself and your colleagues safe