



2023

NATIONAL EMS DATA REPORT



NEMSIS DATA REPORT 2023

EMS, HIGHWAY SAFETY & POST-CRASH CARE

For more than 50 years, the National Highway Traffic Safety Administration (NHTSA) Office of EMS (OEMS) has supported EMS system improvements because the effort to reduce serious injuries and deaths on our country's streets, roads and highways requires effective EMS and 911 systems.

A primary focus in 2023 has been outreach to federal, state, tribal, territorial, local and private stakeholders focused on educating transportation partners on the benefits of and opportunities for collaboration with EMS and 911 communities.

WHAT IS NEMSIS?

NEMSIS is the National Emergency Medical Services Information System supported by the National Highway Traffic Safety Administration (NHTSA), Office of Emergency Medical Services (OEMS).

States and territories across the nation voluntarily submit EMS data to the NEMSIS Technical Assistance Center (TAC). The TAC receives the data and stores it in the National EMS Database.

NATIONAL EMS DATABASE

It is the largest publicly available database of prehospital medical care in the United States.

NEMSIS is an EMS activation registry. One patient may require multiple EMS encounters or transports, and not every EMS response has a patient encounter. While very robust and extensive, the database is not a full census of EMS activations because there are a few counties that do not contribute data.

PUBLIC DATA

The public dataset is comprised of data elements and values that are made available to the public. States and territories submit some data that are not open to public use without explicit authorization from that state/territory. The restricted data include geographical identifiers such as incident State, County, ZIP Codes and State EMS Agency Number.

No personal health information (PHI) is reflected in the data provided by states.

NATIONAL DATA STANDARD

NEMSIS is responsible for establishing and maintaining a National EMS Data Standard through extensive collaboration with industry stakeholders. State/territory EMS data managers, EMS software vendors, clinicians, billers, researchers and national partners all contribute to the development of and updates to the data standard.

Data elements represented in the standard are identified as National, State, Optional, and Custom. Only National data elements are submitted to the NEMSIS TAC for inclusion in the National EMS Database.

NEMSIS v3.5 DATA STANDARD

The 2023 EMS data reflected in this report are primarily submitted in the NEMSIS v3.5 standard. Some states/territories submitted their data in a previous version of the standard.

Of the 585 data elements present in the v3.5 standard, 165 are national and collected by the NEMSIS TAC. Each state/territory determines which additional elements they will require, and EMS agencies may also implement the collection of elements specific to their service.

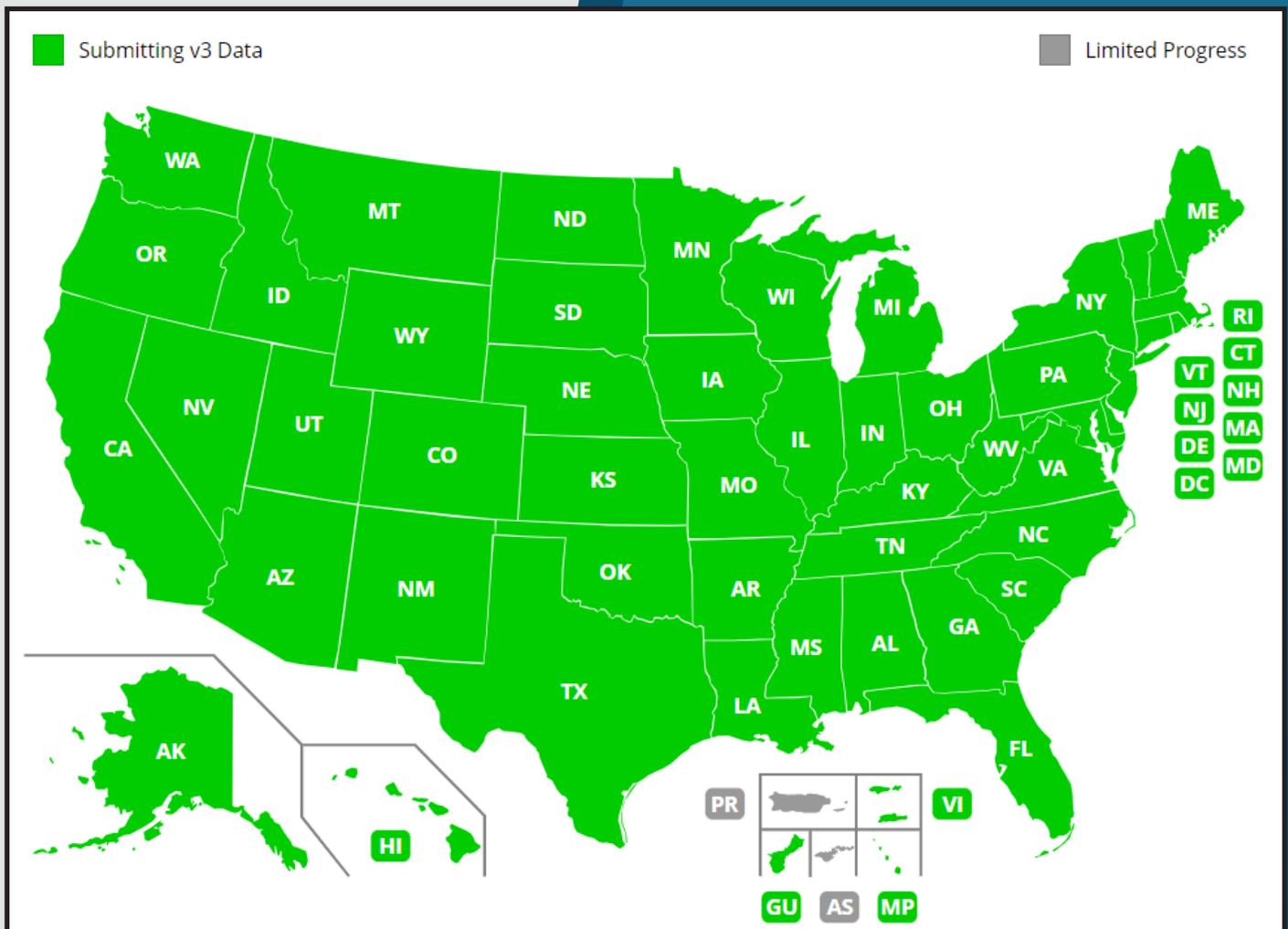
DATA QUALITY

Much care is taken to ensure that national NEMESIS data are as clean as possible. All data collected by EMS clinicians are exposed to several hundred error checking rules at the time of data entry, and again when data are submitted to the state and national repositories.

Any data errors that remain when data are submitted to the national repository are reported back to states and agencies on a weekly basis. Corrected data can be resubmitted to state and national repositories and will automatically update existing records.



All States, DC, Guam, Mariana Islands and the Virgin Islands submitted EMS activations to the National EMS Database in 2023.



OVERVIEW

Total Number of Activations

54,190,579

Participating States/Territories

54

Number of Agencies

14,369

Treated and Transported 911 Response

36,367,261

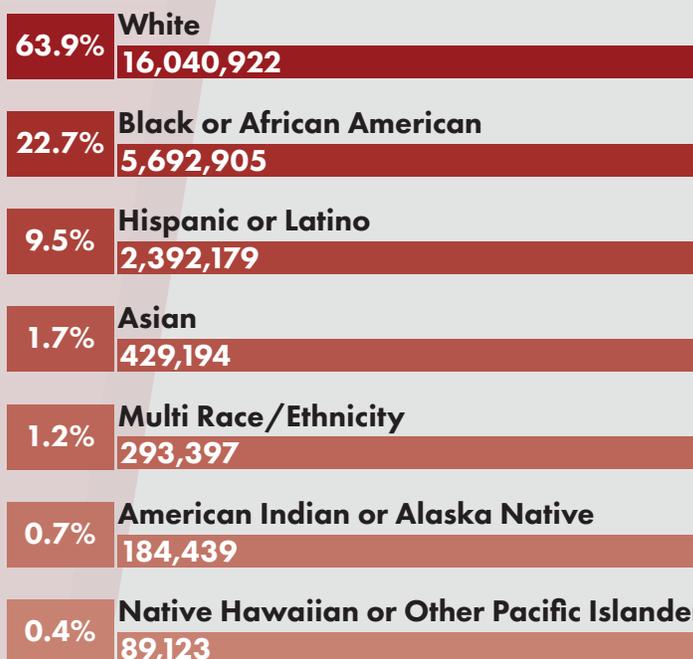
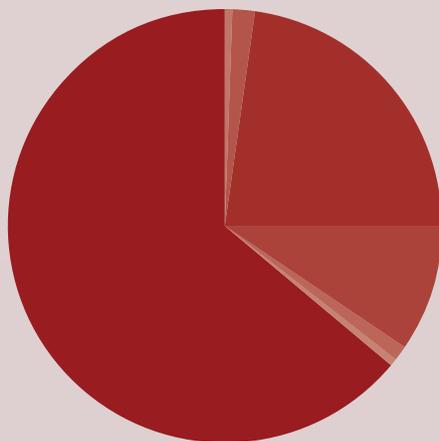
An EMS activation is an occurrence which initiates an EMS response with the potential of patient contact. This is also referred to as an EMS "call" or "run". An activation can include: 911 calls, critical care transports, interfacility transports, standby events, or scheduled medical transports. The data are reflected as the number of activations instead of the number of patients because there can be more than one activation per patient per call.

■ RACE/ETHNICITY

[ePatient.14](#) - Patients can indicate more than one race.

The patient's race as defined by the OMB (US Office of Management and Budget).

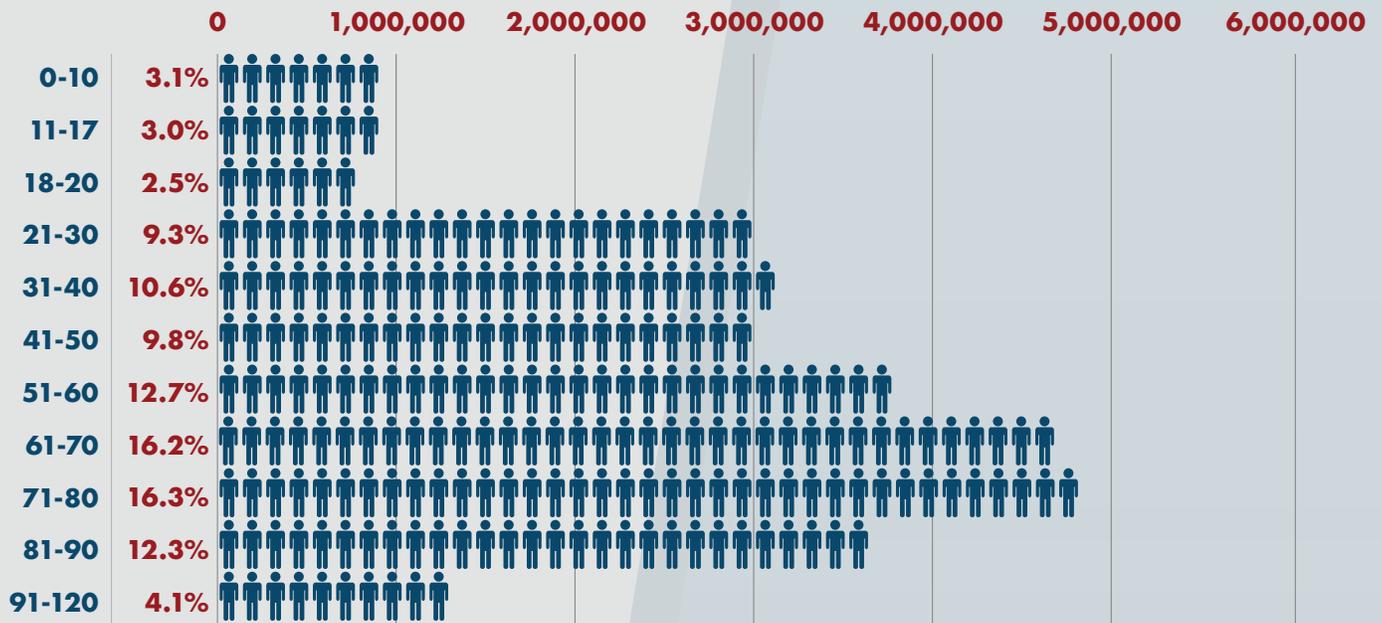
OMB requirements are provided at: <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-089.html>



Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

■ PATIENT AGE

ePatient.15 - The patient's age (either calculated from date of birth or best approximation).

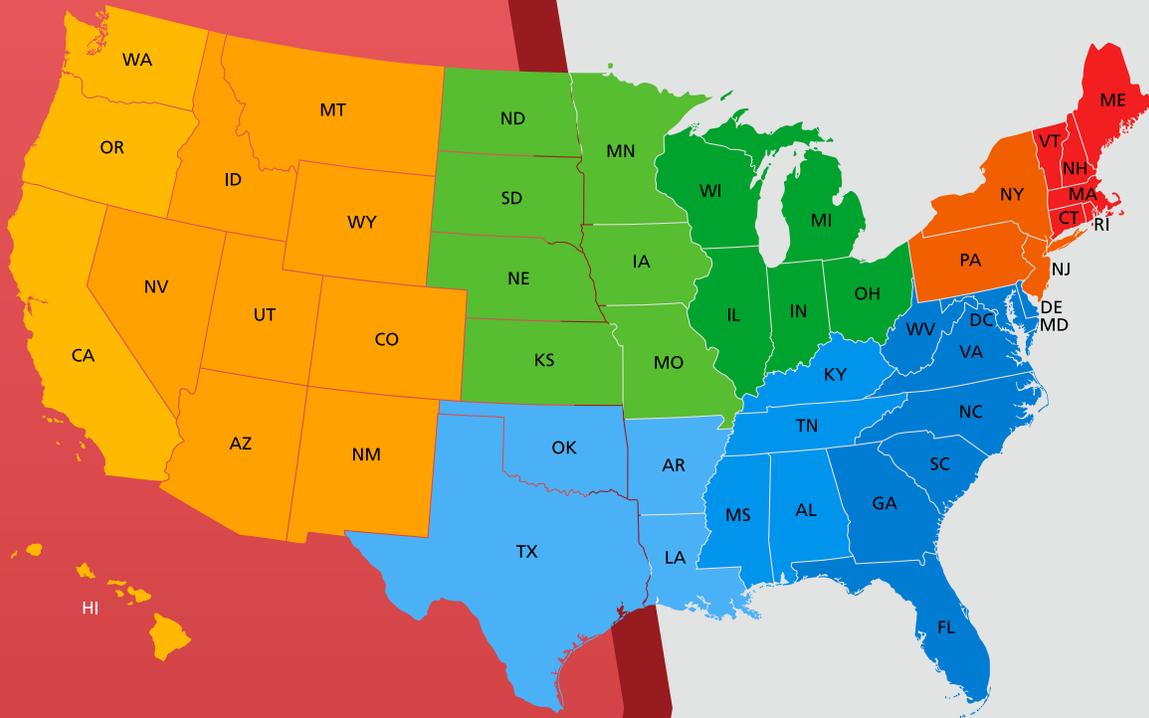


Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.



■ US CENSUS DIVISION OF EMS ACTIVATIONS

eScene.23 - The census tract in which the incident occurred.



Northeast

- New England **2,507,225** 5.5%
- Mid-Atlantic **6,134,491** 13.3%

Midwest

- East North Central **6,946,740** 15.1%
- West North Central **2,584,637** 5.6%

South

- South Atlantic **12,234,102** 26.6%
- East South Central **2,802,083** 6.1%
- West South Central **4,779,413** 10.4%

West

- Mountain **2,309,842** 5.0%
- Pacific **5,708,545** 12.4%

■ URBANICITY OF EMS INCIDENT LOCATION

Urbanicity is calculated using the 2013 USDA Urban Influence Codes to best classify geographic areas. Read more here: <https://www.ers.usda.gov/data-products/urban-influence-codes/documentation.aspx>

Urbanicity	Count of Events	Percent of Total
Urban	31,122,010	87.5%
Rural	2,114,642	5.9%
Suburban	1,879,996	5.3%
Wilderness	471,713	1.3%
TOTAL	35,588,361	

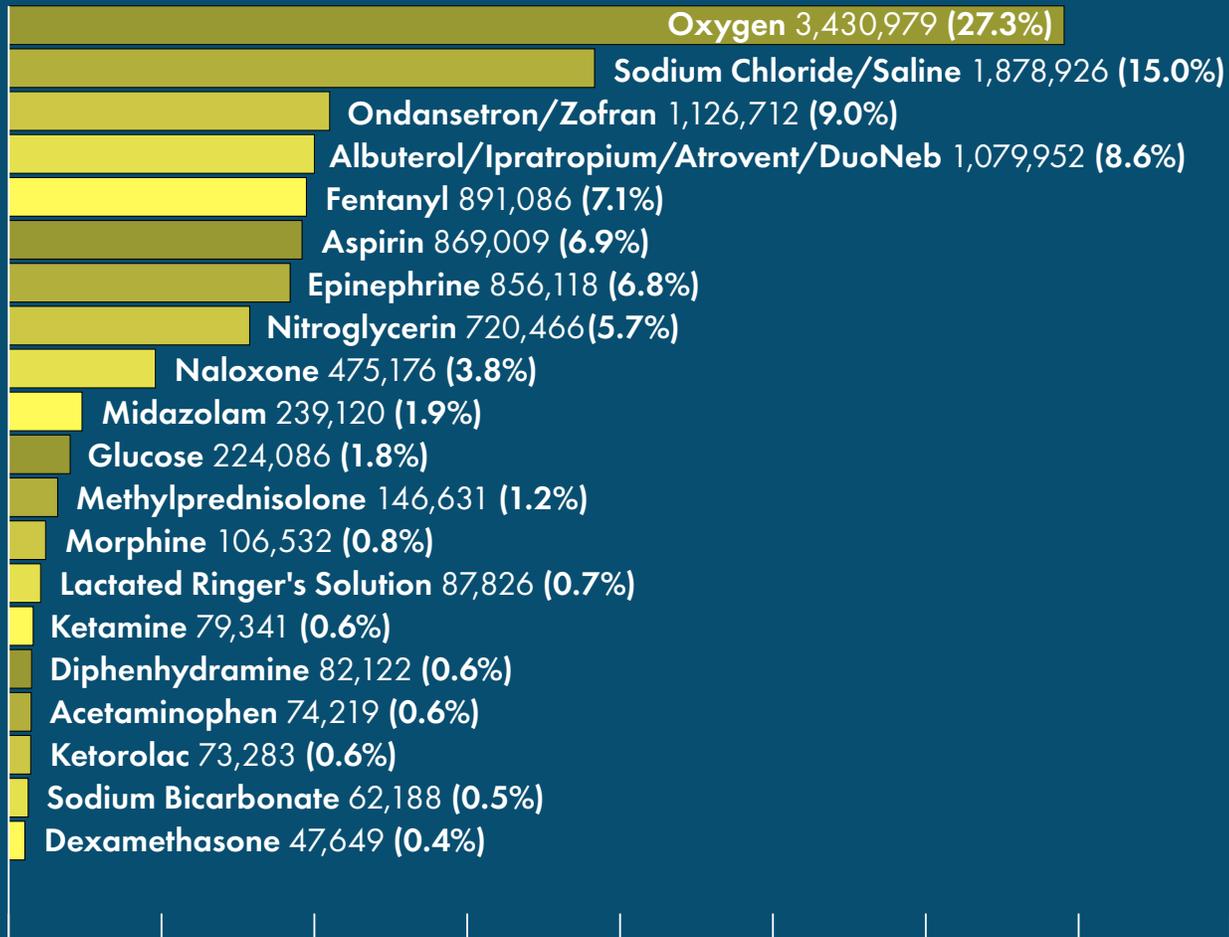
■ EMS AGENCY ORGANIZATIONAL STATUS

[dAgency.12](#) - The primary organizational status of the agency. The definition of Volunteer or Non-Volunteer is based on state or local definitions.

Organizational Status	Count of Events	Percent of Total
Non-Volunteer	37,187,460	80.8%
Mixed	8,066,288	17.5%
Volunteer	787,125	1.7%
TOTAL	46,040,873	

■ TOP 20 MEDICATIONS GIVEN

eMedication_03 - Medication given. List of medications based on RxNorm (RXCUI) codes.



Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.



TOP 20 CAUSES OF INJURY

eSituation.11 - The reported/suspected external cause of the injury. Based on ICD-10 codes.

	Cause of Injury ICD-10 Name	Count of Events	Percent of Total
	Falls (including Tripping, Slipping, Fall from Furniture/Stairs, Ice/Snow)	2,625,518	51.8%
	Motor Vehicle Crash (including Car Accident, Collision, Motorcycle, Occupant Injured)	1,410,893	27.8%
	Assault (including by Bodily Force, by Blunt Object, by Stabbing, by Other Means)	379,944	7.5%
	Other Specified Events, Undetermined Intent	105,587	2.1%
	Contact with Knife, Sword, Dagger, or Unspecified Sharp Object	91,685	1.8%
	Injury, Unspecified	81,078	1.6%
	Intentional Self-Harm (including Suicide Attempt)	60,289	1.2%
	Homicide (Attempted)	51,268	1.0%
	Accidental Hit, Strike, Kick, Twist, Bite, Bump, or Scratch by Another Person	43,501	0.9%
	Striking Against or Struck by Thrown, Projected, Falling, or Other Objects	43,381	0.9%
	Contact with or Bitten by Dog	31,578	0.6%
	Contact with Blunt Object, Undetermined Intent	29,453	0.6%
	Slipping, Tripping and Stumbling without Falling	27,220	0.5%
	Activities, Other Specified	25,222	0.5%
	Fracture	18,069	0.4%
	Caught, Crushed, Jammed or Pinched in or Between Objects	14,857	0.3%
	Contact with Machinery	9,285	0.2%
	Unspecified Firearm Discharge	8,625	0.2%
	Walking and Running	8,324	0.2%
	Contact with Saliva, Feces or Urine of Mammal	7,371	0.1%
TOTAL		5,073,148	

Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.



PROVIDER'S PRIMARY IMPRESSION

[eSituation.11](#) - The EMS personnel's impression of the patient's primary problem or most significant condition which led to the management given to the patient (treatments, medications, or procedures). Based on ICD-10 codes.

	Primary Impression ICD-10 Name	Count of Events	Percent of Total
	Weakness	1,890,189	14.0%
	Injury, Unspecified	1,268,926	9.4%
	Change in Mental Status	970,630	7.2%
	Generalized Abdominal Pain	897,913	6.6%
	Acute Pain, not Elsewhere Classified	891,631	6.6%
	Syncope and Collapse	779,305	5.8%
	Chest Pain, Unspecified	736,595	5.5%
	Encounter for General Examination Without Complaint, Suspected or Reported Diagnosis	628,241	4.6%
	Respiratory Distress	576,082	4.3%
	Encounter for Adult Health Check-Up	547,803	4.1%
	Other Malaise	544,271	4.0%
	Mental Illness	477,002	3.5%
	Back Pain	467,694	3.5%
	Shortness of Breath	438,667	3.2%
	Light-Headedness	437,248	3.2%
	Unspecified Injury of Head	409,704	3.0%
	Anxiety	403,247	3.0%
	Generalized Pain	393,378	2.9%
	Other Chest Pain	378,794	2.8%
	Epileptic Fits	373,452	2.8%
TOTAL		13,510,772	

Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.



■ PATIENT/CREW DISPOSITION

[eDisposition.12](#) - Type of disposition and/or transport of the patient by this EMS Unit. For additional information, click on the following link to see the [Extended Data Definitions](#).

Incident/Patient Disposition Name	Count of Events	Percent of Total
Patient Treated, Transported by EMS	21,065,219	57.9%
Canceled (Prior to Arrival At Scene)	2,332,290	6.4%
Patient Treated, Transferred Care to Another EMS Professional	2,329,724	6.4%
Patient Refused Evaluation/Care (Without Transport)	2,111,613	5.8%
Patient Treated, Released (AMA)	1,824,722	5.0%
Canceled on Scene (No Patient Contact)	1,496,872	4.1%
Canceled on Scene (No Patient Found)	1,147,272	3.2%
Patient Evaluated, No Treatment/Transport Required	863,636	2.4%
Patient Treated, Released (per protocol)	779,707	2.1%
Assist, Unit	693,021	1.9%
Assist, Public	418,211	1.2%
Assist, Agency	407,062	1.1%
Standby-Public Safety, Fire, or EMS Operational Support Provided	294,953	0.8%
Patient Dead at Scene-No Resuscitation Attempted (Without Transport)	260,615	0.7%
Standby-No Services or Support Provided	116,676	0.3%
Patient Dead at Scene-Resuscitation Attempted (Without Transport)	106,006	0.3%
Patient Treated, Transported by Private Vehicle	46,770	0.1%
Patient Treated, Transported by Law Enforcement	41,522	0.1%
Patient Refused Evaluation/Care (With Transport)	19,101	0.1%
Patient Dead at Scene-No Resuscitation Attempted (With Transport)	6,267	<0.01%
Patient Dead at Scene-Resuscitation Attempted (With Transport)	3,304	<0.01%
Transport Non-Patient, Organs, etc.	2,698	<0.01%
TOTAL	36,367,261	

Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

■ TYPE OF SERVICE REQUESTED

[eResponse.05](#) - The type of service or category of service initiated of the EMS Agency responding for this specific EMS event.

Type of Service	Count of Events	Percent of Total
911 Response (Scene)	36,367,261	79.0%
Medical Transport	4,765,743	10.4%
Interfacility Transport	4,179,580	9.1%
Public Assistance/Other Not Listed	243,225	0.5%
Mutual Aid	195,544	0.4%
Intercept	151,884	0.3%
Standby	137,636	0.3%
TOTAL	53,572,097	



Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

■ TYPE OF DESTINATION

[eDisposition.21](#) - The type of destination to which the patient was transported or transferred.

Type of Destination	Count of Events	Percent of Total
Hospital-Emergency Department	20,914,310	90.5%
Hospital-Non-Emergency Department Bed	1,502,001	6.5%
Other EMS Responder (ground)	194,664	0.8%
Other	189,280	0.8%
Freestanding Emergency Department	117,984	0.5%
Home	52,980	0.2%
Nursing Home/Assisted Living Facility	44,553	0.2%
Other EMS Responder (air)	39,053	0.2%
Medical Office/Clinic	25,436	0.1%
Morgue/Mortuary	15,775	0.1%
Urgent Care	4,581	0.02%
Police/Jail	3,772	0.02%
TOTAL	23,104,389	

Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

■ PATIENT'S PRIMARY SYMPTOM

eSituation.09 - The primary sign and symptom present in the patient or observed by EMS personnel. Based on ICD-10 codes.

Primary Symptom ICD-10 Name	Count of Events	Percent of Total
Weakness	2,017,328	13.0%
Shortness of Breath	1,479,611	9.5%
Chest Pain	1,306,563	8.4%
Change in Mental Status	1,277,147	8.2%
Generalized Pain	1,183,401	7.6%
Nausea and Vomiting	937,643	6.0%
Other General Symptoms and Signs	901,678	5.8%
Encounter for Adult Health Check-Up	708,686	4.6%
Encounter for General Examination without Complaint, Suspected or Reported Diagnosis	702,838	4.5%
Anxiety and Worries	623,935	4.0%
Back Pain	578,797	3.7%
Syncope and Collapse	542,821	3.5%
Light-Headedness	515,629	3.3%
Hemorrhage	495,402	3.2%
Headache	484,795	3.1%
Other Malaise	459,763	3.0%
Generalized Abdominal Pain	405,917	2.6%
Pain in Limb, Hand, Foot, Fingers and Toes	348,594	2.2%
Convulsions	296,219	1.9%
Strange and Inexplicable Behavior	265,807	1.7%
TOTAL	15,532,574	

Inclusion criteria: 911 initiated and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.



■ TRANSPORT MODE FROM SCENE

[eResponse.23](#) - The indication whether the response was emergent or non-emergent. An emergent response is an immediate response as determined by local or state protocols.

Transport Mode from Scene	Count of Events	Percent of Total
Non-Emergent	15,203,669	69.9%
Emergent (Immediate Response)	6,217,885	28.6%
Emergent Downgraded to Non-Emergent	259,039	1.2%
Non-Emergent Upgraded to Emergent	76,794	0.4%
TOTAL	21,757,387	



■ EMS PROVIDER LEVEL OF CARE

[eResponse.15](#) - The level of care (BLS or ALS) the unit is able to provide based on the units' treatment capabilities for this EMS response.

Level of Care	Count of Events	Percent of Total
ALS-Paramedic	27,313,865	75.1%
BLS-Basic /EMT	6,583,623	18.1%
ALS-AEMT	783,803	2.2%
Specialty Critical Care	601,230	1.7%
BLS-First Responder/EMR	396,088	1.1%
ALS-Intermediate	300,059	0.8%
BLS-AEMT	286,693	0.8%
BLS-Intermediate	45,398	0.1%
ALS-Community Paramedicine	25,543	0.1%
ALS-Nurse	22,174	0.1%
ALS-Physician	5,410	<0.1%
BLS-Community Paramedicine	3,698	<0.1%
TOTAL	36,367,261	



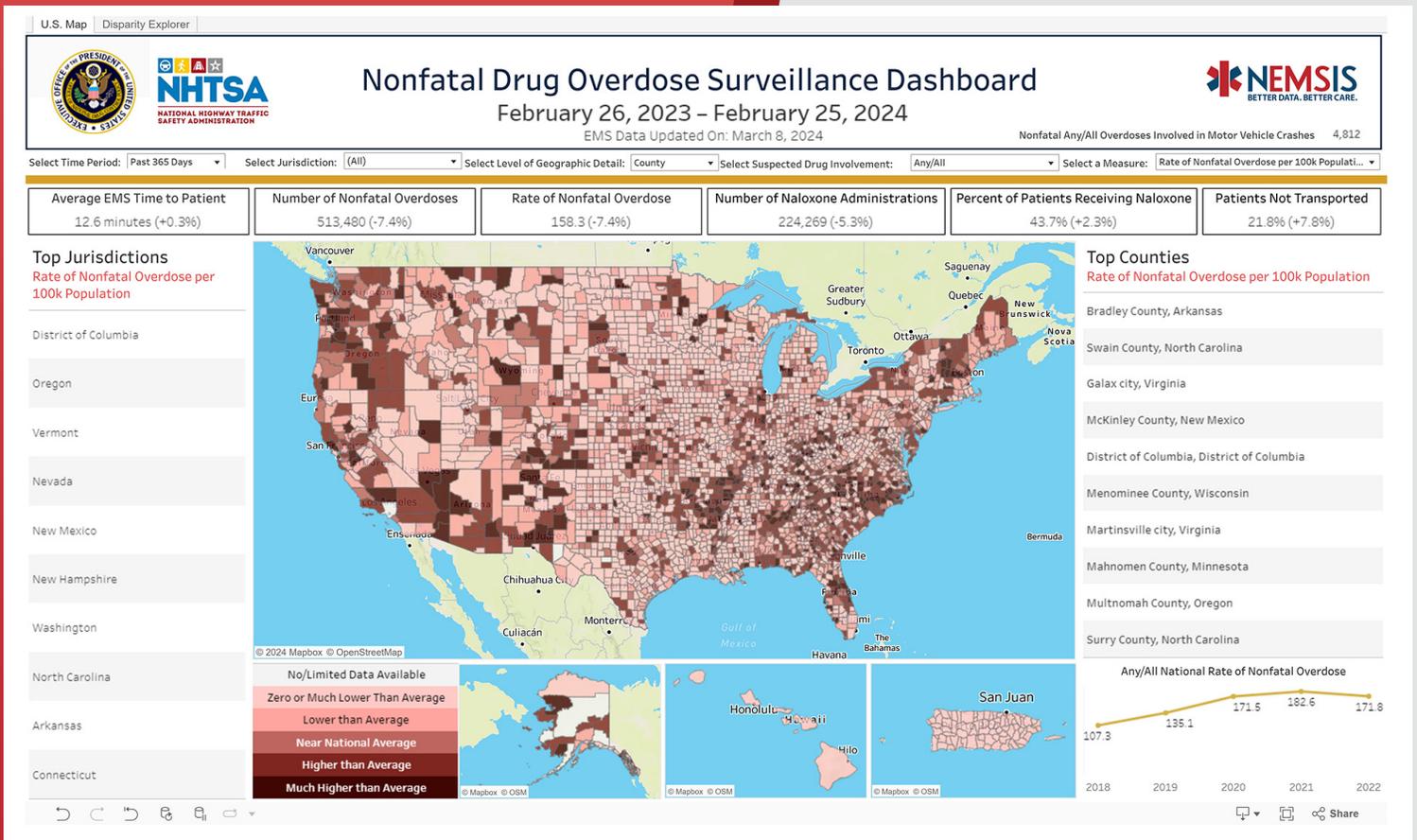
NONFATAL DRUG OVERDOSE SURVEILLANCE DASHBOARD

The ONDCP Nonfatal Drug Overdose Surveillance Dashboard is informed by a derivation of clinical and patient characteristics within the National EMS Information System (NEMSIS) maintained by NHTSA. The NEMSIS data consist of electronic patient care records completed by nearly 95 percent of all EMS agencies nationwide. On average, the data submitted to the national NEMSIS database are 93 percent complete within two weeks.

The Dashboard allows for comparisons of jurisdiction and county level data to national averages in four categories: population rate of nonfatal opioid overdose in a community, average number of naloxone administrations per patient, average EMS time in transit to reach an overdose patient, and the percent of nonfatal opioid overdose patients who are not transported to a medical facility for further treatment. The Dashboard also features the jurisdictions and counties with highest rates of nonfatal overdoses in the prior rolling 12-month and 28-day periods.

The data are updated every Monday morning with a two-week lag. This Dashboard does not currently include other possible sources of naloxone administration such as from community bystanders and therefore is an underestimate of all naloxone administration in the nation.

Visit the dashboard here: <https://nemsis.org/nonfatal-drug-overdose-surveillance-dashboard/>



NEMSIS DATA REPORT 2023

ACKNOWLEDGMENTS

No publication using NEMSIS data would be possible without the dedication and professionalism of EMS clinicians across the country. Likewise, the support and technical guidance provided by state/territory offices of EMS, EMS software vendors, and national partners create the foundation through which EMS data can inform policies, procedures, and protocols to improve EMS evidence-based medical care.

ASSUMPTIONS OF EMS DATA

Hundreds of thousands of EMS clinicians from every walk of life and demographic, document their patient encounters. There is no single right way to complete a patient care report (PCR) and documentation training is varied.

As such, EMS data are rarely collected in calm, sterile, predictable environments. States, territories, and agencies all impact the methods, requirements and codes used to document EMS response activities. This is why there are many descriptions (or codes) used to describe similar injury or illness characteristics. (See Cause of Injury graphic on page seven for an example of the many methods and requirements used to document a “fall”.)

RESEARCHERS

A Public-Release Research Dataset is available to researchers. These very large files (SAS, STATA, ASCII) contain all the public data for one year. Researchers can create and run their own queries and as a static dataset, their results may be validated by other researchers. The Public-Release Research Datasets are used frequently in peer-reviewed scholarly publications.

The Public-Release Research Dataset does not contain information that identifies patients, EMS

agencies, receiving hospitals, or reporting states. EMS Events submitted by states/territories to NEMSIS does not necessarily represent all EMS activations occurring within a state. In addition, states may vary in criteria used to determine the types of EMS activations submitted to the NEMSIS dataset.

Request a copy of the NEMSIS Public-Release

Dataset here:

<https://nemsis.org/using-ems-data/request-research-data/>

CITATION

To cite findings presented in this document, please reference:

National EMS Information System (NEMSIS), (2024) NHTSA Office of EMS, Department of Transportation, 2023 Data Report.

AUTHORS

Christopher Karl Hoffman
Parneet Kaur
Benjamin Fisher

FOR MORE INFORMATION

Please visit

<https://www.NEMSIS.org>

for additional details or email

NEMSIS@hsc.utah.edu with any questions.

