ENGLISH

STATE OF MICHIGAN
DEPARTMENT OF HEALTH AND HUMAN SERVICES
LANSING

GRETCHEN WHITMER
GOVERNOR

ELIZABETH HERTEL
DIRECTOR

MICHIGAN EMS COORDINATION COMMITTEE MEETING
Friday, March 21, 2025
MINUTES
9:30 a.m.
Livingston County EMS
1911 Tooley Road
Howell MI 48855
Join the meeting now
1 248-509-0316 Phone Conference ID: 601 389 624#

Attendance:
Voting Members:
K. Belanger; Dr. C. Brent; D. Condino; R. Cronkright; K. Cummings; Dr. K.D. Edwards; G. Flynn; D. Gorelick; L. Martin; K. Miller; M. Nye; J. Kelly for K. Ostergren; E. Smith; B. Trevithick; M. Oakley; J. Przytulski for R. Ortiz; D. Pratt; G. Wadaga; K. Wilkinson; Dr. S. Wise

Virtual/Ex Officio members:
Dr. R. Smith; C. Meixner; Dr. M. Fill; P. Fox; B. Forbush; A. Sundberg; K. Ostergren.

Absent:
Senator Brinks; Rep. Prestin; J. Brown; A. Sledge; F. Jalloul; W. Hart.

Department Representatives:
Dr. W. Fales; E. Bergquist; N. Babb; J. Wagner; E. Baker; K. Piette; S. Minaudo; A. Brown; L. Corey; D. Flory; R. Chadderton; S. Bliss; A. Scott; K. Schaible; S. Kerr; D. Fitzpatrick; E. Hendy; C. Laking; N. Daugherty; M. Ladetto; C. Nethaway; E. Worden; D. Lali; D. Burke; T. Jenkins; J. Fiedler; L. Ryal; T. Godde; A. Morrison; E. Baty; A. Pantaleo; A. Cerroni; K. Putman, P. Stevens; T. Frascone; A. Biliti; N. Rossow; A. Verlinde; L. Nelson; J. Spitzley.

Guests:
H. Pykonen, AMR; M. LaCrosse and Dr. E. Bigsby, Delta County MCA; N. Edgerly, Alpine Fire; P. Bridges, self; T. Dean, self; O. Blanco, self; M. Kropp and K. Donovan, Macomb County MCA; B. Stalsonburg, Kent County; T. McDonald, self; M. Willoughby-Byra, self; M. Fankhauser, Grand Rapids Fire; T. Sowle, AMR; A. Shaver and R. Warnemuende, Saginaw-Tuscola MCA; A. Madden, MAAS; J. Clayton, MAAS; R. Olkowski, J. Bestard and G. Csiki, Detroit Fire; B. Miljan, HEMS; M. Bentley, Kalamazoo County MCA; C. Robinet and D. Hawley, Superior; K. Henderson and Dr. Domeier, Washtenaw Livingston MCA; J. Theut and B. Kincaid, Oakland County MCA; D. Bunge. Brighton Area Fire; M. Szost, Lapeer; D. Yarger, Barry County MCA; J. Yaroch, self; Dr. Shanley, UM; C. Herbert, Corewell; Dr. Avery, WMed; L.J. Knight, Livingston County EMS.

Call to Order: The meeting was called to order at 9:33 a.m. by Dr. Edwards.

Approval of Agenda: Motion to approve the agenda (Martin, Flynn). Approved.

Approval of Minutes: Motion to approve the minutes from 01/17/2025 (Condino, Miller). Approved.

Reminders of upcoming educational opportunities:

- EMS EXPO: May 8-10, 2025 – Mackinac Island
- SHIFT: Mental Wellness for First Responders: April 23-24 – Traverse City
- MENA 2025 Conference: April 29 – May 1. 2025 – Lansing.
- SaveMiHeart Conference: June 6, 2025 – Fort Shelby
- Save the date - 2025 UP EMS Conference: September 11 – 13, 2025 – Marquette
    - Debbie Condino asked about moving the September meeting to Marquette. The group discussed. Alyson advised they are more than happy to host on **Friday, September 12**, **in Marquette** if we decide to move it.
    - **Motion to move the meeting to Friday, September 12, in Marquette (Wadaga, Flynn). Approved.**
- Save the date - MDHHS Systems Conference: October 7 – 8, 2025 – Muskegon
- Great Lakes Homeland Security Conference: May 6-8, 2025 – Grand Rapids
- 8th Annual North American Active Assailant Conference: June 4-6, 2025 – Troy

Guest Speaker: None.

Public Comment on Agenda Items:

- Maria Willoughby-Byra: Ms. Willoughby-Byra spoke in opposition to the pediatric changes in the CE categories in the education policies on the agenda today.

Old Business & Committee Reports:

EMS Systems/Strategic Planning Update – E. Bergquist

- MDHHS Systems Conference: The call for posters was included with this agenda and is in the Wednesday Update. Emily discussed the posters and how the conference will be presented. Registration is expected to open next week.
- Due to all the things going on in the EMS office, you should expect that subcommittee work will be limited in June and July, and she discussed. Don't be alarmed if subcommittee meetings are cancelled.
- Terrie Godde spoke about her new opportunity with NREMT. She has been with the EMS Office for 12.5 years. Congratulations Terrie!

Paramedic Exam Update – E. Bergquist

- Paramedic exam: This does not affect any level except paramedic. Specifications are almost complete. A full-time employee is in the process to serve as manager for this. The funding for the exam is in the governor's 2026 budget. In the meantime, we are doing the best with what we have.

Emergency Preparedness Update – Dr. Edwards

- Dr. Edwards welcomed new member, Karyn Belanger, and had her introduce herself.
- He discussed a message that had gone out yesterday for potential threats in health care facilities and how it was sent up the chain and this was good news. He read the response message to the group and said it was refreshing that such a good job was done on the preparedness side.
- He spoke about recent exercises, including the cold weather exercise done in Marquette earlier this month, which was the first of its kind. There was a Pediatric Readiness Workshop and tabletop exercise this month, as well as a Cobalt Magnet exercise. In February, a statewide medical surge exercise that involved neighboring states was held.
- He spoke about burn surge training. The next class was moved to June 3rd, a change was made allowing the online portion to be taken after the course, rather than before.
- There is an in person BDLS class on April 18 at Livingston County EMS. The state will continue with other courses, and he discussed.
- The state medical directors held discussion about downsizing the MITESA unit, as well as reserve resources for small PPE requests. Caches have shrunk down and there are discussions on what that will look like moving forward.
- They have been following infectious disease in the state and trends are going down.
- Emily Bergquist advised the preparedness section is updating/liquidating their ventilators and to keep an eye on your emails. They will be reaching out to agencies and education programs in the next few weeks. There would be no cost, but responsibility for maintenance will go to the receiver.

Systems of Care Report – E. Worden

- They are working on the data transition project.
- They have made a data dictionary. STAC will be reviewing at their meeting in two weeks.
- They are reviewing and updating verification criteria.
- Regional Trauma Network applications are being refreshed.
- Stroke and STEMI groups met this week.
- There are two new people and Eileen discussed. The Systems of Care team is now full.

EMS Medical Director Report – Dr. Fales

- Dr. Fales gave a presentation, and his slides are attached to these minutes.
    - Questions: There were questions about biospatial and what can be done. Emily advised some things will be available when the transition is done. Syndromes were discussed. The list of syndromes is attached to these minutes.

Committee Reports:

- Quality Assurance – Dr. Edwards
    - EMSCC Appeal Hearing:
      Trevor Lee Dean v. Macomb County MCA File #2401854
    - Dr. Edwards read the QATF decision in the matter:

In the Matter of Trevor Lee Dean v. Macomb County MCA File #2401854:

QATF addresses the following points of contention on behalf of Trevor Dean, Paramedic, regarding whether MCMCA followed their protocols as stated below, and finds:

- *From Protocol 8-24 pg. 7 V. Due Process:*
  - *Section A: The MCA did not provide 4 business days' notice.*
  - *Section B: The MCA did not provide copies of the Complaint Investigation Protocol.*
  - *Section C: The MCA did not provide copies of the investigative materials.*
  - *Section M: The subject licensee was not given "time to speak on the issue of the complaint including the opportunity to present supporting documentation".*

- **Motion to approve (Martin, Nye). Approved. Condino, Dunne, and Miller abstained.**
  - Discussion: Damon Gorelick asks what happens in this process. Emily discussed. The department will look at it and give direction. The EMSCC is advisory to the department. Emily said it is case by case. The MCA will receive a communication from the department. Redoing an investigation was discussed. This was just the findings, not a recommendation. The QATF just looks at the protocols as they are laid out.

- Ambulance Operations – M. Nye – Did not meet.
- Medical Control Authority – D. Condino
  - They are working on updating the MCA Handbook. They are almost through section 2 and the next meeting is April 1, 2025. If you have anything to consider, please let us know.
- Patient Movement Ad Hoc – D. Condino
  - They are at the point of breaking out the regional meetings. The regions will now look at the previously developed problem statements. Region 8 has already had their first meeting. The regions will report back to the main group. The next meeting is Monday, March 24, 2025.
- Ethics and Compliance – K. Cummings – Did not meet.
- Education – K. Wilkinson
  - Continuing Education Requirements EMS-320
  - **Motion to refer back to subcommittee and for this to go to the stakeholder groups (Trevithick, Oakley). Approved.**
    - **Please send feedback to EMS@michigan.gov.**
      - The group had a robust discussion and decided to send this back to the subcommittee to send to their stakeholder groups for feedback. Emily also had slides for this, which are attached to these minutes.
  - CE Reevaluation Policy and Procedure EMS-319
    - **Motion to approve (Trevithick, Flynn). Amended motion to remove 1a (Trevithick, Flynn). Approved. Gorelick voted no.**

            - Discussion: Greg Flynn asked or about the department waiving and doesn't think it needs to be part of the procedure. This was discussed.
    - Practical Exam Policy EMR level EMS-322
        - **Motion to approve (Trevithick, Flynn). – Motion not voted on.**
        - **Motion to approve as written (Belanger, Oakley). Approved.**
    - Practical Exam Policy EMT and AEMT levels EMS-323
        - **Motion to approve (Trevithick, Flynn). – Motion not voted on.**
        - **Motion to approve with fixing of the typos (Gorelick, Oakley). Approved.**
    - Textbook Policy EMS-321
        - **Motion to approve (Trevithick, Flynn). – Motion not voted on.**
        - **Motion to approve with change to require the department to post approved textbooks on the website. (Nye, Cummings). Approved.**
            - **Discussion:** Kolby asked for a list of textbooks. Emily Baker spoke about the difficulty for the department to maintain a list like this. Emily Bergquist said we could keep a list of reviewed textbooks on the website once they are reviewed.
        - NASEMSO textbook position statements included for review.
    - Emily went over the policies. These are in her slides attached.
- Bylaws – B. Trevithick – Did not meet.
- Data – D. Gorelick
    - They have started going through the data fields and are working on definitions and education. Damon asked if Ambulance Operations if they would look at the scene delay section and provide opinion on it. Monty Nye will get with Damon.
- Legislative – B. Trevithick
    - HB 4012 – EMS Transport of Retired Police Dogs
        - Bruce advised this is being reintroduced and had been opposed previously and they are recommending opposition again.
        - **Motion to oppose HB 4012 (Martin, Nye). Approved.**
            - Dr. Edwards asked for the reasoning and Emily addressed.
    - HB 4067, 4068, 4069 – Safe Delivery of Newborns
        - This relates to the safe delivery of newborns. We have opposed this in the past and it also does not address issues previously presented.
        - **Motion to oppose these three bills (Smith, Belanger). Approved.**
    - HB 4108, 4109 – Good Samaritan; Health Club – No Duty to Act
        - These bills are tie barred together. 4108 addressed bleeding control and the good Samaritan act. 4109 related to health club facilities where the staff would not be obligated to treat someone. The legislative committee recommended support of 4108 and no action of 4109. Bruce advised the legislature may be willing to address issues. He recommended sending this back to the legislative.

- **Motion to support 4108 and send 4109 back to the subcommittee for potential legislative changes. (Gorelick, Oakley). Approved.**
    - Monty discussed AED and health clubs. Kolby also brought up AEDs. The duty to act and liability was discussed.
- Bruce discussed HB 4249 regarding Ambulance Funding for prison transports. The group briefly discussed.
- Greg discussed funding for recruitment and retention for law enforcement from the governor's office but not EMS.

- Rural – G. Wadaga
    - They met on Tuesday and Emily presented work force information. They looked at provider numbers, as well as number of rural ICs, and is there anything to be done. Nothing was decided, and this will stay on the agenda in May. He spoke of some issues with maintaining rural IC numbers. They talked about the CE requirements, as well as Wellpath's outstanding debt. They also talked about MiREMS and funding.
- Pediatric Emergency Medicine – S. Mishra
    - Emily Baker provided the report.
        - EMSC – partial NoA was received 3/20/2025
            - Due to the Federal government's continuing resolution status, funding for this grant award is limited to 45.21% currently, may be revised in coming months.
        - CoPEM - Next scheduled meeting is April 10, 2025
        - Pediatric Education update
            - March 12 was the Michigan Pediatric Readiness Conference, we had just shy of 400 attendees at max participation
            - 4 morning education sessions and afternoon tabletop exercise in breakout rooms by region
            - Thank you to those who attended and shared the opportunity, this was a huge turn out!
            - EMS CEs – finalizing review and issuance by Friday, 3/21/2025
            - Recorded sessions, PowerPoint presentations, resources etc. will be posted to the Pediatric Readiness website
        - Monthly Pediatric Education Hours – resumes in April
            - Child abuse awareness, detection and reporting
            - To be added to the series, please use this form.
- Air Medical – K. Wilkinson – Did not meet.
- EMS Safety – K. Miller
    - They met and had a great presentation from Frontline Strong Together and they are coming up with resources to be available through the EMS website.

- Critical Care Ad Hoc – E. Bergquist – ON HOLD.
- Communications – B. Forbush
    - They did not meet but are working renaming nomenclature. They meet again in two weeks.

Recruitment and Retention Work Group – K. Cummings/E. Bergquist

- This report is in Emily's slides, which are attached to these minutes.

Community Integrated Paramedicine (CIP) – E. Bergquist – ON HOLD.

New Business:

- Conditional Upgrade Report – White Lake Twp 03.21.2025
    - Derek presented to the group. It is statutorily required EMSCC get a copy of the report but there is no action required. Dr. Edwards asked if the state had any concerns and Derek advised no.

Public Comment: None.

- Orlando Blanco asked for clarification for the Trevor Dean matter.

Membership Round Table Report:

- Alyson Sundberg spoke about their CIP program and all the support in the process. They are just completing their soft start and selecting appropriate patients. She thinks it's going to be a huge success and is thankful for the support.
- Eric Smith spoke about the IC Conference. He advised EMS 320 was discussed and the IC Society will make sure to send their comments to the Education Subcommittee and they look forward to collaborating.
- Patrick Fox spoke about upcoming courses, which can be found on their website.
- Greg Flynn spoke about the statewide EMS reimbursement summit. More information can be found here.

Adjournment: Motion to adjourn at 12:27 p.m. (Miller, Flynn). Approved.

EMSCC March 2025

MDHHS
Michigan Department of Health & Human Services

General Updates

MDHHS
Michigan Department of Health & Human Services

Paramedic Examination

- Continue to get questions about other levels, this is paramedic only.
- Nearing completion of specifications.
- Working on selection process for a manager position, in hopes of funding in 2026.

Conference

- Registration should open on Monday.
- Poster competition information distributed
- There are both general and break out sessions on multiple disciplines

The Coming Months

- As implementation progresses on the systems, burden on the team is increasing
- Coupled with budget constraints in obtained assistance, the workload necessitates some restraint
- We anticipate pulling staffing from most subcommittee meetings in June, July, and possibly August (depending on timing)
- Groups can still meet, but our team will not be preparing agendas or supporting projects (other than statutory or technology related)

Team Changes

- I won’t steal Systems’ announcements
- Terrie Godde

Education

MDHHS
Michigan Department of Health & Human Services

CE Requirements - now

- 6 categories
- 13 specific requirements

CE Requirement Chart	MFR (15 Total)	EMT (30 Total)	AEMT (36 Total)	Paramedic (45 Total)
Preparatory	1	2	2	2
Airway Ventilation	1	2	2	2
Patient Assessment	1	2	2	2
Medical	1	2	2	2
BLS for Healthcare Provider	2	2	2	2
Trauma	1	2	2	2
Special Considerations				
Pediatrics Medication Administration-**Practical**			1	1
Pediatrics Airway	1	1	1	1
Pediatrics Assessment	1	1	1	1
Pediatrics Medical	1	1	1	1
Pediatrics Trauma	1	1	1	1
Operations		1	1	1
Emergency Preparedness	1	1	1	1
Individual Choice	3	12	17	26
Total	15	30	36	45

CE Requirements - Proposed

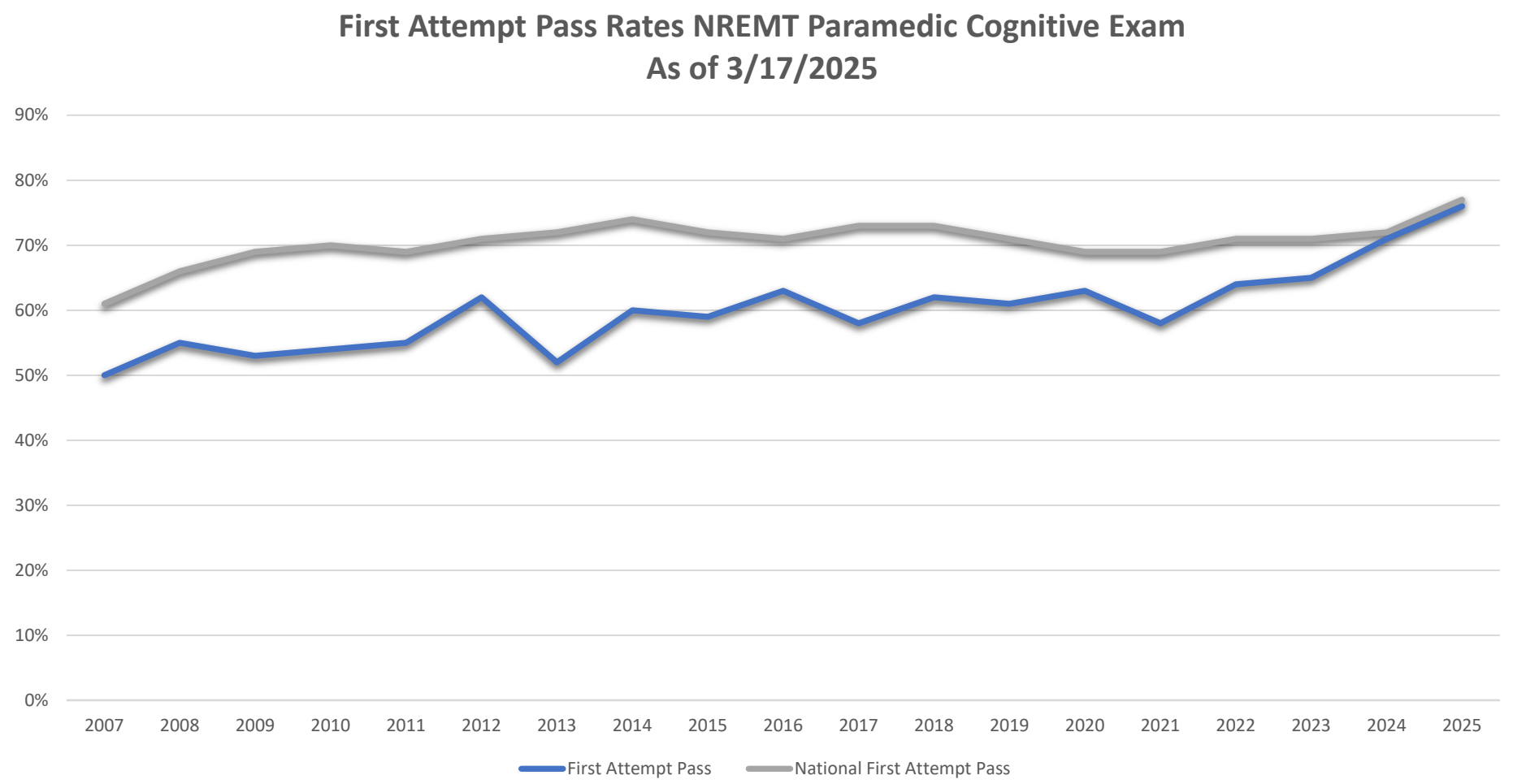
- 2 broader categories
- 11 requirements (10 for EMR and EMT)
- Based on practice analysis

Required minimums for each subcategory				
Topic	EMR	EMT	AEMT	Paramedic
Category 1 Requirements – Clinical Practice Topics				
Airway	1	1	1	1
Medical	1	1	1	1
Trauma	1	1	1	1
Pediatrics	4	4	4	4
Pt Assessment	1	1	1	1
Michigan Specific Pharmacology	0.5	1	2	2
Medication Administration	-	-	1 practical CEU	1 practical CEU
Category 2 – Other professional support topics				
Preparatory	1	1	1	1
Operations	1	1	1	1
Emergency Preparedness	2	2	2	2
Elective Credits				
EMS Clinician Elective Credits	2.5	11	15	18
CPR Certification				
BLS for Healthcare Provider	Current certification at time of application			
Total	15	30	36	45

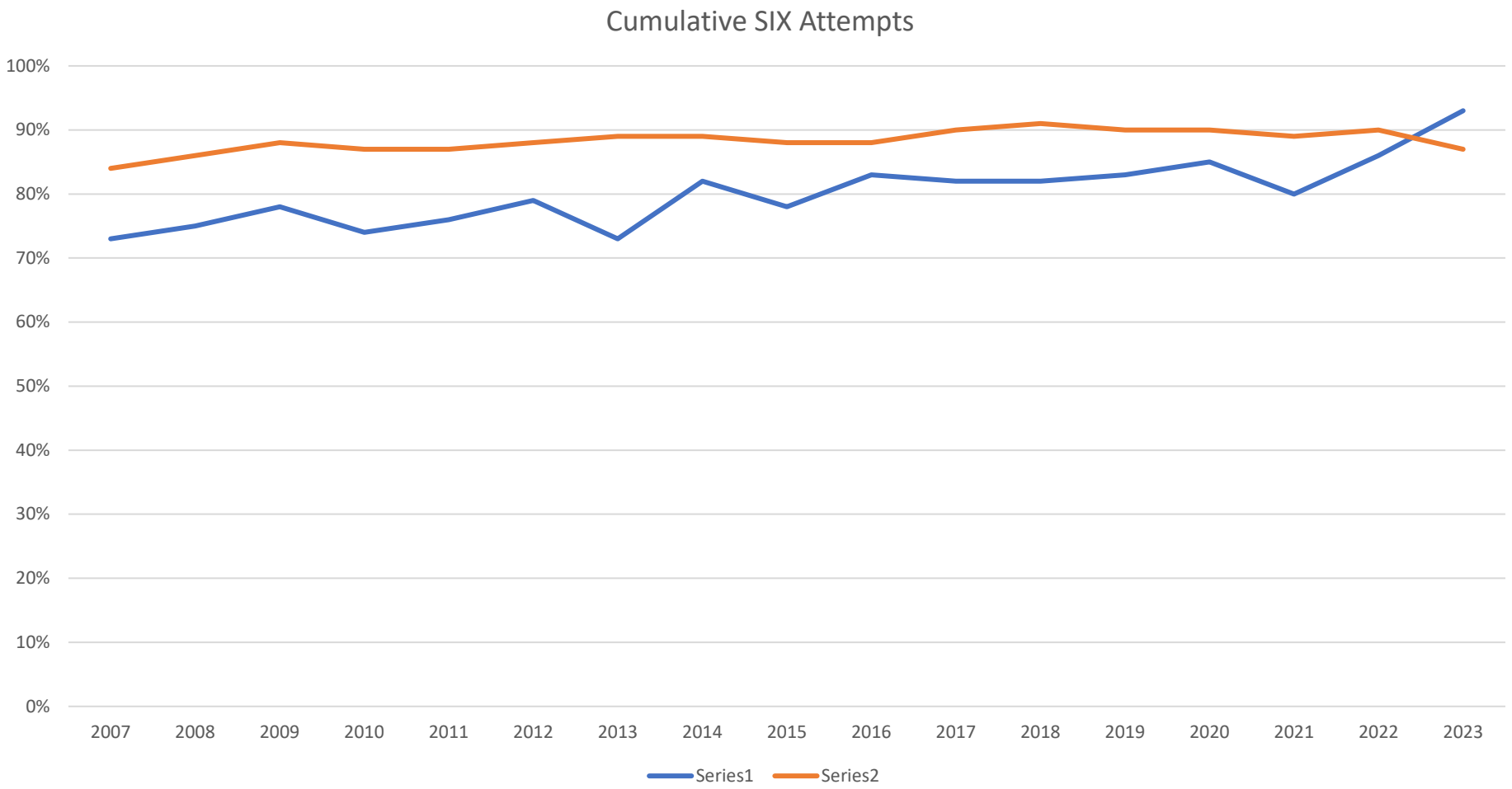
Workforce Report

MDHHS
Michigan Department of Health & Human Services

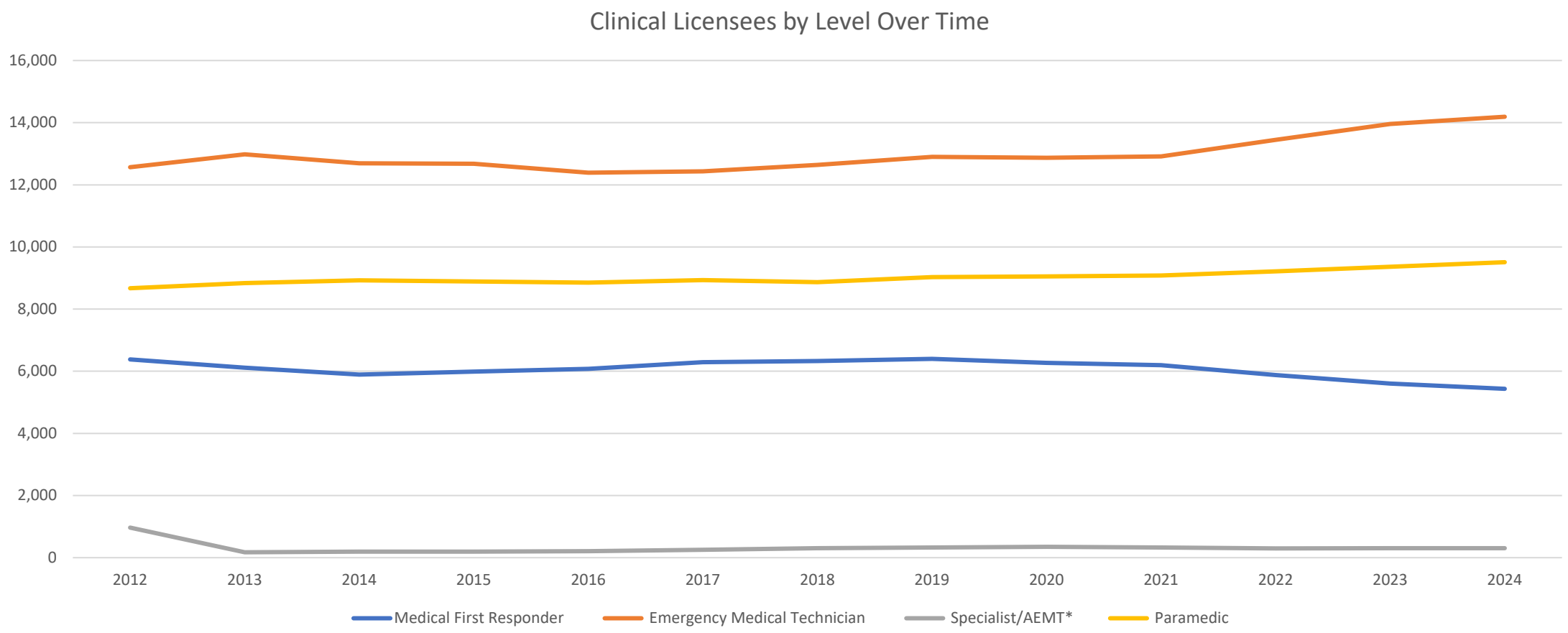
NREMT Performance



NREMT Performance



2024 Year End Stats



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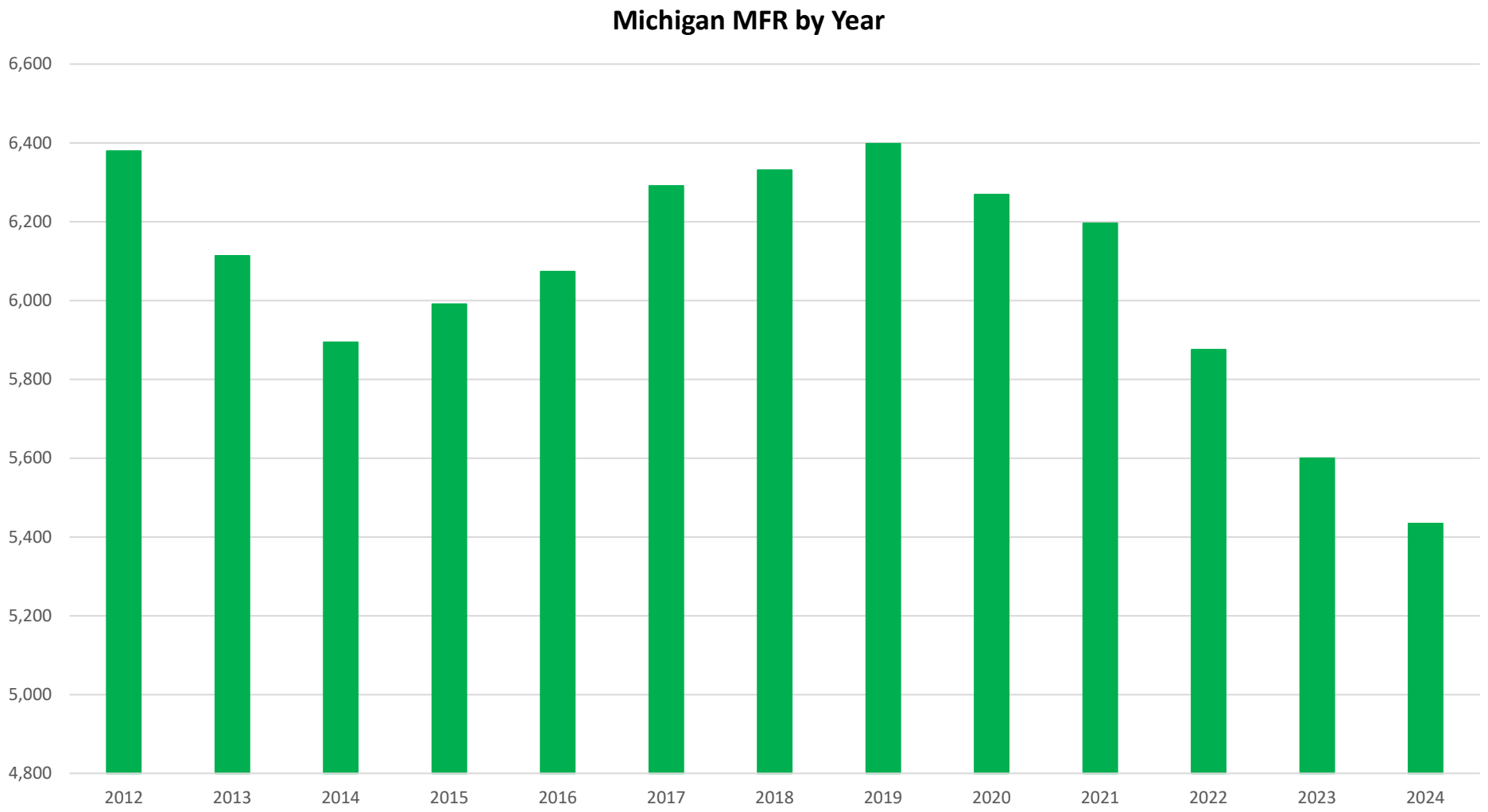

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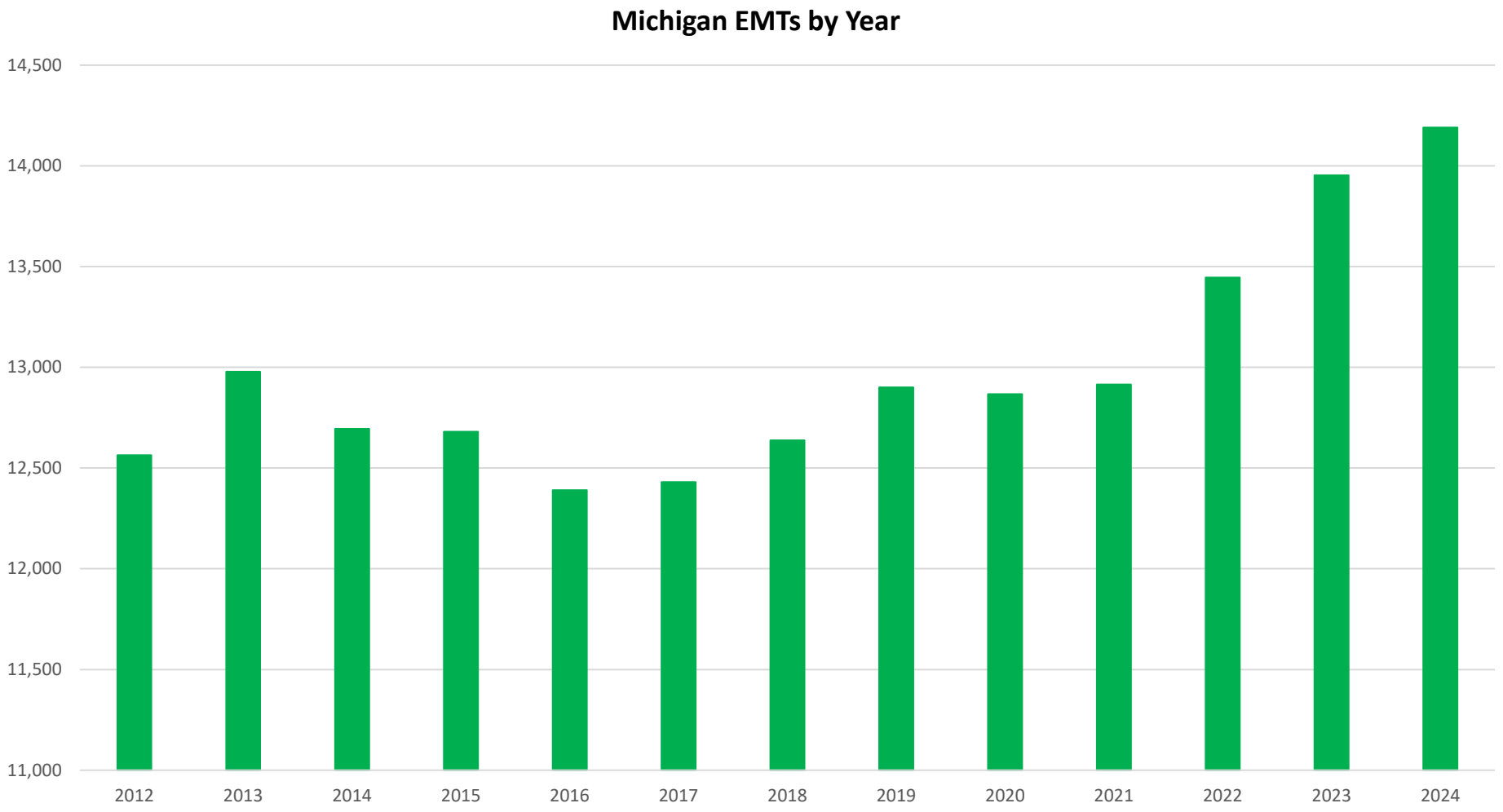

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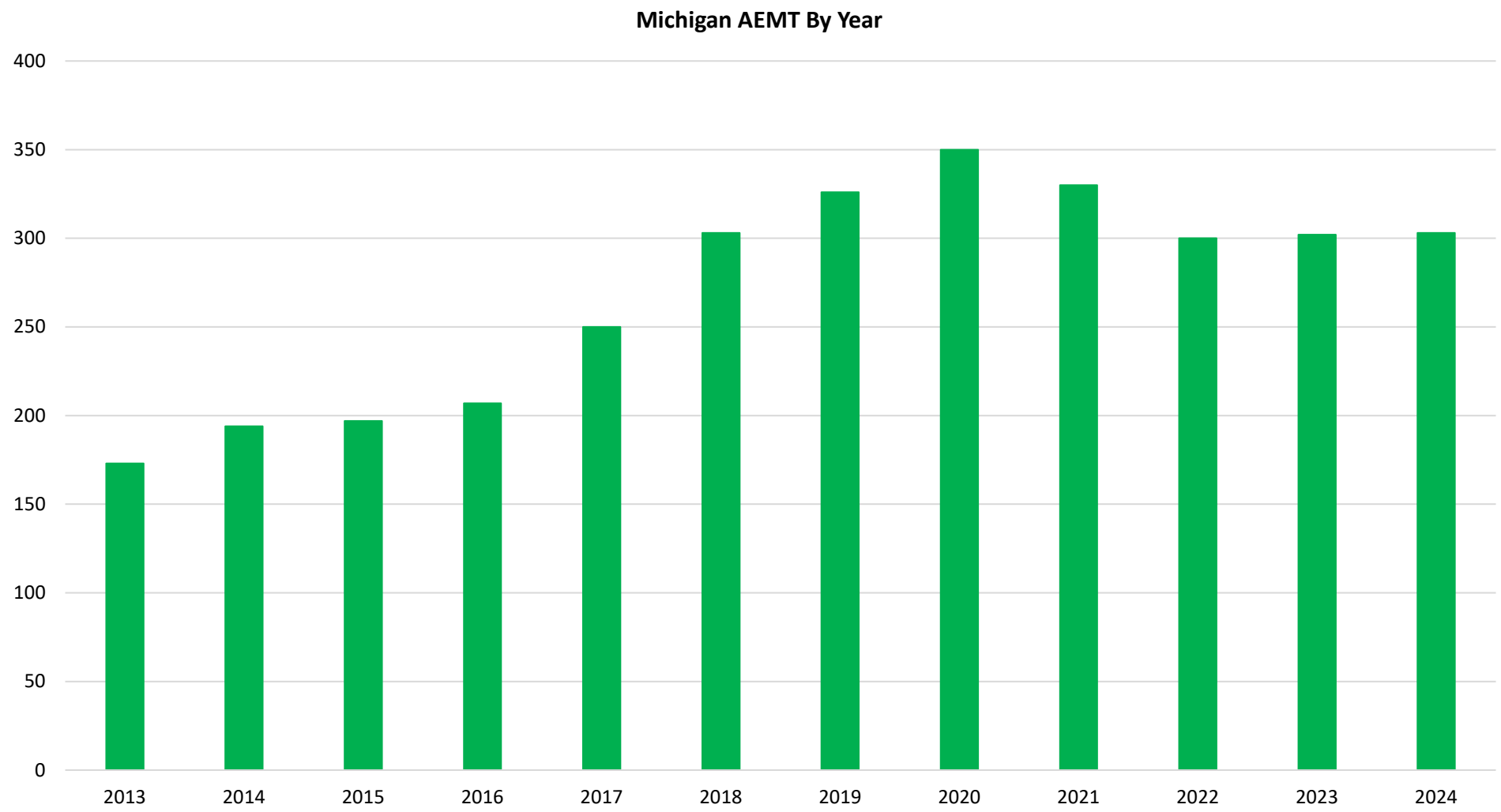

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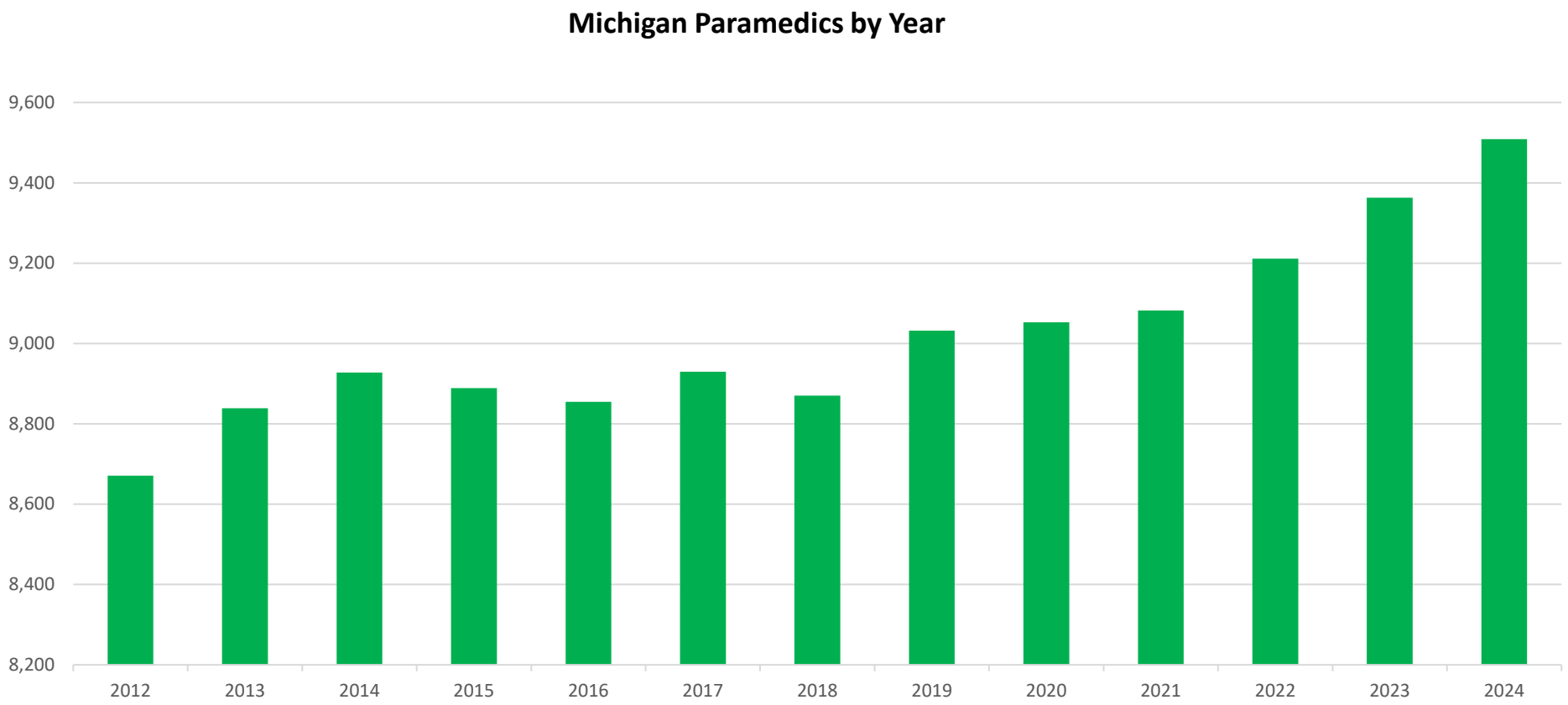
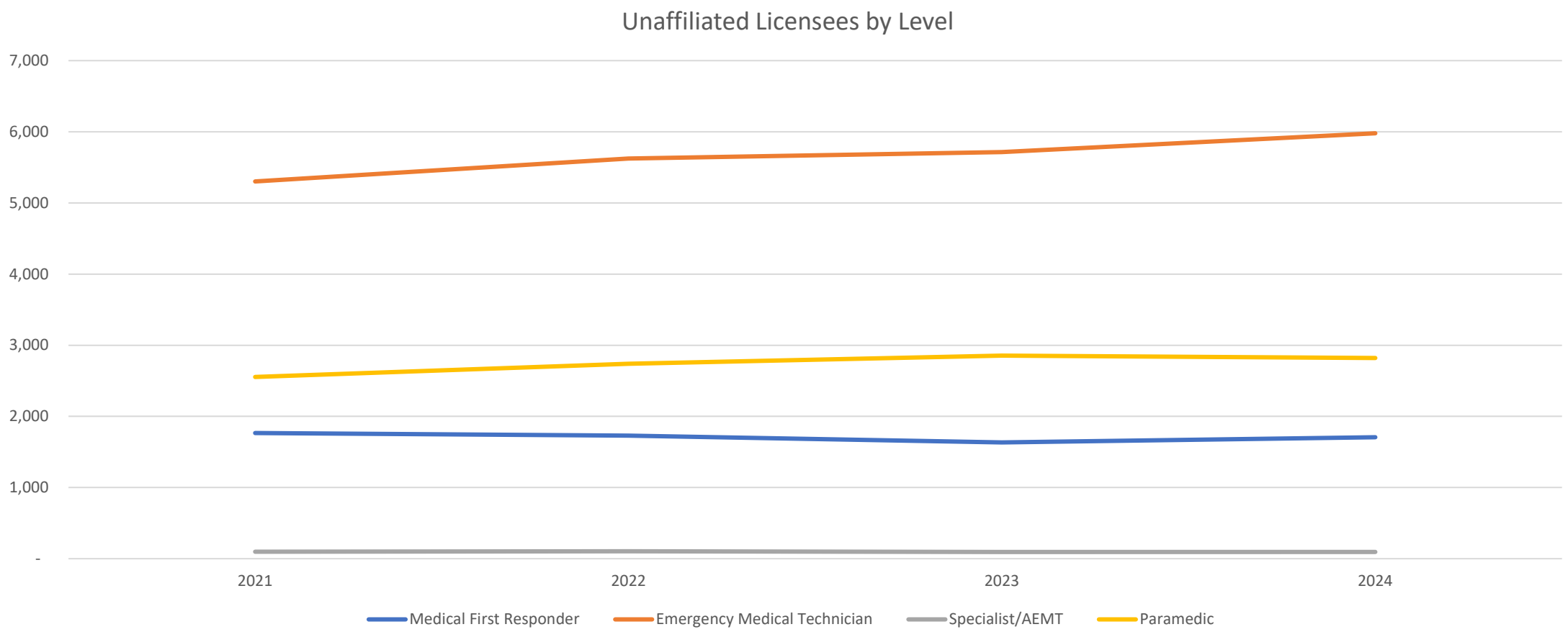


Unaffiliated Licensees

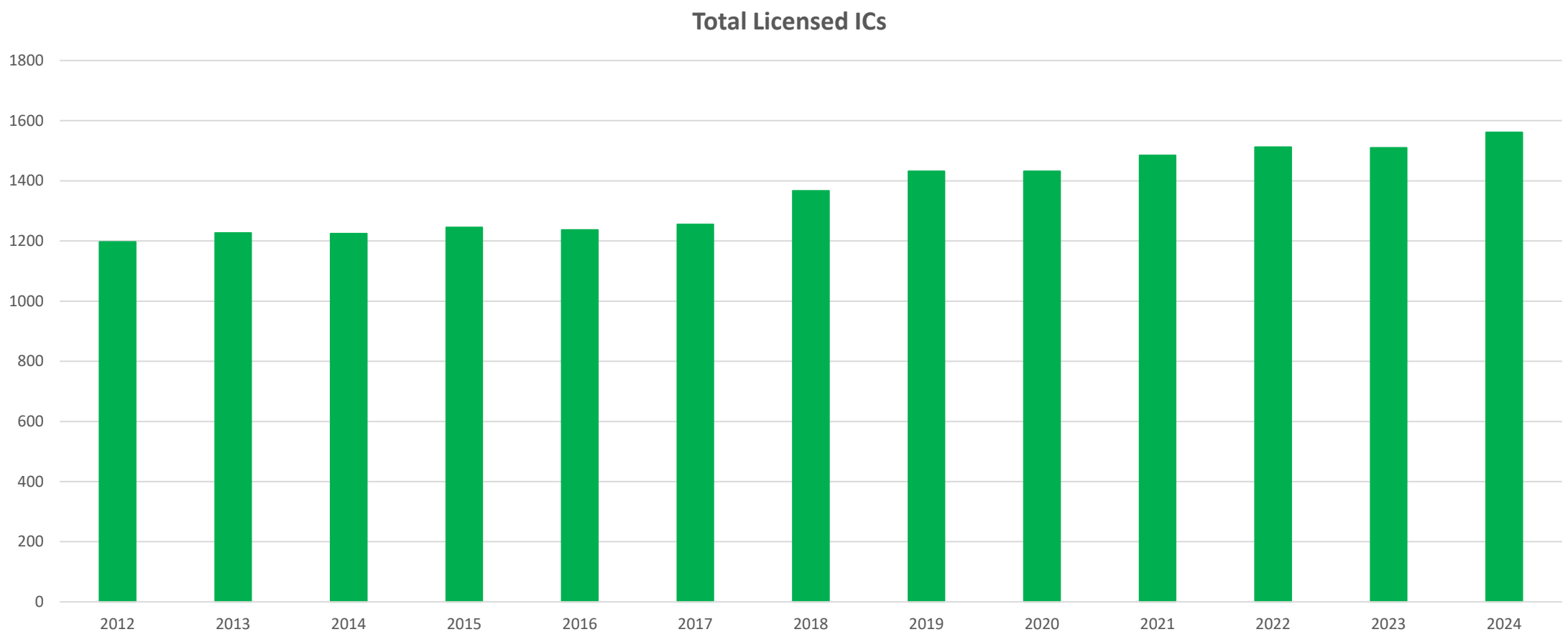


In MI EMSIS

	Valid # in MIEMSIS	Total Licensees	Percentage
EMR/MFR	1739	5434	32%
EMT	5766	14190	41%
AEMT	185	303	61%
Paramedic	4911	9509	52%

- As pulled from MI EMSIS on 3/17/2025
- Still a fair number of invalid IDs present

2024 Year End Stats



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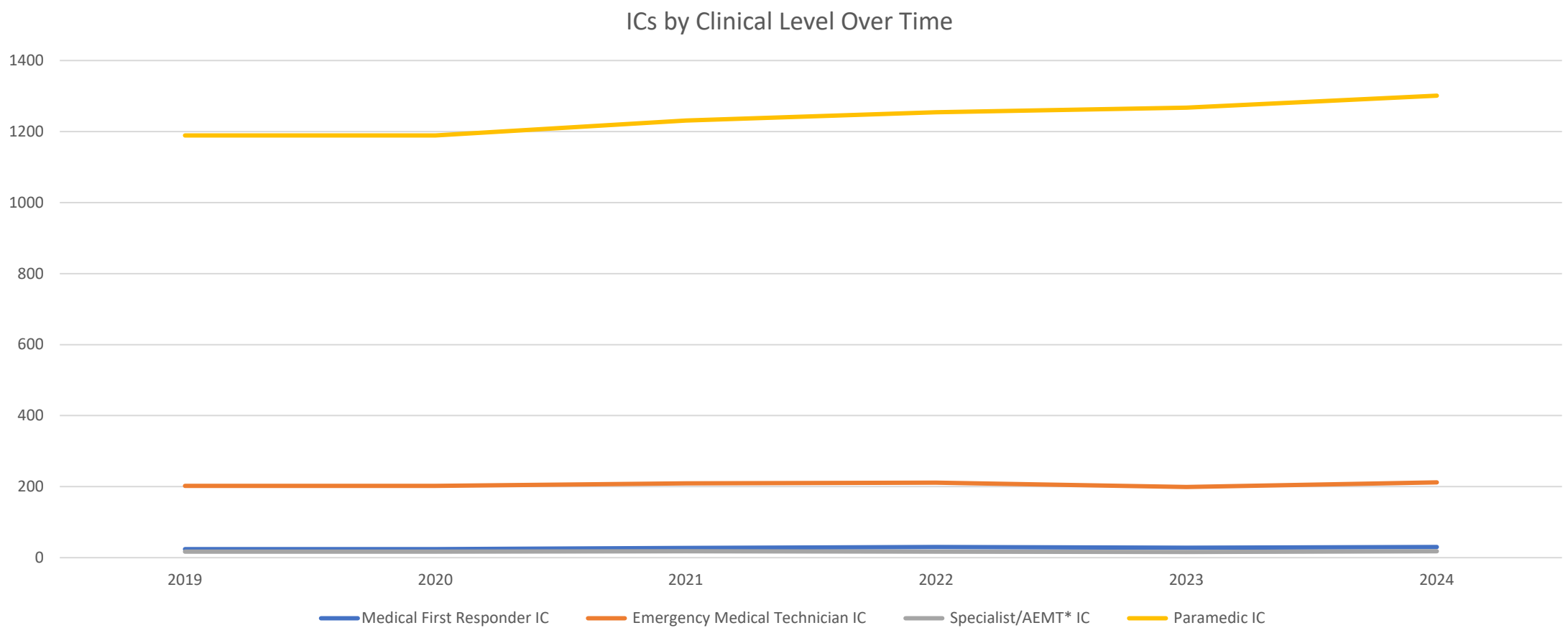


What is an active IC?

Instructor Type	Instructors	Coinstructors	Duplicates	Total Active ICs	Total Licensed ICs
Continuing Education	195	57			
Initial	32	2			
Refresher	0	0			
2021	**227**	**59**	**-25**	**261**	**1434**
Continuing Education	198	101			
Initial	106	7			
Refresher	8	0			
2022	**312**	**108**	**-68**	**352**	**1469**
Continuing Education	202	106			
Initial	102	2			
Refresher	5	0			
2023	**309**	**108**	**-72**	**345**	**1509**
Continuing Education	217	110			
Initial	93	2			
Refresher	3	0			
2024	**313**	**112**	**-67**	**358**	**1506**

Enrollment Numbers:

Paramedic	2020	2021	2022	2023	2024
Enrolled	570	687	597	591	796
Completed	337	404	435	427	532

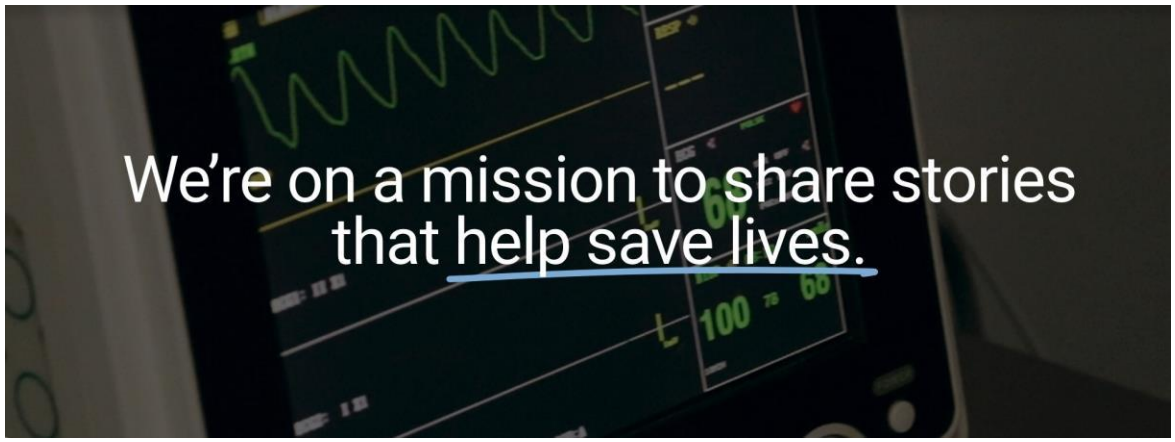
EMT	2020	2021	2022	2023	2024
Enrolled	2331	3288	2817	3058	3250
Completed	1410	2738	2043	2187	2334

State Medical Director Report

William Fales, MD, FAEMS, FACEP

falesw@Michigan.gov

Six Minutes to Live



Many lives are lost across USA because emergency services fail

Turf wars between ambulance, fire crews cause deadly delays

By Robert Davis
USA TODAY

WASHINGTON — Help came too late for Julia Rusnek. The 21-year-old Yale sociology student, an accomplished runner, collapsed on a busy street corner in the nation's capital on a summer evening in 1999 after working out at a nearby gym.

Rusnek had more than a fighting chance to live. She was healthy except for a hidden condition that caused a sudden electrical short circuit in her heart. Her heart needed a zap — within six minutes — from a common medical device known as a defibrillator. Bystanders saw her fall, rushed to help and immediately called 911.

But Rusnek's life ticked away on the corner where she fell. Twelve minutes passed before an ambulance crew connected a defibrillator to her chest. Like thousands of others every year in cities across the country, Rusnek lost any chance she had to survive because of an emergency medical system that consistently fails to save as many lives as it should.

In post-9/11 America, where war and fears of terrorist attacks have brought the need for effective, fast response into sharp focus, a USA TODAY investigation finds that emergency medical systems in most of our

6 MINUTES to live or die
SPECIAL REPORT

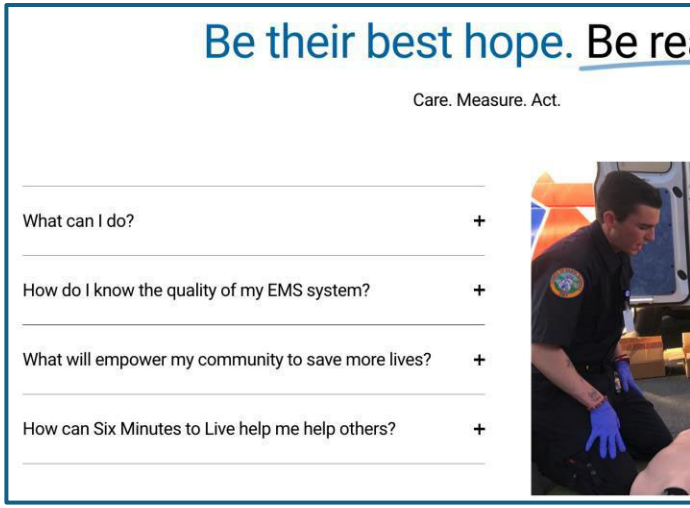
A life lost: Julia Rusnek, 21, a Yale student who competed as a runner, was visiting the nation's capital in 1999 when her heart short-

3/9/25

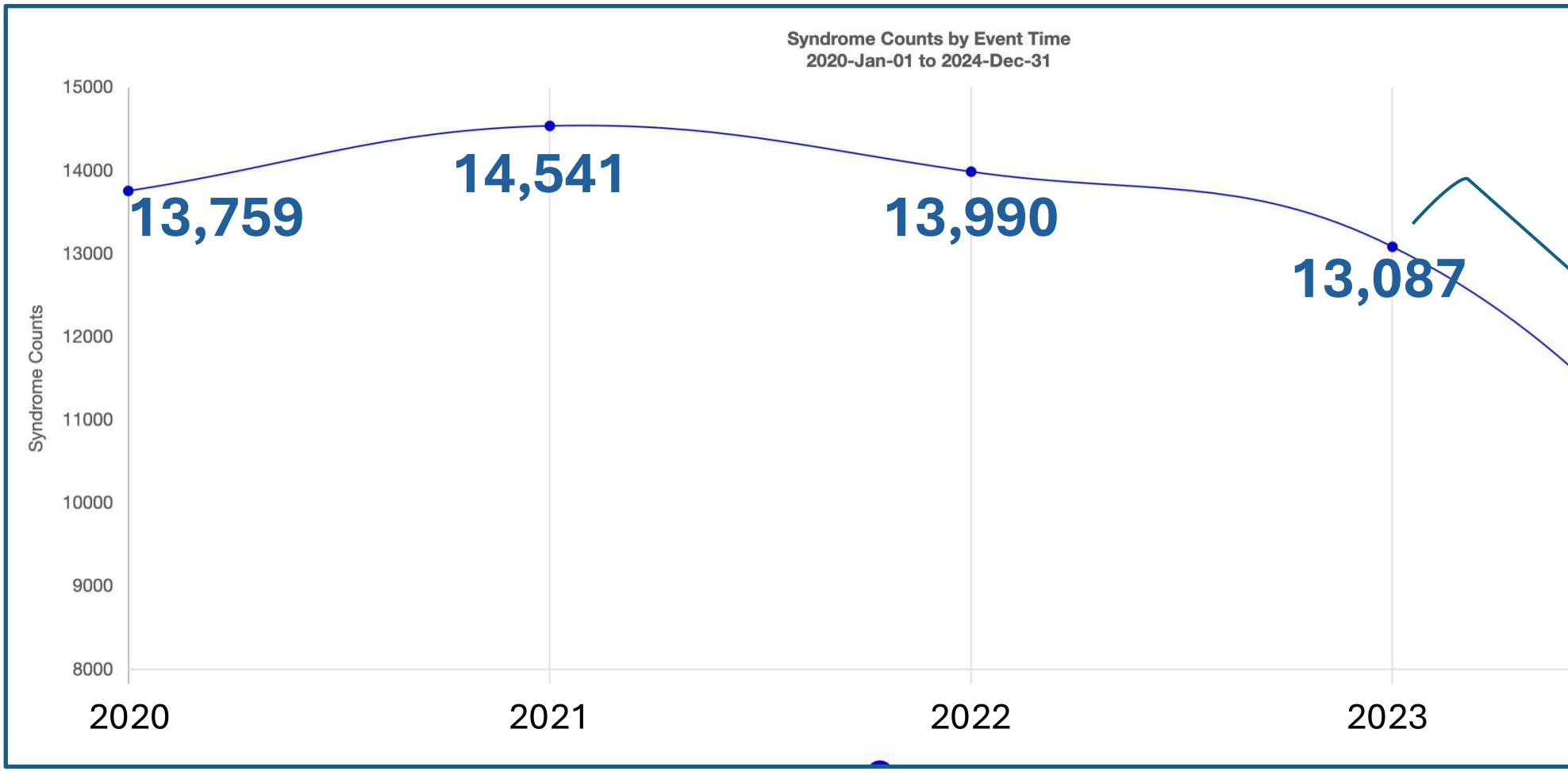
Original USA Today series from 2003: "Six Minutes to Live or Die"

Bob Davis' 2003 Article Series from the USA Today titled "Six Minutes to Live or Die"

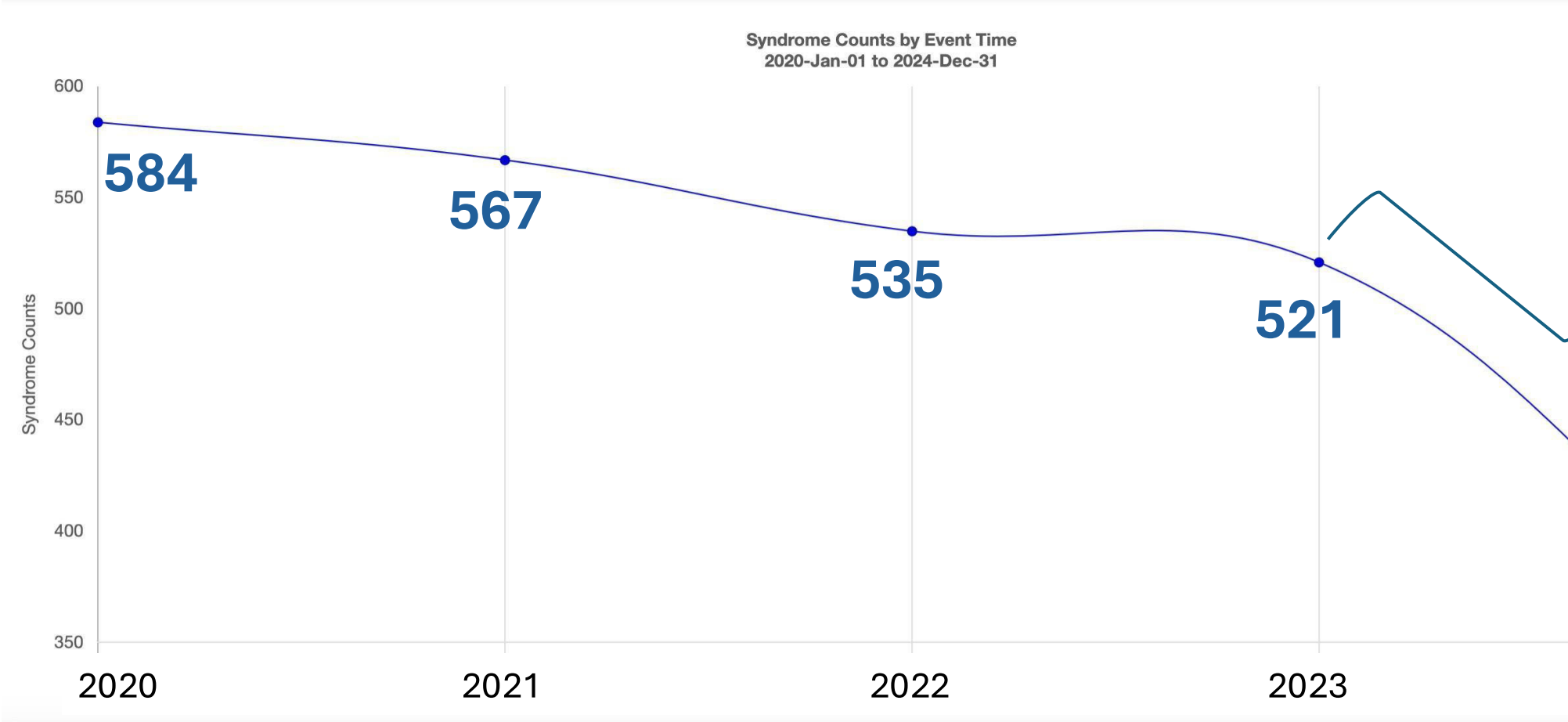
Read More



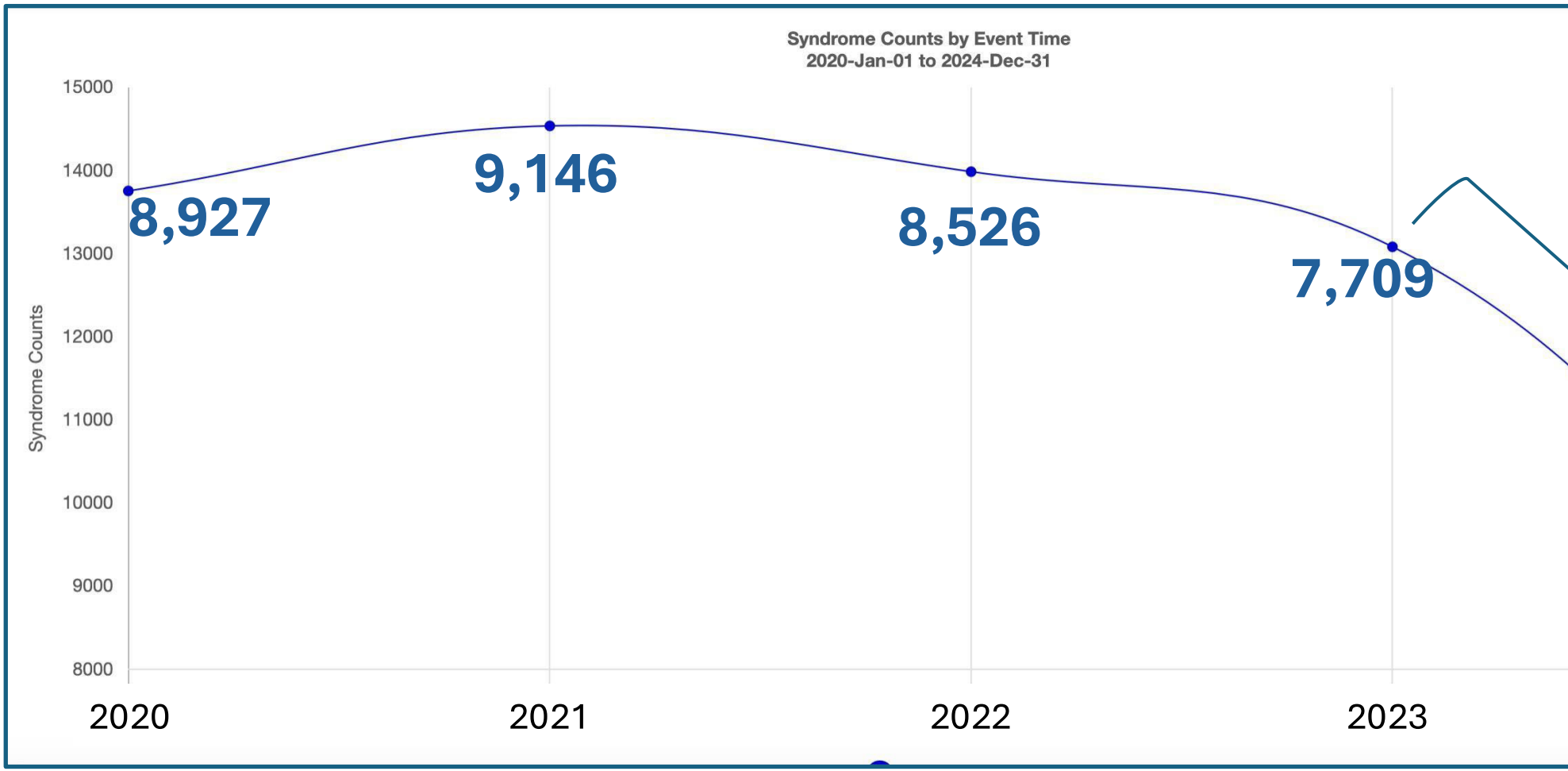
Opioid Syndrome 2020-2024 - N=64,2



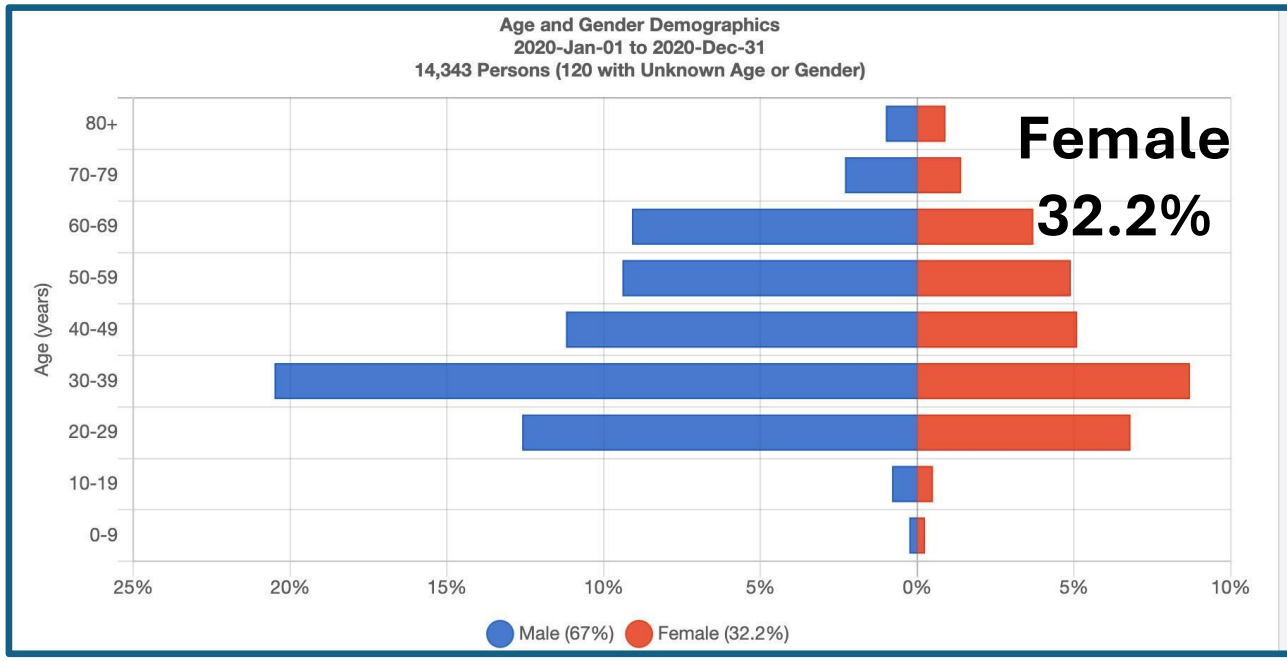
Fatal Opioid Syndrome 2020-2024 - N=2

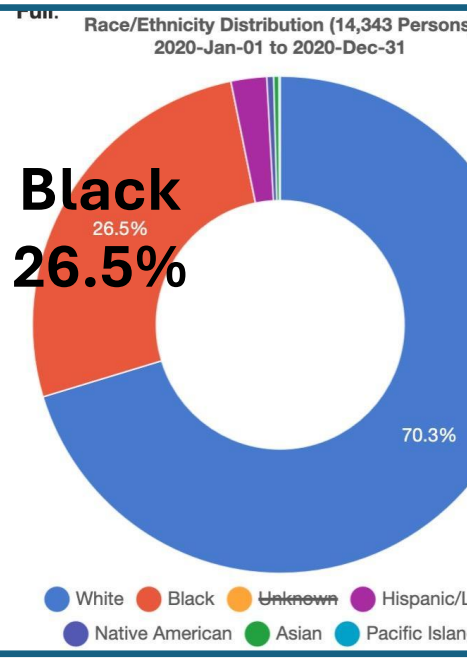


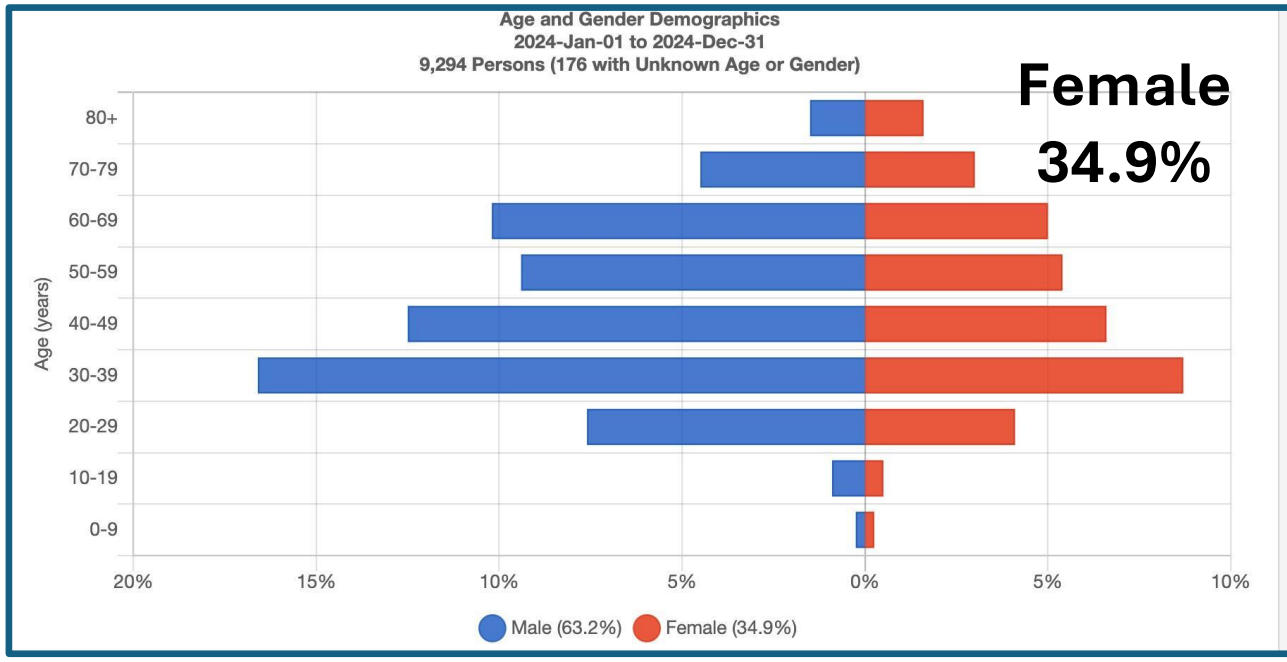
Opioid Syndrome Receiving EMS Naloxo
2020-2024 - N=39,203

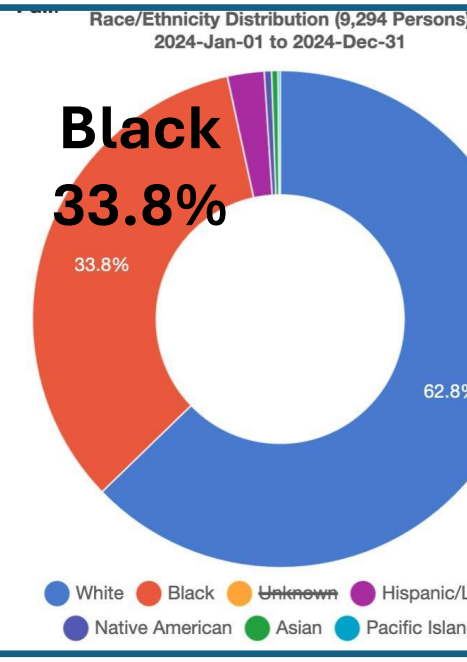


OPIOID SYNDROME

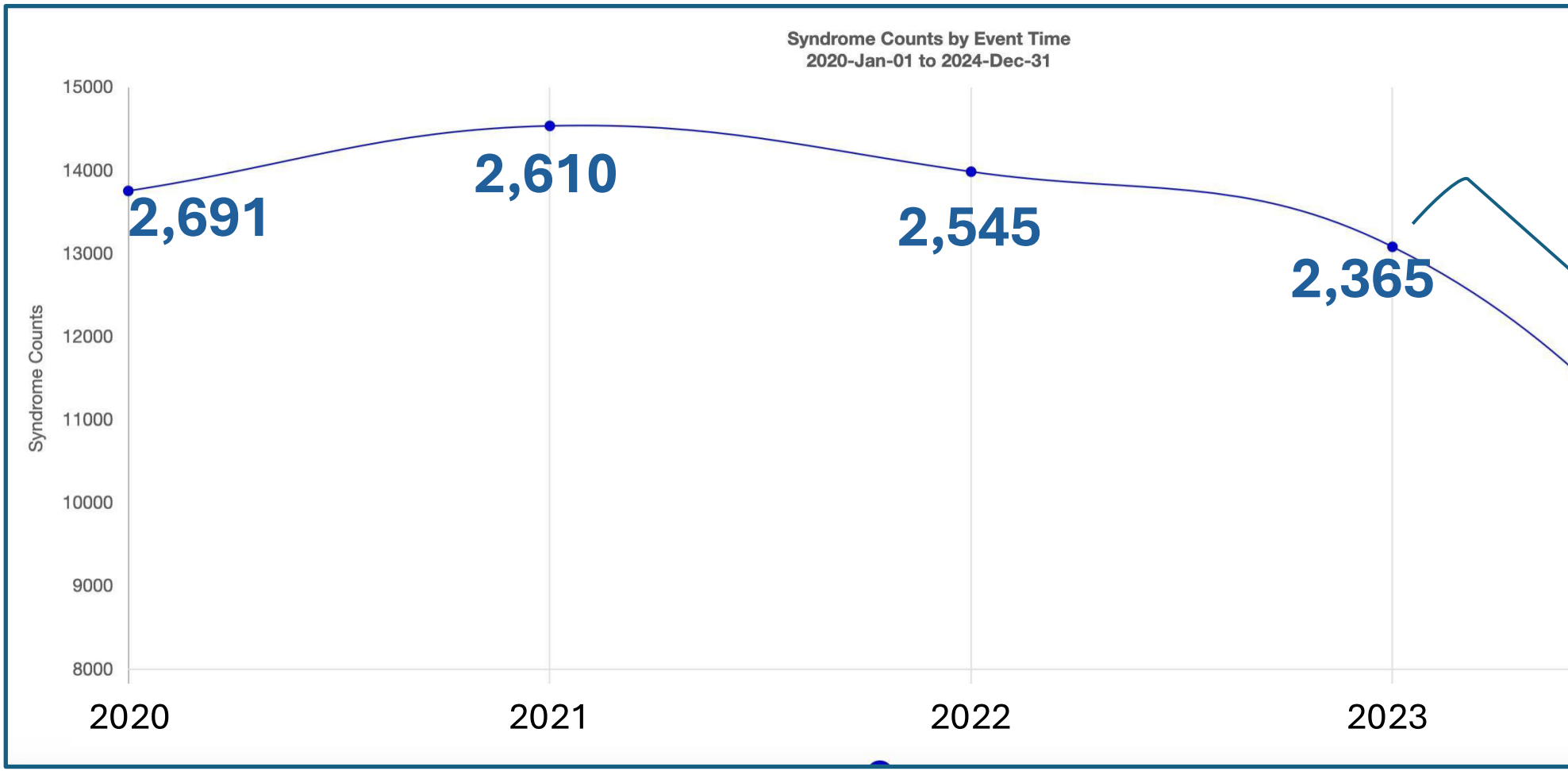




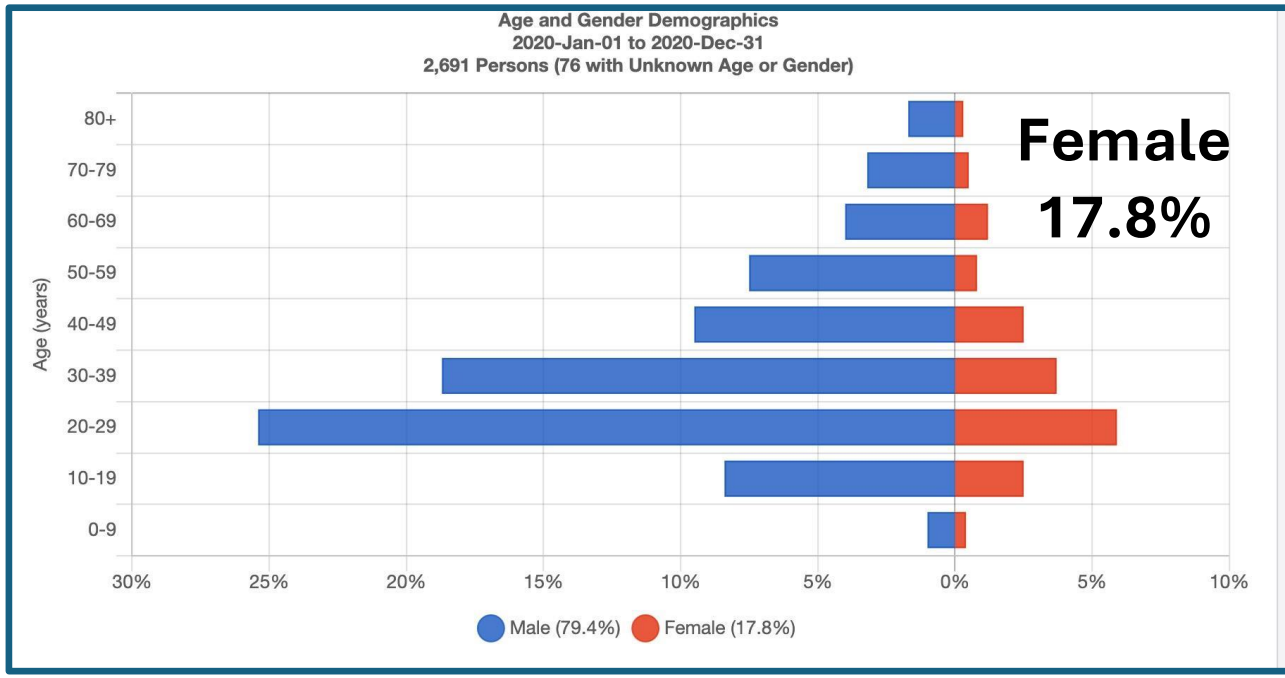


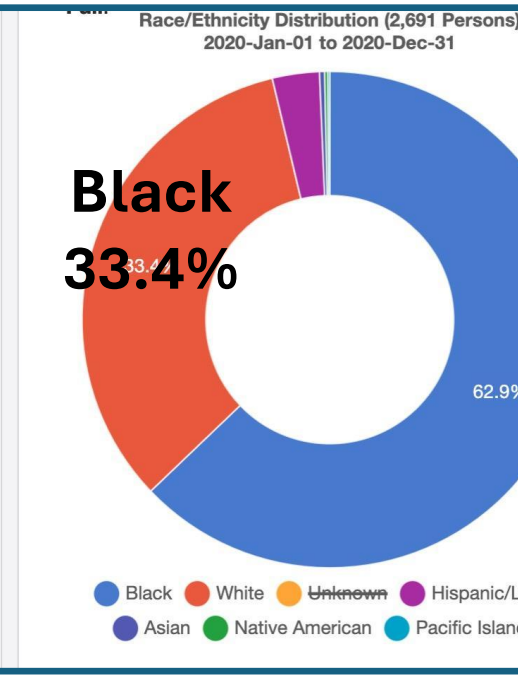


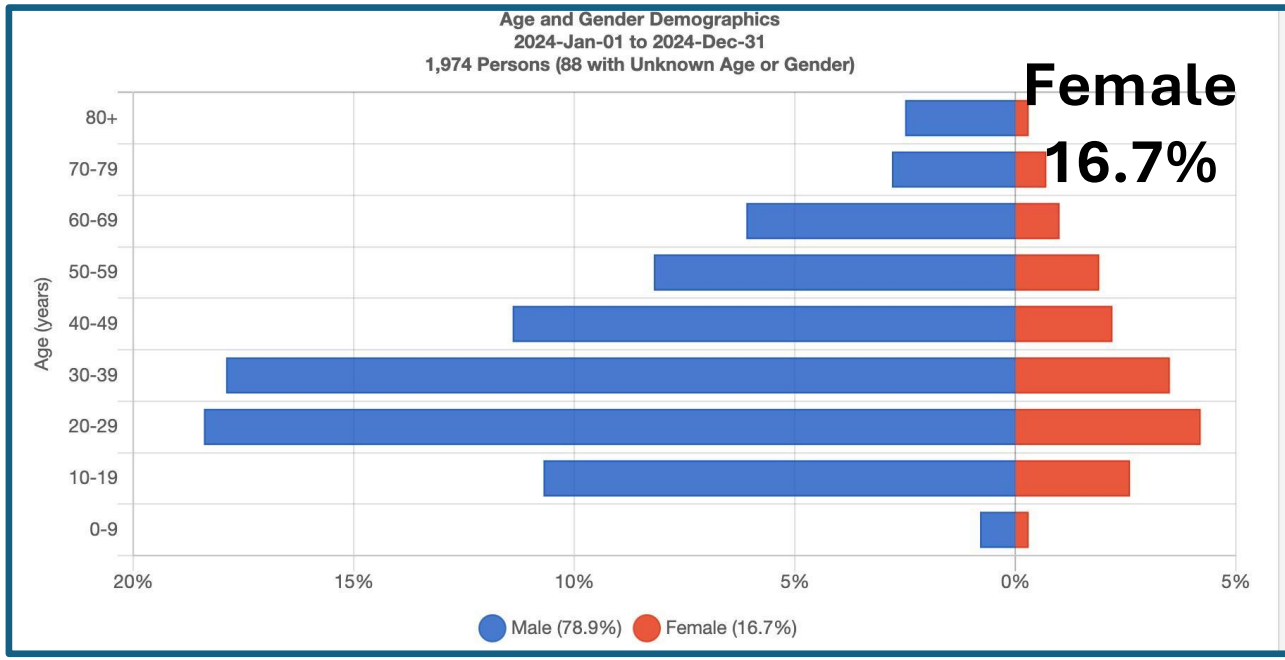
Firearm Injuries 2020-2024 – N=12,185

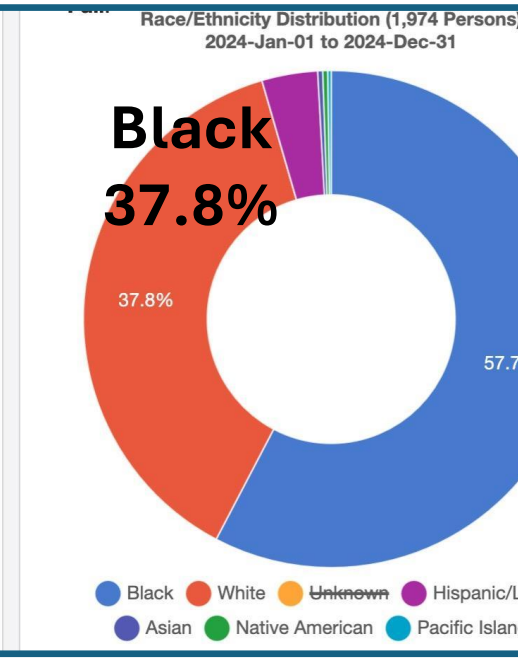


FIREARM INJURIES

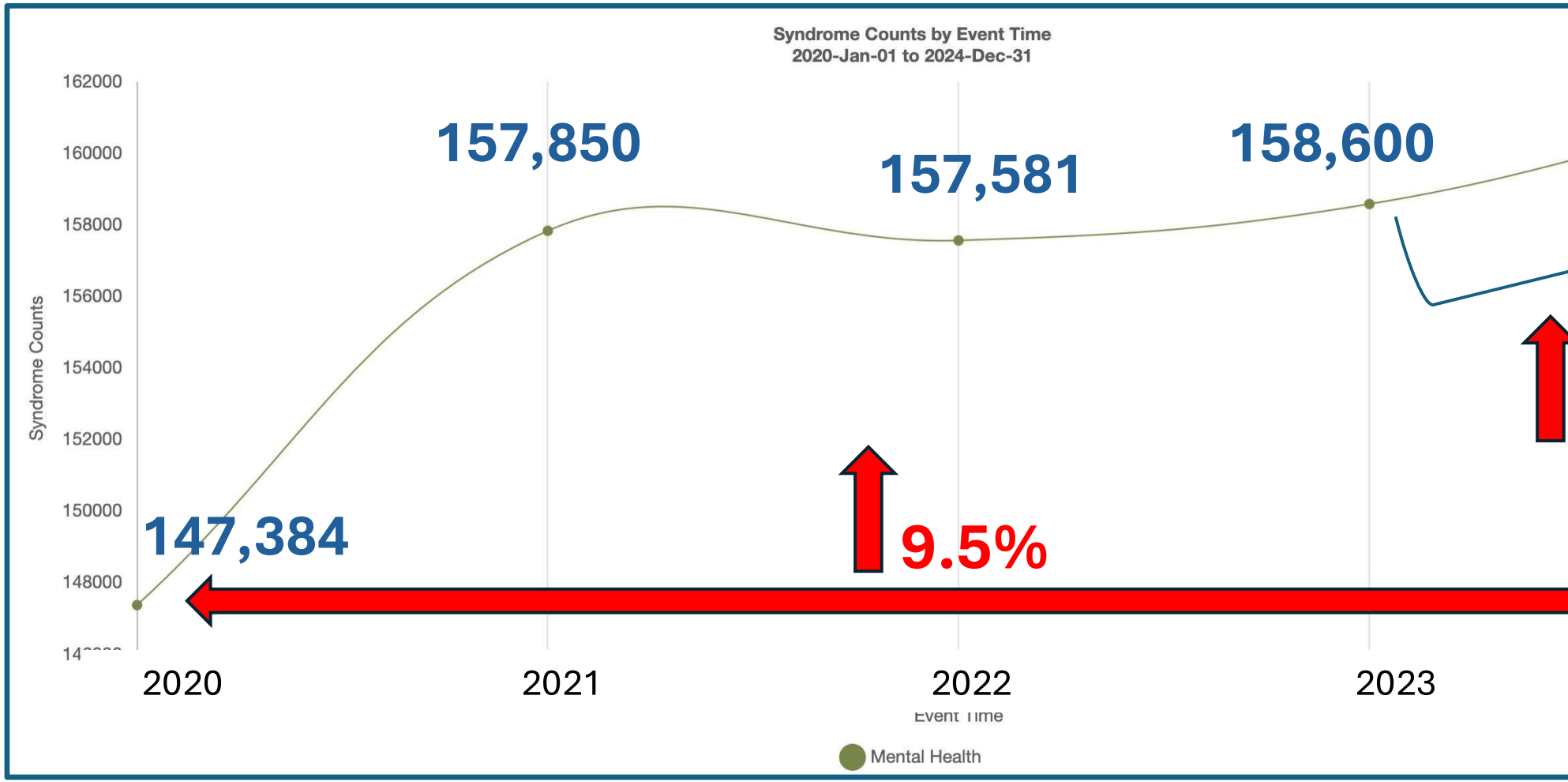




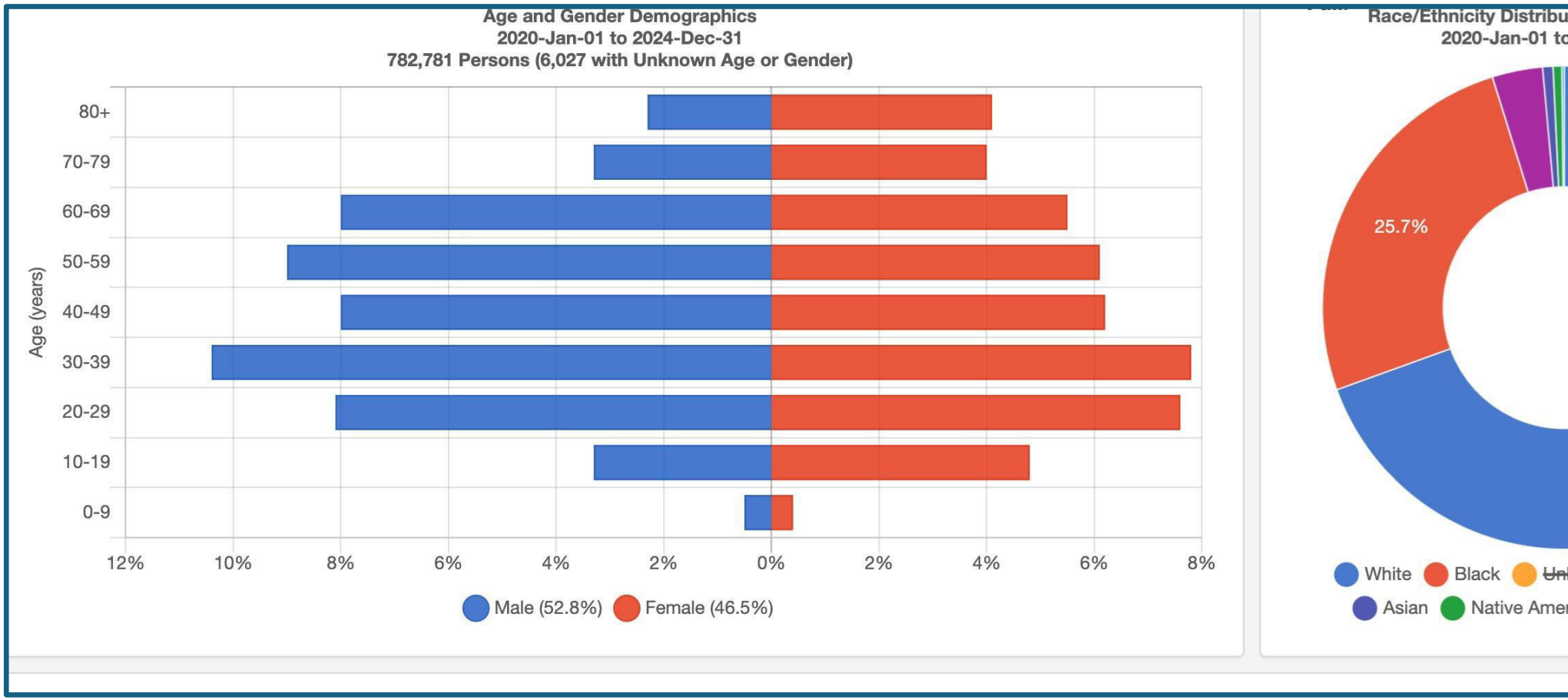




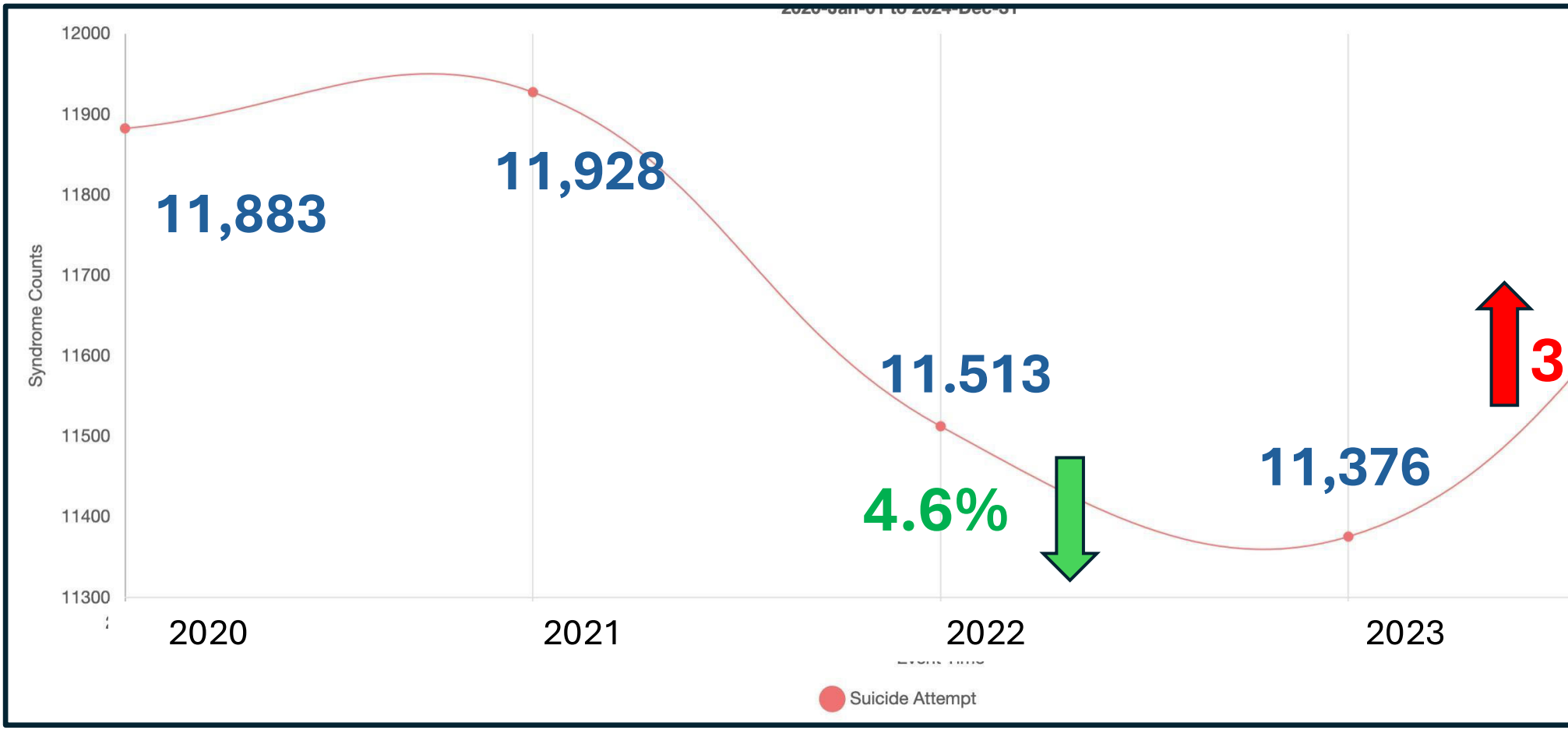
Mental Health Syndrome 2020-2024 – N=



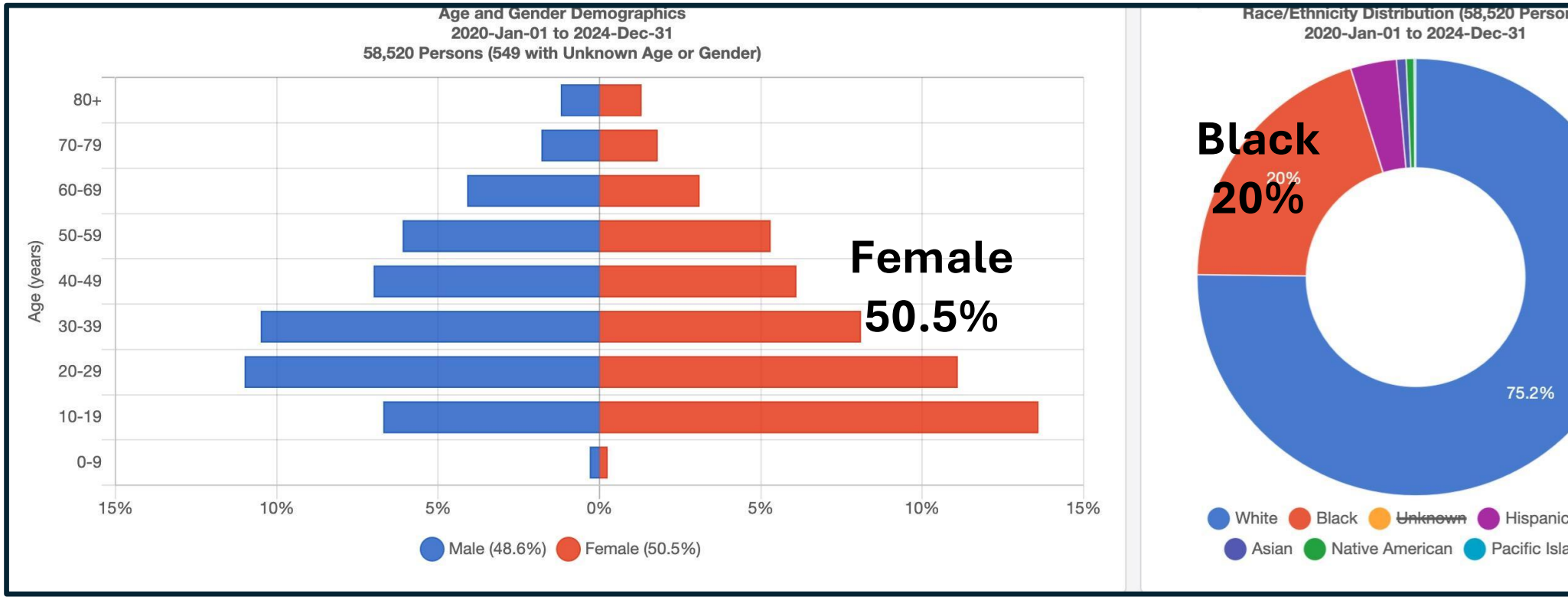
Mental Health Syndrome 2020-2024 – N=



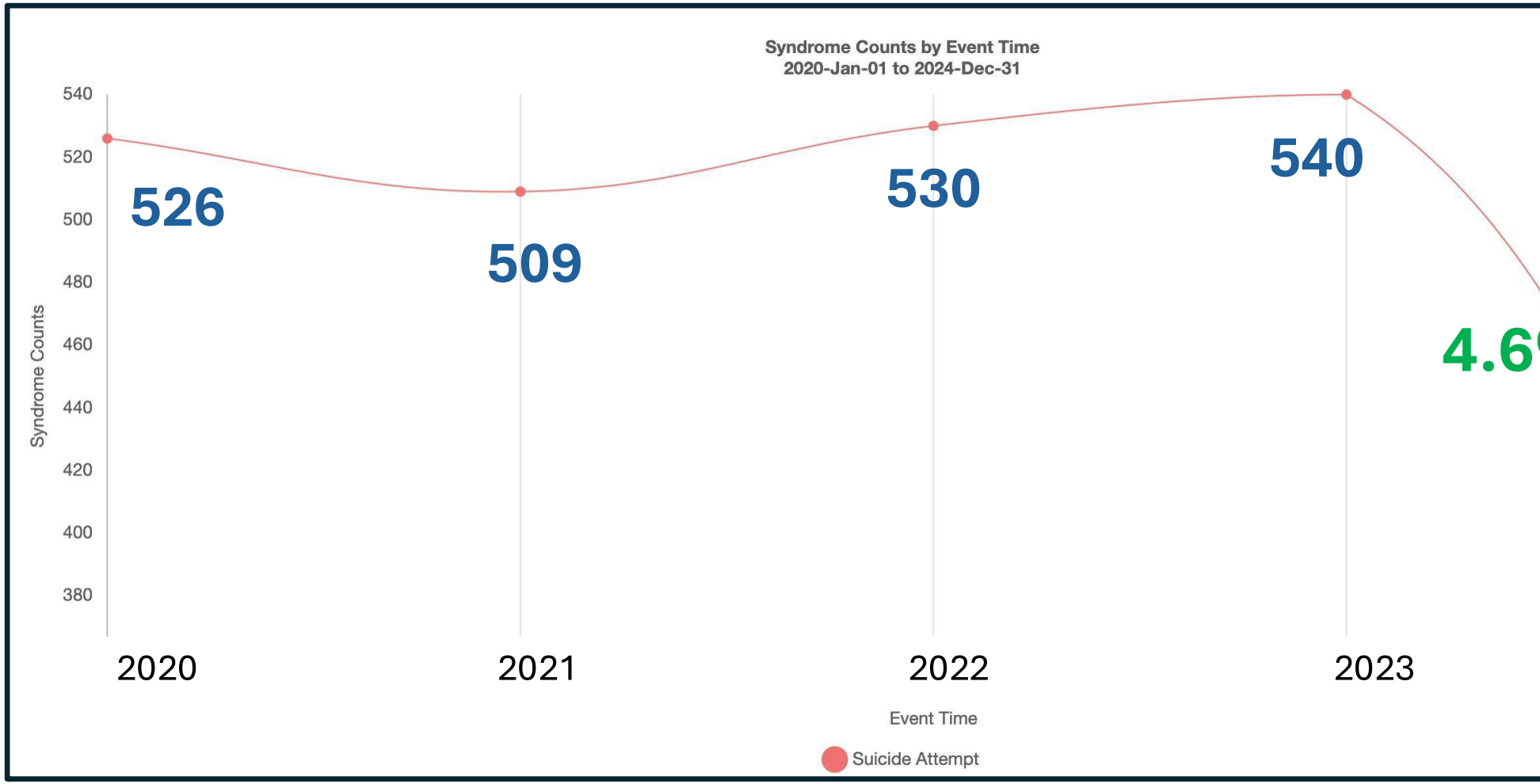
Suicide Attempt 2020-2024 – N=58,520



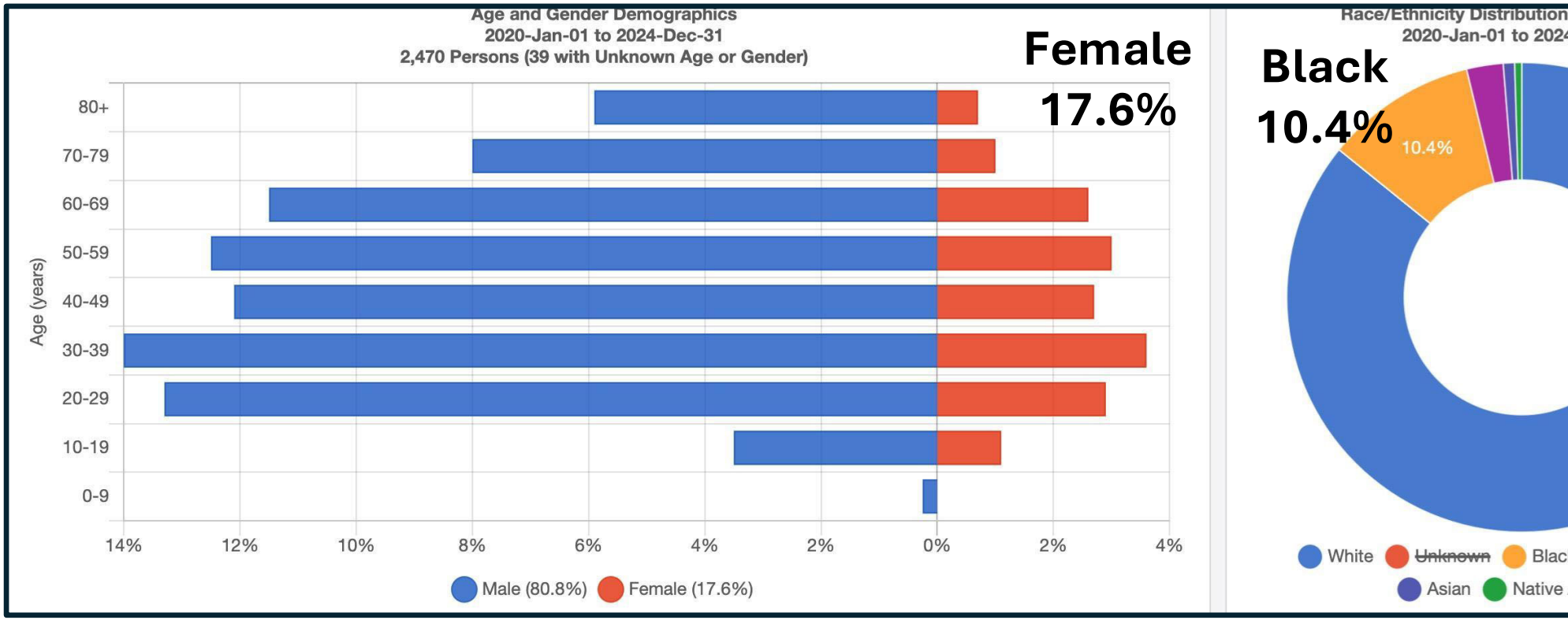
Suicide Attempt 2020-2024 – N=58,520



Fatal Suicide Attempts 2020-2024 – N=2
(4.2% of attempts)



Fatal Suicide Attempts 2020-2024 – N=2
(4.2% of attempts)



Thanks

falesw@Michigan.gov

biospatial Syndrome Definitions

Alcohol

NCBP-defined syndrome based on alcohol-related keywords in the record narrative or chief complaint (e.g., "alcohol", "etoh", "vodka", "intoxication", "drunk", "consumption", etc.). Relevant keyword counts for each record are compared to counts for known alcohol records. If keyword counts for the record are consistent with counts for known alcohol records, the record is considered likely to be an alcohol-related incident.

Burns

Categorical syndrome definition intended to detect incidents involving a burn injury. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a burns incident if any of the following are true:
  - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) **OR** Cause of Injury (eInjury.01) indicate any of the following ICD-10 codes (sub-codes included): T20-T28, T30-T32.
  - Mechanism of Injury (eInjury.02) is 2902003: Burn
  - Vehicular, Pedestrian, or Other Injury Risk Factor (eInjury.04) is 2904025: "Burn, without other trauma" or 2904027: "Burn, with trauma mechanism".
  - Protocols Used (eProtocols.01) is 9914085: Injury-Burns-Thermal.
- NEMSIS v2: Labeled as a burns incident if any of the following are true:
  - Mechanism of Injury (E10_03) is 2040: Burn
  - Protocols Used (E17_01) is 6840: Burns

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.

COVID-19

The COVID-19 syndrome is designed to capture potential Coronavirus Disease 2019 (COVID-19, also referred to as Wuhan coronavirus or 2019-nCoV) patients. While EMS may not have the capability to diagnose COVID-2019, documentation and detection of possible cases will assist users in surveillance and may initiate follow-up investigation. This syndrome analyzes the record for symptoms of respiratory, gastro-intestinal, or influenza-like illness (fever, cough, shortness of breath, lower respiratory infection, pleural effusion, diarrhea, etc.), as well as indication of travel to an affected geographic region (Asia, China, Europe, Iran, Italy), patient contact with someone who has traveled to one of those regions, or patient contact with someone who may have COVID-19.

A NEMSIS v3 or v2 record meets the syndrome criteria for COVID-19 if either of the following are true:

1. The provider documents that the patient is a suspected or confirmed COVID-19 case:
    - Chief complaint (E09_05; eSituation.04) match keywords indicating COVID-19: "COVID-19", "COVID 19", "COVID".
    - Narrative (E13_01; eNarrative.01) or chief/secondary complaint (E09_05/E09_08; eSituation.04) match keywords or phrases indicating COVID-19:
        - "confirmed", "infected with", "positive", "suspected" and other similar terms preceding "COVID-19", "coronavirus", and variants
        - "COVID-19 alert", "COVID positive", and variants
        - "COVID-19 - confirmed by testing", "COVID-19 - exposure to confirmed", "COVID-19 - suspected"
    - NEMSIS V3 provider primary or secondary impression (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes:
        - B97.29: Other coronavirus as the cause of diseases classified elsewhere
        - Z20.828: Contact with...exposure to other viral communicable diseases
        - Z20.9: Contact with...exposure to unspecified communicable diseases
    - NEMSIS V3 medical/surgical history (eHistory.08) indicates the following ICD-10-CM code:
        - B97.29: Other coronavirus as the cause of diseases classified elsewhere
    - Emergency Department Diagnosis (eOutcome.10) or Hospital Diagnosis (eOutcome.13) specify the WHO emergency code for COVID-19, U07.1.
2. The provider documents symptoms of COVID-19 **AND** patient travel to an affected region/patient contact with someone who traveled to an affected region/patient contact with a COVID-19 patient.
    - Documentation of COVID-19 symptoms may be extracted in several ways:
        - The record matches the criteria for the Biospatial Gastrointestinal, Respiratory, or Influenza-like Illness syndromes.
        - Body temperature (E14_20; eVitals.24) is greater than or equal to 38 degrees Celsius.
        - Pulse oximetry (E14_09; eVitals.12) is less than 70%.
        - NEMSIS V2: Primary Symptom (E09_13) or Other Associated Symptoms (E09_14) indicate "Breathing Problem", "Diarrhea", or "Fever".
        - NEMSIS V3: Primary Symptom (eSituation.09), Other Associated Symptoms (eSituation.10), or Provider primary or secondary impression (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes (sub-codes included): B34.2, J11, J12.89, J12.9, J20.8, J20.9, J22, J40, J80, J98.8, O98.5, R05, R06.00, R06.02, R19.7, R50.9.
        - NEMSIS V3 Destination Team Pre-arrival Alert or Activation (eDisposition.24) is 4224021: "Yes - Biological/Infectious Precautions"
    - Documentation of patient travel or contact with infectious persons may be extracted in several ways:
        - Narrative (E13_01; eNarrative.01) or chief/secondary complaint (E09_05/E09_08; eSituation.04) match keywords or phrases from one of five patient travel/contact groups:
            - Asia (Japan, Hong Kong, Singapore, Korea)
            - China (China, Wuhan, Hubei, Beijing, Shanghai)

        - Europe (Austria, Belgium, Denmark, Europe, France, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, U.K.)
        - Iran (Iran, Tehran, Qom, Arak, Guilan)
        - Italy (Italy, Milan, Venice, Bologna, Turin)
    - Specific National Custom Elements indicate travel outside of the patient's community (any of the following):
        - eHistory.901 - Recent Travel is 9922005: "Yes"
        - eHistory.904 - Recent International Travel is not empty.
        - eHistory.905 - Recent State Travel is not empty
    - NEMSIS V3 Recent Exposure to Infectious Disease (National Custom Element eHistory.903) is 9922005: "Yes"

Cardiac Arrest

Categorical syndrome definition intended to detect incidents involving a cardiac arrest. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as cardiac arrest if any of the following are true:
    - Cardiac arrest (eArrest.01) indicates "Yes, Prior to EMS Arrival" or "Yes, After EMS Arrival".
    - Primary Symptom (eSituation.09), Other Associated Symptoms (eSituation.10), Provider's Primary Impression (eSituation.11), **OR** Provider's Secondary Impressions (eSituation.12) indicate the following ICD-10-CM code (sub-codes included): I46.
- NEMSIS v2: Labeled as cardiac arrest if any of the following are true:
    - Cardiac arrest (E11_01) indicates "Yes, Prior to EMS Arrival" or "Yes, After EMS Arrival".
    - Provider primary/secondary impression (E09_15, E09_16) is "427.50 - Cardiac arrest".

Cardiovascular

Categorical syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of a cardiovascular issue. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a cardiovascular incident if any of the following are true:
    - Cardiac Arrest (eArrest.01) indicates "Yes, Prior to EMS Arrival" or "Yes, After EMS Arrival".
    - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): I00-I99, G45, G46.3, G46.4, R00, R01, R07.89, R07.9.
    - Cardiac Rhythm / Electrocardiography (ECG) (eVitals.03) is one of the following:
        - 9901007: Atrial Fibrillation

        - 9901009: Atrial Flutter
        - 9901011: AV Block – 1st Degree
        - 9901013: AV Block – 2nd Degree – Type 1
        - 9901015: AV Block – 2nd Degree – Type 2
        - 9901017: AV Block – 3rd Degree
        - 9901019: Junctional
        - 9901023: Non-STEMI Anterior Ischemia
        - 9901025: Non-STEMI Inferior Ischemia
        - 9901027: Non-STEMI Lateral Ischemia
        - 9901029: Non-STEMI Posterior Ischemia
        - 9901030: Non-STEMI Septal Ischemia
        - 9901037: Premature Atrial Contractions
        - 9901039: Premature Ventricular Contractions
        - 9901051: STEMI Anterior Ischemia
        - 9901053: STEMI Inferior Ischemia
        - 9901055: STEMI Lateral Ischemia
        - 9901057: STEMI Posterior Ischemia
        - 9901058: STEMI Septal Ischemia
        - 9901059: Supraventricular Tachycardia
        - 9901061: Torsades De Points
        - 9901069: Ventricular Tachycardia (With Pulse)
    - Stroke Scale Score (eVitals.29) indicates a positive stroke assessment.
    - Protocols Used (eProtocols.01) is any of the following:
        - 9914055: General-Cardiac Arrest
        - 9914117: Medical-Cardiac Chest Pain
        - 9914143: Medical-ST-Elevation Myocardial Infarction (STEMI)
        - 9914145: Medical-Stroke/TIA
    - Destination Team Pre-arrival Alert or Activation (eDisposition.24) is any of the following:
        - 4224005: "Yes - Cardiac Arrest"
        - 4224013: "Yes - STEMI"
        - 4224015: "Yes - Stroke"
- NEMSIS v2: Labeled as a cardiovascular incident if any of Provider Primary Impression (E09_15), Provider Secondary Impression (E09_16), Cardiac Arrest (E11_01), Cardiac Rhythm (E14_03), Stroke Scale Score (E14_24), Protocols Used (E17_01), **OR** Procedure (E19_03) indicate such an event. Contact biospatial for more details regarding the implementation for NEMSIS v2.

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.
- Cardiac Arrest Etiology (E11_02; eArrest.02) is present and is not "Cardiac (Presumed)".

Chest Pain

Categorical syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of chest pain. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a chest pain incident if any of the following are true:
    - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): I20, I21, I22.2, I24.8, I24.9, I25.10, I25.110, I25.5, I25.6, R07.1, R07.2, R07.8, R07.9.
    - Protocols Used (eProtocols.01) is 9914117: Medical-Cardiac Chest Pain
- NEMSIS v2: Labeled as a chest pain incident if any of the following are true:
    - Provider Primary Impression (E09_15) indicates 1650: 786.50 - Chest pain / discomfort
    - Provider Secondary Impression (E09_16) indicates 1785: 786.50 - Chest pain / discomfort
    - Protocols Used (E17_01) is 6860: Cardiac Chest Pain

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.

Child Abuse and Neglect

Categorical syndrome definition based on the Center for Disease Control and Prevention's Suspected and Confirmed Child Abuse and Neglect v1 definition for ESSENCE. A NEMSIS v3 or v2 record is labeled as a suspected child abuse or neglect incident if one or more of the following are true:

- Patient age (E06_14, E06_15; ePatient.15, ePatient.16) is less than or equal to 17 years of age **AND** one or more of the following are true:
    - The record matches the criteria of the CDC Sexual Violence V3 syndrome.
    - Cause of Injury (E10_01) is 9520: Child battering (E967.0).
    - Cause of Injury (eInjury.01) indicates any of the following ICD-10 codes (sub-codes included): T74.02, T74.12, T74.22, T74.32, T74.4, T74.52, T74.62, T74.92, T76.02, T76.12, T76.22, T76.32, T76.52, T76.62, T76.92, Y07.1, Y07.4, Y07.5, Y07.6, Y07.9, Z04.42, Z04.72, Z04.81, Z04.82.
    - Provider impressions (eSituation.11, eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): T74.02, T74.12, T74.22, T74.32, T74.4, T74.52, T74.62, T74.92, T76.02, T76.12, T76.22, T76.32, T76.52, T76.62, T76.92, Z04.42, Z04.82, Z04.81, Z04.82.
    - Chief/secondary complaint (E09_05, E09_08; eSituation.04) contain the following keywords or phrases (including common misspellings and variants) (negative phrases are excluded, e.g., "denies rape", "did not force sex"): "abandon", "abandonment", "neglect".
    - Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain the following keywords or phrases (including common misspellings and variants) (negative phrases are excluded, e.g., "denies rape", "did not force sex"): "sexual assault", "sexually abused", "forced sex", "abandoned child", "child abuse", "physical abuse", "molest", "child neglect".

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Constitutional

NCBP-defined syndrome based on constitutional-related keywords in the record narrative or chief complaint (e.g., "myalgia", "body aches", "chills", "pre-syncopal", "faint", "fever", etc.). Relevant keyword counts for each record are compared to counts for known constitutional records. If keyword counts for the record are consistent with counts for known constitutional records, the record is considered likely to be a constitutional incident.

Drowning

Categorical syndrome definition intended to detect incidents involving drowning. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a drowning if **one or more** of the following are true:
  - Cause of Injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): T75.1, V90, V92, W65, W67, W69, W73, W74.
  - Cardiac arrest etiology (eArrest.02) is "3002003 - Drowning/Submersion"
  - Provider impression field(s) (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes (sub-codes included): T75.1.
- NEMSIS v2: Labeled as a drowning if **one or more** of the following are true:
  - Cause of injury (E10_01) is "9525 - Drowning (E910.0)"
  - Cardiac arrest etiology (E11_02) is "2260 - Drowning"

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Fall: From Height

Categorical syndrome definition intended to detect incidents involving a patient fall from height. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a fall from height if **one or more** of the following are true:
  - Narrative (eNarrative.01) or chief/secondary complaint (eSituation.04) contains "fall from height", "fall(ing) off", "fall(ing) from", and variants. Certain phrases are excluded, for example: "fall from standing", "fall from sitting", "leads fell off", "leads fell from", "heard fall from", "almost falls off", "risk of falling from", "danger of falling off", "recently fell from".
  - Provider primary/secondary impression (eSituation.11/eSituation.12) or cause of injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): V80.0, W00.1, W00.2, W06, W08-W15, W16.0, W16.1, W16.3-W16.9, W17, X00.3, Y30.
  - Height of fall (eInjury.09) indicates a height greater than ground-level **AND** any of the criteria for a ground-level fall are met.
- NEMSIS v2: Labeled as a fall from height if **one or more** of the following are true:
  - Narrative (E13_01) or chief/secondary complaint (E09_05/E09_08) contains "fall from height", "fall(ing) off", "fall(ing) from", and variants. Certain phrases are

excluded, for example: "fall from standing", "fall from sitting", "leads fell off", "leads fell from", "heard fall from", "almost falls off", "risk of falling from", "danger of falling off", "recently fell from".
    - Height of fall (E10_10) indicates a height greater than ground-level **AND** any of the criteria for a ground-level fall are met.

Patient falls resulting from intentional injury are not included.

NEMSIS v2 provider primary/secondary impressions (E09_05, E09_06) are not considered as they do not include values specifically representing a fall.

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Fall: Ground Level

Categorical syndrome definition intended to detect incidents involving a patient fall from a ground-level height. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a ground-level fall if **one or more** of the following are true:
    - Narrative (eNarrative.01) or chief/secondary complaint (eSituation.04) contains "fall", "falling", "fell", "slip", "slipping", "slipped", "trip", "tripping", "tripped", and variants. Certain phrases are excluded, for example: "fall risk", "risk of fall", "risk of falling", "danger of fall", "almost fell", "fall precaution", "leads fell", "port slipped", "slipped disc", "rise and fall", "rise/fall", "fell asleep", "remainder of the trip", "alarm trip(ped)".
    - Provider primary/secondary impression (eSituation.11/eSituation.12) or cause of injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): V00.111, V00.121, V00.131, V00.141, V00.151, V00.181, V00.211, V00.221, V00.281, V00.311, V00.321, V00.381, V00.811, V00.821, V00.831, V00.891, W00.0, W00.9, W01, W03-W05, W07, W16.2, W18.0-W18.3, W19, E88X.0, R29.6
- NEMSIS v2: Labeled as a ground-level fall if **one or more** of the following are true:
    - Narrative (E13_01) or chief/secondary complaint (E09_05/E09_08) contains "fall", "falling", "fell", "slip", "slipping", "slipped", "trip", "tripping", "tripped", and variants. Certain phrases are excluded, for example: "fall risk", "risk of fall", "risk of falling", "danger of fall", "almost fell", "fall precaution", "leads fell", "port slipped", "slipped disc", "rise and fall", "rise/fall", "fell asleep", "remainder of the trip", "alarm trip(ped)".
    - Cause of Injury (E10_01) is "Falls (E88X.0)".

Patient falls resulting from intentional injury are not included.

NEMSIS v2 provider primary/secondary impressions (E09_05, E09_06) are not considered as they do not include values specifically representing a fall.

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Firearm Assault

Categorical syndrome definition based on the Center for Disease Control and Prevention's Assault Firearm Injury v1 definition for ESSENCE, which is intended to detect incidents involving a firearm injury by assault. This definition includes gunshot injuries by assault sustained from handguns, rifles, and shotguns. Injuries from air-powered, gas-powered, BB and pellet guns, as well as non-penetrating injuries associated with firearms (e.g., "pistol whipping") are excluded.

A NEMSIS v3 or v2 record is labeled as a firearm injury if **one or more** of the following are true:

- Cause of Injury (E10_01) is 9560 - Firearm Assault (E965.0)
- Cause of Injury (eInjury.01) indicates any of the following ICD-10-CM codes (sub-codes included): X93, X94, X95.8, X95.9.
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain "assault" (or common misspellings) **AND** any of the following are true:
    - Chief/secondary complaint (E09_05, E09_08; eSituation.04) contains a key word or phrase related to firearm-related injury: "gsw", "gun shot", "shooting", "bullet graze", or variants of "hit…bullet" and "graze…bullet".
    - **Both** of the following are true:
        - Narrative (E13_01; eNarrative.01) contains a key word or phrase related to firearm-related injury: "gsw", "gun shot wound", "bullet graze", or variants of "hit...bullet" and "graze...bullet".
        - Complaint reported by dispatch (E03_01; eDispatch.01) is 530 - "Stab/Gunshot Wound" or 2301063 - "Stab/Gunshot Wound/Penetrating Trauma".

Exclusions:

- Provider impressions (eSituation.11, eSituation.12) indicates Z51.89 "Encounter for other specified aftercare".
- Incident/Patient Disposition (E20_10, eDisposition.12) indicates cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or standby (no services or support provided).

Firearm Injury

Categorical syndrome definition based on the Center for Disease Control and Prevention's Firearm Injury v2 definition for ESSENCE, which is intended to detect incidents involving a firearm injury. This definition includes gunshot injuries sustained from handguns, rifles, and shotguns. Injuries from air-powered, gas-powered, BB and pellet guns, as well as non-penetrating injuries associated with firearms (e.g., "pistol whipping") are excluded.

A NEMSIS v3 or v2 record is labeled as a firearm injury if **one or more** of the following are true:

- Cause of Injury (E10_01) is one of the following:
    - 9560 - "Firearm Assault (E965.0)"
    - 9565 - "Firearm Injury (accidental) (E985.0)"
    - 9570 - "Firearm self inflicted (E955.0)"
- Cause of Injury (eInjury.01) indicates any of the following ICD-10-CM codes (sub-codes included): W32-W33, W34.00, W34.09, W34.10, W34.19, X72, X73, X74.8, X74.9, X93, X94, X95.8, X95.9, Y22, Y23, Y24.8, Y24.9, Y35.01, Y35.02, Y35.09, Y38.4.
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) contains a key word or phrase related to firearm-related injury: "gsw", "gun shot", "shooting", "bullet graze", or variants of "hit…bullet" and "graze…bullet".
- **Both** of the following are true:
    - Narrative (E13_01; eNarrative.01) contains a key word or phrase related to firearm-related injury: "gsw", "gun shot wound", "bullet graze", or variants of "hit…bullet" and "graze…bullet".
    - Complaint reported by dispatch (E03_01; eDispatch.01) is 530 - "Stab/Gunshot Wound" or 2301063 - "Stab/Gunshot Wound/Penetrating Trauma".

Exclusions:

- Provider impressions (eSituation.11, eSituation.12) indicates Z51.89 "Encounter for other specified aftercare".
- Incident/Patient Disposition (E20_10, eDisposition.12) indicates cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or standby (no services or support provided).

Firearm Injury - Intentional

Categorical syndrome definition based on the Center for Disease Control and Prevention's Intentional Firearm Injury v1 definition for ESSENCE, which is intended to detect incidents involving a self-inflicted intentional firearm injury. A NEMSIS v3 or v2 record is labeled as an intentional firearm injury if one or more of the following are true:

- Cause of Injury (E10_01) is 9570: Firearm self-inflicted (E955.0).
- Cause of Injury (eInjury.01) indicates any of the following ICD-10 codes (sub-codes included): X72, X73, X74.8, X74.9.
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or Report narrative (E13_01; eNarrative.01) contain any of "intentional", "self-harm", "self-inflicted", "suicide", "attempted to kill", or variants **AND**:
    - Chief/secondary complaint (E09_05, E09_08; eSituation.04) contains a key word or phrase related to firearm-related injury.
    - Both of the following are true:
        - Report narrative (E13_01; eNarrative.01) contains a key word or phrase related to firearm-related injury.
        - Complaint reported by dispatch (E03_01; eDispatch.01) is 530 ("Stab/Gunshot Wound") or 2301063 ("Stab/Gunshot Wound/Penetrating Trauma").

Exclusions:

- Provider impressions (eSituation.11, eSituation.12) indicates Z51.89 "Encounter for other specified aftercare".
- Incident/Patient Disposition (E20_10, eDisposition.12) indicates cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or standby (no services or support provided).

Firearm Injury - Unintentional

Categorical syndrome definition based on the Center for Disease Control and Prevention's Unntentional Firearm Injury v1 definition for ESSENCE, which is intended to detect incidents involving an unintentional firearm injury. A NEMSIS v3 or v2 record is labeled as an unintentional firearm injury if one or more of the following are true:

- Cause of Injury (E10_01) is 9565: Firearm injury (accidental) (E985.0).
- Cause of Injury (eInjury.01) indicates any of the following ICD-10 codes (sub-codes included): W32, W33, W34.00, W34.09, W34.10, W34.19, Y22, Y23, Y24.8, Y24.9.
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or Report narrative (E13_01; eNarrative.01) contain any of "accident", "unintentional" or variants **AND**:
    - Chief/secondary complaint (E09_05, E09_08; eSituation.04) contains a key word or phrase related to firearm-related injury.
    - Both of the following are true:
        - Report narrative (E13_01; eNarrative.01) contains a key word or phrase related to firearm-related injury.
        - Complaint reported by dispatch (E03_01; eDispatch.01) is 530 ("Stab/Gunshot Wound") or 2301063 ("Stab/Gunshot Wound/Penetrating Trauma").

Exclusions:

- Provider impressions (eSituation.11, eSituation.12) indicates Z51.89 "Encounter for other specified aftercare".
- Incident/Patient Disposition (E20_10, eDisposition.12) indicates cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or standby (no services or support provided).

Gastrointestinal

Composite syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of gastrointestinal disease or distress.

Gastrointestinal-related keywords (e.g., "rotavirus", "diarrhea", "stomach virus", "gi flu", "intestinal flu", "vomiting", etc.) in the record narrative and patient complaint are counted. If keyword counts for the record are consistent with counts for known gastrointestinal records, the record is considered likely to be a gastrointestinal incident.

Additionally, the record will be labeled as a gastrointestinal-related incident if any of the following are true:

- NEMSIS v3:
    - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): O21, R10.0, R10.3, R10.8, R10.9, R11, R12, R14, R15, R19.7.
- NEMSIS v2:
    - Primary symptom (E09_13) is 1435: Diarrhea OR 1465: Nausea/Vomiting
    - Other associated symptoms (E09_14) is 1540: Diarrhea OR 1570: Nausea/Vomiting
    - Provider's Primary Impression (E09_15) is 1615: 789.00 - Abdominal pain/problems
    - Provider's Secondary Impression (E09_16) is 1750: 789.00 - Abdominal pain/problems

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.

Heat-related Illness

Categorical syndrome definition intended to detect incidents involving heat-related illness. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as heat-related illness if one or more of the following are true:
    - Narrative (eNarrative.01) or complaint (eSituation.04) contains: "feeling overheated", "heat emergency", "heat exhaustion", "heat exposure", "heatstroke", "outside in the heat", or other variants.
    - Provider primary or secondary impression (eSituation.11, eSituation.12) **OR** cause of injury (eInjury.01) indicate any of the following ICD-10 codes (sub-codes included): T67.0 - T67.7.
    - Protocols used (eProtocols.01) is one of the following:
        - 9914027 - Environmental-Heat Exposure/Exhaustion
        - 9914029 - Environmental-Heat Stroke/Hyperthermia
- NEMSIS v2: Labeled as heat-related illness if the following is true:
    - Narrative (E13_01) or chief/secondary complaint (E09_05, E09_08) contains: "feeling overheated", "heat emergency", "heat exhaustion", "heat exposure", "heatstroke", "outside in the heat", or other variants.

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Heroin (VA)

Categorical syndrome definition defined by the Virginia Department of Health, intended to detect incidents involving heroin overdose. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a heroin overdose if **either** of the following are true:
  - Naloxone (or brand names) listed as Medication Administered and response to medication indicates patient improvement **AND one or more** of the following are true:
    - Primary impression ICD-10-CM code starts with T40.1 (Poisoning by and adverse effect of heroin).
    - Chief complaint or narrative contains "heroin", "herion", "heroine", "speedball", "speed ball", "spheroin", or "hod".
  - Primary impression ICD-10-CM code starts with T40.1 (Poisoning by and adverse effect of heroin) **AND** any of the following are true:
    - Medication Administered or naloxone administration are not documented.
    - Naloxone (or brand names) listed as Medication Administered and response to medication is not documented, is not unchanged, or is not worse.
- NEMSIS v2: Labeled as a heroin overdose if the following are both true:
  - Naloxone (or brand names) listed as Medication Administered and response to medication indicates patient improvement.
  - Chief complaint or narrative contains "heroin", "herion", "heroine", "speedball", "speed ball", "spheroin", or "hod".

NOTE: NEMSIS v2 primary impression field contains no values specific to heroin overdose.

Heroin Overdose (DOSE)

Categorical syndrome definition developed as a part of the CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System Guidance based on lessons from ESOOS and guidance from NCHS, CSTE, and SAMSHA, intended to detect incidents involving all heroin overdoses. **This syndrome is only applicable to ADT data.** Patients included are those meeting **any** of the following criteria:

- Discharge Diagnosis: ICD-9-CM codes indicate heroin poisoning (965.01, E850.0)
- Discharge Diagnosis: ICD-10-CM codes indicate Heroin Poisoning (T40.1X1A, T40.1X4A).
- Discharge Diagnosis: SNOMED Codes indicate heroin poisoning or overdose (295174006, 295175007, 295176008)
- Both of the following must be true:
  - Chief Complaint: Matches on an overdose-related term (overdose, poisoning (poison), nodding off, snort, ingestion (ingest, injest), intoxication (intoxic), unresponsive (unresponsiv), loss of consciousness (syncopy, syncope), shortness of breath (SOB), altered mental status (AMS))
  - Chief Complaint: Matches on a heroin-related term (heroin, herion, heroine, HOD, speedball, dope)

REFERENCE: Centers for Disease Control and Prevention (CDC) Drug Overdose Surveillance and Epidemiology (DOSE) Heroin Overdose version 4

Heroin Overdose (DOSE) - EMS Pilot

Categorical syndrome definition developed as a part of the CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System Guidance based on lessons from ESOOS and guidance from NCHS, CSTE, and SAMSHA, intended to detect incidents involving all heroin overdoses. **This syndrome is only applicable to EMS data and is in a pilot phase.** A NEMSIS v3 record is labeled as a heroin overdose incident if one or more of the following are true:

- Patient Care Report Narrative (eNarrative.01) or Patient Complaint (eSituation.04) contains "overdose", "overdosed", "overdoses", "overdosing", or other spelling variants **AND** Patient Care Report Narrative or Patient Complaint contains a heroin-related term (heroin, herion, heroine, HOD, speedball, dope)
- Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) are the following ICD-10 code (sub-codes included): T40.1X

REFERENCE: Centers for Disease Control and Prevention (CDC) Drug Overdose Surveillance and Epidemiology (DOSE) Heroin Overdose version 4

Influenza-like Illness

NCBP-defined syndrome based on influenza-like illness-related keywords in the record narrative or chief complaint (e.g., "sore throat", "influenza", "flu", "chills", "body aches", etc.). Relevant keyword counts for each record are compared to counts for known influenza-like illness records. If keyword counts for the record are consistent with counts for known influenza-like illness records, the record is considered likely to be an influenza-like illness incident.

Intimate Partner Violence

Categorical syndrome definition based on the Center for Disease Control and Prevention's Intimate Partner Violence v2 definition for ESSENCE. A NEMSIS v3 or v2 record is labeled as an intimate partner violence incident if one or more of the following are true:

- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain the following keywords or phrases (including common misspellings and variants): "domestic assault", "domestic violence", "partner violence".
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) contain "dv".
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain the following keywords or phrases (including common misspellings and variants): "boyfriend", "ex-boyfriend", "bf", "girlfriend", "ex-girlfriend", "gf", "partner", "ex-partner", "husband", "ex-husband", "wife", "ex-wife", "significant other", "friend with benefits", "spouse" **AND** one or more of the following are true:
    - The record matches the criteria of the CDC Sexual Violence V3 syndrome.
    - Cause of Injury (eInjury.01) indicates any of the following ICD-10 codes (sub-codes included): O9A.3, O9A.4, T74.11, T74.21, T74.31, T74.91, T76.11,

T76.21, T76.31, T76.91, X94, X95, X99, Y00, Y01, Y02, Y03, Y04, Y07, Y08, Y09, Z65.8.
    - Provider impressions (eSituation.11, eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): O9A.3, O9A.4, T74.11, T74.21, T74.31, T74.91, T76.11, T76.21, T76.31, T76.91, Z65.8.
    - Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain the following keywords or phrases (including common misspellings and variants; negative phrases are excluded): "altercation", "assault", "attacked", "battery", "beat", "choked by", "fear", "fight", "forced her", "forced miscarriage", "homicide", "kick", "kill", "physical abuse", "poisoned", "punch", "pushed", "rape", "sane exam", "sexual contact", "sexually abusive", "shove", "slam", "slap", "stalked", "strangle", "he suffocated her".

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

MIS-C

Categorical syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of MIS-C. Patients included are those meeting all of the following criteria:

- age less than 21 years old
- fever of more than 100.4°F (38°C) for more than 24 hours
- exhibit 2 or more of the following clinical/historical feature groups: rash, gastrointestinal symptoms, extremity changes, oral mucosal changes, conjunctivitis, lymphadenopathy, neurologic symptoms, or an epidemiologic link to COVID-19

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Please reference the Biospatial Syndromes document version 2.0 or later for full syndrome definition details (contact the Biospatial Help Desk for a copy).

MVC Fatal

Categorical syndrome definition intended to detect incidents involving a patient with a fatal injury resulting from a motor vehicle crash (MVC). The criteria for a motor vehicle crash are defined for NEMSIS v3 and v2 as follows:

The NEMSIS record will be categorized as involving an MVC if **two or more** of the following fields are present and valid within the record:

- Vehicular, pedestrian, or other injury risk factors (NEMSIS V2: E10_04; V3: eInjury.04) associated with a MVC
- Area of vehicle impacted (NEMSIS V2: E10_05; V3: eInjury.05)
- Location of patient in vehicle (NEMSIS V2: E10_06, E10_07; V3: eInjury.06)
- Occupant safety equipment (NEMSIS V2: E10_08; V3: eInjury.07); "None" value is excluded.
- Airbag deployment (NEMSIS V2: E10_09; V3: eInjury.08)

If the above check fails, then a second evaluation is made. **One or more** of the following must be true:

- **NEMSIS v3**: Dispatch complaint (eDispatch.01) is "Traffic/Transportation Incident" or "Automated Crash Notification".
- **NEMSIS v3**: Provider primary/secondary impression (eSituation.11/eSituation.12) or cause of injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): V02-V04, V09.0, V09.2, V09.3, V12-V14, V19.0-V19.2, V19.4-V19.6, V19.8-V19.9, V20-V79, V80.3-V80.5, V81-V88, V89.0, V89.2, V89.9, V98.8, V99, Y02.0, Y03, Y32, X81.0, X82
- Narrative (eNarrative.01; E13_01) OR patient complaint (eSituation.04; E09_05, E09_08) contain an MVC-related term (e.g., "ATV", "traffic accident", "airbag deployment", "motorcycle crash", "snow-mobile collision", "MVC", "pedestrian struck", etc.)
- **NEMSIS v2**:Dispatch complaint (E03_01) is "Traffic Accident".
- **NEMSIS v2**:Cause of Injury (E10_01) is "Motorcycle Accident (E81X.0)", "Motor Vehicle traffic accident (E81X.0)", or "Pedestrian Traffic Accident (E814.0)".

If the record is positively identified as an MVC, then the record is categorized by patient injury severity (unknown severity, non-severe, severe, likely fatal, fatal). Injury severity for a patient involved in a motor vehicle crash is "unknown" by default. The patient injury severity estimate will be fatal if **one or more** of the following are true:

- Incident patient disposition (eDisposition.12; E20_10) is "Patient Dead at Scene-No Resuscitation Attempted (With Transport)", "Patient Dead at Scene-No Resuscitation Attempted (Without Transport)", "Patient Dead at Scene-Resuscitation Attempted (With Transport)", or "Patient Dead at Scene-Resuscitation Attempted (Without Transport)".
- Initial patient acuity (eSituation.13) or final patient acuity (eDisposition.19) indicates "Dead".
- Reason CPR discontinued (eArrest.16; E11_10) is "Obvious Signs Of Death".
- Cardiac arrest outcome (eArrest.18) is "Expired in the Field" or "Expired in ED".
- Emergency department disposition (eOutcome.01; E22_01), hospital disposition (eOutcome.02; E22_02), or outcome at hospital discharge (eOutcome.17) indicates patient death.

NOTE: This syndrome is restricted to only those incidents where the Type of Service (eResponse.05; E02_04) is Emergency Response (Primary Response Area) AND patient contact is indicated (eDisposition.27; eDisposition.12; E20_10) or unspecified.

MVC Likely Fatal

Categorical syndrome definition intended to detect incidents involving a patient with a likely fatal injury resulting from a motor vehicle crash (MVC). The criteria for a motor vehicle crash are defined for NEMSIS v3 and v2 as follows:

The NEMSIS record will be categorized as involving an MVC if **two or more** of the following fields are present and valid within the record:

- Vehicular, pedestrian, or other injury risk factors (NEMSIS V2: E10_04; V3: eInjury.04) associated with a MVC
- Area of vehicle impacted (NEMSIS V2: E10_05; V3: eInjury.05)
- Location of patient in vehicle (NEMSIS V2: E10_06, E10_07; V3: eInjury.06)
- Occupant safety equipment (NEMSIS V2: E10_08; V3: eInjury.07); "None" value is excluded.
- Airbag deployment (NEMSIS V2: E10_09; V3: eInjury.08)

If the above check fails, then a second evaluation is made. **One or more** of the following must be true:

- **NEMSIS v3**: Dispatch complaint (eDispatch.01) is "Traffic/Transportation Incident" or "Automated Crash Notification".
- **NEMSIS v3**: Provider primary/secondary impression (eSituation.11/eSituation.12) or cause of injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): V02-V04, V09.0, V09.2, V09.3, V12-V14, V19.0-V19.2, V19.4-V19.6, V19.8-V19.9, V20-V79, V80.3-V80.5, V81-V88, V89.0, V89.2, V89.9, V98.8, V99, Y02.0, Y03, Y32, X81.0, X82
- Narrative (eNarrative.01; E13_01) OR patient complaint (eSituation.04; E09_05, E09_08) contain an MVC-related term (e.g., "ATV", "traffic accident", "airbag deployment", "motorcycle crash", "snow-mobile collision", "MVC", "pedestrian struck", etc.)
- **NEMSIS v2**:Dispatch complaint (E03_01) is "Traffic Accident".
- **NEMSIS v2**:Cause of Injury (E10_01) is "Motorcycle Accident (E81X.0)", "Motor Vehicle traffic accident (E81X.0)", or "Pedestrian Traffic Accident (E814.0)".

If the record is positively identified as an MVC, then the record is categorized by patient injury severity (unknown severity, non-severe, severe, likely fatal, fatal). Injury severity for a patient involved in a motor vehicle crash is "unknown" by default. The patient injury severity estimate will be likely fatal if the record does not indicate a fatal outcome, the patient disposition does not indicate a non-severe disposition (e.g., "treated and released"), and if any of the following criteria are true:

- The median value of the Revised Trauma Scores, both explicit (eVitals.33; E14_27) and computed (from Glasgow Coma Scale (GCS), systolic blood pressure, and respiratory rate) is less than 5.
- The record matches the criteria of the biospatial Cardiac Arrest syndrome (and does not indicate patient fatality).

NOTE: This syndrome is restricted to only those incidents where the Type of Service (eResponse.05; E02_04) is Emergency Response (Primary Response Area) AND patient contact is indicated (eDisposition.27; eDisposition.12; E20_10) or unspecified.

MVC Non-Severe

Categorical syndrome definition intended to detect incidents involving a patient with a non-severe injury resulting from a motor vehicle crash (MVC). The criteria for a motor vehicle crash are defined for NEMSIS v3 and v2 as follows:

The NEMSIS record will be categorized as involving an MVC if **two or more** of the following fields are present and valid within the record:

- Vehicular, pedestrian, or other injury risk factors (NEMSIS V2: E10_04; V3: eInjury.04) associated with a MVC
- Area of vehicle impacted (NEMSIS V2: E10_05; V3: eInjury.05)
- Location of patient in vehicle (NEMSIS V2: E10_06, E10_07; V3: eInjury.06)
- Occupant safety equipment (NEMSIS V2: E10_08; V3: eInjury.07); "None" value is excluded.
- Airbag deployment (NEMSIS V2: E10_09; V3: eInjury.08)

If the above check fails, then a second evaluation is made. **One or more** of the following must be true:

- **NEMSIS v3**: Dispatch complaint (eDispatch.01) is "Traffic/Transportation Incident" or "Automated Crash Notification".
- **NEMSIS v3**: Provider primary/secondary impression (eSituation.11/eSituation.12) or cause of injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): V02-V04, V09.0, V09.2, V09.3, V12-V14, V19.0-V19.2, V19.4-V19.6, V19.8-V19.9, V20-V79, V80.3-V80.5, V81-V88, V89.0, V89.2, V89.9, V98.8, V99, Y02.0, Y03, Y32, X81.0, X82
- Narrative (eNarrative.01; E13_01) OR patient complaint (eSituation.04; E09_05, E09_08) contain an MVC-related term (e.g., "ATV", "traffic accident", "airbag deployment", "motorcycle crash", "snow-mobile collision", "MVC", "pedestrian struck", etc.)
- **NEMSIS v2**:Dispatch complaint (E03_01) is "Traffic Accident".
- **NEMSIS v2**:Cause of Injury (E10_01) is "Motorcycle Accident (E81X.0)", "Motor Vehicle traffic accident (E81X.0)", or "Pedestrian Traffic Accident (E814.0)".

If the record is positively identified as an MVC, then the record is categorized by patient injury severity (unknown severity, non-severe, severe, likely fatal, fatal). Injury severity for a patient involved in a motor vehicle crash is "unknown" by default. The patient injury severity estimate will be non-severe if the record does not indicate a fatal outcome and if any of the following criteria are true:

- The median value of the Revised Trauma Scores, both explicit (eVitals.33; E14_27) and computed (from Glasgow Coma Scale (GCS), systolic blood pressure, and respiratory rate) is greater than or equal to 11.
- Patient disposition (eDisposition.12; E20_10) is "Patient Evaluated, No Treatment/Transport Required", "Patient Refused Evaluation/Care (With Transport)", "Patient Refused Evaluation/Care (Without Transport)", "Patient Treated, Released (AMA)", or "Patient Treated, Released (per protocol)".

NOTE: This syndrome is restricted to only those incidents where the Type of Service (eResponse.05; E02_04) is Emergency Response (Primary Response Area) AND patient contact is indicated (eDisposition.27; eDisposition.12; E20_10) or unspecified.

MVC Severe

Categorical syndrome definition intended to detect incidents involving a patient with a severe injury resulting from a motor vehicle crash (MVC). The criteria for a motor vehicle crash are defined for NEMSIS v3 and v2 as follows:

The NEMSIS record will be categorized as involving an MVC if **two or more** of the following fields are present and valid within the record:

- Vehicular, pedestrian, or other injury risk factors (NEMSIS V2: E10_04; V3: eInjury.04) associated with a MVC
- Area of vehicle impacted (NEMSIS V2: E10_05; V3: eInjury.05)
- Location of patient in vehicle (NEMSIS V2: E10_06, E10_07; V3: eInjury.06)
- Occupant safety equipment (NEMSIS V2: E10_08; V3: eInjury.07); "None" value is excluded.
- Airbag deployment (NEMSIS V2: E10_09; V3: eInjury.08)

If the above check fails, then a second evaluation is made. **One or more** of the following must be true:

- **NEMSIS v3**: Dispatch complaint (eDispatch.01) is "Traffic/Transportation Incident" or "Automated Crash Notification".
- **NEMSIS v3**: Provider primary/secondary impression (eSituation.11/eSituation.12) or cause of injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): V02-V04, V09.0, V09.2, V09.3, V12-V14, V19.0-V19.2, V19.4-V19.6, V19.8-V19.9, V20-V79, V80.3-V80.5, V81-V88, V89.0, V89.2, V89.9, V98.8, V99, Y02.0, Y03, Y32, X81.0, X82
- Narrative (eNarrative.01; E13_01) OR patient complaint (eSituation.04; E09_05, E09_08) contain an MVC-related term (e.g., "ATV", "traffic accident", "airbag deployment", "motorcycle crash", "snow-mobile collision", "MVC", "pedestrian struck", etc.)
- **NEMSIS v2**:Dispatch complaint (E03_01) is "Traffic Accident".
- **NEMSIS v2**:Cause of Injury (E10_01) is "Motorcycle Accident (E81X.0)", "Motor Vehicle traffic accident (E81X.0)", or "Pedestrian Traffic Accident (E814.0)".

If the record is positively identified as an MVC, then the record is categorized by patient injury severity (unknown severity, non-severe, severe, likely fatal, fatal). Injury severity for a patient involved in a motor vehicle crash is "unknown" by default. The patient injury severity estimate will be severe if the record does not indicate a fatal outcome, the patient disposition does not indicate a non-severe disposition (e.g., "treated and released"), and the following criteria are met.

One or more of the following are true:

- The median value of the Revised Trauma Scores, both explicit (eVitals.33; E14_27) and computed (from Glasgow Coma Scale (GCS), systolic blood pressure, and respiratory rate) is greater than or equal to 5 and less than 11.
- Possible Injury (eSituation.02) is 9922005: Yes **AND** either of the following are true:
    - Initial Patient Acuity (eSituation.13) is 2813001 Critical (Red) or 2813003 Emergent (Yellow).
    - Final Patient Acuity (eDisposition.19) is 4219001 Critical (Red) or 4219003 Emergent (Yellow).
- Destination Team Pre-arrival Alert or Activation (eDisposition.24) is any of the following:
    - 4224003: Yes - Trauma - Adult
    - 4224011: Yes - Trauma - Pediatric
    - 4224017: Yes - Trauma (General)
- The record matches the biospatial implementation of anatomic or physiologic trauma triage criteria.

NOTE: This syndrome is restricted to only those incidents where the Type of Service (eResponse.05; E02_04) is Emergency Response (Primary Response Area) AND patient contact is indicated (eDisposition.27; eDisposition.12; E20_10) or unspecified.

MVC Unknown Severity

Categorical syndrome definition intended to detect incidents involving a motor vehicle crash (MVC) of unknown severity. The criteria for a motor vehicle crash are defined for NEMSIS v3 and v2 as follows:

The NEMSIS record will be categorized as involving an MVC if **two or more** of the following fields are present and valid within the record:

- Vehicular, pedestrian, or other injury risk factors (NEMSIS V2: E10_04; V3: eInjury.04) associated with a MVC
- Area of vehicle impacted (NEMSIS V2: E10_05; V3: eInjury.05)
- Location of patient in vehicle (NEMSIS V2: E10_06, E10_07; V3: eInjury.06)
- Occupant safety equipment (NEMSIS V2: E10_08; V3: eInjury.07); "None" value is excluded.
- Airbag deployment (NEMSIS V2: E10_09; V3: eInjury.08)

If the above check fails, then a second evaluation is made. **One or more** of the following must be true:

- **NEMSIS v3**: Dispatch complaint (eDispatch.01) is "Traffic/Transportation Incident" or "Automated Crash Notification".
- **NEMSIS v3**: Provider primary/secondary impression (eSituation.11/eSituation.12) or cause of injury (eInjury.01) indicate any of the following ICD-10-CM codes (sub-codes included): V02-V04, V09.0, V09.2, V09.3, V12-V14, V19.0-V19.2, V19.4-V19.6, V19.8-V19.9, V20-V79, V80.3-V80.5, V81-V88, V89.0, V89.2, V89.9, V98.8, V99, Y02.0, Y03, Y32, X81.0, X82

- Narrative (eNarrative.01; E13_01) OR patient complaint (eSituation.04; E09_05, E09_08) contain an MVC-related term (e.g., "ATV", "traffic accident", "airbag deployment", "motorcycle crash", "snow-mobile collision", "MVC", "pedestrian struck", etc.)
- **NEMSIS v2**:Dispatch complaint (E03_01) is "Traffic Accident".
- **NEMSIS v2**:Cause of Injury (E10_01) is "Motorcycle Accident (E81X.0)", "Motor Vehicle traffic accident (E81X.0)", or "Pedestrian Traffic Accident (E814.0)".

If the record is positively identified as an MVC, then the record is categorized by patient injury severity (unknown severity, non-severe, severe, likely fatal, fatal). Injury severity for a patient involved in a motor vehicle crash is "unknown" by default. The patient injury severity estimate will be upgraded if criteria of the other MVC syndromes are met. In summary, the record must not indicate a fatal outcome, the patient disposition must not indicate a non-severe disposition (e.g., "treated and released"), the median Revised Trauma Score (RTS) value does not indicate a non-severe, severe, or likely fatal injury, the record does not match the biospatial Cardiac Arrest syndrome criteria, and a severe injury is not otherwise indicated.

NOTE: This syndrome is restricted to only those incidents where the Type of Service (eResponse.05; E02_04) is Emergency Response (Primary Response Area) AND patient contact is indicated (eDisposition.27; eDisposition.12; E20_10) or unspecified.

Mental Health

Categorical syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of behavioral or psychiatric problems. The criteria are defined for NEMSIS v3 and v2 as follows:

NEMSIS v3: Labeled as mental health if any of the following are true:

- Mental Status Assessment (eExam.19) contains one or more of the following codes:
  - 3519005: Hallucinations
  - 3519023: Agitation
- Chief Complaint Organ System (eSituation.08) contains one or more of the following codes:
  - 2808001: Behavioral/Psychiatric
- Primary Symptom (eSituation.09), other associated symptoms (eSituation.10), or provider primary or secondary impression (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes (sub-codes included):
  - F01-F09: Mental disorders due to known physiological conditions
  - F10-F19: Mental and behavioral disorders due to psychoactive substance use
  - F20-F29: Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
  - F20-F29: Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
  - F30-F39: Mood [affective] disorders
  - F40-F48: Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders

- F50-F59: Behavioral syndromes associated with physiological disturbances and physical factors
- F90-F98: Behavioral and emotional disorders with onset usually occurring in childhood and adolescence
- F99: Mental disorder, not otherwise specified
- R44: Other symptoms and signs involving general sensations and perceptions
- R45: Symptoms and signs involving emotional state
- R46: Symptoms and signs involving appearance and behavior
- T14.91: Suicide attempt
- T39.012: Poisoning by aspirin, intentional self-harm
- T39.092: Poisoning by salicylates, intentional self-harm
- T39.92: Poisoning by unspecified nonopioid analgesic, antipyretic and antirheumatic, intentional self-harm
- T40.1X2: Poisoning by heroin, intentional self-harm
- T40.2X2: Poisoning by other opioids, intentional self-harm
- T40.4X2: Poisoning by other synthetic narcotics, intentional self-harm
- T40.602: Poisoning by unspecified narcotics, intentional self-harm
- T40.692: Poisoning by other narcotics, intentional self-harm
- T42.4X2: Poisoning by benzodiazepines, intentional self-harm
- T43.012: Poisoning by tricyclic antidepressants, intentional self-harm
- T43.202: Poisoning by unspecified antidepressants, intentional self-harm
- T43.292: Poisoning by other antidepressants, intentional self-harm
- T43.622: Poisoning by amphetamines, intentional self-harm
- T50.902: Poisoning by unspecified drugs, medicaments and biological substances, intentional self-harm
- T50.992: Poisoning by other drugs, medicaments and biological substances, intentional self-harm
- T51.92: Toxic effect of unspecified alcohol, intentional self-harm
- T57.92: Toxic effect of unspecified inorganic substance, intentional self-harm
- T65.0X2: Toxic effect of cyanides, intentional self-harm
- T65.92: Toxic effect of unspecified substance, intentional self-harm
- T71.162: Asphyxiation due to hanging, intentional self-harm

NEMSIS v2: Labeled as mental health if any of the following are true:

- Chief Complaint Organ System (E09_12) is 1385 - "Psych"
- Primary Symptom (E09_13) is 1460 - "Mental/Psych"
- Other Associated Symptoms (E09_14) is 1565 - "Mental/Psych"
- Provider primary impression (E09_15) is 1635 - "312.90- Behavioral / psychiatric disorder"
- Provider secondary impression (E09_16) is 1770 - "312.90- Behavioral / psychiatric disorder"
- Mental Status Assessment (E16_23) is 4100 - "Hallucinations"

The Mental Health syndrome will also match if the record matches the biospatial syndromes for Self-Harm, Suicide Attempt, or Suicide Ideation.

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Methamphetamine

Categorical syndrome definition intended to detect incidents involving methamphetamine based on terms and phrases found in the record narrative and chief complaint elements (there is no ICD-10-CM code specific to methamphetamine abuse, so provider impressions are not conclusive). Indication of methamphetamine overdose, use, treatment, withdrawal, or history of methamphetamine use will positively match, while other confusing terms (methadone, "drawsheet meth", locations with "Meth" in the name, etc.) are ignored. Users may isolate the returned data to acute cases of methamphetamine use by filtering on incident/patient disposition, service category, and patient acuity, among other search parameters.

A NEMSIS v3 or v2 record is labeled as a methamphetamine incident if the following is true:

- Narrative (NEMSIS v2: E13_01; NEMSIS v3: eNarrative.01) or chief/secondary complaint (NEMSIS v2: E09_05/E09_08; NEMSIS v3: eSituation.04) contains "meth" or "methamphetamine". Certain phrases are excluded, for example: "methadone", "denies meth use", "drawsheet meth". Phrases associated with "Methodist" hospitals are excluded: "dispatched to meth", "Meth-Boerne", "Meth-Dallas", "meth-main", "meth-ob", "so-meth", "transferred to meth".

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Mpox

Categorical syndrome definition intended to detect incidents involving mpox.
NOTE: This syndrome is not computed for NEMSIS v2 data.

A NEMSIS v3 record is labeled as an mpox-related incident if one or more of the following are true:

- Primary Symptom (eSituation.09), Other Associated Symptoms (eSituation.10), Provider's Primary Impression (eSituation.11), **OR** Provider's Secondary Impressions (eSituation.12) indicate the following ICD-10-CM code (sub-codes included): B04: Monkeypox.
- Chief/secondary Complaint (eSituation.04) or Narrative (eNarrative.01) contain the following keywords or phrases (including common misspellings and variants) (negative phrases are excluded, e.g., "denies mpox", "scared of monkey pox"): "mpox" or "monkeypox" **AND** one or more of the following are true:
    - Chief/secondary Complaint (eSituation.04) **OR** Narrative (eNarrative.01) contain the following keywords or phrases (including common misspellings and variants) to indicate symptoms of mpox: "rash", "blisters", "open sores", "pustules".
    - Protocols Used (eProtocols.01) is 9914035: Exposure-Biological/Infectious.
    - Primary Symptom (eSituation.09), Other Associated Symptoms (eSituation.10), Provider's Primary Impression (eSituation.11), **OR** Provider's Secondary

Impressions (eSituation.12) indicate signs or symptoms of mpox (sub-codes included):
    - B99.9: Unspecified infectious disease
    - L29.9: Pruritis
    - L50.9: Urticaria
    - R21: Rash and other nonspecific skin eruption
    - R23.8: Other Skins Changes
    - Z22.9: Carrier of infectious disease, unspecified

Calls with no patient contact are excluded.

Neurological

Categorical syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of a neurological issue. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as a neurological incident if any of the following are true:
    - Chief Complaint Organ System (eSituation.08) is 2808005: CNS/Neuro
    - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): I60-I63, G40, G43-G45, G46.3, G46.4, R29.81, R42, R56, S02, S04.04, S06, S07.1, S09.90, T74.4.
    - Stroke Scale Score (eVitals.29) indicates a positive stroke assessment.
    - Neurological Assessment (eExam.20) indicates any of the following:
        - 3520001: Aphagia
        - 3520003: Aphasia
        - 3520005: Cerebellar Function-Abnormal
        - 3520009: Decerebrate Posturing
        - 3520011: Decorticate Posturing
        - 3520013: Gait-Abnormal
        - 3520017: Hemiplegia-Left
        - 3520019: Hemiplegia-Right
        - 3520025: Seizures
        - 3520031: Strength-Asymmetric
        - 3520039: Weakness-Facial Droop-Left
        - 3520041: Weakness-Facial Droop-Right
        - 3520043: Weakness-Left Sided
        - 3520045: Weakness-Right Sided
        - 3520051: Arm Drift-Left
        - 3520053: Arm Drift-Right
- NEMSIS v2: Labeled as a neurological incident if any of the following are true:
    - Chief Complaint Organ System (E09_12) is 1355: CNS/Neuro
    - Provider Primary Impression (E09_15) indicates any of the following:
        - 1730: 436.00 - Stroke / CVA
        - 1710: 780.30 - Seizure
    - Provider Secondary Impression (E09_16) indicates any of the following:
        - 1865: 436.00 - Stroke / CVA

        - 1845: 780.30 - Seizure
    - Stroke Scale Score (E14_24) indicates a positive stroke assessment.
    - Neurological Assessment (E16_24) indicates any of the following:
        - 4135: Abnormal Gait
        - 4140: Facial Droop
        - 4145: Seizures
        - 4165: Weakness-Left Sided
        - 4170: Weakness-Right Sided

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.

Non-Opioid Overdose (VA)

Categorical syndrome definition defined by the Virginia Department of Health, intended to detect incidents involving non-opioid overdose. This syndrome is not applicable to NEMSIS v2 data, due to limitations of the primary impression element. The criteria is defined for NEMSIS v3 as follows:

- NEMSIS v3: Labeled as a non-opioid overdose if **either** of the following are true:
    - Primary impression indicates a heroin or opioid overdose and response to Naloxone is unchanged or worse:
        - Primary impression ICD-10-CM code starts with any of the following:
            - F11 - Opioid related disorders
            - T40.0 - Poisoning by, adverse effect of and underdosing of opium
            - T40.1 - Poisoning by and adverse effect of heroin
            - T40.2 - Poisoning by, adverse effect of and underdosing of opioids
            - T40.3 - Poisoning by, adverse effect of and underdosing of methadone
            - T40.4 - Poisoning by, adverse effect of and underdosing of other synthetic narcotics- Fentanyl, Tramadol, etc.
            - T40.6 - Poisoning by, adverse effect of and underdosing of other and unspecified narcotics
        - Naloxone (or brand names) listed as Medication Administered and response to medication indicates patient condition is unchanged or worse.
    - Primary impression ICD-10-CM code starts with any of the following:
        - F14 - Cocaine related disorders
        - T40.5 - Poisoning by, adverse effect of and underdosing of cocaine
        - T40.7 - Poisoning by, adverse effect of and underdosing of cannabis
        - T40.8 - Poisoning by and adverse effect of lysergide [LSD]
        - T40.9 - Poisoning by, adverse effect of and underdosing of other and unspecified psychodysleptics
        - Other codes in the range T36-T50, but excluding T40.{0,1,2,3,4,6}
        - Other codes in the range F12-F16 and F18-F19

Nonfatal Heroin

Categorical syndrome definition intended to detect incidents involving a suspected nonfatal heroin overdose. The record will be labeled as a nonfatal heroin overdose if **two or more** of the following are true:

- NEMSIS v3: Primary impression is "Poisoning by heroin, undetermined" (T40.1X4) **OR** secondary impression contains "Heroin".
- Narrative or chief complaint contains "heroin", "herion", "speedball", "speed ball", "spheroin", or "hod".
- Naloxone (or brand names) listed as Medication Administered **OR** narrative/chief complaint contains naloxone (or brand names).
- NEMSIS v2: Primary or secondary impression is "Overdose - Drug/Medication", "Overdose - Inhalant", or "Poisoning/Drug Ingestion".

This syndrome is restricted to only those incidents with no patient disposition specified **OR** a patient disposition of "Evaluation, No Treatment", "Refused Care, Transported", "Refused Care, without Transport", "Treated Released", "Treated Released AMA", "Treated Transferred", "Treated Transported", "Treated Transported Law Enforcement", or "Treated Transported Private Vehicle".

NOTE: NEMSIS version 2 primary and secondary impression fields are not specific to opioid/heroin.

REFERENCE: This syndrome definition was originally developed in partnership with the Rhode Island Department of Health (RIDOH) (https://health.ri.gov/publications/guidelines/ESOOSCaseDefinitionForEMS.pdf). RIDOH no longer maintains this definition. biospatial may revise this definition in a future release.

Nonfatal Opioid Overdose (CSTE)

Categorical syndrome definition intended to detect suspected nonfatal opioid overdoses as defined by the Council of State and Territorial Epidemiologists (CSTE). The criteria are defined for NEMSIS v3 and v2 as follows:

Labeled as an opioid overdose if one or more of the following are true:

- Primary/secondary impression (v3: eSituation.11, eSituation.12) or primary/other associated symptoms (v3: eSituation.09, eSituation.10) starts with any of the following:
    - F11 - Opioid related disorders
    - T40.0 - Poisoning by, adverse effect of and underdosing of opium
    - T40.1 - Poisoning by and adverse effect of heroin
    - T40.2 - Poisoning by, adverse effect of and underdosing of opioids
    - T40.3 - Poisoning by, adverse effect of and underdosing of methadone
    - T40.4 - Poisoning by, adverse effect of and underdosing of other synthetic narcotics- Fentanyl, Tramadol, etc.
    - T40.6 - Poisoning by, adverse effect of and underdosing of other and unspecified narcotics
- Naloxone (or brand names) is listed as medication given (v2: E18_03; v3: eMedications.03) **AND** response to medication (v2: E18_07; v3: eMedications.07) is "Improved".

- Patient Care Report Narrative (v2: E13_01; v3: eNarrative.01) contains at least one opioid- related keyword **AND** at least two overdose-related keywords.

Incidents that match any of the following criteria are excluded:

- Type of Service Requested (v2: E02_04; v3: eResponse.05) does **NOT** indicate an emergency response ("Emergency Response (Primary Response Area)").
- Initial Patient Acuity (v3: eSituation.13) or Final Patient Acuity (v2: E20_15; v3: eDisposition.19) is "Dead Without Resuscitation Efforts (Black)".

REFERENCE: https://www.cste.org/page/overdose-course and "EMS Nonfatal Opioid Overdose Guidance Appendix_Release 4.2022.pdf"

Nonfatal Overdose

Categorical syndrome definition intended to detect incidents involving a suspected nonfatal drug overdose. The record will be labeled as a nonfatal overdose if **two or more** of the following are true:

- NEMSIS v3: Primary impression starts with {F11, F13-F16, or F18-F19}, or is one of {T40.1X4, T40.2X1, T40.691, T43.291, T43.621, T50.904, T50.991}; **OR** secondary impression contains "opioid", "stimulant", "hallucinogen", "cocaine", "sedative", "inhalant", "psychoactive", "heroin", "other drugs", or "unspecified drugs".
- Narrative or chief complaint contains "overdose", "opioid", "opiod", "opiate", "opium", "fentanyl", "heroin", "herion", "speedball", "speed ball", "spheroin", "hod", "OD", "O.D.", "O/D", "OD/", or "ODED".
- Naloxone (or brand names) listed as Medication Administered **OR** narrative/chief complaint contains naloxone (or brand names).
- NEMSIS v2: Primary **OR** secondary impression is "Overdose - Drug/Medication", "Overdose - Inhalant", or "Poisoning/Drug Ingestion".

NOTE: This syndrome will also apply if naloxone was given **AND** (the medication response indicates that the patient "Improved" **OR** medication response does not indicate "Unchanged" or "Worse") **AND** one of the following terms is found in the narrative or chief complaint: "white powder", "syringes", "improved loc", "improvement in loc", "positive response to Narcan".

This syndrome is restricted to only those incidents with no patient disposition specified **OR** a patient disposition of "Evaluation, No Treatment", "Refused Care, Transported", "Refused Care, without Transport", "Treated Released", "Treated Released AMA", "Treated Transferred", "Treated Transported", "Treated Transported Law Enforcement", or "Treated Transported Private Vehicle".

NOTE: This syndrome will also apply if the patient meets the criteria for the Rhode Island ESOOS opioid overdose definition "Opioid (RI ESOOS)").

REFERENCE: This syndrome definition was originally developed in partnership with the Rhode Island Department of Health (RIDOH) (https://health.ri.gov/publications/guidelines/ESOOSCaseDefinitionForEMS.pdf). RIDOH no longer maintains this definition. biospatial may revise this definition in a future release.

Opioid (FL ESOOS)

Categorical syndrome definition based on Enhanced State Opioid Overdose Surveillance (ESOOS) criteria as defined by the state of Florida, intended to detect incidents involving opioid-related overdoses. The criteria are defined as follows:

Labeled as opioid overdose if **any** of the following are true:

- Naloxone (or brand names) listed as medication administered (E18_03; eMedications.03) **AND** medication response (E18_07; eMedications.07) is "Improved".
- Provider primary/secondary impression (E09_15, E09_16; eSituation.11, eSituation.12) is any of 977.90 (ICD-9) F11, T40.1-T40.4, T40.60, T40.69 (sub-codes included) **AND** either of the following are true:
    - Naloxone (or brand names) listed as medication administered (E18_03; eMedications.03).
    - Narrative (E13_01; eNarrative.01) contains "Narcan" or "naloxone" **AND** narrative (E13_01; eNarrative.01) contains one of the following unresponsive search terms: "unresponsive", "apneic", "apnea", "semi-cons", "semi cons", "uncons", "agonal".
    - Narrative (E13_01; eNarrative.01) **OR** chief complaint (E09_05; eSituation.04) contain "opioid", "opiate", "opium", "fentanyl", "heroin", "speedball", "speed ball", "spheroin", or "hod".
- Naloxone (or brand names) listed as medication administered (E18_03; eMedications.03) **AND** medication response (E18_07; eMedications.07) is not entered **AND** either of the following are true:
    - Narrative (E13_01; eNarrative.01) contains "Narcan" or "naloxone" **AND** narrative (eNarrative.01) contains one of the following unresponsive search terms: "unresponsive", "apneic", "apnea", "semi-cons", "semi cons", "uncons", "agonal".
    - Narrative (E13_01; eNarrative.01) **OR** chief complaint (E09_05; eSituation.04) contain "opioid", "opiate", "opium", "fentanyl", "heroin", "speedball", "speed ball", "spheroin", or "hod".

NOTE: Common misspellings and other variants of terms are considered when checking the narrative or chief complaint elements.

Opioid (MI)

Categorical syndrome definition based on criteria provided by the Michigan Department of Health and Human Services (MDHHS), intended to detect incidents involving opioid overdose. The criteria are defined for NEMSIS v3 and v2 as follows:

One point is tallied for each of the following indicators that is present. The resulting number of points is called the overdose score (potential values 0-7):

- Primary/secondary impression:
    - NEMSIS v2: Indicates "Poisoning/Drug Ingestion" (977.90)

    - NEMSIS v3: Indicates "Overdose" (T36-T50), or indicates "Opioid Related Disorders" (F11)
- Chief Complaint, Secondary Complaint, or Narrative mentions opioids: "opioid", "opiate", "heroin", "morphine", "codeine", "fentanyl", "hydrocodone", "hydromorphone", "methadone", "oxycodone" and brand names and misspellings.
- Chief Complaint or Narrative mentions overdose: "od", "o/d", "overdose" and misspellings for overdose
- Initial respiratory rate of less than 11 **OR** Chief Complaint, Secondary Complaint, or Narrative mentions respiratory distress/depression: "sob", "apneic", "bradypnea", "shallow respirations", "respiratory depression", "respiratory arrest", "difficulty/trouble breathing", "respirations decreased", "breathing problems", "breathing shallow", "breathing rate slow", "not breathing", "breaths were poor", "ventilations", "barely breathing", along with misspellings. An incident is not considered to have narrative mention of respiratory symptoms if the terms are preceded by a negative (no, not, denies, denied).
- Initial Glasgow Coma Scale of less than 15 **OR** Chief Complaint, Secondary Complaint or Narrative mentions altered level of consciousness: "loc", "ams", "unresponsive", "only responsive", "altered mental status", "decreased consciousness", "semiconscious", "not responding", "passed out", "consciousness declined", "altered loc", "altered level of consciousness", "not responsive". An incident is not considered to have narrative mention of altered level of consciousness if the narrative contains the phrases no loss of consciousness, denies loss of consciousness, or no loc
- Medications contains Narcan or naloxone **OR** Chief Complaint, Secondary Complaint, or Narrative mentions includes the terms rebreath, bag valve, bag mask, Narcan (and misspellings), nalox, CPR or compressions **OR** Procedures contains any of the following:
    - NEMSIS v2: "Airway", "CPR", "Chest Decompression", "Cricothyrotomy", or "Intubation"
    - NEMSIS v3: "Mask", "CPR", "Chest Compression", "Intubation", or "Oxygen"
- Chief Complaint, Secondary Complaint, or Narrative contains "pinpoint pupil", "pupils are/were constricted", "to be pinpoint" or "pupils are/were pinpoint"

A record matches the Michigan definition for an opioid overdose if any of the following are true:

- A person has an opioid overdose if there is an overdose score of 5 or greater.
- A person has an opioid overdose if there is an overdose score of 4 and at least one of the first three indicators is present.
- A person has an opioid overdose if the person improved after being administered Narcan.

NOTE: This syndrome is restricted to only those incidents where the Type of Service (E02_04; eResponse.05) is Emergency Response (Primary Response Area/Intercept/Mutual Aid).

Opioid (MT)

Categorical syndrome definition as defined by the state of Montana, intended to detect incidents involving opioid overdose.

Labeled as opioid overdose if any of the following are true:

1. Naloxone administration (E18_03; eMedications.03) is documented and response to medication (E18_07; eMedications.07) indicates patient improvement.
2. Patient symptoms **OR** provider impressions indicate an opioid overdose **AND** response to Naloxone is NOT worse:
    - NEMSIS v3 - Primary/other associated symptoms (eSituation.09, eSituation.10) OR primary/secondary impression (eSituation.11, eSituation.12) starts with any of the following: F11, T40.0-T40.4, T40.6
    - Any of the following is true:
        - No naloxone administration is documented.
        - Naloxone administration is documented and response to medication indicates patient improvement or unchanged.
        - Naloxone administration is documented and response to medication is not documented.
3. Patient symptoms **OR** provider impressions indicate a generic drug overdose **AND** opioid term is mentioned in narrative **AND** response to Naloxone is NOT worse **AND** there are no narcotic medications listed under administered medications:
    - Patient symptoms **OR** provider impressions starts with any of the following:
        - NEMSIS v3 (eSituation.09 - eSituation.12): F19, T50.9, T65.9
        - NEMSIS v2 (E09_15, E09_16): 977.90
    - Narrative (E13_01; eNarrative.01) or complaint (E09_05; eSituation.04) contains "opioid", "opiate", "opium", "dope", "smack", "heroin", "hod", "speedball", "methadone", "suboxone", "morphine", "tramadol", "buprenorphine", "codeine", "norco", "oxy", "percocet", "vicodin", "hydrocodone", "opana", "dilaudid", "fentanyl", or "hydromorphone". Common misspellings and other variants of these terms are included.
    - Any of the following are true:
        - No naloxone administration is documented.
        - Naloxone administration is documented and response to medication indicates patient improvement or unchanged.
        - Naloxone administration is documented and response to medication is not documented.
    - Fentanyl (4337), Morphine (7052), Oxycodone (7804), Hydromorphone (3423), and Tramadol (10689) are not an administered medication.
4. Patient symptoms **OR** provider impressions indicate a non-specific drug or opioid overdose, cardiac arrest, apnea, or respiratory failure **AND** opioid term is mentioned in narrative **AND** naloxone is an administered medication **AND** patient fatality is indicated:
    - Patient symptoms **OR** provider impressions starts with any of the following:
        - NEMSIS v3 (eSituation.09 - eSituation.12): F11, F19, I46, J96.0, J96.9, R06.81, T40.0-T40.4, T40.6, T50.9, T65.9
        - NEMSIS v2 (E09_15, E09_16): 427.50, 786.09, 799.10, 977.90
    - Narrative or complaint contains any of "opioid", "opiate", "opium", "dope", "smack", "heroin", "hod", "speedball", "methadone", etc.
    - Naloxone administration is documented.
    - Patient fatality is indicated in any of incident/patient disposition (E20_10, eDisposition.12), initial patient acuity (eSituation.13), final patient acuity (E20_15; eDisposition.19), the reason CPR was discontinued (E11_10;

eArrest.16), end of EMS cardiac arrest event (eArrest.18), ED disposition (eOutcome.01), hospital disposition (eOutcome.02), or outcome at hospital discharge (eOutcome.17).

5. Opioid term mentioned in narrative (with no rule out term) **AND** overdose term mentioned in narrative (with no rule out term) **AND** at least two additional terms (Narcan, method, LOC, physiologic sign) mentioned in narrative **AND** there are no narcotic medications listed under administered medications:
    - Narrative or complaint contains an opioid term **AND** an overdose term (term is excluded if preceded by a rule out term: "rule out", "r/o"):
        - Opioid terms: "opioid", "opiate", "opium", "dope", "smack", "heroin", "hod", "speedball", "methadone", etc.
        - Overdose terms: "overdose", "overdosed", "od", "od'd"
    - Narrative or complaint contains a term from at least two of the following groups (common misspellings and other variants of these terms are included):
        - LOC: "nodding off", "unresponsive", "unconscious", "AMS", "altered LOC", "loss of consciousness".
        - Method: "inject", "snort", "tinfoil", "ingest", "smoke", "freebase", "syringe" and "spoon", "needle" and "spoon"
        - Narcan: "narcan", "naloxone"
        - Physiological sign: "pinpoint pupil", "injection mark", "track mark", "blue", "cyano"
    - Fentanyl, Morphine, Oxycodone, Hydromorphone, and Tramadol are not an administered medication.

Opioid (RI ESOOS)

Categorical syndrome definition based on Enhanced State Opioid Overdose Surveillance (ESOOS) criteria as defined by the state of Rhode Island, intended to detect incidents involving non-fatal opioid overdose. The record will be labeled as an opioid overdose if any of the following are true:

- NEMSIS v3: (Primary impression starts with F11, or is T40.2X1, or T40.1X4; **OR** secondary impression contains "opioid" or "heroin") **AND** Naloxone (or brand names) listed as Medication Administered.
- NEMSIS v3: (Primary impression starts with F11, or is T40.2X1, or T40.1X4; **OR** secondary impression contains "opioid" or "heroin") **AND** Narrative contains "Narcan" or "naloxone" **AND** Narrative contains one of the following unresponsive search terms: "unresponsive", "apneic", "apnea", "semi cons", "uncons", "agonal".
- Naloxone (or brand names) listed as Medication Administered **AND** Medication response is "Improved".
- Medication response is not entered **AND** Narrative contains "Narcan" or "naloxone" **AND** Narrative contains one of the following unresponsive search terms: "unresponsive", "apneic", "apnea", "semi-cons", "semi cons", "uncons", "agonal".
- NEMSIS v2: Primary/secondary impression is "Overdose - Drug/Medication", "Overdose - Inhalant", or "Poisoning/Drug Ingestion" **AND** Naloxone (or brand names) listed as Medication Administered.

- NEMSIS v2: Primary/secondary impression is "Overdose - Drug/Medication", "Overdose - Inhalant", or "Poisoning/Drug Ingestion" **AND** narrative contains "Narcan" or "naloxone" **AND** Narrative contains one of the following unresponsive search terms: "unresponsive", "apneic", "apnea", "semi cons", "uncons", "agonal"

This syndrome is restricted to only those incidents with no patient disposition specified **OR** a patient disposition of "Evaluation, No Treatment", "Refused Care, Transported", "Refused Care, without Transport", "Treated Released", "Treated Released AMA", "Treated Transferred", "Treated Transported", "Treated Transported Law Enforcement", or "Treated Transported Private Vehicle".

NOTE: This syndrome will also apply if the patient meets the criteria for the "Nonfatal Heroin" overdose syndrome definition.

NOTE: Although the official RIDOH definition excludes some records by service call type or patient age, the Biospatial definition does not, as additional filters may be applied to restrict the data in this manner.

NOTE: NEMSIS version 2 primary and secondary impression fields are not specific to opioid/heroin.

REFERENCE: https://health.ri.gov/publications/guidelines/ESOOSCaseDefinitionForEMS.pdf

Opioid (VA)

Categorical syndrome definition defined by the Virginia Department of Health, intended to detect incidents involving opioid overdose. The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v2: Labeled as an opioid overdose if the following are both true:
  - Naloxone (or brand names) listed as Medication Administered and response to medication indicates patient improvement.
  - Chief complaint and narrative DO NOT contain "heroin", "herion", "heroine", "speedball", "speed ball", "spheroin", or "hod".
- NEMSIS v3: Labeled as an opioid overdose if **either** of the following are true:
  - Primary impression indicates an opioid overdose and response to Naloxone is NOT unchanged or worse:
    - Primary impression ICD-10-CM code starts with any of the following:
      - F11 - Opioid related disorders
      - T40.0 - Poisoning by, adverse effect of and underdosing of opium
      - T40.2 - Poisoning by, adverse effect of and underdosing of opioids
      - T40.3 - Poisoning by, adverse effect of and underdosing of methadone
      - T40.4 - Poisoning by, adverse effect of and underdosing of other synthetic narcotics- Fentanyl, Tramadol, etc.
      - T40.6 - Poisoning by, adverse effect of and underdosing of other and unspecified narcotics
    - Any of the following are true:

        - Medication Administered or naloxone administration are not documented.
        - Naloxone (or brand names) listed as Medication Administered and response to medication is not documented, is not unchanged, or is not worse.
    - Naloxone (or brand names) listed as Medication Administered and response to medication indicates patient improvement **AND** the following are true:
        - Primary impression ICD-10-CM code DOES NOT start with T40.1 (Poisoning by and adverse effect of heroin)
        - Chief complaint and narrative DO NOT contain "heroin", "herion", "heroine", "speedball", "speed ball", "spheroin", or "hod".

NOTE: NEMSIS v2 primary impression field contains no values specific to opioid overdose.

Opioid Overdose (DOSE)

Categorical syndrome definition developed as a part of the CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System Guidance based on lessons from ESOOS and guidance from NCHS, CSTE, and SAMSHA, intended to detect incidents involving all opioid overdoses. **This syndrome is only applicable to ADT data.** Patients included are those meeting **any** of the following criteria:

- Discharge Diagnosis: ICD-9-CM codes indicate opioid poisoning (965.00, 965.01, 965.02, 965.09,E850.0, E850.1, E850.2)
- Discharge Diagnosis: **Either** of the following are true for ICD-10-CM codes
    - Indicate Opioid Poisoning: T40.1X1A, T40.1X4A, T40.0X1A, T40.0X4A, T40.2X1A, T40.2X4A, T40.3X1A, T40.3X4A, T40.4X1A, T40.4X4A, T40.601, T40.604, T40.691, T40.694.
    - Indicate opioid abuse/dependence/use with intoxication: F11.12, F11.120, F11.121, F11.122, F11.129, F11.22, F11.220, F11.221, F11.222, F11.229, F11.92, F11.920, F11.921, F11.922, F11.929
- Discharge Diagnosis: SNOMED Codes indicate opioid poisoning or overdose (295174006, 295175007, 295176008, 295165009, 242253008, 297199006, 295213004)
- Chief Complaint: Term matches on naloxone administration including naloxone, Narcan, and Evzio (spelling variants included).
- Chief Complaint: Matches on an overdose-related term (overdose, poisoning (poison), nodding off, snort, ingestion (ingest, injest), intoxication (intoxic), unresponsive (unresponsiv), loss of consciousness (syncopy, syncope), shortness of breath (SOB), altered mental status (AMS)) **and at least one of the following**:
    - Chief Complaint: Matches on an opioid-related term (opioid, opiod, opoid, opiate, opate, opium, opum, heroin, herion, heroine, HOD, speed ball, speedball, dope, methadone, suboxone, oxyco, oxy, oxyi, percoc, vicod, fent, hydrocod, morphin, codeine, codiene, codene, oxymor, dilaud, hydromor, tramad, suboxin, buprenorphine, and other common opioid brand and generic names)
    - Discharge Diagnosis: ICD-10-CM codes indicate opioid abuse/dependence/use (F11.10, F11.90, F11.20)

REFERENCE: Centers for Disease Control and Prevention (CDC) Drug Overdose Surveillance and Epidemiology (DOSE) Opioid Overdose version 3

Overdose (DOSE)

Categorical syndrome definition developed as a part of the CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System Guidance based on guidance from the DEA, CSTE, and SAMSHA, intended to detect incidents involving all drug overdoses. **This syndrome is only applicable to ADT data.** Patients included are those meeting **any** of the following criteria:

- Discharge Diagnosis: ICD-9-CM codes indicate drug poisoning (960-979, E850-E858, E980.0-E980.5)
- Discharge Diagnosis: **Either** of the following are true for ICD-10-CM codes
    - Indicate Drug Poisoning: T36-T50 with only 1 and 4 for intent, and A for first encounter, no underdosing or adverse affect.
    - Indicate opioid abuse/dependence/use with intoxication: F11.12, F11.120, F11.121, F11.122, F11.129, F11.22, F11.220, F11.221, F11.222, F11.229, F11.92, F11.920, F11.921, F11.922, F11.929
- Discharge Diagnosis: SNOMED Codes indicate drug poisoning or overdose (295121001, 295597003, 295487009, 295334008, 295313001, 295593004, 295799003, 295117008, 295495008, 295332007, 295808006, 295123003, 295587007, 295314007, 295134000, 295910009, 296295001, 296412004, 296529003, 296334003, 296921006, 296513006, 296389000, 296845006, 296499009, 296922004, 296825003, 296943003, 296896008, 296853003, 296974001, 296450005, 296478006, 296402006, 296970005, 296509004, 296503003, 296425007, 296811004, 296948007, 297006008, 297094003, 297065005)
- Chief Complaint: Term matches on naloxone administration including naloxone, Narcan, and Evzio (spelling variants included).
- Chief Complaint: Term matches on "overdose" or common misspellings and abbreviations.
- Chief Complaint: Matches on an overdose-related term (poisoning (poison), nodding off, snort, ingestion (ingest, injest), intoxication (intoxic), unresponsive (unresponsiv), loss of consciousness (syncopy, syncope), shortness of breath (SOB), altered mental status (AMS)) **and at least one of the following**:
    - Chief Complaint: Matches on a drug-related term (drug, pill, poly drug/substance, stimulants, benzodiazepines, hallucinogens, opioids, marijuana, cannabinoids and synthetic cannabinoids, cathinones or bath salts, ketamine, gabapentin, gamma hydroxybutyrate (GHB), sleep sedatives, and various drug names and slang terms)
    - Discharge Diagnosis: ICD-10-CM codes indicate opioid abuse/dependence/use (F11.10, F11.90, F11.20)

REFERENCE: Centers for Disease Control and Prevention (CDC) Drug Overdose Surveillance and Epidemiology (DOSE) All Drug Overdose version 2

Overdose (DOSE) - EMS Pilot

Categorical syndrome definition developed as a part of the CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System Guidance based on guidance from the DEA, CSTE, and SAMSHA, intended to detect incidents involving all drug overdoses. **This syndrome is only**

applicable to EMS data and is in a pilot phase. A NEMSIS v3 record is labeled as an overdose incident if one or more of the following are true:

- Patient Care Report Narrative (eNarrative.01) or Patient Complaint (eSituation.04) contains "overdose", "overdosed", "overdoses", "overdosing", or other spelling variants.
- Patient Care Report Narrative (eNarrative.01) or Patient Complaint (eSituation.04) contains an overdose- related term: poisoning (poison), nodding off, snort, ingestion (ingest, injest), intoxication (intoxic), unresponsive (unresponsiv), loss of consciousness (syncopy, syncope), shortness of breath (SOB), altered mental status (AMS) **AND** Patient Care Report Narrative or Patient Complaint contains a drug-related term (drug, pill, poly drug/substance, stimulants, benzodiazepines, hallucinogens, opioids, marijuana, cannabinoids and synthetic cannabinoids, cathinones or bath salts, ketamine, gabapentin, gamma hydroxybutyrate (GHB), sleep sedatives, and various drug names and slang terms).
- Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) are any of the following ICD-10 codes (sub-codes included): F11-F16, F18, F19, T36-T50
- The record matches the criteria for the Nonfatal Opioid Overdose (CSTE), Heroin Overdose (DOSE), or Stimulant Overdose (DOSE) case definitions implemented for EMS data in the biospatial platform.

REFERENCE: Centers for Disease Control and Prevention (CDC) Drug Overdose Surveillance and Epidemiology (DOSE) All Drug Overdose version 2

Overdose (FL ESOOS)

Categorical syndrome definition based on Enhanced State Opioid Overdose Surveillance (ESOOS) criteria as defined by the state of Florida, intended to detect incidents involving any drug overdose. The criteria are defined as follows:

Labeled as overdose if **any** of the following are true:

- Provider primary/secondary impression (E09_15, E09_16; eSituation.11, eSituation.12) is any of 977.90 (ICD-9), F11-F16, F18-F19, T36-T50 (sub-codes included).
- Narrative (E13_01; eNarrative.01) **OR** chief/secondary complaint (E09_05; eSituation.04) contains "meth" or "methamphetamine". Certain phrases are excluded, for example: "methadone", "denies meth use", "drawsheet meth" and phrases associated with "Methodist" hospitals: "dispatched to meth", "Meth-Dallas", "meth-main", "transferred to meth".
- Narrative (E13_01; eNarrative.01) **OR** chief complaint (E09_05; eSituation.04) contains "overdose", "OD", "O.D.", "O/D", "OD/", or "ODED". Common misspellings and other variants of these terms are considered.
- The patient meets the criteria for the Florida ESOOS opioid overdose definition "Opioid (FL ESOOS)".

Overdose (MI)

Categorical syndrome definition based on criteria provided by the Michigan Department of Health and Human Services (MDHHS), intended to detect incidents involving drug-involved emergencies responded to by EMS. The criteria are defined for NEMSIS v2 and v3 as follows:

Labeled as a drug-involved emergency if any of the following are true:

- The record matches the criteria for the Methamphetamine or Opioid (MI) case definitions implemented for EMS data in the biospatial platform.
- Naloxone administration is documented (E18_03; eMedications.03) and response to medication (E18_07; eMedications.07) indicates patient improvement.
- Provider's primary impression (eSituation.11; E09_15) indicates (sub-codes included): F11, T36-T50, T65.9, or 977.90.
- Both of the following are true:
    - Provider primary/secondary impressions indicate an overdose related symptom:
        - NEMSIS v3 (sub-codes included): F13, F19, F29, I46.9, J80, J96.00, J96.9, R09.2, R11, R40.0-R40.2, R40.4, R41.82, R45.89, R53.1, R53.81, R55, R56.9, T14.91, T39.1X4.
        - NEMSIS v2: 312.90, 427.50, 427.90, 780.09, 780.20, 786.09, 799.10.
    - Narrative (eNarrative.01; E13_01) **OR** chief complaint (eSituation.04; E09_05) contain a drug overdose term (overdose, opioid, heroin, cocaine, stimulant, speedball, etc.) without mentioning withdrawal or detox.
- Two or more of the following are true:
    - Naloxone administration is documented (E18_03; eMedications.03).
    - Narrative (eNarrative.01; E13_01) **OR** chief complaint (eSituation.04; E09_05) contain a drug overdose term (overdose, opioid, heroin, cocaine, stimulant, speedball, etc.) without mentioning withdrawal or detox.
    - Provider's secondary impressions (eSituation.12; E09_16) indicates (sub-codes included): F11, T36-T50, T65.9, or 977.90.

This syndrome is restricted to only those incidents where the Type of Service (E02_04; eResponse.05) is Emergency Response (Primary Response Area/Intercept/Mutual Aid).

Respiratory

Composite syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of respiratory disease or distress.

Respiratory-related keywords (e.g., "bronchiolitis", "bronchitis", "cough", "sputum", "lower respiratory infection", "pleural effusion", "pleuritic chest pain", "congestion", etc.) in the record narrative and patient complaint are counted. If keyword counts for the record are consistent with counts for known respiratory records, the record is considered likely to be a respiratory incident.

Additionally, the record will be labeled as a respiratory-related incident if any of the following are true:

- NEMSIS v3:
    - Chief Complaint Organ System (eSituation.08) is 2808019: Pulmonary

    - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): J00-J99, R04, R06.
- NEMSIS v2:
    - Chief Complaint Organ System (E09_12) is 1390: Pulmonary
    - Primary symptom (E09_13) is 1410: Breathing Problem
    - Other associated symptoms (E09_14) is 1515: Breathing Problem
    - Provider's Primary Impression (E09_15) indicates any of the following:
        - 1620: 519.80 - Airway obstruction
        - 1700: 786.09 - Respiratory distress
        - 1705: 799.10 - Respiratory arrest
    - Provider's Secondary Impression (E09_16) indicates any of the following:
        - 1755: 519.80 - Airway obstruction
        - 1835: 786.09 - Respiratory distress
        - 1840: 799.10 - Respiratory arrest

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.

STEMI

Categorical syndrome definition intended to detect incidents involving a ST-segment elevation myocardial infarction (STEMI). The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as STEMI if **one or more** of the following are true:
    - Provider primary or secondary impression (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes (sub-codes included): I21.0, I21.1, I21.2, I21.3.
    - Destination Team Pre-Arrival Alert or Activation (eDisposition.24) is "4224013 Yes - STEMI"
    - Cardiac Rhythm / Electrocardiography (ECG) (eVitals.03) is one of the following:
        - 9901051 - STEMI Anterior Ischemia
        - 9901053 - STEMI Inferior Ischemia
        - 9901055 - STEMI Lateral Ischemia
        - 9901057 - STEMI Posterior Ischemia
    - Protocols used (eProtocols.01) is "9914143 - Medical-ST-Elevation Myocardial Infarction (STEMI)"
- NEMSIS v2: Labeled as STEMI if the following is true:
    - Procedure (E19_03) is "101.104 - Specialty Center Activation-STEMI".

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Self-Harm

NCBP-defined syndrome based on self-harm-related keywords in the record narrative or chief complaint (e.g., "committing", "die", "harm", "kill", "suicidal", etc.). Relevant keyword counts for each record are compared to counts for known self-harm records. If keyword counts for the record are consistent with counts for known self-harm records, the record is considered likely to be a self-harm-related incident.

Sepsis

Categorical syndrome definition intended to detect incidents involving sepsis. This syndrome is not computed for NEMSIS v2 data. A NEMSIS v3 record is labeled as a Sepsis incident if **one or more** of the following are true:

- Provider primary or secondary impression (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes (sub-codes included): A40-A41, R65.2

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Sexual Violence

Categorical syndrome definition based on the Center for Disease Control and Prevention's Sexual Violence definition for ESSENCE, which is intended to detect incidents involving sexual violence.

A NEMSIS v3 or v2 record is labeled as sexual violence if **one or more** of the following are true:

- Cause of Injury (E10_01) is 9620 - "Rape (E960.1)"
- Provider's primary impression (E09_15) is 1715: 959.90 - "Sexual assault/rape"
- Provider's secondary impression (E09_16) is 1850: 959.90 - "Sexual assault/rape"
- Provider impressions (eSituation.11, eSituation.12) indicate any of the following ICD-10 codes (sub codes included): T74.2, T74.51, T74.52, T76.2, T76.51, T76.52, Z04.41, Z04.42, Z56.81.
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain the following keywords or phrases (including common misspellings and variants) (negative phrases are excluded, e.g., "denies rape", "did not force sex"): "sexual assault", "sexually abused", "forced sex", "SAFE examination", "SART kit", "SANE testing".

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Stimulant Overdose (DOSE)

Categorical syndrome definition developed as a part of the CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System Guidance based on guidance from CSTE, and SAMSHA, intended to detect incidents involving all stimulant overdoses. **This syndrome is only applicable to ADT data.** Patients included are those meeting **any** of the following criteria:

- Discharge Diagnosis: ICD-9-CM codes indicate stimulant poisoning (969.70, 969.71, 969.72, 969.73, 969.79, 970.0, 970.81, 970.89, 970.9, E854.2, E854.3, E855.2)
- Discharge Diagnosis: ICD-10-CM codes indicate stimulant poisoning (T40.5X1A, T40.5X4A, T43.601A, T43.604A, T43.611A, T43.614A, T43.621A, T43.624A, T43.631A, T43.634A, T43.641A, T43.644A, T43.691A, T43.694A).
- Discharge Diagnosis: SNOMED Codes indicate stimulant poisoning or overdose (296321004, 441527004, 296290006, 61803000)
- Both of the following must be true:
    - Chief Complaint: Matches on an overdose-related term (overdose, poisoning (poison), nodding off, snort, ingestion (ingest, injest), intoxication (intoxic), unresponsive (unresponsiv), loss of consciousness (syncopy, syncope), shortness of breath (SOB), altered mental status (AMS))
    - Chief Complaint: Matches on a stimulant-related term (speedball, cocaine, coke, crack, amphetamine (will catch methamphetamine), meth, crystal meth, lisdexamfetamine, dextroamphetamine, levoamphetamine, biphetamine, Dexedrine, Adderal, Vyvanse, Concerta, Methylin, Ritalin, cathinone, bath salt, stimulant, MDMA, ecstasy, molly)

REFERENCE: Centers for Disease Control and Prevention (CDC) Drug Overdose Surveillance and Epidemiology (DOSE) Stimulant Overdose version 3

Stimulant Overdose (DOSE) - EMS Pilot

Categorical syndrome definition developed as a part of the CDC's Drug Overdose Surveillance and Epidemiology (DOSE) System Guidance based on guidance from CSTE and SAMSHA, intended to detect incidents involving all stimulant overdoses. **This syndrome is only applicable to EMS data and is in a pilot phase.** A NEMSIS v3 record is labeled as a stimulant overdose incident if one or more of the following are true:

- Patient Care Report Narrative (eNarrative.01) or Patient Complaint (eSituation.04) contains an overdose-related term: poisoning (poison), nodding off, snort, ingestion (ingest, injest), intoxication, unresponsive (unresponsiv), loss of consciousness (syncopy, syncope), shortness of breath (SOB), altered mental status (AMS) **AND** Patient Care Report Narrative or Patient Complaint contains a stimulant-related term (speedball, cocaine, coke, crack, amphetamine, methamphetamine, meth, crystal meth, lisdexamfetamine, dextroamphetamine, levoamphetamine, biphetamine, Dexedrine, Adderal, Vyvanse, Concerta, Methylin, Ritalin, cathinone, bath salt, stimulant, MDMA, ecstasy, molly).
- Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) are any of the following ICD-10 codes (sub-codes included): T40.5, T43.6

REFERENCE: Centers for Disease Control and Prevention (CDC) Drug Overdose Surveillance and Epidemiology (DOSE) Stimulant Overdose version 3

Stroke

Categorical syndrome definition intended to detect incidents involving a cerebrovascular accident (CVA), commonly known as a "stroke". The criteria are defined for NEMSIS v3 and v2 as follows:

- NEMSIS v3: Labeled as stroke if **one or more** of the following are true:
  - Provider primary or secondary impression (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes (sub-codes included): I60, I61, I63, G45, G46.3, G46.4.
  - Stroke scale score (eVitals.29) indicates a positive stroke assessment.
- NEMSIS v2: Labeled as stroke if **one or more** of the following are true:
  - Provider primary **OR** secondary impression (E09_05, E09_06) is "436.00-Stroke/CVA".
  - Stroke scale score (E14_24) indicates a positive stroke assessment.

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Substance Use Disorder

Composite syndrome definition intended to detect incidents involving patients exhibiting signs or symptoms of substance use disorder. A record will be labeled as a substance use disorder incident if any of the following are true:

- NEMSIS v3:
  - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provide Primary/Secondary Impression (eSituation.11/eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): F10-F19, G31.2, O99.31, O99.32, T36-T51.
  - Alcohol/Drug Use Indicators (eHistory.17) is any of the following:
    - 3117001: Alcohol Containers/Paraphernalia at Scene
    - 3117003: Drug Paraphernalia at Scene
    - 3117005: Patient Admits to Alcohol Use
    - 3117007: Patient Admits to Drug Use
    - 3117009: Positive Level known from Law Enforcement or Hospital Record
    - 3117011: Smell of Alcohol on Breath
    - 3117013: Physical Exam Indicates Suspected Alcohol or Drug Use
- NEMSIS v2:
  - Alcohol/Drug Use Indicators (E12_09) is any of the following:
    - 2985: Smell of Alcohol on Breath
    - 2990: Patient Admits to Alcohol Use
    - 2995: Patient Admits to Drug Use
    - 3000: Alcohol and/or Drug Paraphernalia at Scene

The Substance Use Disorder syndrome will also match if the record matches the biospatial syndromes for Alcohol or Overdose (FL ESOOS).

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.

Suicide Attempt

Categorical syndrome definition based on the Center for Disease Control and Prevention's Suicide Attempt definition for ESSENCE, which is intended to detect incidents involving a suicide attempt.

A NEMSIS v3 or v2 record is labeled as a suicide attempt if **one or more** of the following are true:

- Cause of Injury (E10_01) is 9570 - "Firearm self inflicted (E955.0)"
- Cause of Injury (eInjury.01) indicates any of the following ICD-10 codes (sub-codes included):
    - Suicide attempt: T14.91
    - Intentional self-harm: X71 - X83
    - Intentional poisoning: T3[6-9].[X0-9][X0-9]2; T37.92; T[4-5][0-9].[X0-9][X0-9]2; T50.[ABZ][129]2
    - Toxic effects of substances ... (intentional self-harm): T6[0-5].[X0-9][X0-9]2
    - Asphyxiation (intentional self-harm): T71.[1-2][1-9]2
- Provider impressions (eSituation.11, eSituation.12) indicate any of the following ICD-10 codes (sub codes included):
    - Suicide attempt: T14.91
    - Intentional poisoning: T3[6-9].[X0-9][X0-9]2; T37.92; T[4-5][0-9].[X0-9][X0-9]2; T50.[ABZ][129]2
    - Toxic effects of substances … (intentional self-harm): T6[0-5].[X0-9][X0-9]2
    - Asphyxiation (intentional self-harm): T71.[1-2][1-9]2
- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain the following keywords or phrases (including common misspellings and variants) (negative phrases are excluded, e.g., "denies suicide", "did not try to kill"): "suicide", "attempted to hang", "tried to shoot", "tried to overdose", "attempts to end life".

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Suicide Ideation

Categorical syndrome definition based on the Center for Disease Control and Prevention's Suicide Ideation definition for ESSENCE, which is intended to detect incidents involving suicide ideation.

A NEMSIS v3 or v2 record is labeled as sucide ideation if **one or more** of the following are true:

- Provider impressions (eSituation.11, eSituation.12) indicate any of the following ICD-10 codes (sub codes included):
    - R45.851: Suicidal ideations

- Chief/secondary complaint (E09_05, E09_08; eSituation.04) or narrative (E13_01; eNarrative.01) contain the following keywords or phrases (including common misspellings and variants) (negative phrases are excluded, e.g., "denies suicide", "did not want to kill self"): "suicide", "suicidal", "wants to die", "wanted to end life", "ideation", "plan to self-harm", "planning to self-inflict", "wants to self mutilate", "going to kill themselves", "wanting to overdose".

Calls that are cancelled prior to arrival at scene, cancelled on scene (no patient contact or found), or are on standby (no services or support provided) are excluded.

Trauma

Categorical syndrome definition intended to detect incidents involving patients with a traumatic injury. A record will be labeled as a trauma incident if any of the following are true:

- NEMSIS v3:
    - Cardiac Arrest Etiology (eArrest.02) is 3002015: Trauma.
    - Possible Injury (eSituation.02) is 9922005: Yes **AND** either of the following are true:
        - Initial Patient Acuity (eSituation.13) is any of the following: 2813001 Critical (Red), 2813003 Emergent (Yellow), 2813007 Dead without Resuscitation Efforts (Black).
        - Final Patient Acuity (eDisposition.19) is any of the following: 4219001 Critical (Red), 4219003 Emergent (Yellow), 4219007 Dead without Resuscitation Efforts (Black), 4219009 Dead with Resuscitation Efforts (Black).
    - Primary/Other Associated Symptoms (eSituation.09/eSituation.10) **OR** Provider Primary/Secondary Impression (eSituation.11/eSituation.12) indicate any of the following ICD-10 codes (sub-codes included): O71.9, R58, S02, S05, S06, S09.9, S12, S17, S19.9, S27.0, S27.1, S28, S29.9, S39.9, S49.9, S59.9, S69.9, S79.9, S89.9, S99.9, T07, T14, T30.0, T79.4, T79.9.
    - Protocols Used (eProtocols.01) is any of the following:
        - 9914045: Exposure-Explosive/ Blast Injury
        - 9914077: Injury-Amputation
        - 9914087: Injury-Cardiac Arrest
        - 9914089: Injury-Crush Syndrome
        - 9914097: Injury-Extremity
        - 9914099: Injury-Eye
        - 9914101: Injury-Head
        - 9914103: Injury-Impaled Object
        - 9914105: Injury-Multisystem
        - 9914107: Injury-Spinal Cord
        - 9914193: Injury-Thoracic
        - 9914205: Injury-Facial Trauma
        - 9914207: Injury-General Trauma Management
        - 9914209: Injury-Lightning/Lightning Strike

    - Destination Team Pre-arrival Alert or Activation (eDisposition.24) is any of the following:
        - 4224003: Yes - Trauma - Adult
        - 4224011: Yes - Trauma - Pediatric
        - 4224017: Yes - Trauma (General)
- NEMSIS v2:
    - Provider's Primary Impression (E09_15) is 1740: 959.90 - Traumatic injury
    - Provider's Secondary Impression (E09_16) is 1875: 959.90 - Traumatic injury
    - Cardiac Arrest Etiology (E11_02) is 2255: Trauma.
    - Protocols Used (E17_01) is any of the following:
        - 6920: Extremity Trauma
        - 6925: Eye Trauma
        - 6940: Head Trauma
        - 7000: Trauma-Multisystem
        - 7175: Spinal Cord Trauma
        - 7214: Trauma-Arrest
        - 7215: Trauma-Amputation
    - Procedure (E19_03) is any of the following:
        - 101.101: Specialty Center Activation-Adult Trauma
        - 101.102: Specialty Center Activation-Pediatric Trauma

The Trauma syndrome will also match if the record matches the biospatial implementation of anatomic or physiologic trauma triage criteria.

Exclusions:

- Calls with no patient contact (E20_10; eDisposition.12) are excluded.