



---

# 2019 DATA REPORT

---

---

# NEMSIS DATA REPORT 2019

## 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 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.

It is **not** a patient registry as one patient may require multiple EMS encounters/transportations during a single event 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 states/territories that do not contribute data. It is a database of EMS activations.

## 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 ZIP Code, EMS agency name, and receiving facility ZIP Code.

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.



---

## NEMESIS v3.4 DATA STANDARD

The 2019 EMS data reflected in this report are primarily submitted in the NEMESIS v3.4 standard. Some states/territories submit their data in the previous version of the standard, NEMESIS v3.3.4.

Of the 585 data elements present in the v3.4 standard, 165 are national and collected by the NEMESIS 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 the data are as clean as possible.

All data submitted by states must comply with the XML standard and are exposed to several hundred error rules. For the most part, the NEMESIS TAC does not correct identified errors.

The NEMESIS TAC does not have the resources to require states or agencies to correct errors retrospectively, but errors are reported to states, with hopes of future data refinement. Thus, the information contained in this dataset is provided as reported by states.

---

## OVERVIEW

---

# Total Number of Activations

# 36,119,969

Participating States/Territories

# 47

Number of Agencies

# 11,025

911 Initiated Responses

# 27,925,669 (77.31%)

An EMS activation is an occurrence which initiates an EMS response with the potential of patient medical care. 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.

#### TYPICAL PATIENT (OVERALL)



**Age 60 - 36,856 (1.6%)**

**Race White - 12,013,748 (64.5%)**

**Sex Female - 11,986,073 (52.0%)**

**EMS Transport Method Ground-Ambulance - 18,969,357 (98.6%)**

Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

#### TYPICAL PATIENT (PEDIATRIC)



**Age 17 - 163,955 (11.0%)**

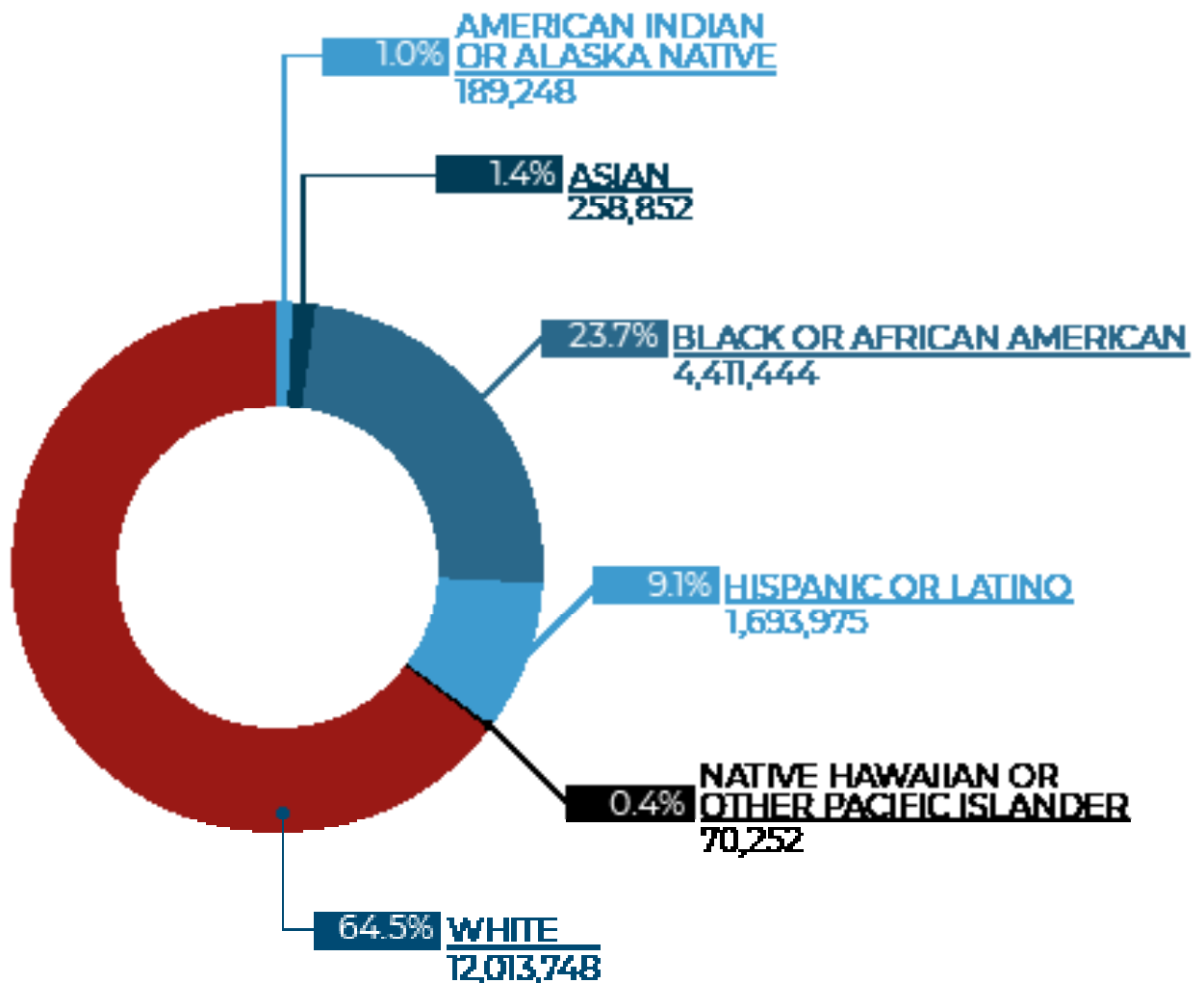
**Race White - 541,732 (46.3%)**

**Sex Male - 762,974 (51.8%)**

**EMS Transport Method Ground-Ambulance - 1,412,339 (97.1%)**

Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

#### RACE/ETHNICITY



Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

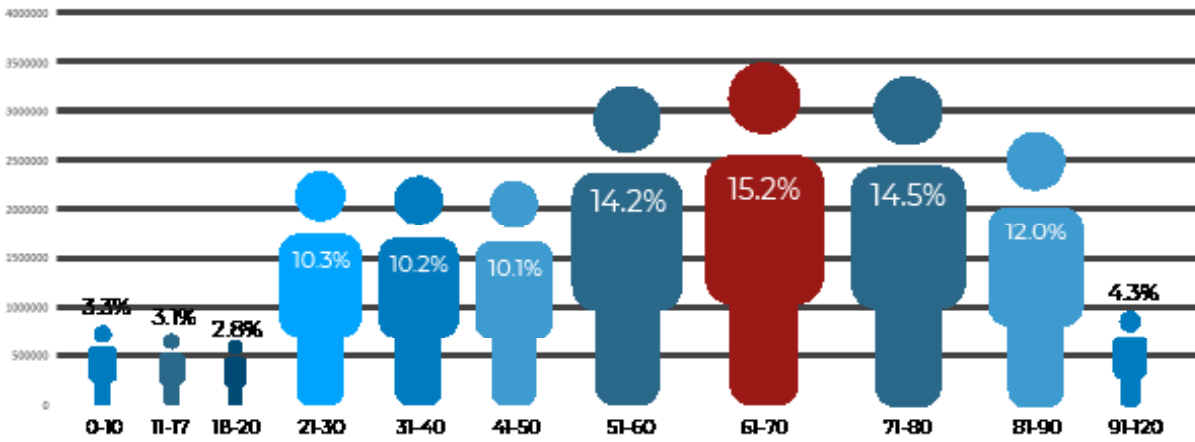
The patient's race as defined by the OMB (US Office of Management and Budget).

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

Element- ePatient.14. Patients can indicate more than one race.

**PATIENT AGE**

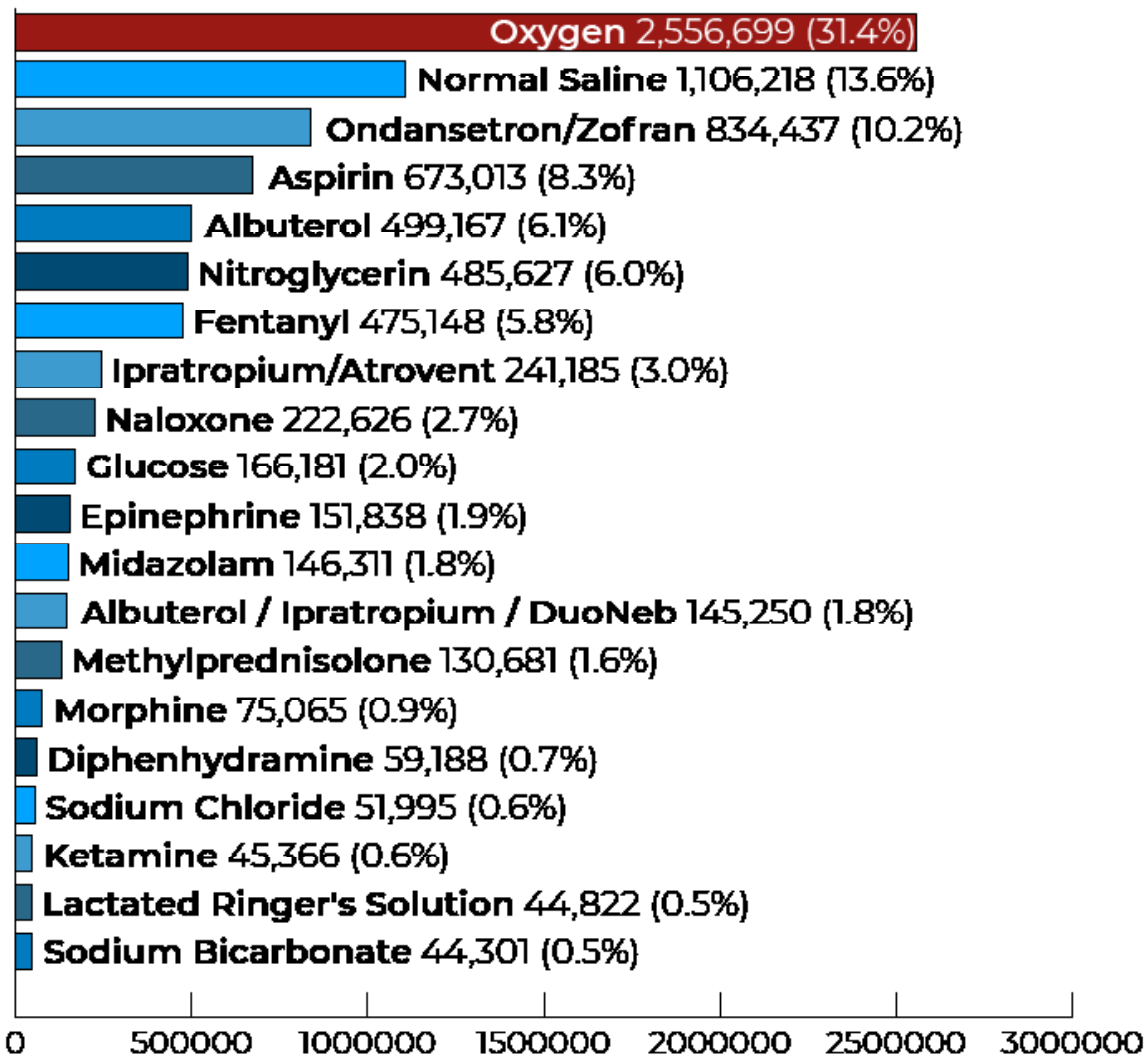
[ePatient.15](#) - The patient's age (either calculated from date of birth or best approximation).



Inclusion criteria: 9-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

**TOP 18 MEDICATIONS GIVEN**

[eMedication.03](#) - Medication given. List of medications based on RxNorm (RXCU) codes.



Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

## TOP 20 CAUSES OF INJURY (ICD-10\_CM Codes)

[eSituation.11](#) - The reported/suspected external cause of the injury.

Incident Patient Disposition	Count of Events	Percent of Total
Falls (including tripping, slipping, fall from furniture/stairs, ice/snow)	2,001,183	52.1%
Motor Vehicle Crash (including car accident, collision, motorcycle, occupant injured)	1,172,727	30.5%
Assault (including by bodily force, by blunt object, by stabbing, by other means)	279,588	7.3%
Homicide (attempted) NOS	69,048	1.8%
Intentional self-harm by unspecified sharp object or other specified means	35,462	0.9%
Accidental hit, strike, kick, twist, bite, bump, or scratch by another person	34,141	0.9%
Other specified events, undetermined intent	28,489	0.7%
Striking against or struck by other objects	25,306	0.7%
Contact with blunt object, undetermined intent	25,161	0.7%
Contact with or bitten by dog	21,390	0.6%
Contact with knife, sword or dagger	20,453	0.5%
Contact with unspecified sharp object, undetermined intent	19,985	0.5%
Other specified effects of external causes	19,592	0.5%
Caught, crushed, jammed or pinched in or between objects	14,491	0.4%
Contact with sharp glass	13,714	0.4%
Suicide attempt	13,435	0.4%
Struck by thrown, projected or falling object	13,180	0.3%
Foreign body or object entering through skin	12,907	0.3%
Injury, unspecified	12,394	0.3%
Contact with machinery NOS	8,175	0.3%
<b>TOTAL</b>	<b>3,840,821</b>	<b>100%</b>

Inclusion criteria: 9-1-1 requested 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.

Incident Patient Disposition	Count of Events	Percent of Total
Patient Treated, Transported by EMS	16,776,954	60.1%
Canceled (Prior to Arrival At Scene)	1,762,139	6.3%
Patient Treated, Transferred Care to Another EMS Professional	1,523,087	5.5%
Patient Refused Evaluation/Care (Without Transport)	1,463,965	5.2%
Patient Treated, Released (AMA)	1,256,643	4.5%
Canceled on Scene (No Patient Contact)	1,203,269	4.3%
Patient Evaluated, No Treatment/Transport Required	819,458	2.9%
Canceled on Scene (No Patient Found)	783,919	2.8%
Assist, Unit	514,648	1.8%
Patient Treated, Released (per protocol)	503,853	1.8%
Assist, Public	310,920	1.1%
Assist, Agency	257,086	0.9%
Standby-Public Safety, Fire, or EMS Operational Support Provided	242,444	0.9%
Patient Dead at Scene-No Resuscitation Attempted (Without Transport)	182,707	0.7%
Standby-No Services or Support Provided	131,152	0.5%
Patient Dead at Scene-Resuscitation Attempted (Without Transport)	74,140	0.3%
Patient Treated, Transported by Private Vehicle	51,953	0.2%
Patient Treated, Transported by Law Enforcement	45,512	0.16%
Patient Refused Evaluation/Care (With Transport)	12,153	0.04%
Patient Dead at Scene-No Resuscitation Attempted (With Transport)	4,933	0.02%
Patient Dead at Scene-Resuscitation Attempted (With Transport)	3,369	0.01%
Transport Non-Patient, Organs, etc.	1,365	<0.01%
<b>TOTAL</b>	<b>27,925,669</b>	<b>100%</b>

Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

### PROVIDER'S PRIMARY IMPRESSION (ICD-10\_CM CODE)

[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).

Primary Impression ICD Name	Count of Events	Percent of Total
T14.90 Injury, unspecified	1,342,978	12.4%
R53.1 Asthenia NOS	1,309,902	12.1%
R41.82 Change in mental status NOS	824,820	7.6%
R10.84 Generalized abdominal pain	728,309	6.7%
G89.1 Acute pain, not elsewhere classified	625,209	5.8%
J80 Acute respiratory distress syndrome	621,602	5.8%
R55 Syncope and collapse	564,394	5.2%
F99 Mental illness NOS	477,418	4.4%
R07.9 Chest pain, unspecified	452,780	4.2%
Z00 Encounter for general examination without complaint, suspected or reported diagnosis	439,167	4.1%
M54.9 Back pain NOS	403,396	3.7%
R52 Generalized pain NOS	394,480	3.7%
Z00.00 Encounter for adult health check-up NOS	391,968	3.6%
R53.81 Chronic debility	357,725	3.3%
R07.89 Other chest pain	350,860	3.3%
R10.0 Severe abdominal pain (generalized) (with abdominal rigidity)	318,035	2.9%
S09.90 Unspecified injury of head	308,889	2.9%
G40.909 Epileptic fits NOS	307,580	2.8%
I20.9 Cardiac angina	300,946	2.8%
R51 Headache	274,944	2.5%
<b>TOTAL</b>	<b>10,795,402</b>	<b>100%</b>

Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

### PATIENT'S PRIMARY SYMPTOM (ICD-10\_CM CODE)

[eSituation.09](#) - The primary sign and symptom present in the patient or observed by EMS personnel.

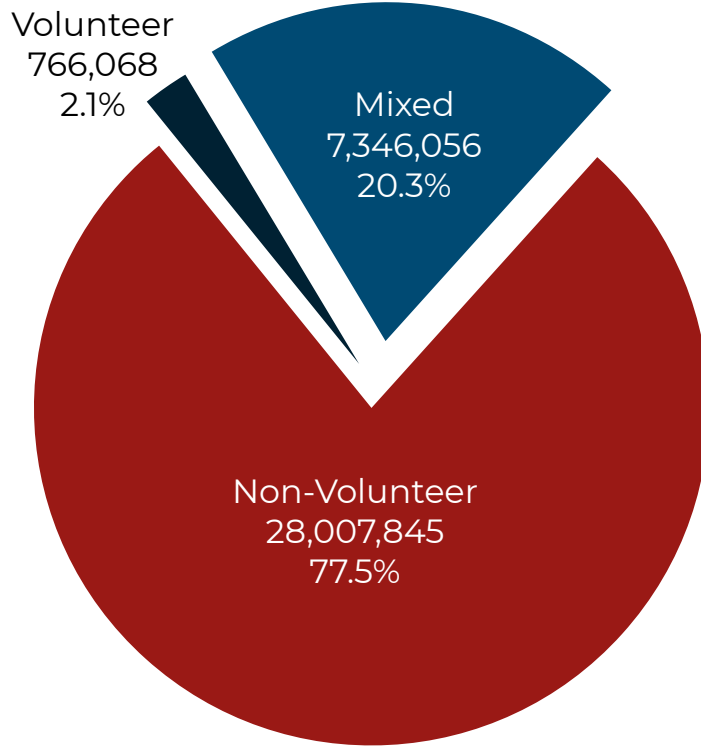
Primary Symptom ICD Name	Count of Events	Percent of Total
R52 Generalized pain NOS	1,678,172	14.6%
R53.1 Asthenia NOS	1,481,838	12.9%
R41.82 Change in mental status NOS	922,704	8.0%
R07.9 Chest pain, unspecified	752,410	6.5%
R68.89 Other general symptoms and signs	691,491	6.0%
R06.02 Shortness of breath	646,615	5.6%
M54.9 Back pain NOS	521,674	4.5%
R06.00 Dyspnea, unspecified	459,661	4.0%
Z00 Encounter for general examination without complaint, suspected or reported diagnosis	447,701	3.9%
R51 Headache	417,437	3.6%
R58 Hemorrhage NOS	404,018	3.5%
R55 Syncope and collapse	386,374	3.4%
R42 Light-headedness	368,000	3.2%
R10.84 Generalized abdominal pain	366,784	3.2%
Z00.00 Encounter for adult health check-up NOS	319,094	2.8%
R11.0 Nausea	295,719	2.6%
R45.82 Worries	262,075	2.3%
R07.89 Other chest pain	245,811	2.1%
R53.81 Chronic debility	218,116	1.9%
R50.9 Fever, unspecified	215,737	1.9%
R10.81 Abdominal tenderness	211,212	1.8%
R56.9 Unspecified convulsions	208,837	1.8%
<b>TOTAL</b>	<b>11,524,936</b>	<b>100%</b>

Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.



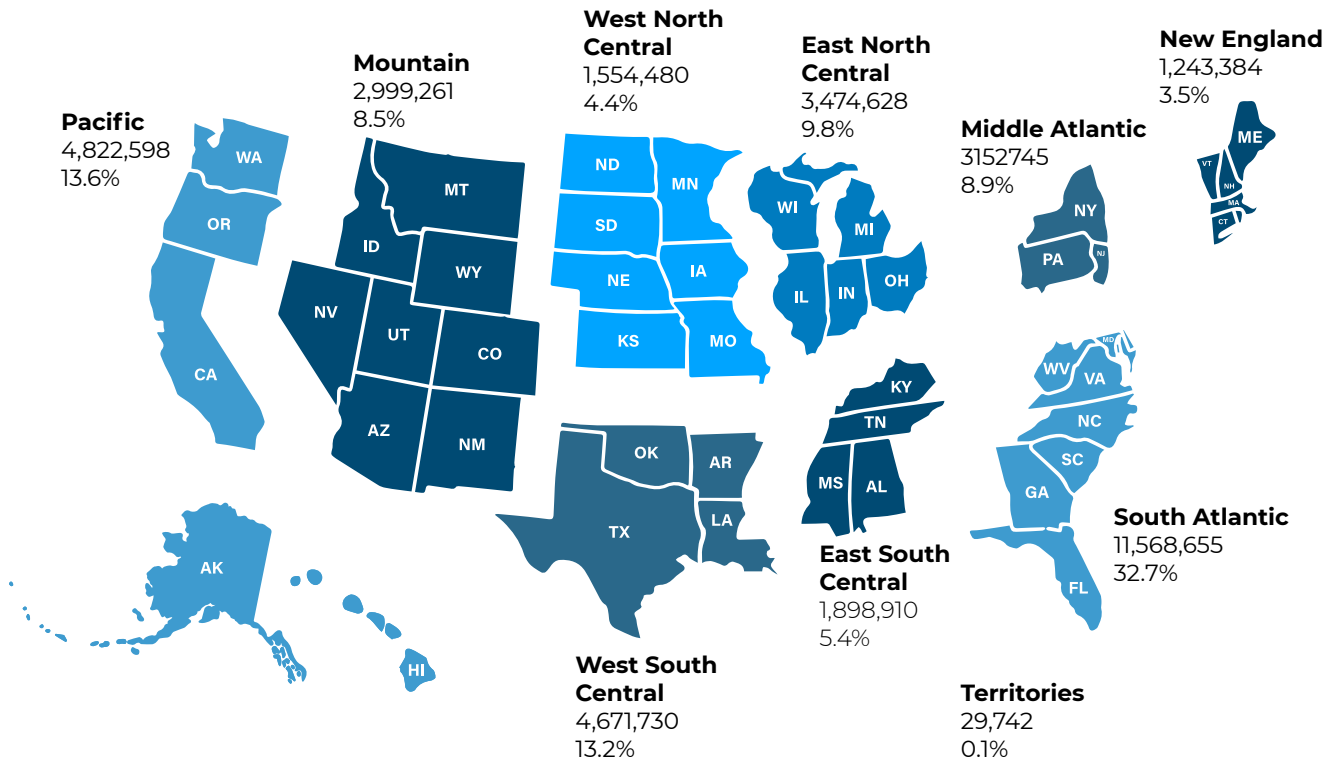
### EMS AGENCY ORGANIZATIONAL STATUS

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



### US CENSUS DIVISION REGION OF EMS ACTIVATION

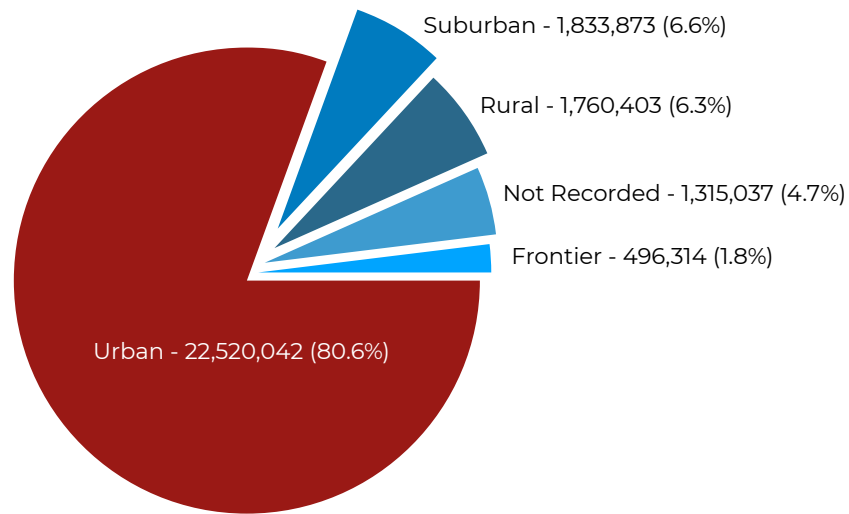
[eScene.23](#) - The census tract in which the incident occurred.



## URBANICITY OF EMS INCIDENT LOCATION

2013 Urban Influence Codes. Urbanicity is calculated using the 2013 USDA Urban Influence Codes to best classify geographic areas in detail.

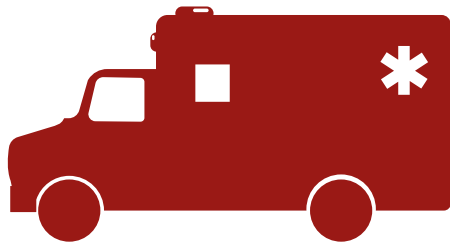
Read more here: <https://www.ers.usda.gov/data-products/urban-influence-codes/documentation.aspx>.



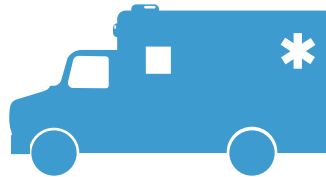
Inclusion criteria: 9-1-1 requested and patient contact was made.

## TRANSPORT MODE FROM SCENE

[eResponse.23](#) - The indication whether the response was emergent or non-emergent. An emergent response is an immediate response.



**Non-Emergent**  
12,514,692  
71.7%



**Emergent (Immediate Response)**  
4,562,512  
26.1%



**Emergent Downgraded to Non-Emergent**  
290,274  
1.7%



**Non-Emergent Upgraded to Emergent**  
84,185  
0.5%

Inclusion criteria: 9-1-1 requested 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 requested of the EMS Agency responding for this specific EMS event.

Type of Service Requested	Count of Events	Percent of Total
911 Response (Scene)	27,925,669	77.3%
Medical Transport	4,408,022	12.2%
Interfacility Transport	3,309,316	9.2%
Public Assistance/Other Not Listed	182,470	0.5%
Standby	140,532	0.4%
Intercept	90,829	0.3%
Mutual Aid	62,423	0.2%
<b>TOTAL</b>	<b>36,119,261</b>	<b>100%</b>

## TYPE OF DESTINATION

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

Type of Destination	Count of Events	Percent of Total
Hospital-Emergency Department	16,267,916	87.9%
Hospital-Non-Emergency Department Bed	1,682,714	9.1%
Other EMS Responder (ground)	141,030	0.1%
Other	116,748	0.1%
Nursing Home/Assisted Living Facility	90,418	0.1%
Home	56,731	0.03%
Medical Office/Clinic	54,281	0.03%
Freestanding Emergency Department	43,070	0.02%
Other EMS Responder (air)	25,532	0.01%
Morgue/Mortuary	12,500	0.01%
Police/Jail	4,013	0.002%
Urgent Care	3,179	0.002%
<b>TOTAL</b>	<b>18,498,132</b>	<b>100%</b>

Inclusion criteria: 9-1-1 requested and patient contact was made. Values that were marked Not Applicable or Not Recorded are removed.

## 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	25,428,878	70.4%
BLS-Basic /EMT	7,625,611	21.1%
Specialty Critical Care	982,829	2.7%
ALS-AEMT	646,936	1.8%
ALS-Intermediate	605,343	1.7%
BLS-AEMT	340,725	0.9%
BLS-First Responder/EMR	209,384	0.6%
BLS-Intermediate	155,254	0.4%
ALS-Nurse	79,317	0.2%
ALS-Community Paramedicine	35,124	0.1%
ALS-Physician	6,089	0.02%
BLS-Community Paramedicine	4,479	0.01%
<b>TOTAL</b>	<b>36,119,969</b>	<b>100%</b>

---

# NEMESIS DATA REPORT 2019

## ACKNOWLEDGEMENTS

No publication using NEMESIS data would be possible without the dedication and professionalism of EMS clinicians across the county.

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 that make EMS evidence-based medical care.

## ASSUMPTIONS OF EMS DATA

Hundreds of thousands EMS clinicians from every walk of life and in every demographic document their patient encounters. There is no single right way to complete a patient care report (PCR) and documentation training is extremely 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 six for an example of the many ways a fall is documented.)

## 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 another researcher. 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 NEMESIS do 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 are events submitted to the NEMESIS dataset.

Request a copy of the NEMESIS 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 (NEMESIS), NHTSA Office of EMS, Department of Transportation, 2019 National EMS Data Report.

## FOR MORE INFORMATION

Please visit

<https://www.NEMESIS.org>

for additional details or email

[NEMESIS@hsc.utah.edu](mailto:NEMESIS@hsc.utah.edu)

with any questions.

