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Office of Emergency Medical Services
Data Report

2016

Emergency Medical Services Data Report

2016

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Glossary of Terms
TRCC: Connecticut Traffic Records Coordinating Committee / National Highway Safety Office
OEMS: Office of Emergency Medical Services, Connecticut Department of Public Health
UCONN: Connecticut Transportation Safety Research Center
ALS: Advanced Life Support
BLS: Basic Life Support
EMS: Emergency Medical Services

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Introduction

The Office of Emergency Medical Services (OEMS) has statutory authority for statewide collection of EMS data [1] and Trauma Registry information. [2]

The 2016 EMS data report is the last one that will be based on prehospital data aggregated with the state's original application from Digital Innovation, Inc. Year 2016 and previous data collections followed the National Emergency Medical Services Information System (NEMSIS) version 2.2.1. This report represents a third step in the evolution of EMS data collection and reporting and is based on 2016 data submitted through March 23, 2017.

The 2017 EMS data collection will engage the transition to NEMSIS 3.4.0, using electronic patient care records from vendors whose software is required to be compliant with the new field names and data structures. Data are submitted to a new Central Site provided by Digital Innovation, Inc.

The scheduled transition included a time frame for EMS agencies to submit any year 2017 old version data to the new Central Site for translation into the new format, followed by a requirement to submit only NEMSIS version 3.4.0 data as of July 1, 2017. The new system for 2017 data allows data submitters to see how many records were processed and to identify possible data submission problems that can be resolved by working with the software vendors, EMS system administrators, Digital Innovation, Inc. and OEMS. In addition, we anticipate the rollout of tools that give end-users the ability to see their data in graphical form and to query their own data.

The Trauma Registry data collection is also part of the new Central Site. A decision on upgrade to Version 5 of the NTDB-compliant system is an essential part of going forward. The current system has been tested for the ability to import historical data. However, the upgrade to Version 5 would also require migration of historical data to the new version, in order to maintain a complete trauma database. These decisions and the funding necessary to commit to them will be one of many challenges in 2017 and 2018. At present, only the EMS part of the state data system has an ongoing funding commitment.[3]

OEMS interacts within a large network of stakeholders that includes people in the communities, local EMS practitioners, municipal governments, software vendors, Connecticut hospitals and trauma centers, medical associations, clinicians, members of the state legislature, the Department of Emergency Services and Public Protection (DESPP), Division of Emergency Management and Homeland Security, the Connecticut Department of Transportation (DOT), the National Highway Traffic Safety Administration (NHTSA), the Connecticut Hospital Association (CHA) and other state and federal partners. Connecticut shares data with the National EMS information system (NEMSIS) and continues to work with its partners to standardize the submission of high quality data. The program is also strengthening its connections with the Department of Public Health (DPH) Office of Injury Prevention and the Office of Public Health Preparedness and Response (OPHPR).

[1] Connecticut General Statutes Section 19a-177(8)(A) designates the Commissioner of Public Health to collect information on prehospital care rendered by each licensed ambulance service or certified ambulance service that provides emergency medical services.

[2] Section 19a-177-7 of the Regulations of Connecticut State Agencies requires that each licensed Connecticut acute care hospital must submit information to the trauma registry for analysis and evaluation of the quality of care of trauma patients. Records in the trauma registry include all admitted trauma patients, trauma patients who died, trauma patients who were transferred and all patients with traumatic brain injury.

[3] Connecticut General Statute §19a-177, and funding, as codified in Connecticut General Statute §28-24

Status of Objectives

The 2016 data collection year is marked with tremendous changes in data collection for both emergency medical services (EMS) and the Trauma Registry. "Data collection" depends on having standardized entry of data, appropriate software and hardware, a way to transmit data to a central collection site and tools for both local users and state-level users to do quality assurance, trouble-shooting and data reporting.

The state systems are moving to a new data structure for EMS data (NEMSIS 3.4.0), issue of state guidance on NEMSIS data elements, and toward data validation at the point of data entry. This requires changes to software by 8 to 10 different EMS software vendors, testing of data submissions with the new EMS database and planning and provision of systems changes within the DPH and state (BEST) technology so that local data is successfully transmitted to the state.

The Trauma Registry connection was re-established in 2016 and was tested successfully by Bridgeport Hospital. However, data submission awaits decisions on whether to upgrade to a newer version of software that directly fulfills requirements of the National Trauma Database (NTDB). Transition to the new version may require additional funding.

The EMS and Trauma data are to be transmitted to a Central Site. DPH will proceed with pilot efforts to link EMS records with other data. The status of short, intermediate and longer term goals is summarized below.

0 = on hold, no progress; IP = in progress; X = completed. The "GO team" refers to the NHTSA (National Highway Safety) assessment team. More information about the GO team is in Appendix C.

Short term		
EMS Standardize medication documentation	IP	
EMS Software compliance with version 3.4	IP	
Hardware testing	IP	
Business plan	IP	GO team follow-up
Funding issues	ongoing	
Progress report 1 year after GO team visit	X	See Appendix C
Intermediate term		
Testing of new EMS collector and Trauma collector	IP	EMS done
Driller tools for EMS data	IP	Demo only
Driller tools for Trauma registries	IP	Demo only
Import trauma data from 2012 forward	0	Decision needed
State-specific EMS Data Dictionary requirements	IP	continuing
Submit 2016 data to NEMSIS	X	
Identify data submission issues in Staging (EMS)	X	
Identify data submission issues in Production (EMS)	IP	Ongoing process
Identify data submission issues in Production V5, Trauma	0	V5 not yet adopted
EMS Software compliance with edits	0	To be done
Longer term		
EMS data validated at the point of data entry	IP	
Data sharing projects	IP	
Data linkage projects	IP	One HIC approval
Complete 2017 NHTSA assessment	X	
Examine system costs, advantages, barriers to change	IP	

Current Practice

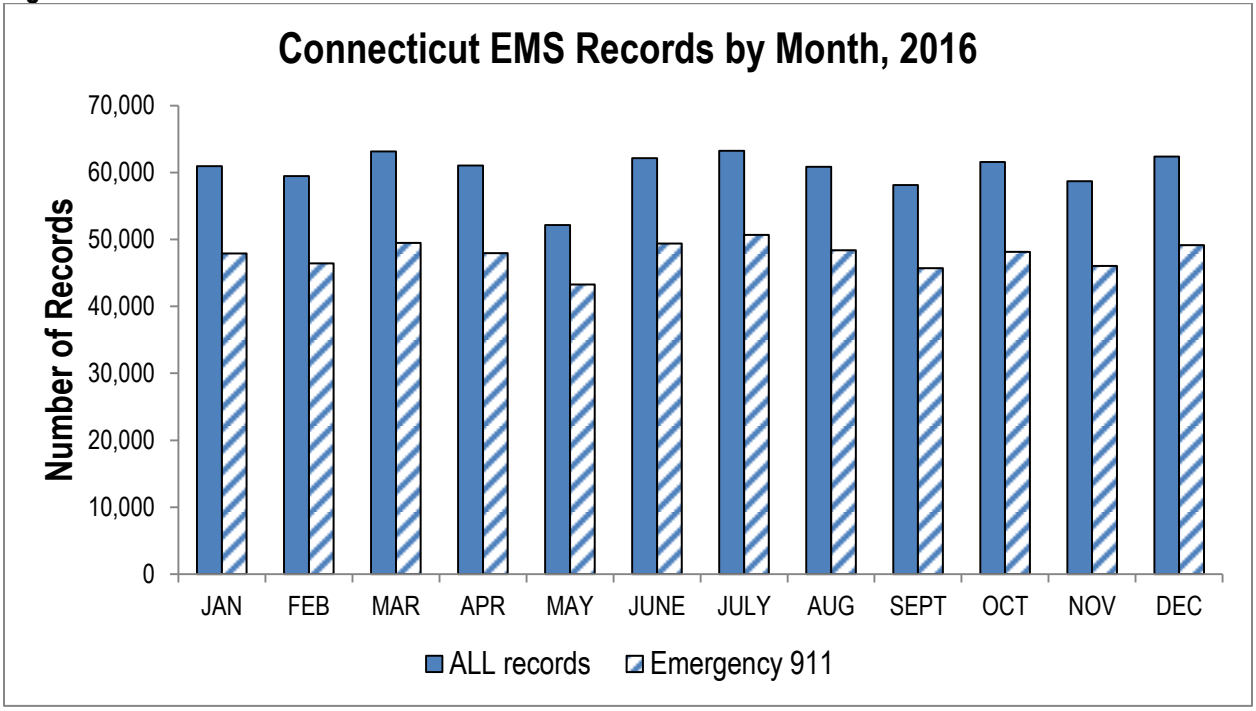
- Software vendors required to make their products compliant with NEMSIS 3.4.0
- Agency demographic fields (“d” elements) and electronic Patient Care Record (ePCR) fields (“e” elements) are defined in the NEMSIS version 3.4.0 data dictionary.
- About sixty percent of the new system fields collect information that was common to the old data collection.
- All EMS field names have changed.
- Codes for acute care hospitals and emergency departments that accept EMS transports have been distributed.
- The state data dictionary for EMS is being worked on by OEMS and a subset of EMS providers from the Quality Improvement team of the Connecticut Emergency Medical Services Advisory Board (CEMSAB). New Hampshire colleagues have shared their master lists of codes and labels for our review. The NEMSIS 3.4.0 data dictionary continues as the standard for coding. Connecticut-specific code lists and guidance are in process. As in other states, updating will occur from time to time. The goal is to standardize the way we collect data in New England.
- Not all software vendors or EMS agencies were ready for the June 30 transition to NEMSIS version 3.4.0., but after extending the deadline once, the decision to keep to a midyear deadline was shared with software vendors and EMS agencies by Everbridge and email. Relevant information is also posted to the OEMS website. Data submitted after June 30, 2017 must adhere to NEMSIS 3.4.0. Unfortunately, the old version data that was not submitted before the deadline will not be part of the 2017 dataset.
- Reminder to document medications given by both BLS and ALS providers was posted.

EMS Data Summary Figures, 2016

Type of Service Requested	**723,785**	
911 Response (Scene)	558,122	77%
Medical Transport	123,154	17%
Invalid Code	12,249	2%
Intercept	12,042	2%
Inter-facility Transfer	9,735	1%
Standby	6,197	1%
Mutual Aid	2,286	0%
Total Emergency 911 records	**572,450**	**79%**
medical problem	502,342	88%
trauma	61,906	11%
911 mutual aid	2,286	<1%
911 paramedic on scene	374,310	65%
cancelled calls	69,429	12%
911 calls by gender	**509,733**	
females	244,774	48%
males	264,959	52%
11% of records had no gender documented		
911 calls by age	**512,717**	
age under 18 years	35,031	7%
age 18 years and older	477,686	93%
10% of records were missing age or age units or both		
911 calls by response mode	**572,450**	
lights and sirens	348,263	61%
no lights or sirens	187,527	33%
initial Lights and Sirens, Downgraded to No Lights or Sirens	26,966	5%
initial No Lights or Sirens, Upgraded to Lights and Sirens	4,724	1%
invalid code entered	4,970	1%
911 calls for cardiac arrests	**4,208**	
records with arrest timing data	4,167	
arrest prior to EMS arrival		86%
arrest after EMS arrival		14%
41 records (<.01%) had no timing information		
cardiac arrest records: at least one <u>documented</u> defibrillation attempt *(of 4,208 records)*	**902**	21%
defibrillation attempts that were successful *(of 902 records)*	264	29%
records with no defibrillation outcome documented *(of 902 records)*	43	5%

Record Volume

Figure 1



Incident Location Type

Through 2016, incident location type overlapped between two categories in NEMSIS version 2.2.1.: "Residential institution" (nursing home, jail/prison) and "Health care facility" (clinic, hospital, nursing home), NEMSIS 3.4.0 incident location type is a more specific list of ICD10 codes which do not overlap.

Table 1

Incident Location Type	% of ALL Records	% of e911 records
Home/Residence	44.8%	53.7%
Health Care Facility	22.0%	8.2%
Street or Highway	11.2%	13.9%
Residential Institution	9.3%	9.1%
Public Building	5.0%	5.9%
Trade / service place	4.4%	5.4%
Other Location	2.2%	2.7%
Recreation/Sport place	0.6%	<1%
Industrial Place	0.2%	<1%
Farm	0.2%	<1%
Lake, River, Ocean	0.0%	<1%
Mine / Quarry	0.0%	<1%
	638,838	**501,048**

12-13% records are missing location

Patient Disposition

Figure 2

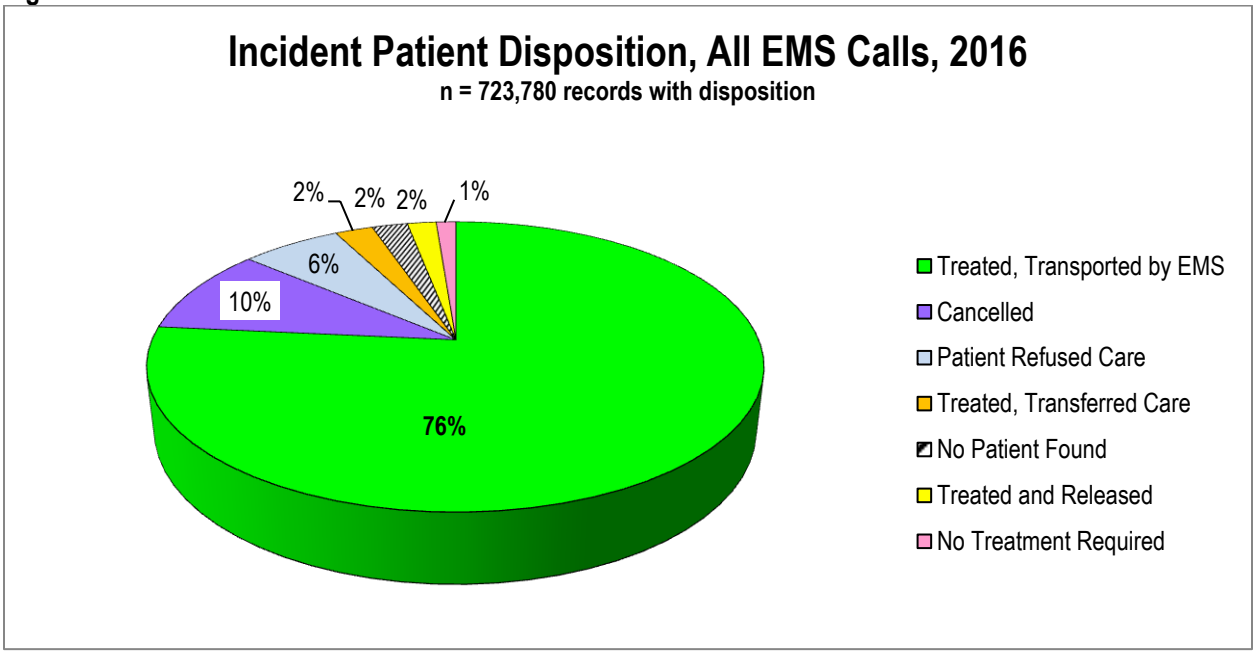


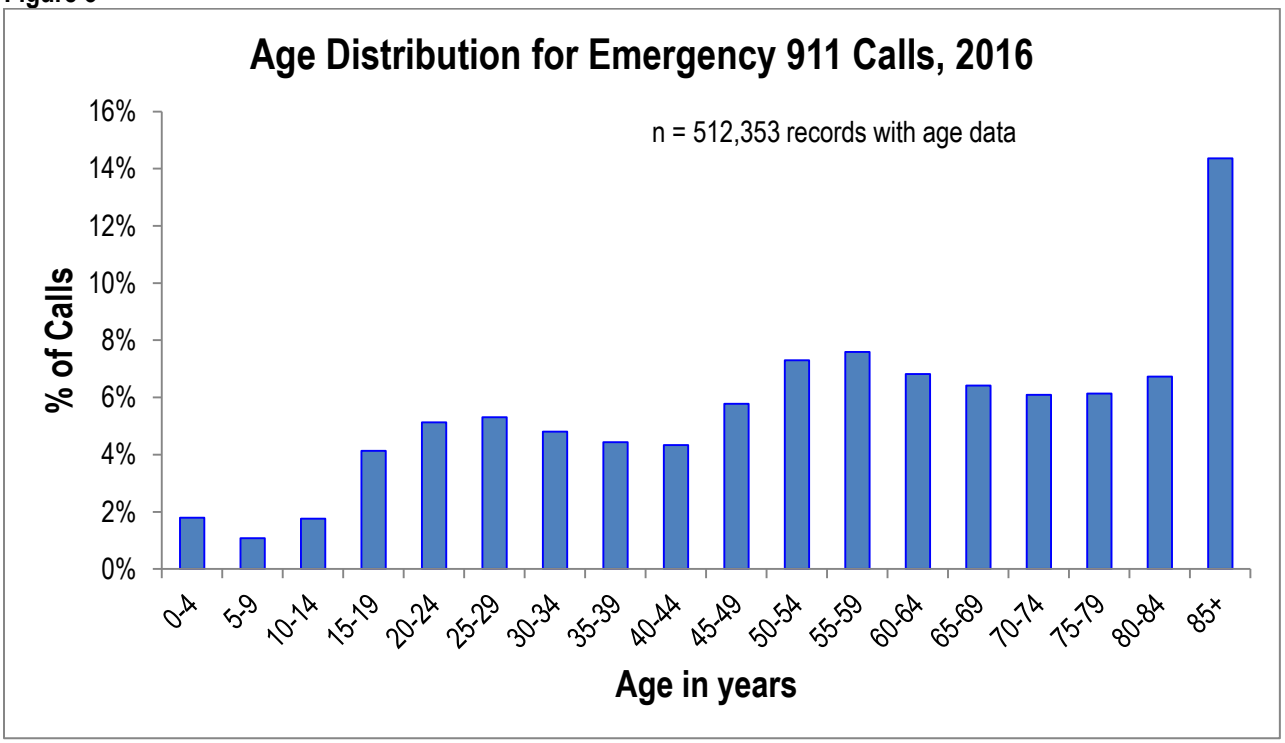
Table 2

Incident Patient Disposition	ALL Calls	Percent
Treated, Transported by EMS	550,774	76%
Cancelled	69,429	10%
Patient Refused Care	44,855	6%
Treated, Transferred Care	17,046	2%
No Patient Found	15,967	2%
Treated and Released	12,991	2%
No Treatment Required	8,848	1%
Dead at Scene	3,716	1%
Treated, Transported by Private Vehicle	100	<0.1%
Treated, Transported by Law Enforcement	54	<0.1%
	723,780	

Several agencies appear to be leaving in "Cancelled" or "No Patient Found" as default values for incident patient disposition. Almost three thousand records with a disposition of "No Patient Found", "Cancelled", "Patient Refused Care" or "No Treatment Required" actually had medication administrations documented in the record.

Almost 32,000 emergency 911 records with a disposition of "Treated and Transported by EMS" do not document a cause of injury or give a "destination type" code for where the patient was taken. Ninety percent of those records were generated by five EMS agencies. Other records were missing data in one of these two fields.

Figure 3



Top Causes of Injury

The top causes of injury for adults and for children age 17 years and younger are displayed in Figure 4 and Figure 5.

Figure 4

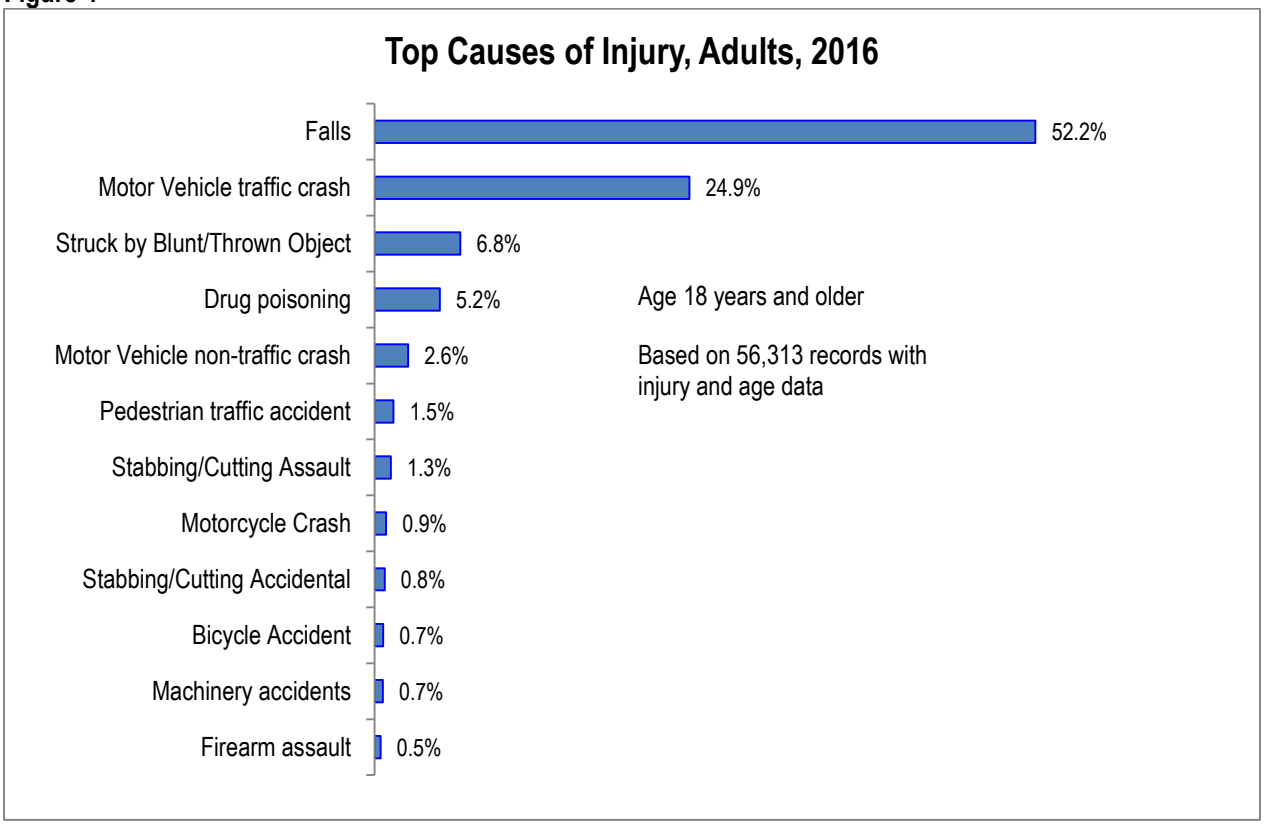
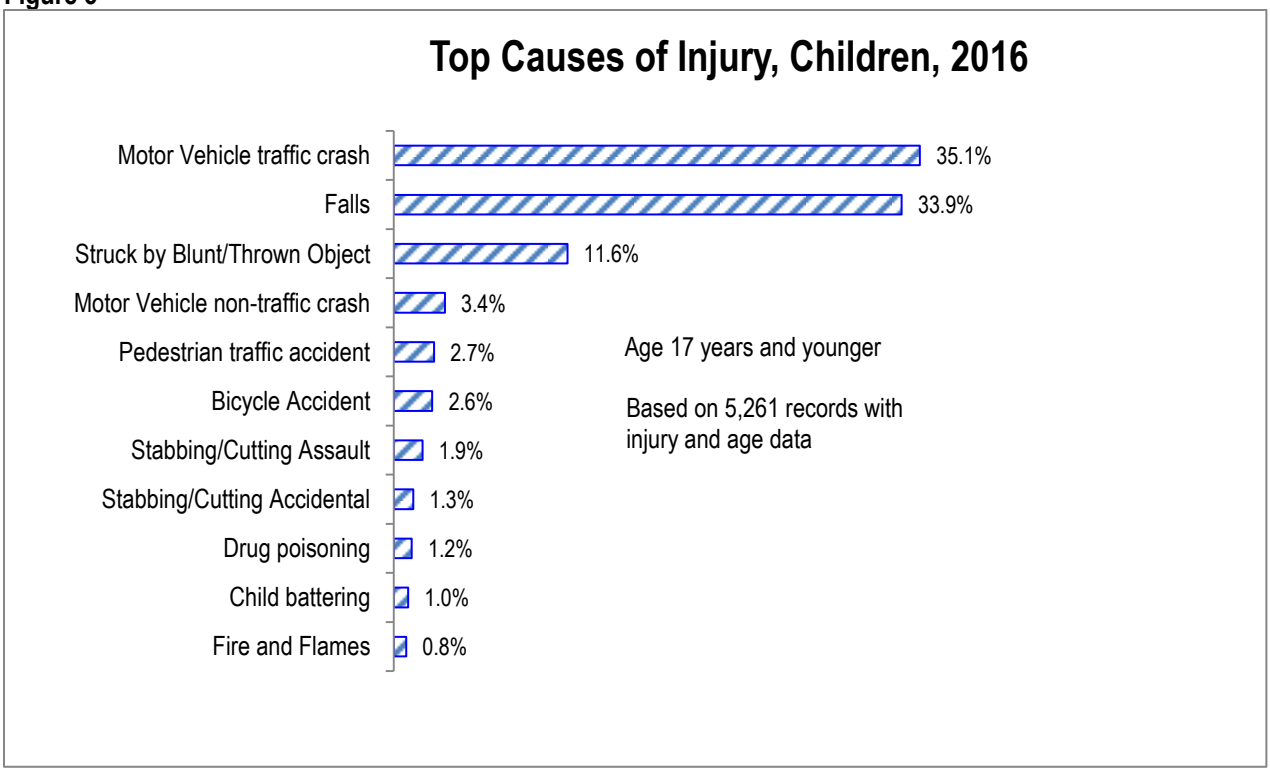


Figure 5



Calls Related to Firearms

Three hundred and ninety-six records listed a cause of injury related to firearms in 2016. These comprise 0.6 percent of all records with a documented cause of injury. The majority of records (89%) reported an intentional firearm injury. Eighty-seven percent of the records were for males. Thirty-six records documented death at the scene.

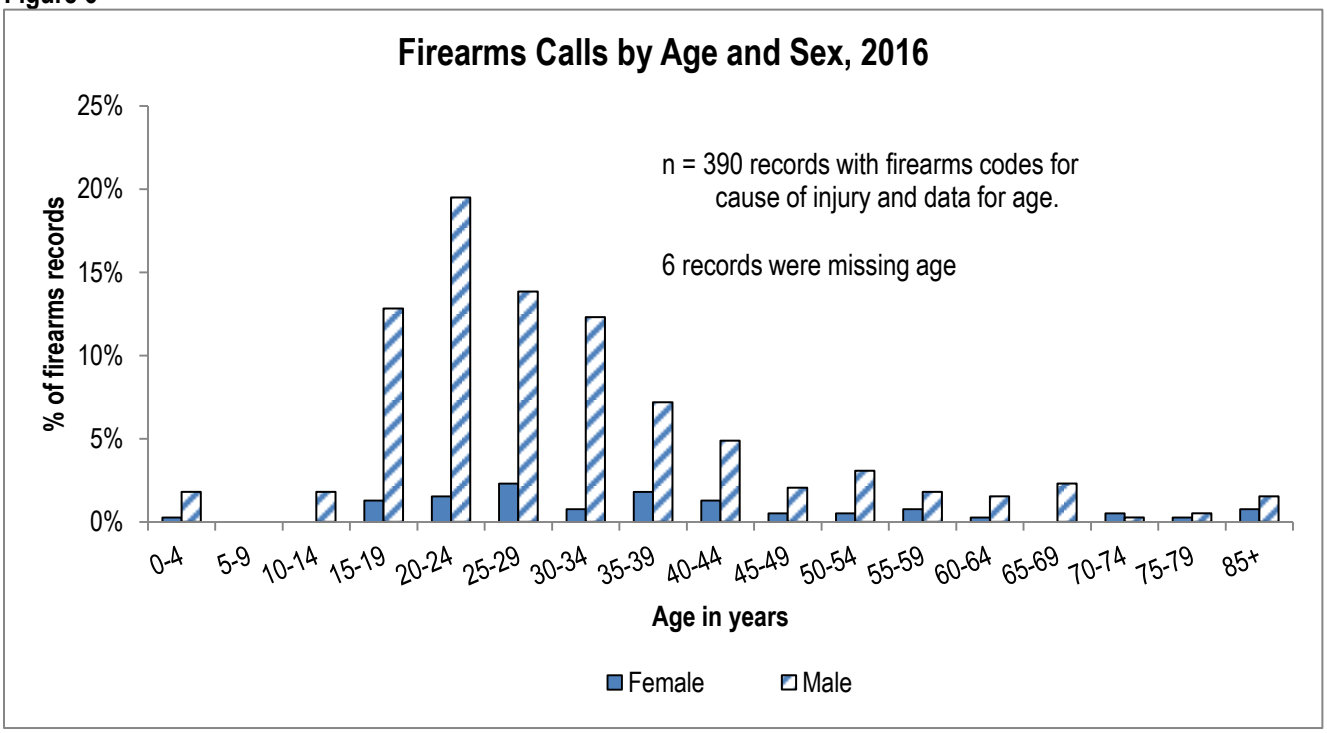
Table 3

Intentional	Type of Event coded	# records	%
No	Firearm injury (accidental)	44	11%
Yes	Firearm assault	307	78%
Yes	Firearm self-inflicted	45	11%
		396	

The documentation of patient disposition for firearms calls is shown in Table 4. (Tx = treated, treatment)

Table 4 **Intentional?**	Call Cancelled	Dead at Scene	No Patient Found	No Tx Required	Pt Refused Care	Tx and Released	Tx, Transfer Care	Tx, Transport by EMS	**Total**
No	1	5	3	0	2	0	3	30	44
Yes	1	31	20	2	4	21	1	272	352
Total	2	36	23	2	6	21	4	302	**396**

Figure 6



Drugs, Alcohol and Toxicity Documentation

Emergency 911 call records were examined with respect to data available for identifying alcohol, drug or other toxicity. These were: Alcohol/Drug Use indicators (A/D), Condition codes, Protocols Used and Medications given fields. [4]

About seven percent of all emergency 911 records contained data for one or more indicators of possible toxicity. Overall, ten percent (4,245) of the "toxicity" records documented at least one naloxone administration in the "medications given" fields. The other ninety percent (37,019) records did not contain any notations for naloxone as a medication given

Total emergency calls with at least one indication of toxicity	**41,264**
Record shows at least one naloxone administration	*4,245*
A/D indicator, condition code or toxicity protocol but no naloxone	**37,019**
only toxicity protocol noted	111
only condition code noted	18,208
only A/D use indicator(s) noted	17,928
A/D indicator and toxicity protocol noted	109
A/D indicator and condition code noted	420
Condition code AND use of toxicity protocol(s) noted	234
A/D indicator(s), condition code(s) AND use of toxicity protocol noted	9

Twenty percent of the "no naloxone" records had no primary or secondary impression, or cause of injury information. It is important to distinguish the toxicity record types for further analysis. Standardized collection is needed for: provider impressions, cause of injury, location type, patient disposition, any treatment given, procedures done and specific destination is needed if the patient was treated and transported by emergency medical services.

Table 5

Possible overdose records by Incident Location Type	Naloxone Given
Home/Residence	57%
Street or Highway	16%
Trade / service place	9%
Public Building	6%
Residential Institution	5%
Other Location	4%
Health Care Facility	2%
Recreation/Sport place	1%
Farm	<0.5%
Industrial Place	<0.5%
Mine / Quarry	<0.5%
# records with location type	**3,660**

[4] Any record with at least one dose of naloxone in Medications Given fields was scored 1 for GOTNARCAN. Multiple alcohol/drug usage indicator fields may be coded for "Patient Admits to Drug Use", "Patient Admits to Alcohol Use", "Alcohol of Drug Paraphernalia at Scene", or "Smell of alcohol on Breath". If a record had any of these codes, ALCDRUGUSE was scored 1. Any record that had a Condition Code of "Poisons (all routes)", "Alcohol Intoxication or Drug Overdose" or "Severe Alcohol Intoxication" received a score of 1 for TOXICITY. If a Protocol Used field was coded for "Overdose/Toxic Ingestion", then it received a score of 1 for TPROTOCOL. A summary field was coded 1 if a record had at least one score of 1 for any of the indicator fields. The percent of records with possible toxicity is an estimate based on documentation of Cause of Injury and the component indicator fields. Records that documented toxicity only in a patient care narrative could not be searched. Consistent documentation is crucial to utility of the data.

The number of naloxone doses documented in 4,245 emergency 911 records is shown below. From these records, we estimate a total of 5,425 total doses were dispensed, with the majority (76%) getting one dose. The estimate is only as good as the consistency in reporting. Whether an EMS provider level is ALS or BLS, the administration of any drug must be documented in fields for entering medications given. It is not sufficient to mention them in the patient care narrative. Drug name, dose and route of administration should be documented in three separate fields.

It is not always possible to get accurate ethnicity and race information in emergency medical situations. In the future, a link with trauma registry may yield additional information for patients who are brought.to an emergency department or admitted to an acute care hospital. Forty percent of toxicity records are missing both ethnicity and race, so the information is not useful for analysis. About one percent of toxicity records were missing gender information.

Table 6

# DOSES	% of records
1	76%
2	20%
3	3%
4 to 6	<1%

The records scored for possible toxicity were also examined for age and gender distribution after dividing them into naloxone administered vs.no naloxone documented groups. The potential for toxicity clearly does not lie with only one class of drugs, but may involve concomitant use of alcohol and other substances by all demographic groups.[5, 6]

The 2016 EMS data shows the same distribution by gender (61% male, 39% female) for both "no naloxone" and "naloxone given" records. The age distributions are of interest. Caution is warranted for those results because the "no naloxone" records may contain misclassifications if naloxone administration was not documented in the "medications given" fields.

Note: Records from both 2015 and 2016 were subset into those where the patient disposition was "Treated and Transported by EMS". In 2015, about 7% of the BLS subset documented at least one medication given, compared to 30% of ALS records. In 2016, about 3% of the BLS subset documented at least one medication compared to 29% of ALS records.

[5] Ilomaki, J e.t al., Prevalence of Concomitant Use of Alcohol and Sedative-Hypnotic Drugs in Middle and Older Aged persons: A Systematic Review. Ann Pharmacother. 2013 Feb; 47(2): 257-68. doi: 10.1345/aph.1R449. Epub 2013 Jan 29 https://www.researchgate.net/publication/235383324_Prevalence_of_Concomitant_Use_of_Alcohol_and_Sedative-Hypnotic_Drugs_in_Middle_and_Older_Aged_Persons_A_Systematic_Review, Accessed 10/10.2017

[6] Substance Abuse and Mental Health Services Administration, Drug Abuse Warning Network, 2011: *National Estimates of Drug-Related Emergency Department Visits.* HHS Publication No. (SMA) 13-4760, DAWN Series D-39. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2013. See percent of ED visits and Rate of ED visits per 100,000 population. https://www.samhsa.gov/data/sites/default/files/DAWN2k11ED/DAWN2k11ED/DAWN2k11ED.pdf, Accessed 9/7/2017.

Figure 7

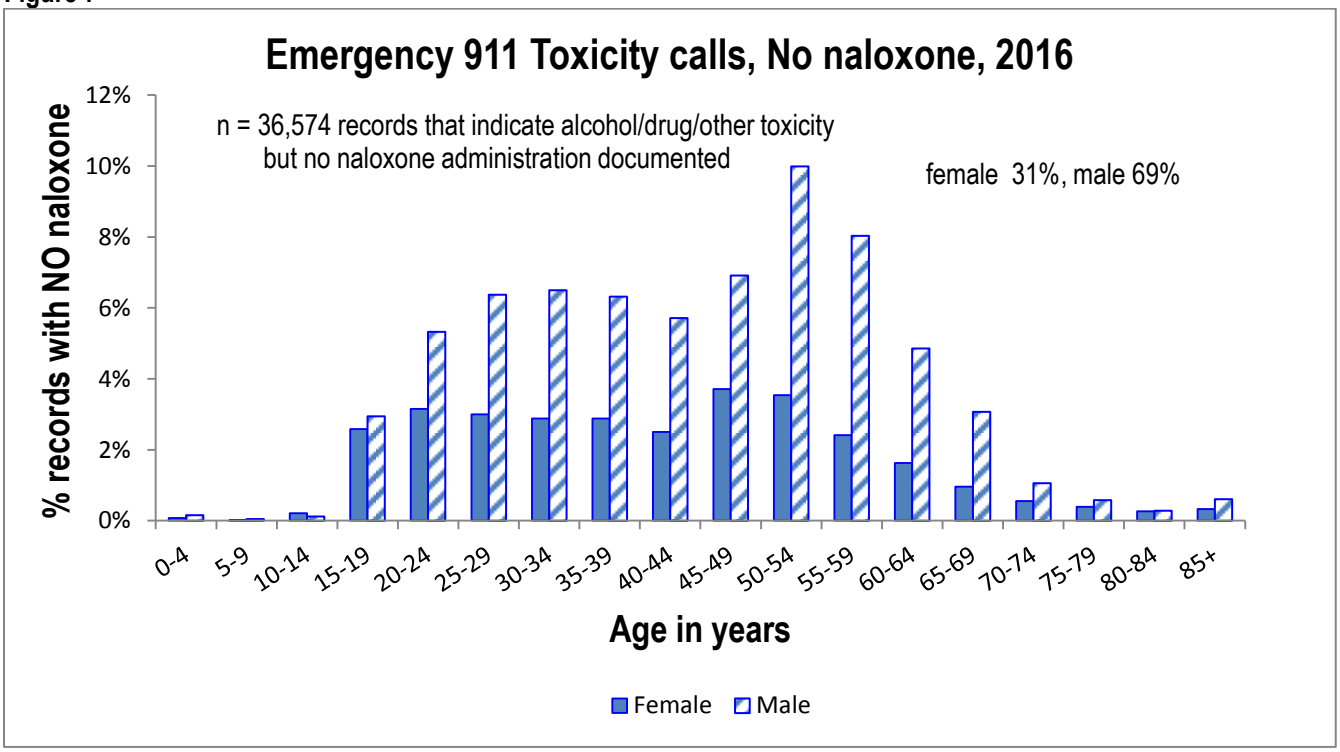
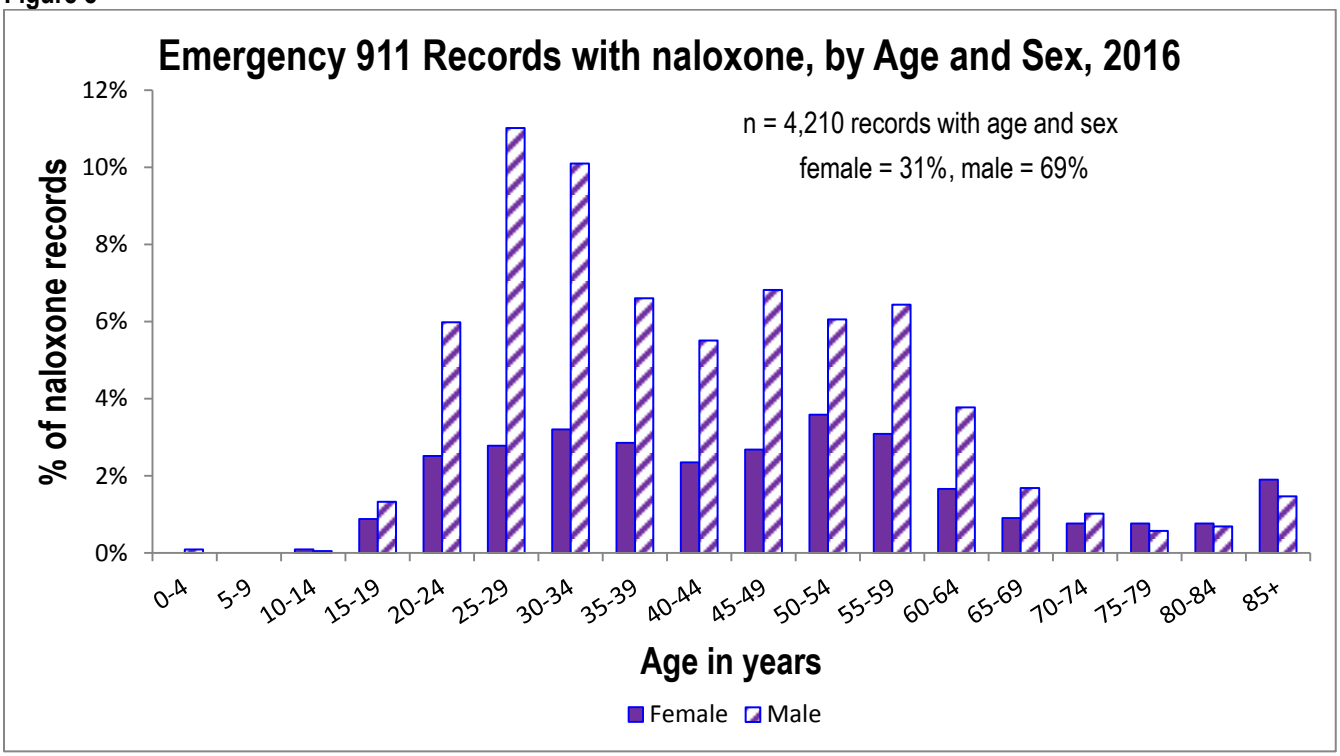


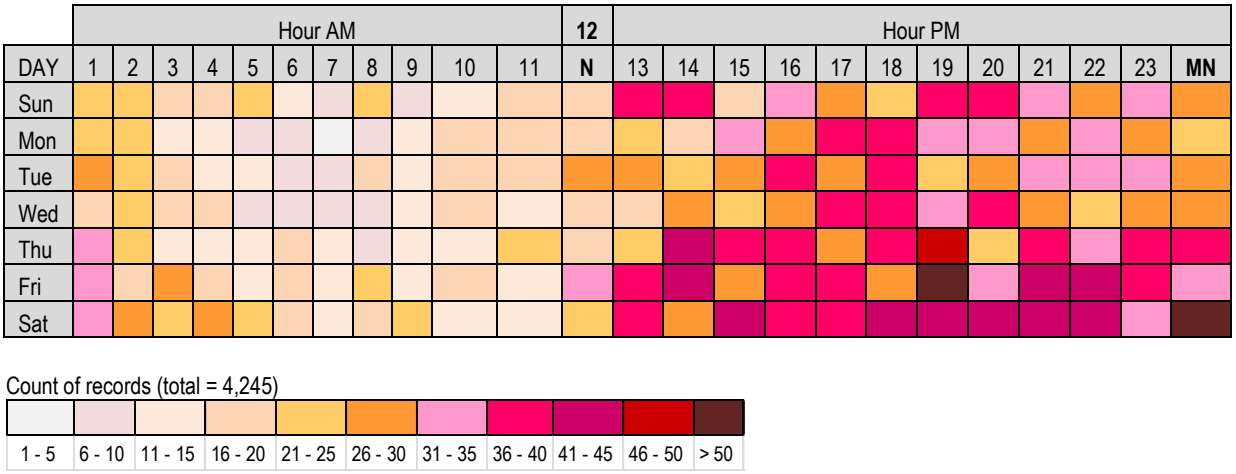
Figure 8



Naloxone Heat Map

The number of Connecticut emergency 911 calls with at least one administration of naloxone documented were plotted by weekday and hour of day. This is a plot for more than four thousand records with naloxone administration documented as medication given. The time that the EMS unit was notified by dispatch was used to represent the hour of the event.

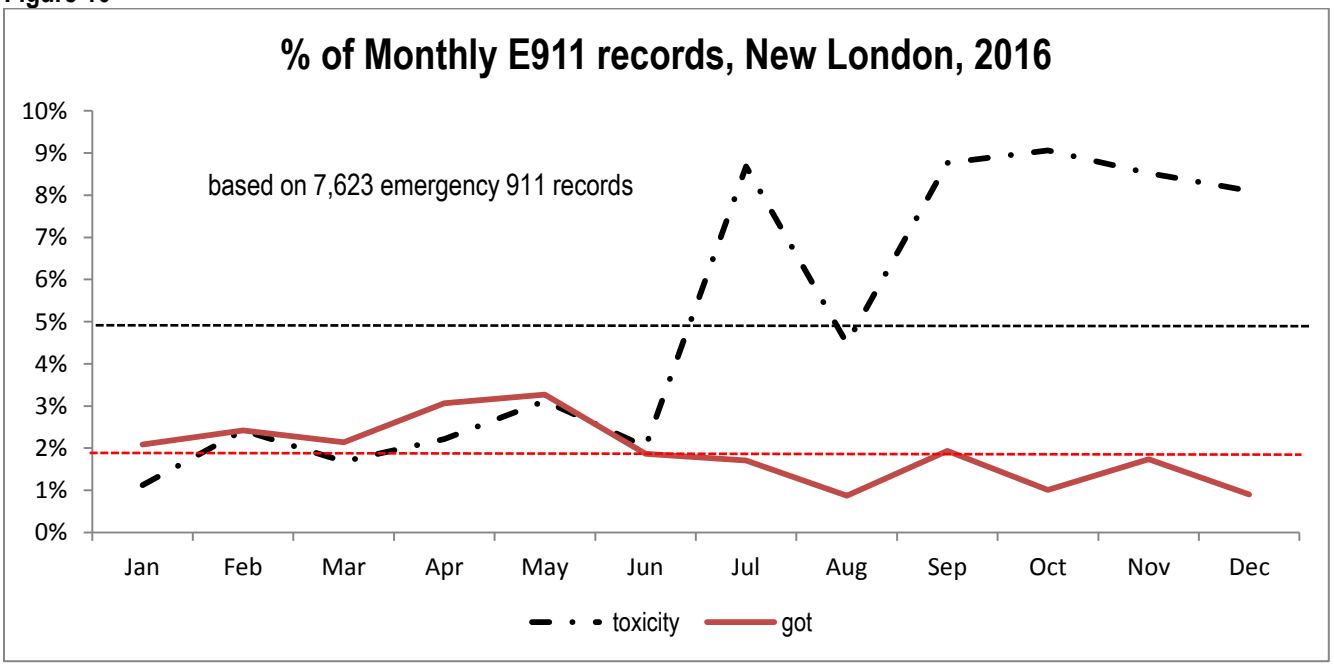
Figure 9



Community Patterns

Naloxone administration is one part of the alcohol and drug use landscape in communities. The division of EMS records with toxicity indicators into those where naloxone was administered (for presumed opioid overdose) and toxicity records where no naloxone was recorded may reflect actual community patterns if the EMS documentation is standardized. For example, in New London 2016 data: overall 5% of emergency 911 calls had some toxicity indicator but no naloxone doses. Overall, 2% of emergency 911 calls documented that naloxone was given. Emergency calls by month for these subsets follow in Figure 10.

Figure 10



Community Patterns, continued

In 2015, the Centers for Disease Control (CDC) published findings from analysis of data from the National Survey on Drug Use and the National Vital Statistics System, which covered annual substance abuse surveys from 2002 to 2013. Each year's survey focused on illicit drugs, nonmedical use of prescription drugs, alcohol and tobacco used by civilian noninstitutionalized people age 12 years and older. [7] Public health objectives were to gain understanding of heroin use in the context of individual-level risk factors through reports of past year use of alcohol, marijuana, cocaine, opioid pain relievers, tranquilizers, sedatives, stimulants, tobacco) and past month binge-drinking, in addition to demographic characteristics. Heroin use is often associated with the use of multiple other substances such as cocaine, opioid pain relievers, alcohol, and marijuana. EMS documentation of possible toxicity may be important for prevention and community development of pathways to treatment.

Opioids, alcohol and other drugs have contributed to the first decrease in U.S. life expectancy from 2014 to 2015, noted in comparison of United States mortality files from 2000 to 2015.[8] These findings also support prevention efforts which address sentinel events encountered by emergency medical services providers.

A 2013 report from the US Department of Health and Human Services used data from DAWN (Drug Abuse Warning Network) to describe drug-related emergency department visit data for calendar year 2011.[9] Alcohol use under age 21 years was classified as illicit drug use. More than forty percent of ED visits by individuals under age 21 involved alcohol, either alone or taken with other drugs. Comparison of age-group ED visit rates (age 12 to 17 years vs. age 18 to 20 years) involving alcohol showed a higher visit rate in the 18 to 20 years age group (286.7 visits per 100,000 population vs 857.6 visits per 100,000 population). Identification of early abuse patterns in individuals at ED visits could be helpful for intervention.

Toxicity Indicators for the Two Leading Causes of Injury

Figure 11 and Figure 12 show the age distributions for all falls records and then for the subset of falls associated with one or more toxicity indicators.

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[7] Centers for Disease Control, Morbidity and Mortality Weekly Report (MMWR) "Vital Signs: Demographic and Substance Abuse Trend Among Heroin Users – United States, 2002-2013". July 10, 2015 / 64(26);719-725https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6426a3.htm?s_cid=mm6426a3_w, Accessed 10/10/17

[8] Dowell D, Arias E, Kochanek K, et al, JAMA. 2017:1065-1067. Doi:10.1001/jama.2017.9308 https://jamanetwork.com/journals/jama/fullarticle/2654372 Contribution of Opioid-Involved Poisoning to the Change in Life Expectancy in the United States, 2000-2015 Accessed 10/12/2017

[9] Substance Abuse and Mental Health Services Administration, *Drug Abuse Warning Network*, *2011*: National Estimates of Drug-Related Emergency Department Visits: HHS Publication No. (SMA) 13-4760, DAWN Series D-39. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2013. https://www.samhsa.gov/data/sites/default/files/DAWN2k11ED/DAWN2k11ED/DAWN2k11ED.pdf Accessed 10/12/2017

Figure 11

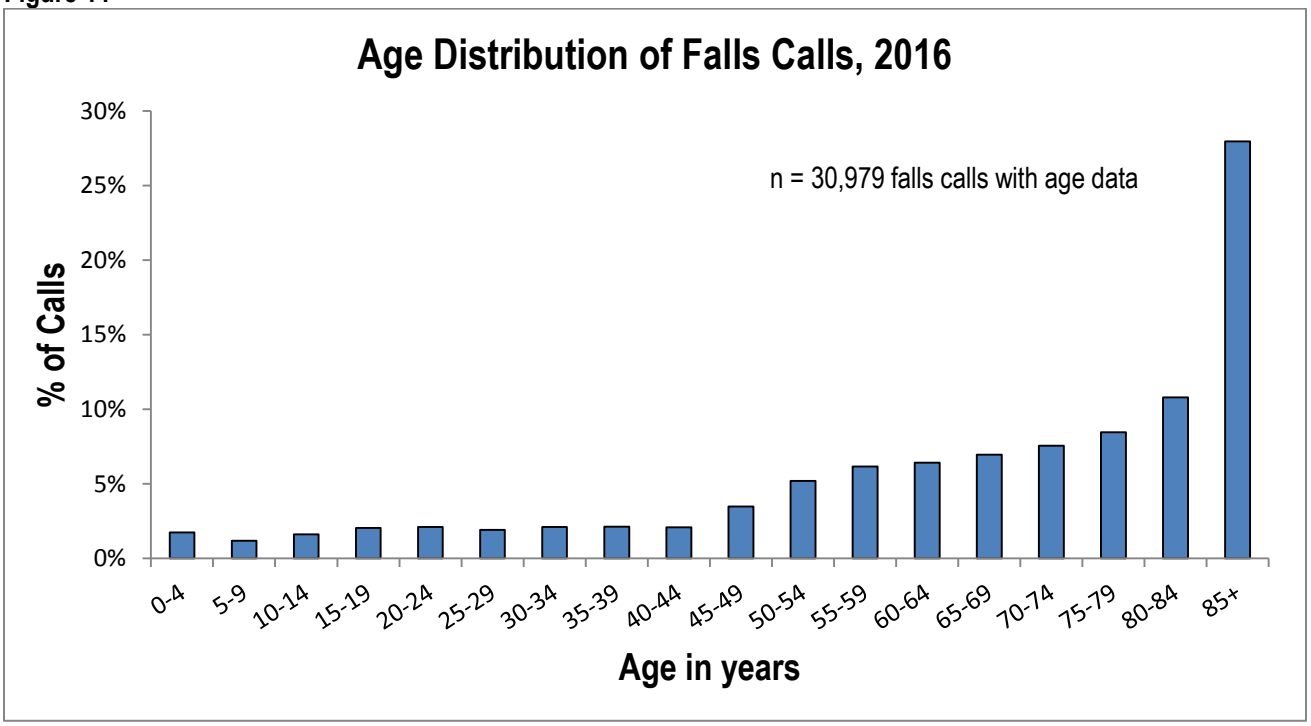


Figure 12

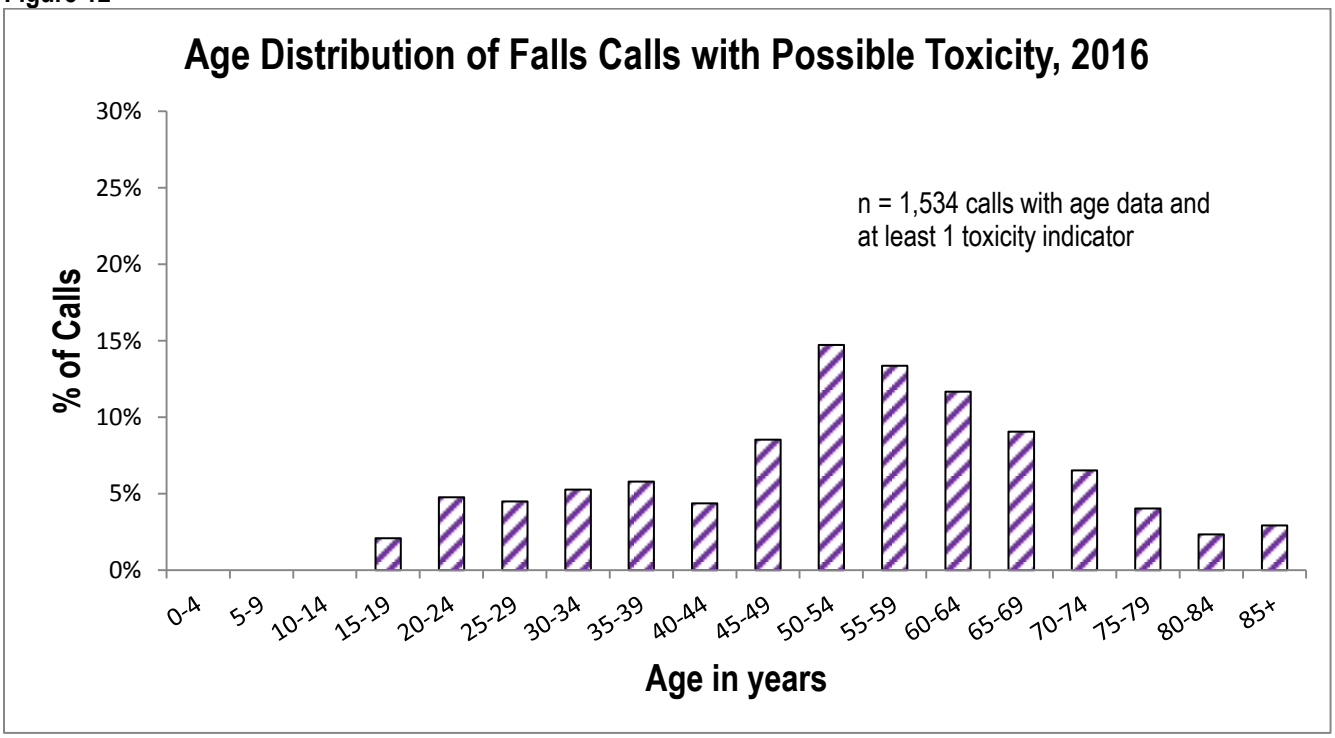


Figure 13 and Figure 14 show the age distributions in records of motor vehicle traffic crash calls (MVC), then for the subset of crashes associated with one or more toxicity indicators.

Figure 13

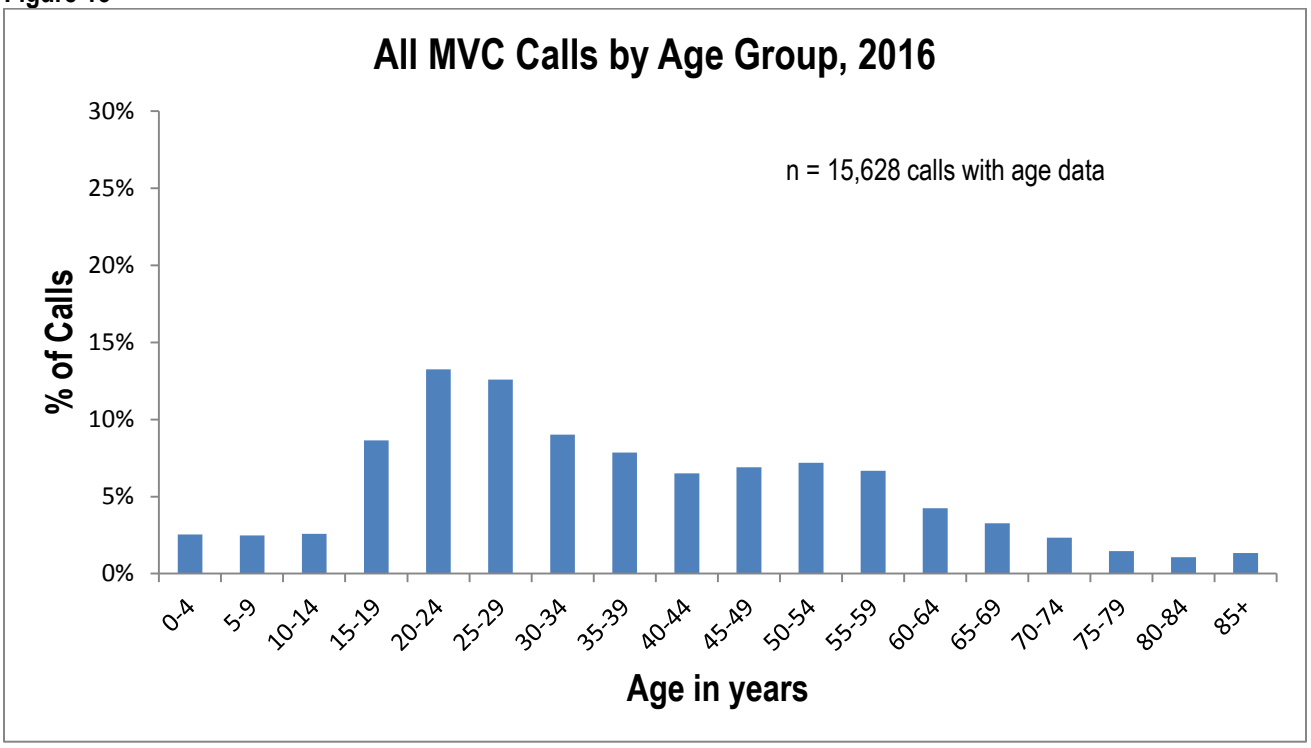
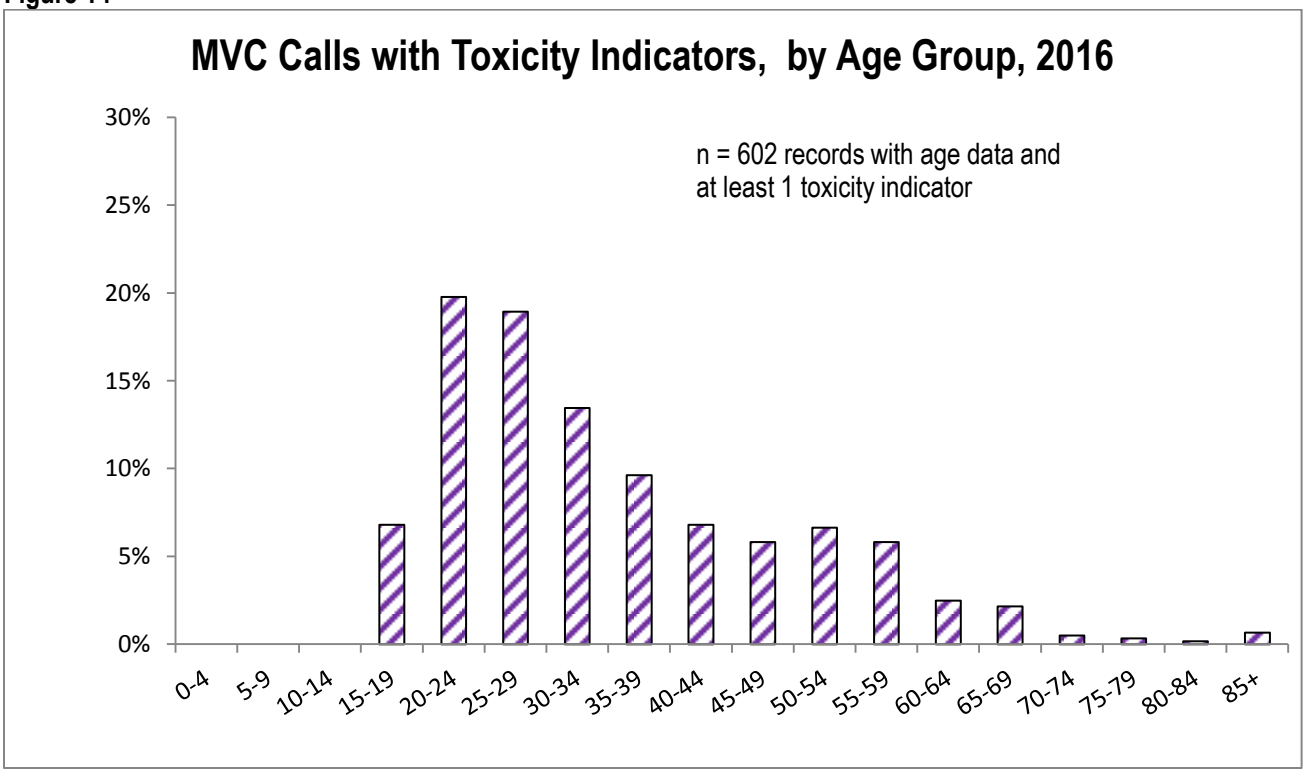


Figure 14



Performance Indicators

As the standardization of destination codes improves, the records of patients treated and transported by EMS should yield better linkage of their records with trauma registry and other data. Performance measures for transport to specialty care for strokes, heart attacks, trauma and other conditions are difficult to assess with the data from 2016 and earlier years. Some key indicators for future use of standardized data collection are management of critical trauma patients, heart failure, asthma, anaphylaxis, diabetes, seizures, acute coronary syndrome/ chest pain, stroke/TIA, cardiac arrest, airway and pediatric care.

Calculated Times

EMS performance indicators frequently refer to the scene time, transport time and patient response times for emergency 911 calls. One of the goals of standardized data collection is to have valid date and time information entered in key fields of the patient care report. This information will also assist the linkage of EMS data with data from other sources.

Scene time: difference between time EMS unit left the scene and the time EMS unit arrived at the patient.
Transport time: difference between time patient arrived at destination and time EMS unit left the scene
Patient Response time: difference between time EMS Unit arrived at patient and the time of the PSAP call
Response Time in annual reports: **difference between time EMS unit arrived at scene and time unit notified by dispatch.**

There are nine related time points in the NEMSIS dataset. We examined the 2016 data for presence or absence of these time points in the subset of emergency 911 records where incident patient disposition was "Treated and Transported by EMS". Even where time point data are present, a smaller subset of records is usable because of invalid time entries or default values.

Among the nine time points examined, there are many possible combinations of filled and unfilled fields. Table 6 summarizes the effects of differences in documentation of time points. Standardization of data collection should involve deciding which time points are the most useful and reasonable to collect in actual practice.

Table 8

How Data for Time Points are Actually Collected	Max % *
Have data for all nine time points	43%
Have time points to calculate Scene Time	78%
Have time points to calculate Transport Time	98%
Have data for Patient Response time (tech. definition)	56%
Have data for Response time as calculated in annual reports	71%

* **Some time points entered are clearly invalid, so this is the maximum percent that could be usable for calculations.**

Time points of interest: PSAP call Date/Time; Unit notified by Dispatch Date/Time; Unit arrived on scene Date/Time; Unit arrived at Patient Date/Time; Transfer of EMS Patient care Date/Time; Unit Left scene Date/Time; Unit arrived at Destination Landing Area Date/Time; Patient arrived at Destination Date/Time; Destination Patient Transfer of Care Date/Time (may not be able to get this one).

Provider Service Level is associated with performance measures and with standardized medication documentation. In the 2016 data, twenty-two percent of records where EMS treated and transported had an invalid or missing service level code.

Destination for Treated and Transported

Only twenty percent of records where EMS treated and transported had a valid destination code. The destination NAME field was more useful, but a major problem was that many variations of free text were entered. The standard code list for hospital and ED codes should be used to fill element eDisposition.02 (Destination/Transferred to, Code) and eDisposition.01 (Destination/Transferred to, Name). The hospital/ED code list has been shared with all software vendors and with EMS agencies. It is posted on the EMS web site. Records for patients treated and transported by EMS" should include a NEMSIS destination type code.

The coordination of emergency medical transport to the most appropriate care is part of the Connecticut Emergency Medical Services Plan 2015-2020, which underscores the integration of public health, health care and public safety.[10] In order to evaluate and coordinate the transport patterns for key events such as trauma, stroke, ST segment elevation myocardial infarction (STEMI) and pediatric care, standardized documentation of cause of injury, primary impression and other prehospital data and consistent entry of destination for patients treated and transported by EMS are major requirements.

Preparedness

Emergency medical services information can play a role in preparedness for special events. Following an article pertaining to prehospital planning published after the 2015 papal visit to Philadelphia[11], OEMS considered our 2016 data to ascertain what might be helpful to planners in the context of data collection expectations.

The special event modeled was SailFest, an event which attracts more than 300,000 people over three days each July in New London at Waterfront Park, along the Thames River. The area is the site of a busy state pier, just upriver from Long Island Sound. The areas of main activity encompass rail, bus, train and ferry transit sites and are in proximity to local colleges, military and commercial centers and tourist attractions. Security and emergency preparations necessarily include safety zones for fireworks, outdoor entertainment venues, restricted traffic access on land and water as well as deployment of emergency medical services, safety and security personnel.

EMS data for the city of New London allowed us to create a distribution of emergency 911 calls and nonemergency calls by month. However, it is likely that emergency medical encounters at SailFest or other special events are not documented in the EMS database. EMS data has potential use in helping to forecast needs for special events even if it contributes only to the 'background noise" of the emergency calls typically handled in a particular time period.

1. We can look at volume by type of call, by location, incident address, date and time.
2. We are largely under-documenting provider impressions and cause of injury.
3. We need to use hospital and ED code lists for documenting destination if patients are taken to a hospital or ED.
4. Documentation of age and gender is available for the majority of encounters.
5. Documentation of ethnicity and race is available about 50% of the time.
6. Possible alcohol/drug toxicity appears to be a significant portion of all emergency 911 calls.

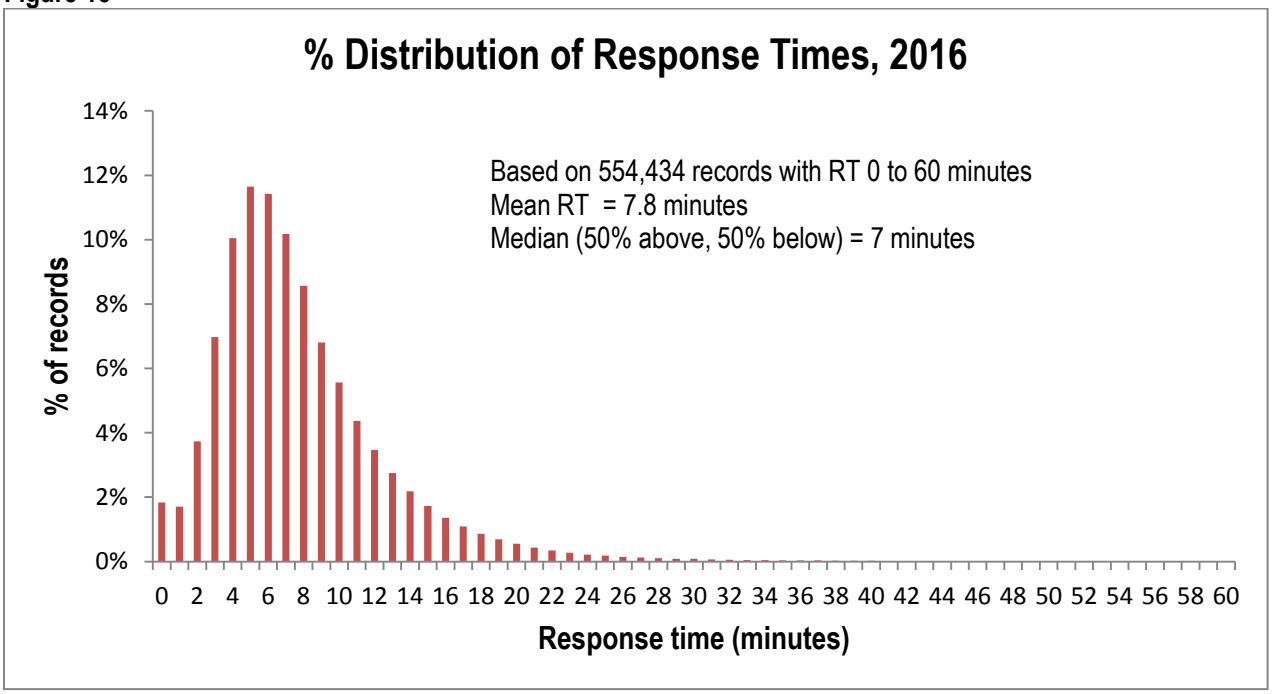
[10] Mullen, J; Furniss WH and Reynolds, J: Connecticut Department of Public Health Emergency Medical Services Plan 2015 http://www.ct.gov/dph/lib/dph/ems/pdf/communication_statements/20152020_state_ems_plan_final_v10.26.2015.pdf, Accessed 10/17/2017.

[11] Mecham, C, et. al. Prehospital Medical Planning for the 2015 Philadelphia Papal Visit. Journal of Prehospital Emergency Care, 2016; 20:695-704, accessed 8/7/2017 http://www.tandfonline.com /doi/abs/10.1080/10903127.2016.1182608

Response Times for Emergency 911 Calls

Response times are a continuing feature of the EMS Annual Data Report. Although they are part of a statutory reporting requirement, their utility for comparison by town or EMS agency is limited by the lack of data for calculation (Table 8) as well as by the differences in type of service (commercial vs volunteer), number of ambulances and crew, terrain, traffic and other characteristics of responder territory across the state.

Figure 15



Response time calculated as: the difference between time EMS unit arrived at scene and time EMS unit was notified by dispatch.

Appendix A: Estimates for Reported Response Times, by EMS Agency, 2016 [Emergency 911 calls]

Response time (RT) estimates are based on calculated response time of 0 to 60 minutes to exclude the most documentation errors. The 95% confidence interval (CI) brackets the mean response time that would be expected from repeated random sampling of response times for each agency in 2016. Statistics are not reported for fewer than 30 records or for records with incomplete time point data.

						confidence Interval for mean RT	
EMS Agency Name	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Aetna Amb. Svc.	18,758	6.0	4.4	0	51	6.0	6.1
Amb. Svc. of Manchester	21,802	7.3	3.8	0	37	7.3	7.4
American Amb. Svc.	14,737	8.1	5.3	0	58	8.0	8.1
American Legion Amb.	1,650	9.0	5.2	0	42	8.8	9.3
AMR of CT	182,423	8.0	5.1	0	60	8.0	8.0
AMR New Haven	2,363	6.3	3.3	0	43	6.1	6.4
Andover Vol. FD	286	11.5	4.5	2	33	10.9	12.0
Ansonia Rescue & Medical Svc	2,950	5.9	3.2	0	56	5.7	6.0
Ashford Vol. FD	313	11.3	6.4	0	30	10.6	12.0
Baltic FD	224	11.0	4.7	0	37	10.3	11.6
Bantam FD	284	12.6	4.8	0	37	12.1	13.2
Beacon Hose Co.	fewer than 30 records; no statistics reported						
Bethany Vol. FD	400	11.5	4.5	0	28	11.0	11.9
Bethel Police Dept.	1,459	7.4	4.7	0	27	7.2	7.6
Bethel Volunteer FD	1,307	6.4	4.8	0	55	6.2	6.7
Bethlehem Amb. .	fewer than 30 records; no statistics reported						
Bloomfield Vol. Amb.	1,455	9.5	4.3	0	60	9.2	9.7
Bozrah Vol. FD	194	12.6	5.3	1	37	11.8	13.3
Bradley Airport Emergency	411	4.9	3.1	0	35	4.6	5.2
Branford FD-EMS	3,866	6.9	4.0	0	39	6.7	7.0
Bridgewater Vol. FD	105	13.5	6.0	0	36	12.4	14.7
Brookfield Vol. FD	1,544	6.5	4.0	0	43	6.3	6.6
Burlington Vol. FD	578	10.6	4.7	0	35	10.2	10.9
Campion Amb. Svc.	22,058	7.7	4.9	0	57	7.7	7.8
Chester Hose Company	77	14.4	8.7	3	57	12.5	16.4
Chesterfield FD	156	6.1	3.9	0	20	5.5	6.7
West Haven FD Allingtown	80	5.2	2.9	1	24	4.6	5.9
Clinton Vol. FD	1,244	12.7	6.1	0	58	12.4	13.0
Colchester Hayward Vol. FD	1,356	9.1	5.5	0	39	8.9	9.4
Community FD	784	9.3	6.3	0	58	8.8	9.7
Cornwall Vol. FD	277	15.3	6.7	0	40	14.5	16.1
Coventry Vol. FD	972	10.1	5.7	0	51	9.7	10.4
Cromwell FD	1,767	7.4	4.3	0	56	7.2	7.6
Danbury Amb. Svc	480	10.7	7.9	0	47	10.0	11.4
Danbury EMS/ FD	10,510	6.9	3.8	0	46	6.8	7.0
Darien EMS	1,582	6.1	4.0	0	35	5.9	6.3

						confidence Interval for mean RT	
EMS Agency Name	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Dayville FD First Responder	fewer than 30 records; no statistics reported						
Deep River Amb. .	501	15.1	5.5	0	48	14.6	15.6
Durham Volunteer Amb.	463	11.6	5.4	0	36	11.1	12.1
East Haddam Amb. .	653	18.9	7.1	0	54	18.3	19.4
East Hampton Amb. .	891	12.5	5.5	0	50	12.1	12.8
East Hartford FD	8,042	5.7	2.6	0	56	5.6	5.7
East Haven FD	2,468	5.3	2.8	0	46	5.2	5.4
East Lyme Amb.	2,037	5.5	3.5	0	41	5.4	5.7
East Windsor Amb. .	2,452	8.3	4.4	0	44	8.2	8.5
Easton Vol. EMS	426	7.6	5.3	0	34	7.0	8.1
Echo Hose Hook & Ladder	4,234	9.5	4.3	0	45	9.4	9.6
Electric Boat Corporation	154	2.3	1.6	0	8	2.1	2.6
Ellington Vol. Amb.	1,009	8.7	4.0	0	40	8.4	8.9
Enfield Community Amb.	6,588	7.0	4.0	0	53	6.9	7.1
Essex Amb. .	663	14.2	5.1	0	49	13.8	14.6
Falls Village Vol. FD	54	12.6	5.0	5	26	11.3	14.0
Franklin Vol. FD	123	15.3	5.6	4	42	14.3	16.3
Gardner Lake Vol. FD	289	11.0	5.3	0	36	10.4	11.6
Georgetown Vol. FD	578	7.6	5.4	0	60	7.2	8.1
Glastonbury Vol. Amb. .	3,120	5.9	3.6	0	31	5.8	6.0
Goshen Vol. FD	202	12.9	5.9	0	37	12.1	13.7
Granby Amb. .	1,485	9.3	4.9	0	46	9.1	9.6
Greenwich EMS	6,481	5.3	4.0	0	53	5.3	5.4
Groton Amb. .	4,007	7.8	4.2	0	49	7.6	7.9
Haddam Vol. Amb. Svc.	664	12.9	6.2	0	45	12.4	13.3
Harwinton Amb. .	462	8.7	4.5	0	41	8.3	9.2
Hebron Vol. FD	538	12.1	6.3	0	42	11.6	12.6
Heritage Village Amb. .	1,150	7.1	3.8	0	46	6.9	7.4
Hunter's Amb. Svc.	26,685	8.0	7.2	0	60	7.9	8.1
KB Amb.	3,201	9.4	4.7	0	47	9.2	9.5
Kent Vol. FD	379	16.0	6.4	0	57	15.4	16.7
Killingworth Amb. .	312	17.4	6.3	0	40	16.7	18.1
Lawrence & Memorial Hospital	4,919	8.7	4.9	0	49	8.6	8.9
Lebanon Volunteer FD	428	15.9	6.6	0	48	15.3	16.6
Ledyard Vol. Emergency Squad	738	12.4	7.4	0	47	11.8	12.9
LifeNet, NY	fewer than 30 records; no statistics reported						
Litchfield Vol. Amb. .	1,096	8.3	4.9	0	53	8.0	8.6
Lyme Amb. .	177	21.7	8.6	5	59	20.4	23.0
Madison Amb.	1,867	6.2	3.9	0	32	6.0	6.4

						confidence Interval for mean RT	
EMS Agency Name	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Middlebury Vol. FD	175	10.3	5.0	0	39	9.5	11.0
Middlefield Vol FD first responder	379	11.0	4.7	2	28	10.6	11.5
Middlesex Hospital	7,300	11.0	6.3	0	60	10.9	11.2
Milford FD	1,699	5.7	2.9	0	35	5.5	5.8
Mohegan FD	699	6.2	3.6	0	25	5.9	6.4
Mohegan Tribal FD	2,320	5.6	4.3	0	37	5.5	5.8
Monroe Vol. EMS	1,297	9.6	4.9	0	52	9.3	9.8
Montville FD Amb.	722	6.0	3.4	0	42	5.7	6.2
Morris Vol. FD	215	9.5	4.9	0	30	8.9	10.2
Mortlake FD	888	10.8	6.1	0	48	10.4	11.2
Mystic River Amb. .	2,049	8.7	4.6	0	49	8.5	8.9
Naugatuck Amb. .	2,056	7.0	3.2	0	30	6.9	7.2
New Britain EMS	13,657	6.5	3.5	0	42	6.4	6.5
New Canaan Vol. Amb.	1,886	7.2	4.2	0	35	7.0	7.3
New Hartford Vol. FD Amb. Svc.	789	13.2	6.6	0	42	12.8	13.7
New London FD	6,002	4.7	2.1	0	25	4.7	4.8
New Milford Community Amb.	2,175	10.4	5.6	0	50	10.1	10.6
Newington Vol. Amb. Corp	1,410	5.0	3.2	0	55	4.9	5.2
Newtown Vol. Amb.	2,680	10.0	5.0	0	43	9.8	10.1
Norfolk Lions Club Amb.	172	14.2	5.8	1	28	13.3	15.1
North Branford FD Amb. Co. #4	1,141	10.9	5.2	0	55	10.6	11.2
North Canaan Vol. Amb.	1,057	8.5	5.4	0	47	8.2	8.8
North Haven FD	1,333	6.3	3.4	0	42	6.1	6.5
North Haven FD2	1,142	6.1	3.3	0	31	5.9	6.3
Northern Duchess Paramed	987	11.2	6.5	0	41	10.8	11.6
Norwalk Hospital .	13,527	8.4	4.3	0	59	8.3	8.4
Oakdale FD	316	5.9	4.1	0	40	5.4	6.3
Old Lyme South End Vol. Amb. .	499	12.2	6.7	0	42	11.6	12.8
Old Mystic FD first responder	160	6.2	2.8	0	14	5.7	6.6
Old Saybrook Amb. .	1,370	11.8	5.3	0	49	11.5	12.0
Oxford Amb. .,	807	11.2	5.3	0	51	10.8	11.6
Petengill Amb. Marlborough	238	11.7	5.2	0	35	11.0	12.3
Pfizer	40	3.0	1.4	0	6	2.5	3.4
Plymouth Vol. Amb.	1,257	6.9	3.9	0	39	6.7	7.1
Poquetanuck Vol. FD	233	11.5	7.0	0	47	10.6	12.4
Pratt & Whitney Div. of UTC	103	4.2	2.5	0	15	3.8	4.7
Pratt & Whitney-Middletown	46	2.4	1.7	0	7	1.9	3.0

						confidence Interval for mean RT	
EMS Agency Name	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Putnam E.M.S. Amb. Svc.	1,222	6.5	4.0	0	32	6.3	6.8
Redding Fire District	181	10.1	4.8	1	32	9.4	10.8
Ridgefield FD	1,942	6.7	3.7	0	30	6.6	6.9
Rocky Hill Vol. Amb.	695	8.0	4.5	0	51	7.7	8.3
Roxbury Amb. .	144	14.4	7.9	0	53	13.1	15.7
Salisbury Vol. Amb. Svc.	411	15.4	5.9	0	42	14.8	16.0
Seymour Amb. .,	525	8.0	4.4	0	35	7.6	8.4
Sharon FD Amb. Squad	306	10.2	4.5	1	29	9.7	10.7
Sherman Vol. FD	220	16.3	7.0	0	60	15.4	17.2
Sikorsky Aircraft Corporation	135	2.5	2.2	0	16	2.1	2.9
Simsbury Volunteer Amb.	fewer than 30 records; no statistics reported						
Somers FD Amb. Div.	821	8.1	4.3	0	36	7.8	8.4
South Manchester FD	5,478	5.2	2.4	0	27	5.2	5.3
Southbury Amb. .	1,950	8.1	3.8	0	44	7.9	8.2
Southbury Training School	362	5.6	4.2	0	40	5.1	6.0
Stafford Amb. .	879	7.7	5.5	0	35	7.3	8.0
Stamford EMS	13,944	7.4	4.2	0	53	7.3	7.4
Stonington Vol. Amb.	468	9.4	5.2	0	37	8.9	9.8
Stony Hill Vol. FD	956	6.7	5.1	0	42	6.3	7.0
Storm Engine Co. Amb. & Rescue	1,728	7.1	4.1	0	31	6.9	7.3
Stratford EMS	7,908	7.4	4.3	0	57	7.3	7.5
Submarine Base FD	157	5.5	3.5	0	16	4.9	6.0
Suffield Vol. Amb. .	1,496	9.8	6.0	0	57	9.5	10.1
Thomaston Vol. Amb. .,	907	8.0	4.6	0	29	7.7	8.3
Tolland FD	1,125	12.0	6.9	0	56	11.6	12.4
Town of Canton Vol. Fire & EMS	988	9.1	5.3	0	41	8.7	9.4
Town of Guilford FD Amb.	2,305	8.6	5.0	0	52	8.4	8.8
Town of Mansfield	1,614	8.0	4.0	0	35	7.8	8.2
Trumbull EMS	4,843	8.4	4.4	0	57	8.3	8.5
UCONN FD Storrs	1,041	4.9	3.3	0	36	4.7	5.1
UCONN Health Center FD	1,664	8.2	5.8	0	34	7.9	8.4
Valley EMS	5,974	8.3	3.6	0	33	8.2	8.4
Vernon FD	3,153	6.8	4.6	0	50	6.6	7.0
Volunteer FD of New Fairfield	882	10.8	5.9	0	43	10.4	11.2
Voluntown Volunteer FD #1	fewer than 30 records; no statistics reported						
Wallingford Dept. of Fire Svs.	5,044	6.4	3.4	0	31	6.3	6.5
Warren Vol. FD	97	16.1	6.3	0	38	14.8	17.4
Washington Amb. .	328	16.7	5.5	3	39	16.1	17.3

						confidence Interval for mean RT	
EMS Agency Name	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Waterford Amb. .	1,104	6.3	3.7	0	53	6.1	6.5
West Hartford FD	961	5.3	3.1	0	24	5.1	5.5
WEST HAVEN FD	235	5.3	2.5	0	22	4.9	5.6
West Redding Vol. FD District Co	147	14.3	7.7	0	57	13.0	15.5
West Shore Fire District	84	5.4	3.3	1	24	4.6	6.1
Westbrook Amb. .	730	12.5	5.4	0	54	12.1	12.9
Westerly Amb. RI	597	5.4	3.6	0	28	5.1	5.7
Weston Vol. EMS	506	16.2	5.4	0	35	15.8	16.7
Westport EMS	2,908	6.8	4.3	0	39	6.7	7.0
Wethersfield Vol. Amb. .	719	6.0	3.1	0	40	5.8	6.3
Willimantic FD	280	5.8	3.1	0	18	5.5	6.2
Willington FD	435	9.4	4.8	0	33	8.9	9.8
Wilton Volunteer Amb.	1,367	8.3	5.0	0	53	8.1	8.6
Windham Comm Memorial Hospital	3,601	8.7	5.1	0	35	8.6	8.9
Windsor Locks Lions Club Amb.	1,438	4.8	2.9	0	34	4.7	5.0
Windsor Vol. Amb./ EMS	2,127	7.9	4.0	0	52	7.7	8.0
Winsted Area Amb. .	1,713	8.1	5.3	0	35	7.9	8.4
Wolcott Vol. Amb.	1,473	6.0	3.4	0	28	5.8	6.1
Woodbury Amb. .	752	16.0	5.4	0	36	15.6	16.4
Woodstock EMS/ FD.	523	11.2	6.6	0	43	10.6	11.7

n = 554,434 records with times
between 0 and 60 minutes

Appendix B: Estimates for Reported Response Times, by Incident Town, 2016 [Emergency 911 calls]

Response time (RT) estimates are based on calculated response time of 0 to 60 minutes to exclude the most documentation errors. The 95% confidence interval (CI) brackets the mean response time that would be expected from repeated random sampling of response times for each town in 2016. Statistics are not reported for fewer than 30 records or for records with incomplete time point or zip code data.

						confidence Interval for mean RT	
Town	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Abington	fewer than 30 records; no statistics reported						
Amston	104	13.6	6.4	2	42	12.4	14.9
Andover	351	11.7	4.4	1	33	11.3	12.2
Ansonia	3,755	6.0	3.1	0	56	5.9	6.1
Ashford	401	12.7	6.3	0	35	12.1	13.3
Avon	1,819	8.0	4.6	0	45	7.8	8.2
Ballouville	fewer than 30 records; no statistics reported						
Baltic	300	11.9	4.8	0	37	11.4	12.5
Bantam	125	12.0	4.3	0	23	11.3	12.8
Barkhamsted	318	13.9	6.6	1	53	13.2	14.6
Beacon Falls	140	13.8	5.3	1	34	12.9	14.7
Berlin	1,828	7.0	3.0	0	40	6.8	7.1
Bethany	585	12.3	4.7	0	28	11.9	12.6
Bethel	3,333	6.2	4.4	0	55	6.1	6.4
Bethlehem	89	16.6	4.9	6	31	15.6	17.6
Bloomfield	3,387	11.5	5.9	0	60	11.3	11.7
Bolton	378	9.5	4.0	0	23	9.1	9.9
Botsford	fewer than 30 records; no statistics reported						
Bozrah	259	12.0	4.9	1	37	11.4	12.6
Branford	3,991	7.0	4.3	0	39	6.9	7.2
Bridgeport	30,821	7.1	4.8	0	60	7.0	7.1
Bridgewater	111	12.8	5.9	0	36	11.7	13.9
Bristol	238	12.3	7.4	0	41	11.3	13.2
Broad Brook	597	11.0	3.8	1	44	10.7	11.3
Brookfield	1,555	6.6	4.0	0	43	6.4	6.8
Brooklyn	1,182	10.7	5.3	0	44	10.4	11.0
Burlington	494	9.8	4.4	0	35	9.4	10.2
Canaan	1,005	8.6	5.6	0	47	8.3	9.0
Canterbury	174	17.2	7.0	0	48	16.2	18.3
Canton	975	11.0	6.9	0	51	10.6	11.4
Canton Center	fewer than 30 records; no statistics reported						
Centerbrook	144	12.9	5.1	0	33	12.0	13.7
Central Village	172	8.3	7.2	0	42	7.2	9.3
Chaplin	113	10.0	4.7	0	24	9.2	10.9
Cheshire	3,750	7.0	3.9	0	44	6.9	7.1
Chester	315	15.8	6.0	0	57	15.1	16.5
Clinton	1,732	12.3	5.5	0	58	12.0	12.5
Cobalt	61	12.8	4.7	0	26	11.6	14.0
Colchester	1,802	10.1	5.5	0	38	9.9	10.4

						confidence Interval for mean RT	
Town	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Colebrook	110	12.8	5.0	3	30	11.9	13.7
Collinsville	140	7.1	4.9	1	35	6.3	7.9
Columbia	177	9.3	3.7	0	24	8.8	9.9
Cornwall	103	15.3	6.8	0	32	13.9	16.6
Cornwall Bridge	102	18.3	7.0	0	40	16.9	19.7
Cos Cob	392	4.3	4.0	0	50	3.9	4.7
Coventry	1,437	10.4	5.1	0	43	10.1	10.7
Cromwell	2,375	8.2	4.2	0	56	8.0	8.3
Danbury	10,561	6.8	3.8	0	46	6.8	6.9
Danielson	2,245	8.4	4.6	0	58	8.2	8.6
Darien	2,170	6.6	4.0	0	35	6.5	6.8
Dayville	1,155	9.8	4.3	0	46	9.5	10.0
Deep River	599	14.7	5.2	0	48	14.3	15.1
Derby	2,578	7.1	3.7	0	31	7.0	7.2
Durham	627	12.2	5.2	0	50	11.7	12.6
East Berlin	169	7.1	3.7	3	39	6.5	7.6
East Canaan	fewer than 30 records; no statistics reported						
East Glastonbury	fewer than 30 records; no statistics reported						
East Granby	414	8.5	4.6	0	29	8.1	9.0
East Haddam	663	20.5	7.0	0	54	20.0	21.1
East Hampton	1,178	12.1	5.2	0	50	11.9	12.4
East Hartford	15,198	6.3	3.0	0	35	6.2	6.3
East Hartland	88	13.8	6.9	0	46	12.3	15.2
East Haven	7,399	8.6	5.0	0	52	8.5	8.7
East Killingly	36	12.8	5.2	0	26	11.1	14.6
East Lyme	1,626	6.3	4.3	0	41	6.1	6.5
East Windsor	1,119	6.1	3.6	0	42	5.9	6.3
East Woodstock	fewer than 30 records; no statistics reported						
Eastford	118	15.4	7.3	0	33	14.1	16.7
Easton	582	8.8	5.6	0	34	8.3	9.2
Ellington	1,367	8.9	4.2	0	56	8.6	9.1
Enfield	6,723	7.2	4.3	0	53	7.1	7.3
Essex	656	13.6	4.7	0	49	13.3	14.0
Fairfield	5,853	6.5	4.1	0	55	6.3	6.6
Falls Village	79	13.1	6.4	0	27	11.7	14.5
Farmington	3,880	7.2	4.6	0	48	7.0	7.3
Gales Ferry	448	13.4	6.1	1	44	12.9	14.0
Gaylordsville	51	16.2	5.2	6	33	14.7	17.6
Georgetown	34	14.9	4.7	4	23	13.2	16.5

						confidence Interval for mean RT	
Town	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Glastonbury	4,677	6.1	3.7	0	31	6.0	6.2
Goshen	84	14.1	7.2	0	39	12.5	15.6
Granby	703	8.0	4.5	0	43	7.6	8.3
Greenwich	4,784	5.5	4.2	0	54	5.4	5.7
Grosvenor Dale	39	6.4	3.8	1	17	5.2	7.6
Groton	6,043	7.8	4.5	0	49	7.7	8.0
Guilford	2,156	8.5	5.2	0	52	8.2	8.7
Haddam	571	14.5	6.2	0	45	14.0	15.0
Hadlyme	fewer than 30 records; no statistics reported						
Hamden	8,385	10.8	5.6	0	60	10.7	10.9
Hampton	56	13.7	4.4	2	28	12.5	14.9
Hanover	fewer than 30 records; no statistics reported						
Hartford	35,520	6.6	4.5	0	60	6.5	6.6
Harwinton	373	9.1	4.7	0	39	8.6	9.5
Hebron	628	12.4	5.7	0	34	12.0	12.9
Higganum	310	11.5	5.8	0	39	10.9	12.2
Ivoryton	112	14.9	4.8	2	28	14.0	15.7
Jewett City/Lisbon	1,888	8.2	5.2	0	51	8.0	8.5
Kent	407	16.6	6.6	0	57	15.9	17.2
Killingworth	472	17.5	5.6	0	40	17.0	18.0
Lakeside	fewer than 30 records; no statistics reported						
Lakeville	144	14.5	7.0	0	34	13.4	15.7
Lebanon	659	15.0	6.1	0	48	14.6	15.5
Ledyard	1,889	7.3	6.3	0	53	7.0	7.6
Litchfield	636	9.0	4.4	0	31	8.7	9.3
Madison	1,877	6.3	4.3	0	42	6.1	6.5
Manchester	12,803	6.2	3.2	0	30	6.2	6.3
Mansfield Center	1,042	8.5	4.0	0	36	8.3	8.7
Mansfield Depot	fewer than 30 records; no statistics reported						
Marion	fewer than 30 records; no statistics reported						
Marlborough	1,131	22.0	11.2	0	55	21.3	22.6
Mashantucket	133	6.3	6.9	0	30	5.2	7.5
Meriden	10,915	5.5	2.8	0	40	5.5	5.6
Middle Haddam	fewer than 30 records; no statistics reported						
Middlebury	907	10.1	4.1	0	39	9.8	10.3
Middlefield	294	9.3	3.9	0	23	8.8	9.7
Middletown	10,525	6.6	3.7	0	60	6.5	6.7
Milford	6,488	7.7	4.7	0	53	7.6	7.8
Milldale	fewer than 30 records; no statistics reported						

						confidence Interval for mean RT	
Town	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Monroe	2,303	9.6	5.0	0	52	9.4	9.8
Montville	105	6.1	3.6	1	19	5.4	6.8
Moodus	282	17.6	5.7	0	38	16.9	18.3
Moosup	720	10.9	6.0	0	36	10.4	11.3
Morris	181	12.8	7.5	0	50	11.7	13.9
Mystic	2,099	8.6	4.7	0	49	8.4	8.8
Naugatuck	2,440	7.7	3.8	0	43	7.6	7.9
New Britain	13,876	6.7	3.8	0	42	6.7	6.8
New Canaan	3,142	7.2	4.5	0	56	7.1	7.4
New Fairfield	917	10.7	5.9	0	43	10.3	11.0
New Hartford	703	12.7	6.2	0	39	12.2	13.1
New Haven	39,703	7.7	4.8	0	60	7.7	7.8
New London	7,237	4.8	2.3	0	25	4.8	4.9
New Milford	2,436	10.2	5.8	0	53	10.0	10.5
New Preston Marble Dale	140	16.3	5.0	0	38	15.4	17.1
Newington	5,459	6.5	4.3	0	55	6.4	6.7
Newtown	2,190	10.1	5.5	0	47	9.9	10.3
Niantic	1,029	8.0	4.9	0	30	7.7	8.3
Norfolk	112	13.0	5.0	0	28	12.1	13.9
North Branford	793	12.4	4.8	0	55	12.1	12.7
North Franklin	271	12.9	5.5	0	42	12.2	13.5
North Granby	48	10.3	3.8	3	21	9.2	11.4
North Grosvenordale	546	9.0	5.5	0	58	8.5	9.4
North Haven	6,121	8.2	4.3	0	42	8.0	8.3
North Stonington	277	12.9	6.4	0	42	12.2	13.7
North Windham	348	8.2	3.5	0	35	7.8	8.5
Northfield	51	14.0	6.0	4	38	12.3	15.6
Northford	412	8.3	4.4	0	26	7.9	8.8
Norwalk	10,884	8.3	4.2	0	59	8.3	8.4
Norwich	7,361	6.4	3.4	0	57	6.4	6.5
Oakdale	673	7.9	5.1	0	40	7.5	8.2
Oakville	622	8.5	3.6	2	35	8.2	8.8
Old Greenwich	349	5.2	3.5	0	28	4.9	5.6
Old Lyme	828	14.3	7.0	0	46	13.8	14.8
Old Mystic	fewer than 30 records; no statistics reported						
Old Saybrook	1,941	11.1	4.9	0	49	10.9	11.3
Oneco	31	13.7	5.7	0	27	11.6	15.8
Orange	3,809	8.2	5.9	0	56	8.0	8.4
Oxford	1,177	11.6	5.0	0	51	11.3	11.9

						confidence Interval for mean RT	
Town	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
Pawcatuck	341	6.1	4.5	0	24	5.6	6.6
Pequabuck	fewer than 30 records; no statistics reported						
Pine Meadow	fewer than 30 records; no statistics reported						
Plainfield	1,138	10.7	5.8	0	36	10.4	11.1
Plainville	2,311	7.7	3.9	0	44	7.5	7.8
Plantsville	1,280	6.2	3.8	0	50	6.0	6.4
Plymouth	403	9.5	4.3	0	36	9.1	10.0
Pomfret	132	15.8	5.4	0	30	14.9	16.8
Pomfret Center	136	14.7	5.6	0	47	13.8	15.7
Poquonock	fewer than 30 records; no statistics reported						
Portland	1,284	8.8	3.4	0	27	8.6	9.0
Preston	539	10.6	5.2	0	47	10.2	11.1
Prospect	625	11.8	4.6	0	34	11.4	12.2
Putnam	1,608	6.8	4.2	0	39	6.6	7.0
Quaker Hill	228	7.9	4.8	0	31	7.3	8.5
Quinebaug	65	10.4	5.6	0	29	9.1	11.8
Redding	903	10.4	6.5	0	60	10.0	10.8
Redding Center	150	12.6	5.7	2	37	11.7	13.5
Redding Ridge	45	10.3	3.8	0	20	9.2	11.5
Ridgefield	1,926	7.0	4.0	0	32	6.8	7.1
Riverside	533	3.9	3.6	0	32	3.5	4.2
Riverton	fewer than 30 records; no statistics reported						
Rockfall	105	7.4	2.4	0	17	6.9	7.9
Rocky Hill	3,190	6.6	4.4	0	51	6.4	6.7
Rogers	fewer than 30 records; no statistics reported						
Roxbury	130	13.9	5.5	0	35	12.9	14.8
Salem	344	11.9	5.3	0	36	11.4	12.5
Salisbury	371	14.9	5.3	0	42	14.3	15.4
Sandy Hook	724	10.6	4.7	0	41	10.3	11.0
Scotland	35	11.4	4.5	0	18	9.9	12.9
Seymour	1,341	8.1	4.0	0	35	7.9	8.4
Shelton	7,137	9.6	4.5	0	45	9.5	9.7
Sherman	180	16.5	7.4	0	60	15.4	17.6
Simsbury	404	15.8	7.8	0	50	15.0	16.6
Somers	1,189	8.6	4.5	0	50	8.4	8.9
Somersville	fewer than 30 records; no statistics reported						
South Britain	fewer than 30 records; no statistics reported						
South Glastonbury	249	9.2	3.8	0	25	8.7	9.7
South Kent	42	18.8	5.4	9	29	17.1	20.5

						confidence Interval for mean RT	
Town	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
South Windham	fewer than 30 records; no statistics reported						
South Windsor	2,707	6.8	3.7	0	56	6.7	7.0
South Woodstock	fewer than 30 records; no statistics reported						
Southbury	4,310	9.5	5.9	0	57	9.4	9.7
Southington	3,738	7.0	5.4	0	59	6.8	7.1
Southport	480	8.5	4.4	0	41	8.1	8.9
Stafford	fewer than 30 records; no statistics reported						
Stafford Springs	1,343	8.5	5.9	0	47	8.2	8.8
Stamford	13,087	7.4	4.3	0	59	7.3	7.4
Sterling	217	16.1	6.5	0	41	15.2	17.0
Stonington	978	8.8	5.4	0	37	8.5	9.1
Storrs Mansfield	2,083	6.1	3.9	0	40	5.9	6.3
Stratford	8,334	7.5	4.6	0	57	7.4	7.6
Suffield	1,420	9.6	6.0	0	57	9.3	9.9
Taftville	467	9.3	3.5	0	26	9.0	9.6
Tariffville	fewer than 30 records; no statistics reported						
Terryville	997	6.9	4.4	0	39	6.7	7.2
Thomaston	1,052	8.6	4.7	0	36	8.3	8.9
Thompson	352	11.2	7.0	0	53	10.5	12.0
Tolland	1,573	10.9	6.0	0	55	10.6	11.2
Torrington	6,338	6.1	3.3	0	42	6.0	6.1
Trumbull	5,132	8.5	4.5	0	57	8.4	8.6
Uncasville	3,353	5.1	3.1	0	42	5.0	5.2
Unionville	629	10.6	5.4	0	47	10.2	11.0
Vernon Rockville	5,097	7.2	4.8	0	55	7.1	7.3
Versailles	fewer than 30 records; no statistics reported						
Voluntown	101	18.0	5.6	4	37	16.9	19.1
Wallingford	6,669	7.8	4.6	0	51	7.7	7.9
Washington	267	17.0	5.7	3	39	16.4	17.7
Washington Depot	36	16.7	5.5	6	30	14.9	18.6
Waterbury	19,179	7.2	4.1	0	53	7.1	7.3
Waterford	1,736	7.2	3.7	0	31	7.0	7.4
Watertown	1,457	10.6	4.7	0	60	10.4	10.9
Wauregan	139	9.5	5.1	0	38	8.6	10.3
Weatogue	fewer than 30 records; no statistics reported						
West Cornwall	125	13.3	5.0	0	30	12.4	14.2
West Granby	31	9.2	4.0	4	21	7.8	10.7
West Hartford	10,101	6.3	4.4	0	57	6.3	6.4
West Hartland	fewer than 30 records; no statistics reported						

						confidence Interval for mean RT	
Town	N	Mean	Std Dev	Minimum	Maximum	Lower 95%	Upper 95%
West Haven	8,968	9.9	5.1	0	54	9.8	10.0
West Mystic	40	8.1	3.8	3	20	6.9	9.3
West Simsbury	fewer than 30 records; no statistics reported						
West Suffield	233	12.6	6.3	0	33	11.8	13.4
Westbrook	1,999	21.3	13.5	0	60	20.7	21.9
Weston	891	14.6	5.5	0	35	14.3	15.0
Westport	3,091	7.5	5.2	0	48	7.3	7.7
Wethersfield	3,686	5.7	3.4	0	45	5.6	5.8
Willimantic	1,235	5.1	3.1	0	26	4.9	5.2
Willington	526	10.1	5.2	0	45	9.7	10.6
Wilton	2,369	8.3	4.8	0	53	8.1	8.5
Winchester Center	93	11.0	5.3	0	27	9.9	12.1
Windham	177	8.3	3.6	0	20	7.8	8.8
Windsor	3,104	8.2	4.5	0	52	8.0	8.3
Windsor Locks	2,129	5.2	3.1	0	35	5.1	5.3
Winsted	1,957	7.5	5.2	0	56	7.2	7.7
Wolcott	1,596	6.6	4.1	0	28	6.4	6.8
Woodbridge	2,272	7.6	5.7	0	41	7.4	7.9
Woodbury	1,051	16.9	5.5	0	39	16.5	17.2
Woodstock	599	11.3	6.4	0	43	10.8	11.8
Woodstock Valley	35	16.4	4.5	10	28	14.8	17.9
Yantic	fewer than 30 records; no statistics reported						

Appendix C: One Year Follow-up after the NHTSA "GO Team" Visit

In October of 2016, a team of EMS and Trauma Registry experts from the National Highway Transit Safety Administration (NHTSA) visited DPH in response to our invitation to provide feedback on our systems and processes.
Issues identified by the team are separated by type. The highlights are followed by brief narrative of current status.

Trauma Registry Data Collection:

1. Lost functionality to submit data directly to the State repository
   Functionality has been regained and demonstrated with one major submitter. However, the decision to transition to an updated Trauma Registry that uses only the National Trauma Data Bank (NTDB) standard elements has been stalled at the legislative level because the state-specific system is listed in current regulations and would need to be changed. Migrating older trauma registry data would also incur costs. The Legislature has not acted on a proposed revision to allow hospitals to collect solely the NTDB standard elements. Currently, information that is submitted goes only to the NTDB from individual hospitals and the state has no aggregate data.

2. Software updates did not have enough supporting documentation or training.
   This is moot until we actually have the new Version 5 Digital Innovation software distributed to the hospitals and translations in place for any hospitals that use a different software.

3. No resources have been developed to support adequate staffing.
   Funding continues to be a challenge.

4. Other end-user resources are needed.
   Digital Innovation has demonstrated "The Driller" to trauma center end-users. This would allow individual hospitals to create queries that result in graphical displays (such as histogram distributions of injury severity scores) of their own institution's data and to compare it to aggregate distributions from the whole state.

   In addition, should the new database be adopted, end-users will need a valid online address for uploading batch data in V5. Uploading of earlier version data will depend on migration of that data to the V5 format. Digital Innovation has agreed to maintain the data dictionary for V5.

   We should create a schema for submitting data and develop a list of contacts for system assistance, so that for instance if the web portal becomes non-functional again, it is reported and corrected.

Summary: The trauma registry is still not functional for collection and aggregation of current year data. A demonstration of the updated portal showed that the old trauma data could be uploaded.

Decision points: The trauma registry community goal is to move forward with Version 5 data collection and aggregation. The older database may not be supported in the future by Digital Innovation and it is important to bring in the older data to a new, common system. The training done with Digital Innovations by the OEMS epidemiologist will be one year old at the end of 2017. That means re-learning and practicing skills if the new system V5 is ever adopted.

Accuracy should be taken care of by the V5 data collection system, as invalid trauma data are not accepted by the NTDB. Completeness may be up to review by the trauma registrars and NTDB. The OEMS has no aggregate data to look at or review. Construction of a comprehensive trauma dataset requires migration of old data, incoming newer data in V5 and assessment tools at both the end-user and EMS level. Those require IT and software support and training.

The acceptance of NTDB requires revisions to the current Regulations. The Technology Bill will be introduced for 2018 legislation.

EMS Data Collection:

1. Transition from NEMSIS Version 2.2.1 to Version 3.4.0 is still happening.
   EMS Agencies and vendors were required to submit any data still in version 2.2.1 to the Collector in Production after testing their software in Staging. The software vendors had already reported compliance with the NEMSIS 3.4.0 data structures. An extension was granted so that the old version data could be sent in and translated with a small loss of data until June 30, 2017. Emails and website postings of memos and Data Submission manuals were made available to all vendors and EMS agencies. Not all EMS vendors and agencies actually submitted data.

   Server space issues were identified to BEST and Digital Innovation when larger record files were submitted.
   Some software vendors and EMS clients still need to resolve some data submission and structure issues.
   DPH Epidemiologist has requested and OEMS purchased SAS/Access software so that data in the new Collector can be examined in aggregate. Additional connections must be made via Information Technology. Programming of older SAS queries will need to be rewritten to match the new element names and structures.

2. EMS Data Driller for basic queries of aggregate data has been demonstrated but not implemented.
   Implementation process meetings took place in July and October of 2017. As of November 2017, the steps to ensure end-user and OEMS functionality are not completed.

3. The new Collector allows end-users to access a Submission Report
   Users can review the number of records submitted and the processing status. This is a large improvement over the old system. Not all of the data submitters understand that they can review their own submissions. A Data Submission manual from Digital Innovation has been emailed to all software vendors, EMS agencies and also posted to the OEMS website. When questions arise that are not covered by the manual, OEMS contacts Digital Innovation and has requested additional support.

4. Data validation was not being done by the old collection system.
   The new database incorporates the NEMSIS version 3.4.0 business rules, but it is not clear whether every piece of logic is in there to validate on data entry. The OEMS epidemiologist leads a group of EMS providers from the quality Improvement Data Committee (QIDC) in weekly meetings to create the Connecticut data dictionary. Discussions with other New England partner states promotes regional continuity. There are included many lists of fields such as hospital codes, patient disposition, primary impression, injury codes, medications and more that require review of NEMSIS suggested lists and codes, as well as Connecticut-specific procedures and protocols, in addition to making sure that labels which would appear on drop-down lists are understandable by field personnel at different practice levels. The data quality improvement group meets every week and has completed drafts drop-down lists for five areas, as well as briefs for each area that should allow the end-user answering an emergency call to understand what is required without trying to read the NEMSIS version 3.4.0 data dictionary. There are significant changes from the previous years' data dictionaries in both element names and data structures. The process is ongoing.

   Data quality will likely improve with implementation of the state-specific data dictionary guidelines and incorporation into the software used by each EMS agency. A number of agencies have chosen new software to move forward with and that is a cost that the state does not cover.

5. There is no link between prehospital (EMS) data and trauma registry data.
   In drafting a state data dictionary, the OEMS epidemiologist worked with traffic records researchers from UCONN as well as the trauma committee chair to identify EMS fields that could be useful to link prehospital records to trauma records. As of September 2017, a research project to link EMS with Trauma Center data has been approved by the Human Investigations Committee at DPH.

6. Timeliness of EMS data submissions may still be an issue to resolve.

The 2017 dataset is anticipated to be incomplete due to old format data not being submitted by June 30th. There are several circumstances which appear to contribute to this problem. Some EMS agencies did not regularly submit data even before the transition started. Others appear not to have a version 3.4 compatible software on board or are not yet trained in its use. OEMS has encouraged all EMS agencies to work with the software vendors to supply NEMSIS version 3.4.0 compliant software. It will take additional effort for their partnerships to adhere to state-specific requirements, but as a whole, these mirror what has already been put in the NEMSIS version 3.4.0 schema.

Without more inquiry tools (The EMS Driller and SAS/Access), OEMS cannot yet look at the 2017 data in aggregate.

The EMS agencies are encouraged to resolve file submission issues first with their software vendors.
OEMS has asked every EMS agency and vendor to submit data to the new system within 30 days of each event. This would allow time for coding and review at local levels.

Appendix D: All Call Records by Agency and Service Requested

EMS Agency	INVALID CODE	911 Response (Scene)	Intercept	Interfacility Transfer	Medical Transport	Mutual Aid	Standby	Total Records
Aetna Amb. Svc. Inc.	0	18,294	464	456	0	0	10	**19,224**
Amb. Svc. of Manchester	0	21,084	719	439	0	0	16	**22,258**
American Amb. Svc.	0	11,189	3,570	207	0	0	10	**14,976**
American Legion Amb. Fund	0	1,680	1	0	4	14	22	**1,721**
American Medical Response	0	188,771	0	0	87,748	0	4,248	**280,767**
AMR New Haven	0	2,364	0	0	0	0	0	**2,364**
Andover . FD	0	293	0	0	0	0	0	**293**
Ansonia Rescue & Medical Svc.	0	2,869	0	0	0	145	159	**3,173**
Ashford . FD.	0	313	0	0	0	0	0	**313**
Baltic FD.	0	225	0	0	0	0	0	**225**
Bantam Fire Co.	0	303	0	0	0	9	4	**316**
Beacon Hose Co.	0	2	0	0	0	0	0	**2**
Bethany . FD. Amb.	0	407	0	0	0	0	0	**407**
Bethel Police Dept.	0	1,474	25	0	0	42	0	**1,541**
Bethel unteer FD.	0	1,268	0	0	22	89	22	**1,401**
Bethlehem Amb. Assn.	0	11	0	0	2	0	0	**13**
Bloomfield . Amb.	0	1,462	0	0	0	0	1	**1,463**
Bozrah . Fire Company	0	200	0	0	0	5	0	**205**
Bradley Airport Emergency	0	414	11	0	5	1	12	**443**
Branford FD-EMS	0	3,913	0	0	0	2	6	**3,921**
Bridgewater . FD	0	105	0	1	0	4	0	**110**
Bristol Hospital EMS, LLC	10,911	0	0	0	0	0	0	**10,911**
Brookfield . Fire Co.	0	1,558	1	0	1	1	3	**1,564**
Burlington . FD.	0	525	29	0	0	36	2	**592**
Campion Amb. Svc.	0	22,291	896	307	3,960	0	16	**27,470**
Chester Hose Company	0	53	1	0	338	29	5	**426**
Chesterfield Fire Co.	0	162	0	0	0	0	0	**162**
CITY OF WEST HAVEN FD ALLINGTOWN	0	80	0	0	0	0	0	**80**
Clinton . FD	0	1,298	0	0	7	3	3	**1,311**
Colchester Hayward . Fire Co.	0	1,394	0	0	0	4	1	**1,399**
Community Fire Co.	0	802	0	0	0	5	68	**875**
Cornwall . FD.	0	328	8	0	0	0	24	**360**
Coventry . Fire Assn. Inc.	0	1,018	0	0	10	5	35	**1,068**
Cromwell FD.	0	1,806	0	0	12	0	3	**1,821**
Danbury Amb. Svc.	0	392	68	2,952	5,279	37	41	**8,769**
Danbury EMS/Div. of Danbury FD.	0	10,535	3	0	0	154	39	**10,731**
Darien EMS - Post 53	0	1,560	0	0	0	35	75	**1,670**
Dayville Fire Company First Resp.	0	4	0	0	0	0	0	**4**
Deep River Amb. Assn.	0	532	0	0	0	1	2	**535**
Durham unteer Amb.	0	499	0	0	0	9	8	**516**
East Haddam Amb. Assn. Inc.	0	699	0	0	0	0	3	**702**
East Hampton Amb. Assn.	0	918	0	0	0	8	10	**936**
East Hartford FD.	0	8,041	1	1	131	1	0	**8,175**
East Haven FD	0	2,529	0	0	0	0	8	**2,537**
East Lyme Amb.	0	2,105	0	0	0	2	10	**2,117**
East Windsor Amb. Assn.	0	2,565	0	0	0	0	2	**2,567**
Easton . EMS	0	432	0	0	0	4	6	**442**
Echo Hose Hook & Ladder	0	4,276	4	0	30	9	52	**4,371**
Electric Boat Corporation	0	150	0	0	7	5	1	**163**
Ellington . Amb.	0	1,053	0	0	4	7	12	**1,076**
Enfield Community Amb.	0	6,806	7	0	1	13	9	**6,836**
Essex Amb. Assn.	0	788	0	0	0	1	29	**818**

EMS Agency	INVALID CODE	911 Response (Scene)	Intercept	Interfacility Transfer	Medical Transport	Mutual Aid	Standby	Total Records
Falls Village . FD.	0	57	0	0	0	1	0	**58**
Franklin . FD.	0	130	0	0	0	0	0	**130**
Gardner Lake . Fire Co.	0	290	0	0	0	1	0	**291**
Georgetown . FD.	0	586	1	0	2	6	4	**599**
Glastonbury . Amb. Assn.	0	3,149	0	1	11	0	6	**3,167**
Goshen . Fire Co.	0	213	0	0	0	0	0	**213**
Granby Amb. Assn.	0	1,533	12	0	0	0	5	**1,550**
Greenwich EMS	0	6,518	3	8	30	31	277	**6,867**
Groton Amb. Assn.	0	4,985	0	0	0	7	11	**5,003**
Haddam . Amb. Svc.	0	697	0	0	0	10	15	**722**
Hartford Hospital-Life Star	130	0	0	0	333	0	0	**463**
Harwinton Amb. Assn.	0	479	1	0	0	2	1	**483**
Hebron . FD.	0	559	0	0	0	0	3	**562**
Heritage Village Amb. Assn.	0	1,075	0	0	0	127	1	**1,203**
Hunter's Amb. Svc.	0	26,541	58	3,983	20,816	198	113	**51,709**
KB Amb. Inc.	0	3,233	12	0	0	78	22	**3,345**
Kent . FD.	0	381	1	0	0	0	0	**382**
Killingworth Amb. Assn.	0	332	0	0	5	1	1	**339**
Lawrence & Memorial Hospital	0	4,981	191	7	1	0	2	**5,182**
Lebanon unteer FD. Inc.	0	435	0	0	4	0	0	**439**
Ledyard . Emergency Squad	0	754	0	2	2	6	2	**766**
LifeNet, NY	0	3	0	66	0	0	0	**69**
Litchfield . Amb. Assn.	0	1,112	0	8	15	1	0	**1,136**
Lyme Amb. Assn.	0	172	0	0	0	30	7	**209**
Madison Amb. Association Inc.	0	1,854	18	0	11	48	5	**1,936**
Middlebury . FD.	0	175	0	0	0	0	1	**176**
Middlefield FD First Resp.	0	392	0	0	0	10	1	**403**
Middlesex Hospital	0	8,749	5	171	2,879	2	5	**11,811**
Milford FD.	0	1,701	1	3	5	1	0	**1,711**
Milford FD.2	0	6	0	0	0	0	0	**6**
Mohegan Fire Co.	0	699	0	0	0	0	1	**700**
Mohegan Tribal FD	0	1,785	1,208	0	0	104	0	**3,097**
Monroe . EMS	0	1,315	0	0	1	0	14	**1,330**
Montville Fire Co. Amb.	0	726	0	0	0	0	0	**726**
Morris . FD.	0	205	0	0	0	16	1	**222**
Mortlake Fire Co. Inc.	0	891	0	0	0	0	0	**891**
Mystic River Amb. Assn.	0	2,354	0	20	0	0	12	**2,386**
Naugatuck Amb. . Inc	1,207	2,068	0	0	0	0	0	**3,275**
New Britain EMS Inc.	0	13,771	3	1	15	6	54	**13,850**
New Canaan . Amb.	0	1,890	0	0	0	16	3	**1,909**
New Hartford . FD. Amb. Svc.	0	855	0	0	7	8	4	**874**
New London FD.	0	6,088	0	9	0	0	3	**6,100**
New Milford Community Amb.	0	2,222	0	0	1	18	7	**2,248**
Newington . Amb. Corp	0	1,400	0	0	0	12	9	**1,421**
Newtown . Amb.	0	2,722	14	0	0	1	3	**2,740**
Norfolk Lions Club Amb.	0	202	0	0	0	6	0	**208**
North Branford FD. Amb. Co. #4	0	1,198	3	0	33	18	8	**1,260**
North Canaan . Amb.	0	1,075	6	6	0	3	2	**1,092**
North Haven FD	0	1,337	0	0	0	0	0	**1,337**
North Haven FD2	0	1,164	0	1	1	0	4	**1,170**
Northern Duchess Paramed	0	939	145	887	0	0	17	**1,988**
Norwalk Hospital Assn.	0	13,514	112	1	0	107	42	**13,776**
Oakdale Fire Co.	0	318	0	0	0	0	0	**318**
Old Lyme South End . Amb. Assn.	0	508	3	0	12	4	19	**546**
Old Mystic FD First Resp.	0	160	0	0	0	0	0	**160**
Old Saybrook Amb. Assn.	0	1,465	0	0	3	9	7	**1,484**
Oxford Amb. Assn., Inc.	0	810	0	1	1	6	6	**824**

	INVALID	911	Intercept	Interfacility	Medical	Mutual	Standby	Total

EMS Agency	CODE	Response (Scene)		Transfer	Transport	Aid		Records
Petengill Amb. Marlborough	0	243	0	0	0	0	0	**243**
Pfizer Inc	0	41	0	0	0	0	0	**41**
Plymouth . Amb.	0	1,267	0	0	0	0	5	**1,272**
Poquetanuck . FD.	0	230	0	0	4	3	0	**237**
Pratt & Whitney Div. of UTC	0	104	0	0	0	0	1	**105**
Pratt & Whitney-Middletown	0	46	0	0	0	0	0	**46**
Putnam E.M.S. Amb. Svc. Inc.	0	1,254	0	0	0	30	20	**1,304**
Redding Fire District	0	179	0	0	0	4	9	**192**
Ridgefield FD.	0	1,952	0	0	0	0	1	**1,953**
Rocky Hill . Amb.	0	693	0	0	0	2	1	**696**
Roxbury Amb. Assn.	0	147	0	0	0	13	9	**169**
Salisbury . Amb. Svc.	0	447	0	0	10	4	29	**490**
SEYMOUR Amb. ASSN.,INC.	0	540	0	0	0	0	13	**553**
Sharon FD. Amb. Squad	0	327	0	3	0	0	13	**343**
Sherman . FD.	0	241	0	0	0	23	4	**268**
Sikorsky Aircraft Corporation	0	135	0	0	0	0	0	**135**
Simsbury unteer Amb. Assoc.	0	2	0	0	844	0	2	**848**
Somers FD. Amb. Div.	0	838	0	0	6	2	1	**847**
South Manchester FD	0	5,464	13	0	0	4	3	**5,484**
Southbury Amb. Assn.	0	1,989	0	0	3	2	21	**2,015**
Southbury Training School	0	288	0	0	199	76	0	**563**
Stafford Amb. Assn.	0	970	0	0	0	1	1	**972**
Stamford EMS Inc.	0	14,138	66	1	1	48	26	**14,280**
Stonington . Amb.	0	384	0	0	0	138	22	**544**
Stony Hill . Fire Co.	0	952	0	0	0	26	2	**980**
Storm Engine Co.	0	1,753	0	0	0	24	54	**1,831**
Stratford EMS	0	8,035	31	1	80	90	30	**8,267**
Submarine Base FD.	0	116	0	10	90	43	0	**259**
Suffield . Amb. Assn.	0	1,592	2	0	5	1	29	**1,629**
Thomaston . Amb. ., Inc.	1	921	0	0	1	2	8	**933**
Tolland FD.	0	1,126	0	1	11	1	2	**1,141**
Town of Canton . Fire & EMS	0	991	2	0	0	6	0	**999**
Town of Guilford FD Amb.	0	2,326	2	1	10	0	1	**2,340**
Town of Mansfield	0	1,651	0	0	0	0	0	**1,651**
Trumbull EMS	0	4,868	18	0	0	5	14	**4,905**
UCONN FD Storrs	0	1,022	1	5	0	20	7	**1,055**
UCONN Health Center FD	0	1,630	29	133	83	9	0	**1,884**
Valley EMS	0	2,352	4,145	2	0	0	1	**6,500**
Vernon FD.	0	3,231	0	0	0	1	0	**3,232**
Volunteer FD. of New Fairfield	0	909	2	0	0	23	2	**936**
Voluntown unteer Fire	0	1	0	0	0	0	0	**1**
Wallingford Fire Svs.	0	5,112	2	0	16	2	9	**5,141**
Warren . Fire Co. Inc.	0	105	0	0	1	15	15	**136**
Washington Amb. Assn. Inc.	0	354	0	0	0	27	2	**383**
Waterford Amb. Assn.	0	1,125	0	4	0	0	35	**1,164**
West Hartford FD	0	978	23	0	20	0	0	**1,021**
WEST HAVEN FD.	0	235	0	0	0	0	0	**235**
West Redding . FD. District Co	0	150	0	0	3	2	0	**155**
WEST SHORE FIRE DISTRICT	0	84	0	0	0	0	0	**84**
Westbrook Amb. Assn.	0	781	0	0	0	4	1	**786**
Westerly Amb. RI	0	613	23	0	1	10	5	**652**
Weston . EMS	0	516	0	0	6	3	22	**547**
Westport EMS	0	2,989	0	0	0	0	1	**2,990**
Wethersfield . Amb. Assn.	0	758	0	0	5	0	5	**768**

	INVALID	911 Response	Intercept	Interfacility	Medical	Mutual Aid	Standby	Total

EMS Agency	CODE	(Scene)		Transfer	Transport			Records
Willimantic FD.	0	280	0	0	0	0	0	**280**
Willington FD.	0	436	0	0	2	3	0	**441**
Wilton unteer Amb.	0	1,369	0	0	0	13	7	**1,389**
Windham Comm. Memorial Hospital	0	3,969	36	27	0	0	8	**4,040**
Windsor Locks Lions Club Amb.	0	1,420	15	0	4	4	1	**1,444**
Windsor . Amb.	0	2,240	27	0	0	0	12	**2,279**
Winsted Area Amb. Assn.	0	1,734	0	0	0	22	8	**1,764**
Wolcott . Amb.	0	1,519	0	9	0	2	24	**1,554**
Woodbury Amb. Assn.	0	780	0	0	0	0	0	**780**
Woodstock EMS/ Fire	0	567	0	0	0	4	34	**605**
Yale E.M.S.	0	0	0	0	0	0	2	**2**
Total	**12,249**	**558,122**	**12,042**	**9,735**	**123,154**	**2,286**	**6,197**	**723,785**

Missing Agency = 5

Appendix E: Agencies That Did Not Submit Data in 2015 and 2016

Agency Name	AgencyID	CITY
Canterbury Vol. Fire Co.	C022B1	CANTERBURY
CT State Police, Emergency Services Unit	C028P1	COLCHESTER
EFK of Ct, Inc., d/b/a Nelson Amb. Svc.	L015P3	Connecticut
Hamden Fire Dept.	C062P1	HAMDEN
Hamilton Sundstrand Emer. Svcs. Dept.	C165B2	WINDSOR LOCKS
Hampton-Chaplin Ambulance Corp.	C063B1	HAMPTON
Lisbon Fire Dept., Inc.	C073B1	LISBON
New Haven Fire Dept.	C093P2	NEW HAVEN
North Stonington Ambulance	C102B1	NORTH STONINGTON
Scotland Volunteer Fire Dept.	C123B1	SCOTLAND
Western CT Health Network Affiliates	C034P3	DANBURY
Wilton-Weston ALS Assn., Inc.	C161P1	WILTON

Wilton: C161B1 Wilton Vol Ambulance only

Appendix F: All Causes of Injury, Emergency 911 Calls

Documented causes of injury in descending order of frequency, all ages (total = 61,908 records)

Cause Of Injury
Falls
Motor Vehicle traffic crash
Struck by Blunt/Thrown Object
Drug poisoning
Motor Vehicle non-traffic crash
Pedestrian traffic crash
Stabbing/Cutting Assault
Motorcycle crash
Stabbing/Cutting Accidental
Bicycle Accident
Machinery accidents
Firearm assault
Fire and Flames
Bites
Rape
Excessive Heat
Child battering
Chemical poisoning
Electrocution (non-lightning)
Mechanical Suffocation
Smoke Inhalation
Drowning
Firearm self-inflicted
Firearm injury (accidental)
Non-Motorized Vehicle crash
Water Transport accident
Venomous stings (plants, animals)
Excessive Cold
Aircraft related accident
Lightning
Radiation exposure