STATEWIDE OPIOID REPORTING DIRECTIVE (SWORD) 2020 ANNUAL REPORT

June 2019-May 2020

Abstract

This report details data from the first year of the Connecticut Department of Public Health (DPH), Office of Emergency Medical Services (OEMS), Statewide Opioid Reporting Directive (SWORD) between June 1, 2019-May 31, 2020.

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Introduction

The impacts of Connecticut's overdose epidemic continue to expand, killing 6,321 people between 2012 and 2019 according to data provided by the Connecticut Office of the Chief Medical Examiner (OCME). Between 2018 and 2019, fatal unintentional (accidental) overdoses rose by 18%, from 1,018 (2018) to 1,200 (2019). Opioids are the main drug driving overdoses in Connecticut, involved in 94% of fatal overdoses in 2019, an increase from 83% in 2012. Overdoses involving fentanyl are of concern because of the relative low dose which can cause an overdose, the range in potency, and the risks of them adulterating other drugs across the illicit drug market, including clandestinely produced pills. This introduces new risk among those who do not know they are at risk of an opioid overdose, within the context of complex pathways to recovery and stigma toward those who use drugs.

As public health professionals, there is an imperative to understand these risks and the profound implications for individuals directly and indirectly affected by overdoses. While an understanding of the impact of overdose fatalities is fundamentally important, the public health and healthcare systems require more actionable data to address the pervasive drug threats on the community. The Statewide Opioid Reporting Directive (SWORD) was developed to provide near real-time overdose information to community-level public health and public safety for the purpose of collaboratively responding to those in need.

After one full year of collecting suspected overdose data reported by Emergency Medical Service providers to the SWORD program, this report provides an overview of data collected. The data in this report span June 1, 2019 to May 31, 2020 and were accessed on June 9, 2020.

Background

Since June 1, 2019 Connecticut (CT) Emergency Medical Services (EMS) responders, under the CT EMS Statewide Opioid Reporting Directive (SWORD), have been reporting suspected opioid overdoses to the Connecticut Poison Control Center (CPCC). The program is based on a successful pilot project that was conducted in Hartford from May 2018 to March 2019. In April 2019, all responders in the North Central Region joined the program, followed by the remaining state regions in June. Following each suspected overdose, EMS responders call the CPCC's 1-800-222-1222 line and answer a series of 10 questions about the event. See Appendix A for the SWORD Pocket Card with questions. CPCC Specialists record the information into their toxiCALL software and then enter a portion of the data into the Overdose Detection Mapping Application Program (ODMAP), a federal mapping application that empowers local, state and federal public health and public safety agencies to rapidly respond to overdoses in their respective communities. See Appendix B for the ODMAP data entry screen.

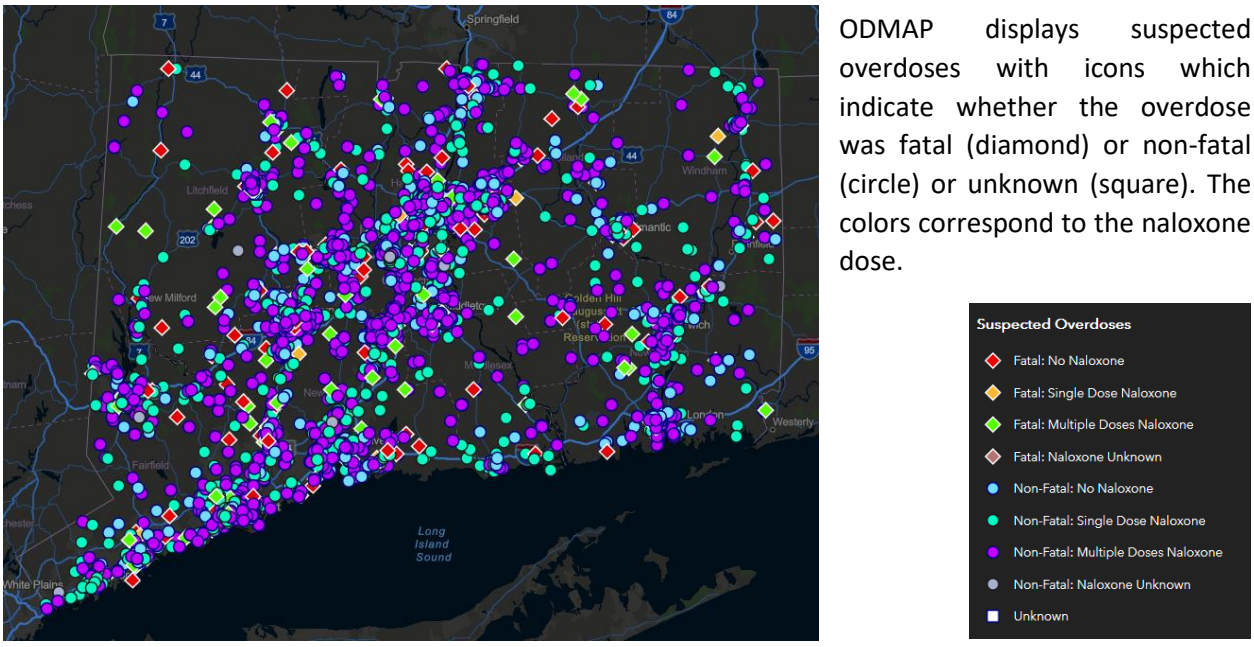
SWORD was created pursuant to Public Act No. 18-166, Sec. 5, in response to the 2016 Connecticut Opioid REsponse (CORE) strategic plan to combat the opioid epidemic. The CORE strategic plan included six recommendations, the following two of which applied directly to OEMS and had a key role in the development of SWORD:

1) increased tracking of naloxone use; and

2) increased data sharing across agencies to monitor and facilitate responses, including rapid responses, to "outbreaks" of overdoses.

The program is a collaboration between the Connecticut Department Public Health (DPH) Office of Emergency Medical Services (OEMS) and Injury and Violence Surveillance Unit (VSU), the Connecticut Poison Control Center at UConn Health, The High Intensity Drug Trafficking Areas (HIDTA) program, and Connecticut's emergency medical providers.

Figure 1. ODMAP Level 2 Map View



ODMAP displays suspected overdoses with icons which indicate whether the overdose was fatal (diamond) or non-fatal (circle) or unknown (square). The colors correspond to the naloxone dose.

Highlights

SWORD Data Highlights June 2019-May 2020

- There were 4,505 suspected overdoses including 337 fatal overdoses, reported by EMS to the SWORD program between June 1, 2019 and May 31, 2020.
- Males accounted for 74% of the overdoses; females 26%.
- People between the ages of 25 and 39 were most likely to overdose.
- When the drug of exposure was known, 87% of the overdoses were due to heroin or fentanyl versus 11% for prescription opioid and 2% for methadone or suboxone.
- Bystanders gave naloxone in 15% of the overdose cases where 911 was called.
- For the cases with known naloxone administration, naloxone was given in 80% of cases.
- 88% of overdose victims were transported to the hospital.
- 2% of overdose incidents involved multiple patients.
- 11% of overdoses occurred in motor vehicles.
- There were 131 “spike alerts” generated.
- There are 109 public health and public safety agencies registered in Connecticut.

ODMAP Utilization

Participation in ODMAP is open to federal, state, local and tribal law enforcement and criminal justice personnel, public health personnel, and entities serving the interests of public safety and/or public health as part of its official mandate. ODMAP is available to licensed first responders, such as law enforcement, fire departments and EMS entities. ODMAP is also available to hospitals but not available to associated research units as commonly seen with universities. ODMAP is available throughout the United States of America and its territories.

Only agencies that have signed the ODMAP Participation Agreement may participate in ODMAP. When signing up, the Agency will designate an ODMAP Administrator who will be responsible for managing ODMAP on behalf of the Agency.

ODMAP provides two levels of user access:

1) Level 1 is used for data entry and agency management. Due to the reporting mechanism in Connecticut, all data entry in Connecticut is performed through CPCC. Each agency should, however, use their Level 1 Agency Administrator to manage their agency's creation of alerts and creation of Level 2 users, described in the Spike Alert section of this Annual Report (page 23).
2) Level 2 users have access to the nationwide electronic map, which allows the user access to all reported suspected overdose event data nationwide submitted to ODMAP. There are 184 people registered as Level 2 users.

There are 109 agencies signed up for ODMAP in Connecticut, representing each of the eight (8) counties in Connecticut (see Table 1). A current list of agencies can be accessed here: http://odmap.org/#agency. A list of Connecticut agencies with ODMAP access at the time of this document's publication can be found in

Appendix C. Connecticut Agencies Registered and Approved in Level 1 ODMAP.

Table 1. County Level Utilization of ODMAP

County	Number of Agencies	Number of Agencies using Spike Alerts	Number of Agencies with designated Level 2 Users
Fairfield	27	5	14
Hartford	27	8	20
Litchfield	8	4	7
Middlesex	11	3	7
New Haven	21	9	14
New London	5	3	3
Tolland	2	0	1
Windham	3	1	2
Statewide	5	2	5
TOTAL	**109**	**35**	**73**

Findings

Overview

Between June 1, 2019 and May 31, 2020, there were 4,505 suspected overdoses, including 337 fatal overdoses, reported by EMS to the SWORD program.

Figure 2. Suspected Overdoses by Day

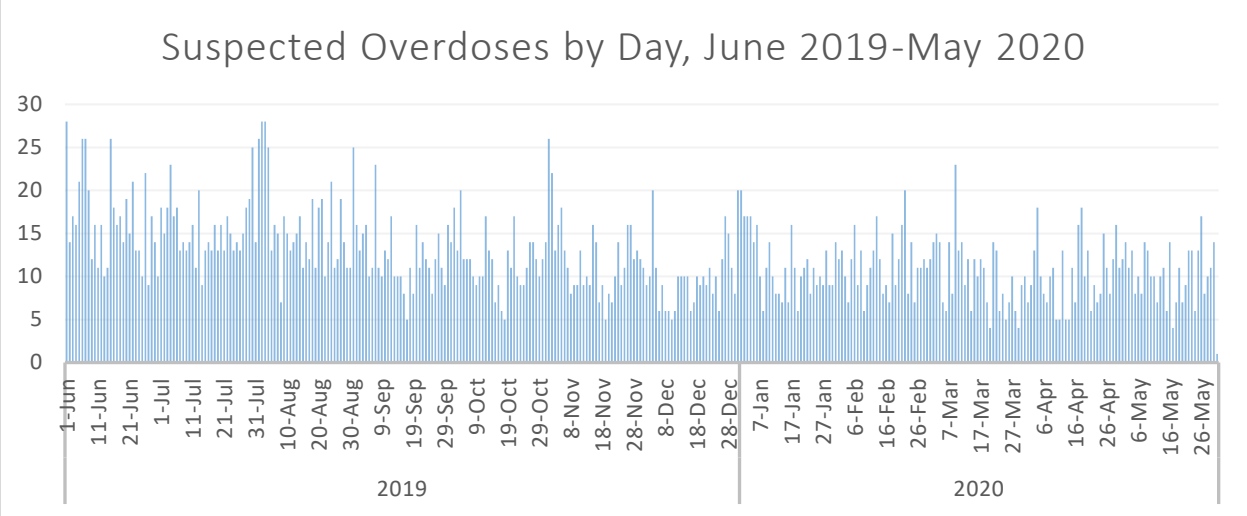


Figure 2 shows that on average, there were 12.34 suspected overdoses per day for the time period. The maximum number of overdoses in a single day was 28 (June 1, 2019, August 2, 2019 and August 3, 2019).

Figure 3. Suspected Overdoses by Month

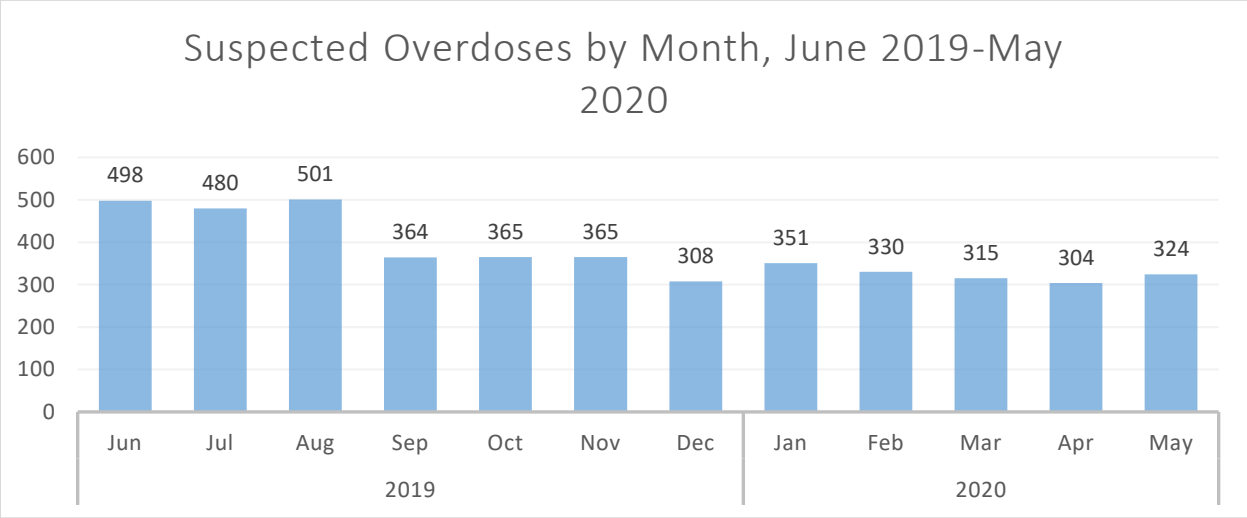


Figure 3 shows that suspected overdoses are typically highest in the summer months.

Figure 4. Fatal Suspected Overdoses, by Month

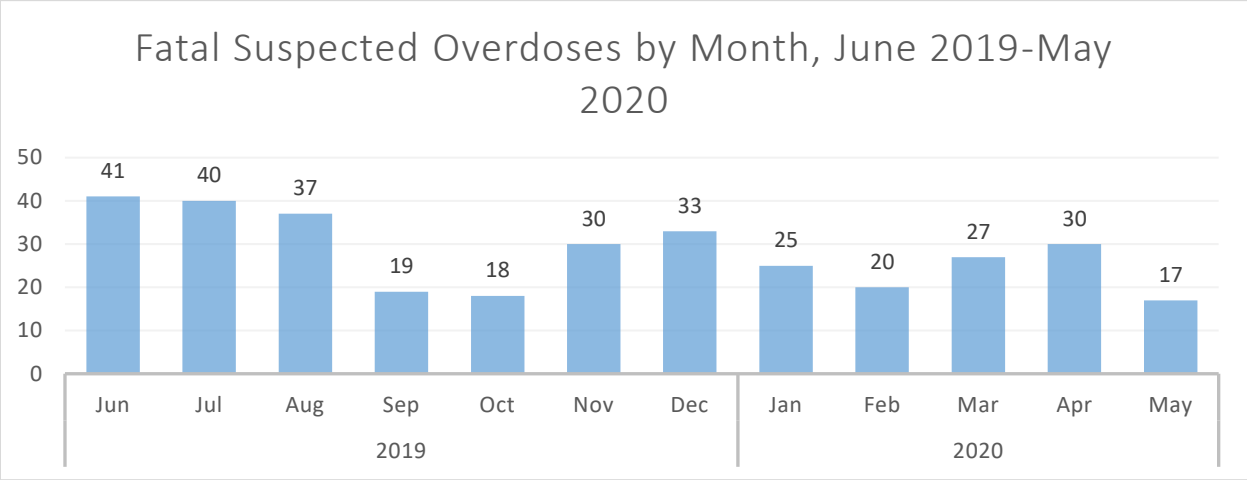


Figure 4 shows that there were 337 fatal overdoses reported to the SWORD program and the greatest number of overdose decedents within the year were in the months of June through August 2019.

Fatal overdoses are underreported by EMS because without paraphernalia or eyewitness accounts, EMS has no way to determine cause of death. Additionally, patients may pass away later at the hospital after the call has already been reported as a nonfatal.

Figure 5. Suspected Overdoses, by Hour of the Day

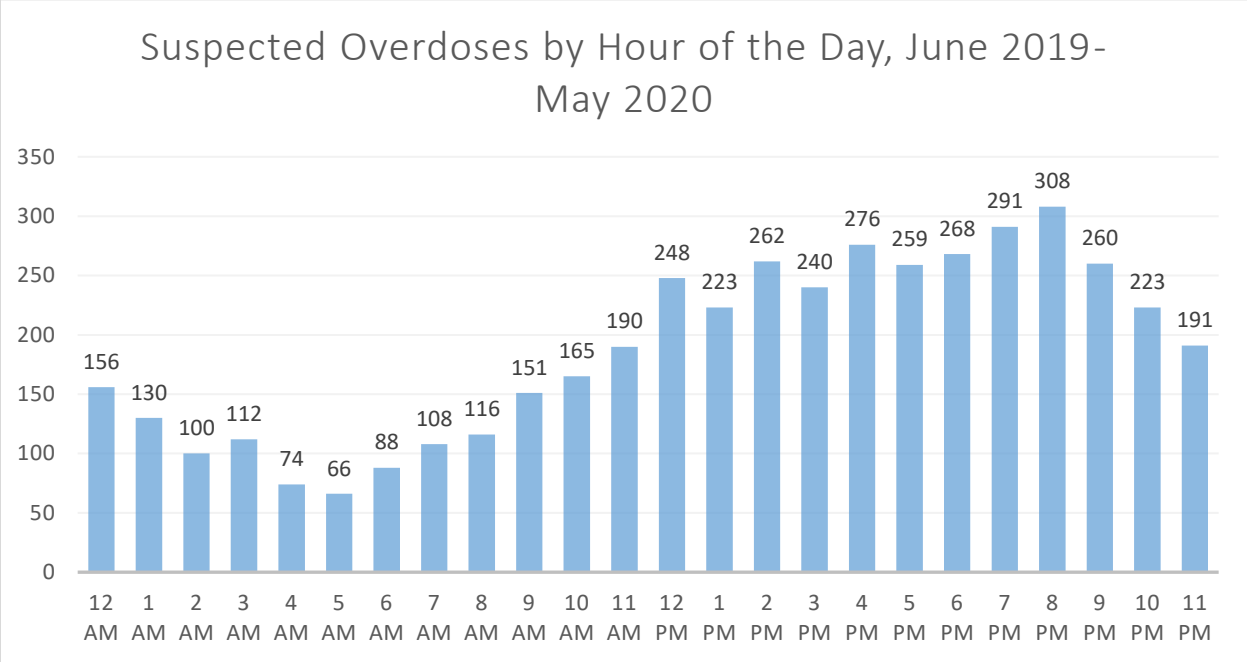


Figure 5 shows that the peak time for suspected overdoses occurred between 7:00 and 9:00 in the evening.

Figure 6. Suspected Overdoses by Day of the Week

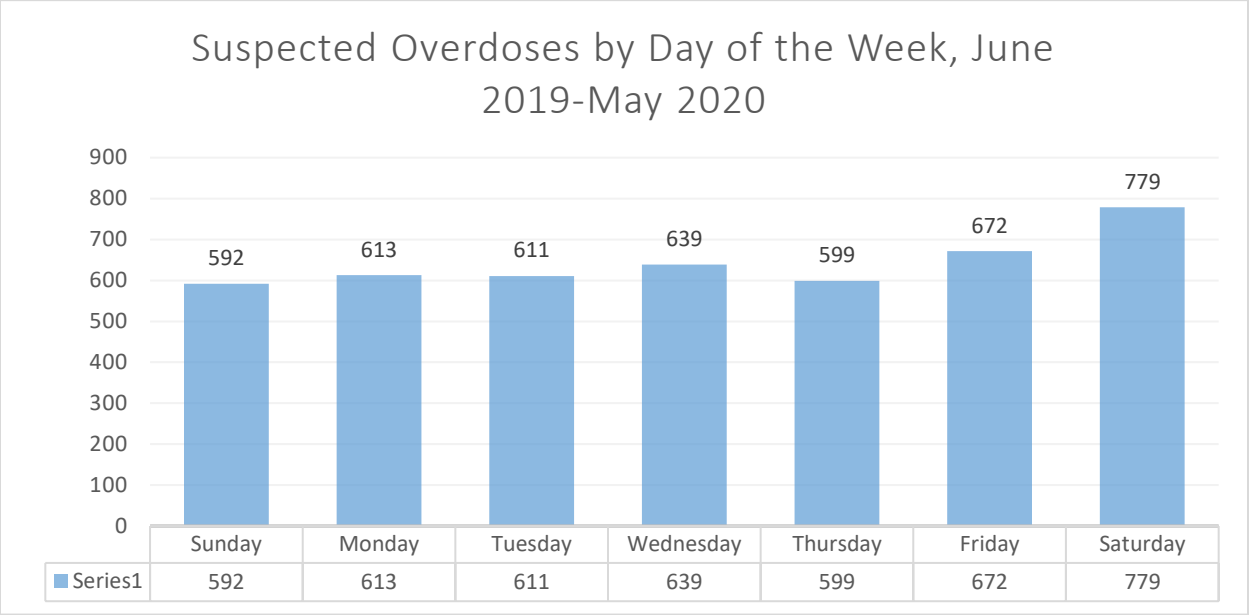


Figure 6 shows that overdoses were consistent throughout the week, increasing on Fridays and Saturdays.

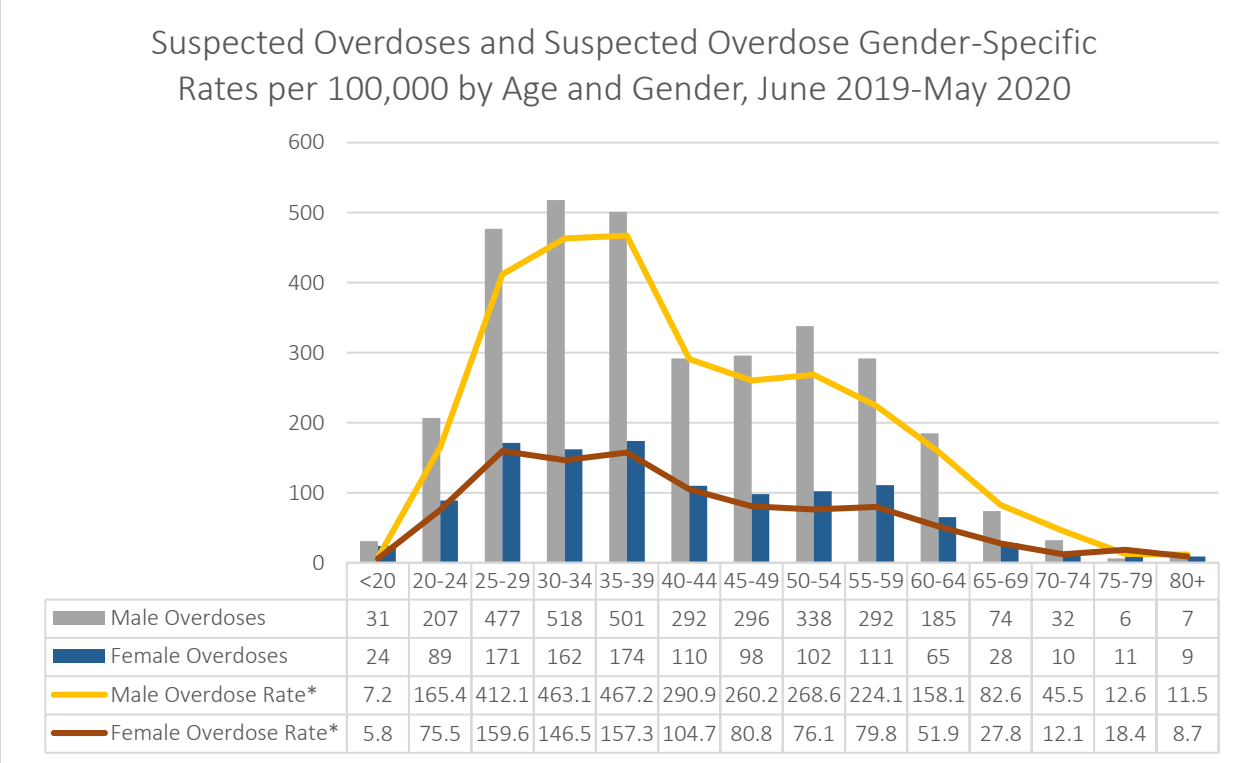
Table 2. Suspected Overdoses by Day of Week and Hour of Day

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
12 AM	28	14	18	24	20	20	32
1 AM	21	15	13	16	21	18	26
2 AM	12	15	15	15	13	7	23
3 AM	18	12	15	11	16	16	24
4 AM	11	5	11	10	14	8	15
5 AM	9	5	9	11	10	9	13
6 AM	23	7	12	9	9	11	17
7 AM	16	20	13	16	15	14	14
8 AM	16	15	18	20	18	10	19
9 AM	28	22	14	24	21	20	22
10 AM	23	16	24	20	30	25	27
11 AM	23	31	28	20	28	31	29
12 PM	36	32	44	26	19	41	50
1 PM	31	27	35	18	32	41	39
2 PM	32	49	34	33	36	37	41
3 PM	29	30	40	39	28	35	39
4 PM	27	43	32	38	41	44	51
5 PM	32	40	40	35	33	36	43
6 PM	36	42	38	40	33	42	37
7 PM	26	41	30	50	42	54	48
8 PM	33	35	42	58	41	54	45
9 PM	34	34	31	46	36	41	38
10 PM	28	37	32	31	25	31	39
11 PM	20	26	23	29	18	27	48
Total	**592**	**613**	**611**	**639**	**599**	**672**	**779**

Table 2 shows the most overdoses in any hour occurred on Friday nights from 7:00 to 9:00 PM and Wednesday nights from 8:00 to 9:00 PM. The most overdoses in any eight-hour block were between 1:00 and 9:00 PM on Fridays, followed by Saturdays between noon and 8:00 PM.

Demographics

Figure 7. Suspected Overdoses by Age and Gender

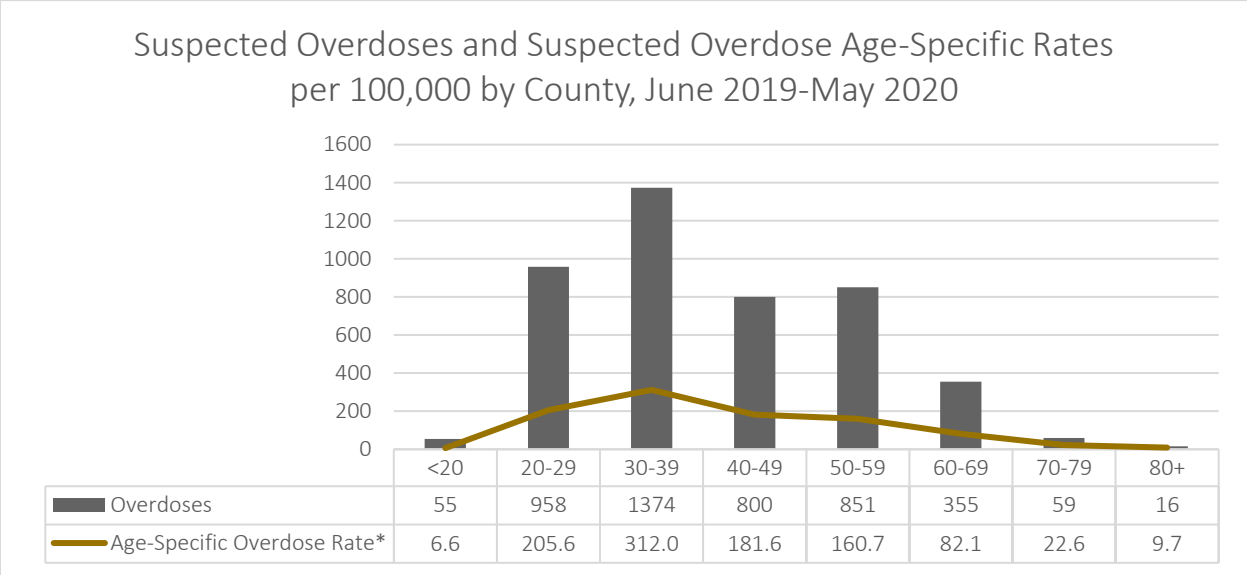


	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
Male Overdoses	31	207	477	518	501	292	296	338	292	185	74	32	6	7
Female Overdoses	24	89	171	162	174	110	98	102	111	65	28	10	11	9
Male Overdose Rate*	7.2	165.4	412.1	463.1	467.2	290.9	260.2	268.6	224.1	158.1	82.6	45.5	12.6	11.5
Female Overdose Rate*	5.8	75.5	159.6	146.5	157.3	104.7	80.8	76.1	79.8	51.9	27.8	12.1	18.4	8.7

*Gender Specific Rate per 100,000

The above depicted data (Figure 7) include only individuals for whom there is complete data on age and gender (n=4420). People between the ages of 25 and 39 experienced overdoses with the highest frequency in terms of numbers and rates. Males experienced overdoses with greater frequency in terms of counts and rates for all age groups under 75.

Figure 8. Suspected Overdose by Age, 10-year Increments

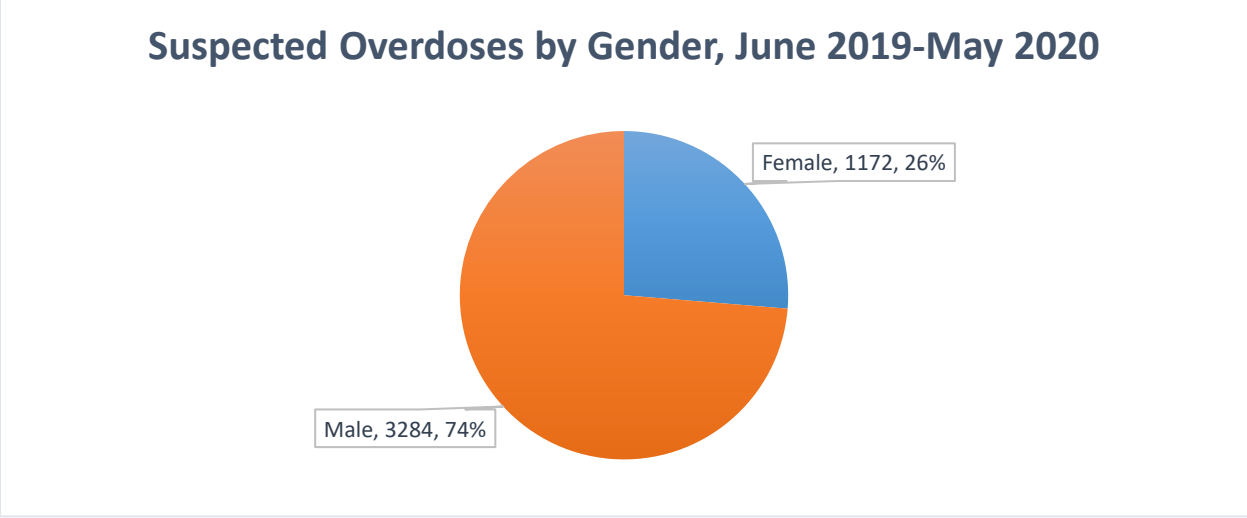


	<20	20-29	30-39	40-49	50-59	60-69	70-79	80+
Overdoses	55	958	1374	800	851	355	59	16
Age-Specific Overdose Rate*	6.6	205.6	312.0	181.6	160.7	82.1	22.6	9.7

*Age-Specific Overdose Rate per 100,000

The above depicted data (Figure 8) include only individuals for whom there is complete data on age (n=4468). People between the ages 30-39 experienced the most overdoses of any single 10-year age range analyzed in terms of both overdose counts (n=1374) and age-specific overdose rates (312 per 100,000), followed by those ages 20-29 for both overdose counts (n=958) and age-specific overdose rates (205.6 per 100,000).

Figure 9. Suspected Overdoses by Gender

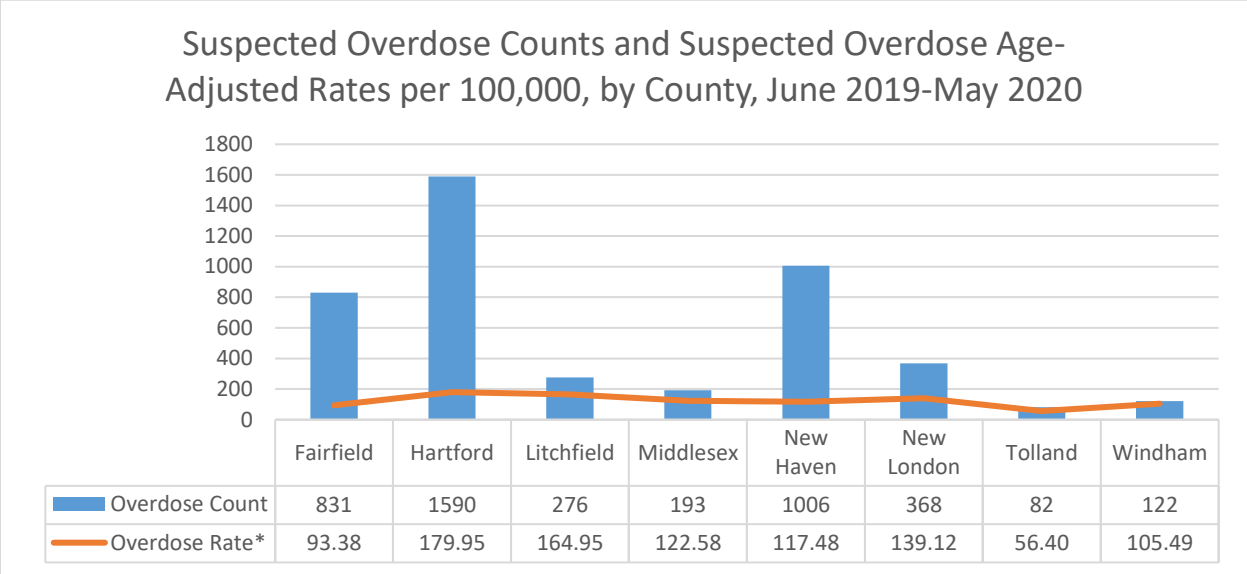


Gender information was available for 4,456 victims of overdose. Figure 9 shows the majority of overdoses were among males (n=3284, 74%). This pattern was consistent across all age groups.

Geography

Suspected overdoses are reported by the location where the overdose occurred.

Figure 10. Suspected Overdoses by County

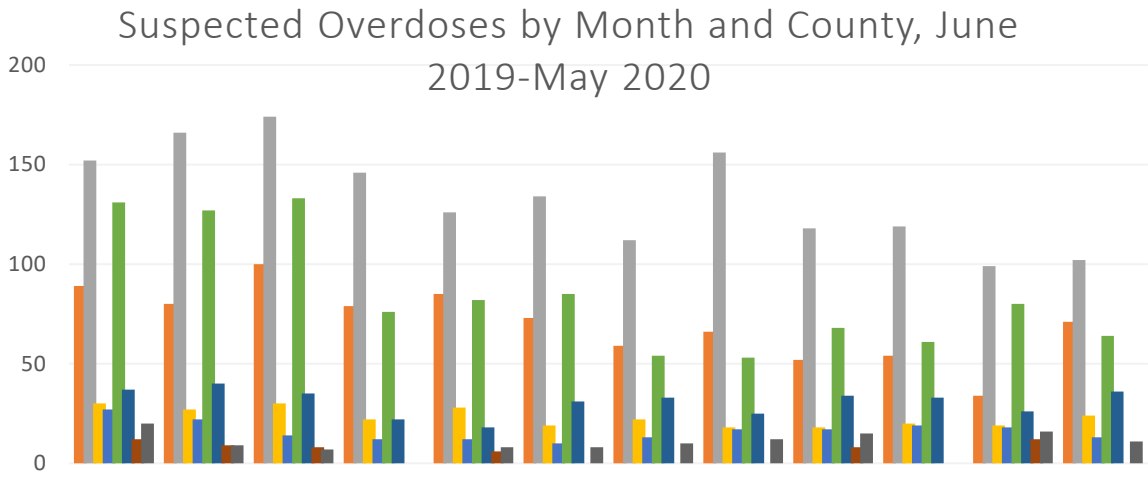


	Fairfield	Hartford	Litchfield	Middlesex	New Haven	New London	Tolland	Windham
Overdose Count	831	1590	276	193	1006	368	82	122
Overdose Rate*	93.38	179.95	164.95	122.58	117.48	139.12	56.40	105.49

*Age-adjusted suspected overdose rate per 100,000

There were 4468 suspected overdoses for which there was complete county and age information available. In Figure 10, Hartford County reported the largest number (n=1604) and rate (179.95) of overdoses. After Hartford County, the greatest number of overdoses were reported by New Haven County (n=1006), however the next largest age-adjusted overdose rate was reported in Litchfield County (164.95 overdoses per 100,000).

Figure 11. Suspected Overdoses by County/Month



	Jun '19	Jul '19	Aug '19	Sep '19	Oct '19	Nov '19	Dec '19	Jan '20	Feb '20	Mar '20	Apr '20	May '20
Fairfield	89	80	100	79	85	73	59	66	52	54	34	71
Hartford	152	166	174	146	126	134	112	156	118	119	99	102
Litchfield	30	27	30	22	28	19	22	18	18	20	19	24
Middlesex	27	22	14	12	12	10	13	17	17	19	18	13
New Haven	131	127	133	76	82	85	54	53	68	61	80	64
New London	37	40	35	22	18	31	33	25	34	33	26	36
Tolland	12	9	8	<6	6	<6	<6	<6	8	<6	12	<6
Windham	20	9	7	<6	8	8	10	12	15	<6	16	11

County and month information was complete for overdoses reported during this timeframe (n=4505). There may be reporting differences across counties, as previously mentioned, however the temporal patterns of increased numbers of overdoses during the warmer months was consistent across all counties. Non-zero data under six are reflected as "<6".

In Figure 11, Fairfield County, the number of reported overdoses in a month ranged from 34 (April 2020) to 100 (August 2019). Hartford County reported the largest number of overdoses in total and the largest number of overdoses monthly, ranging from 99 (April 2020) to 174 (August 2019). Litchfield County reported a minimum of 18 overdoses in a month (January 2020, February 2020) to 30 (June 2019, August 2019). In Middlesex County, the number of monthly overdoses reported ranged from 10 (November 2019) to 27 (June 2019). New Haven County reported a range of monthly overdoses from 53 (January 2020) to 133 (August 2019). New London County reported a range of monthly overdoses from 18 (October 2019) to 40 (July 2019). Tolland County reported overdoses ranging from monthly totals under 6 (September 2019, November 2019-January 2020, March 2020, May 2020) the exact number of which cannot be

reported here, to 12 (June 2019, April 2020). In Windham County, the number of monthly overdoses ranged from <6 (September 2019, March 2020) to 20 (June 2019).

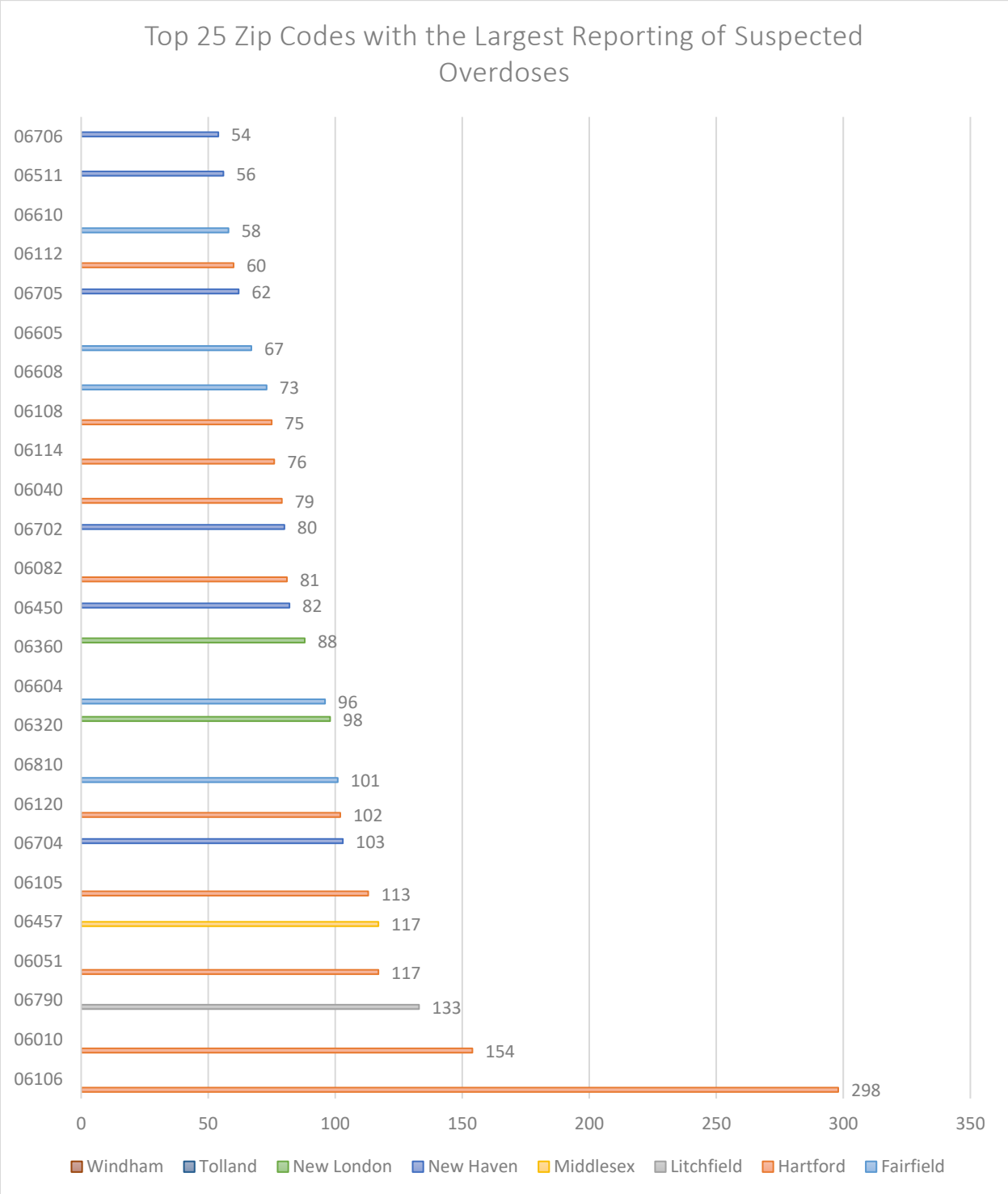
Table 3. Top Ten* Zip Codes Reporting, by County

Overdoses by County and Zip Code							
Fairfield		**Hartford**		**Litchfield**		**Middlesex**	
06810	101	06106	298	06790	133	06457	117
06604	96	06010	154	06098	33	06413	16
06608	73	06051	117	06786	17	06416	12
06605	67	06105	113	06776	16	06475	6
06610	58	06120	102	06787	12		
06606	44	06082	81	06795	10		
06615	37	06040	79	06798	7		
06614	34	06114	76	06779	6		
06854	32	06108	75	06057	6		
06811	29	06112	60				
New Haven		**New London**		**Tolland**		**Windham**	
06704	103	06320	98	06066	22	06226	40
06450	82	06360	88	06076	12	06354	17
06702	80	06351	29	06238	8	06260	13
06705	62	06415	19	06084	7	06239	6
06511	56	06340	18	06071	6		
06706	54	06380	18				
06516	51	06382	17				
06513	50	06385	10				
06708	43	06249	8				
06451	42	06338 / 06334	7				

*For some counties, fewer than ten zip codes are shown because data under six are not displayed.

Table 3 shows for each county the zip codes reporting the highest number of overdoses.

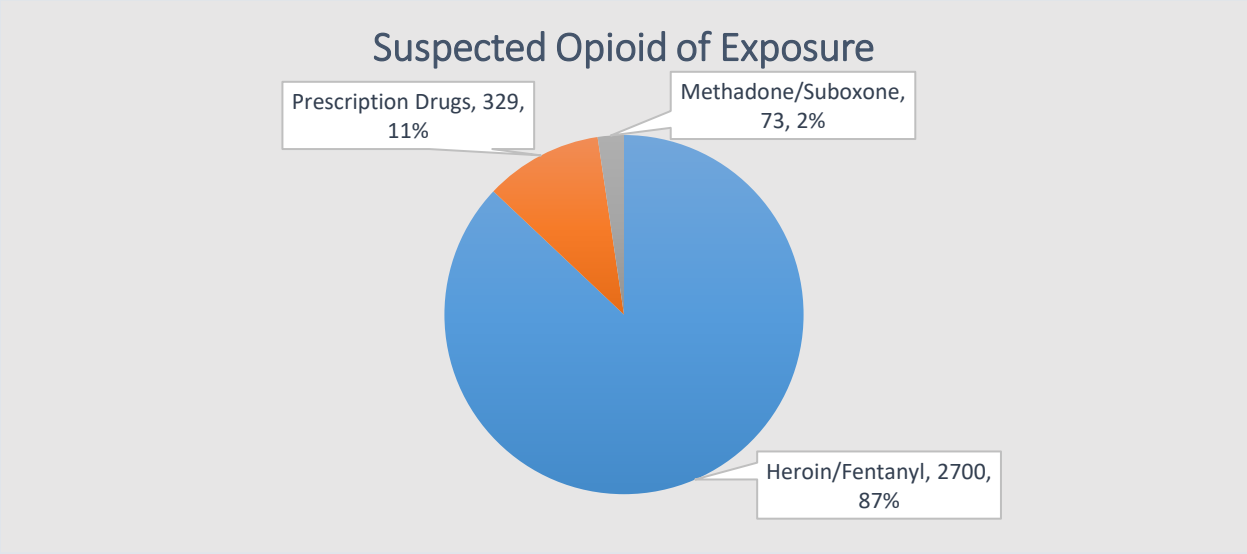
Figure 12. Suspected Overdoses by Zip Code



The top 25 reporting zip codes reported a total of 2423 overdoses throughout the span of the year, more than 50% of the reported overdoses. In Figure 12, of the top ten zip codes reporting the largest number of overdoses, 5 zip codes were in Hartford County (06106, 06010, 06051, 06105, 06120) and one each

from Litchfield County (06790), Middlesex County (06457), New Haven County (06704), Fairfield County (06810), and New London (06320).

Figure 13. Drug of Exposure



When EMS reports a suspected overdose to the CPCC, they are asked to report the suspected opioid of exposure, such as heroin, fentanyl, oxycodone, etc. When the drug of exposure was known (n=3102), 87% of the time the drug was either heroin or fentanyl ash shown in Figure 13. In this analysis, oxycodone and Percocet were lumped together with other drugs as "prescription pills." The category "prescription pills" includes all "pills" regardless of whether or not there was suspicion that the pill was counterfeit, diverted, or prescribed. In many of the cases, drugs were not found on scene and the patient refused to divulge what opioid they overdosed on. These were categorized as unknown opioid.

EMS is asked to report on paraphernalia found on the scene. These reports are valuable to public safety and health officials. This year there were numerous instances of reports of cocaine contaminated with fentanyl, counterfeit Xanax containing an unknown opioid (likely fentanyl) and reports of black tar heroin, which is rare in our state.

Figure 14. Heroin Bag "Pray for Death"

In Connecticut, heroin and fentanyl often come in glassine envelopes stamped with various "brands." Identification of these brands at overdose scenes was shared with harm reduction and public safety officials.

Some of the brands reported included: Pray for Death (Figure 14), Back off, Vamp, Corona Virus, Way to Go, Smiley Face, Good and Plenty, Venom, Vigilante 13, Nite Nite, It's Hot, Danger, Cobra, Atomic, It, Ultimate High, NASA, Artic Ice, A+, Good stuff, Victory, Joker, Canada Dry, Four of a Kind, Amazing, GI Joe, No Bullshit, Gambler, The Mechanic, and Decoy.

Naloxone Administration

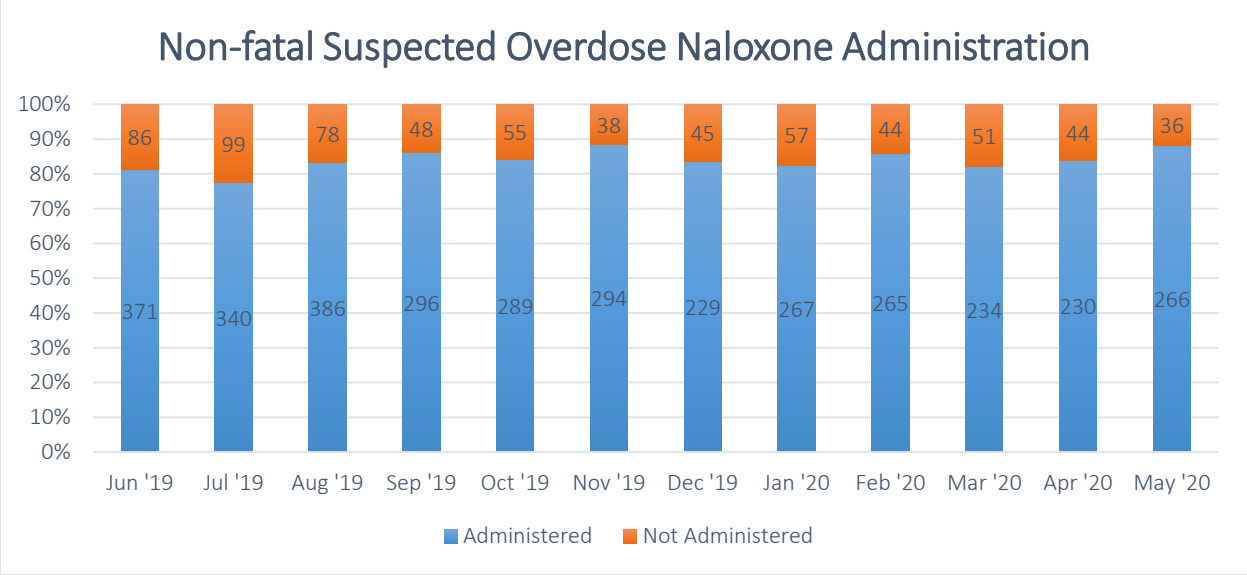
Among the CORE strategic plan recommendations, there was a recommendation to increase tracking of naloxone use.

Table 4. Naloxone Administration Overview

Overdose Type	Naloxone Administered	Naloxone Not Administered
Fatal (336)	142 (42.26%)	194 (57.74%)
Non-Fatal (4148)	3467 (83.58%)	681 (16.42%)
Total (n=4484)	**3609 (80.49%)**	**875 (19.51%)**

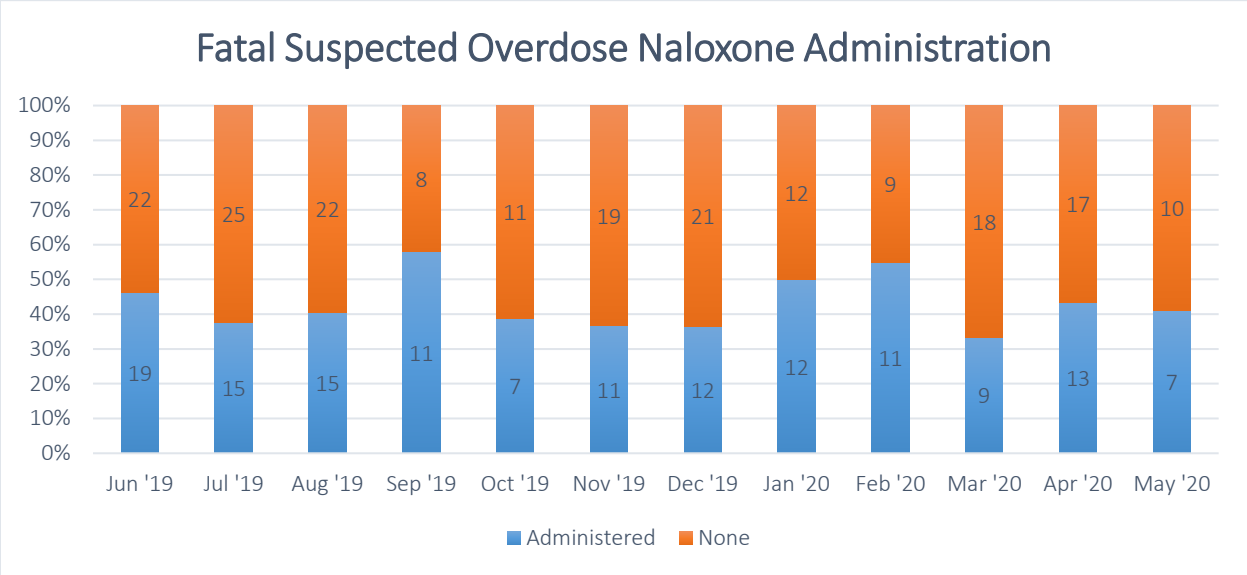
Table 4 shows of the reports in which naloxone administration was known (n=4484), naloxone was administered in 80.49% of cases overall. Among fatal cases, naloxone was administered less frequently (42.26%) than in non-fatal cases (83.58%), likely due in large part to the patient having already died prior to the arrival of EMS.

Figure 15. Nonfatal Naloxone Administration



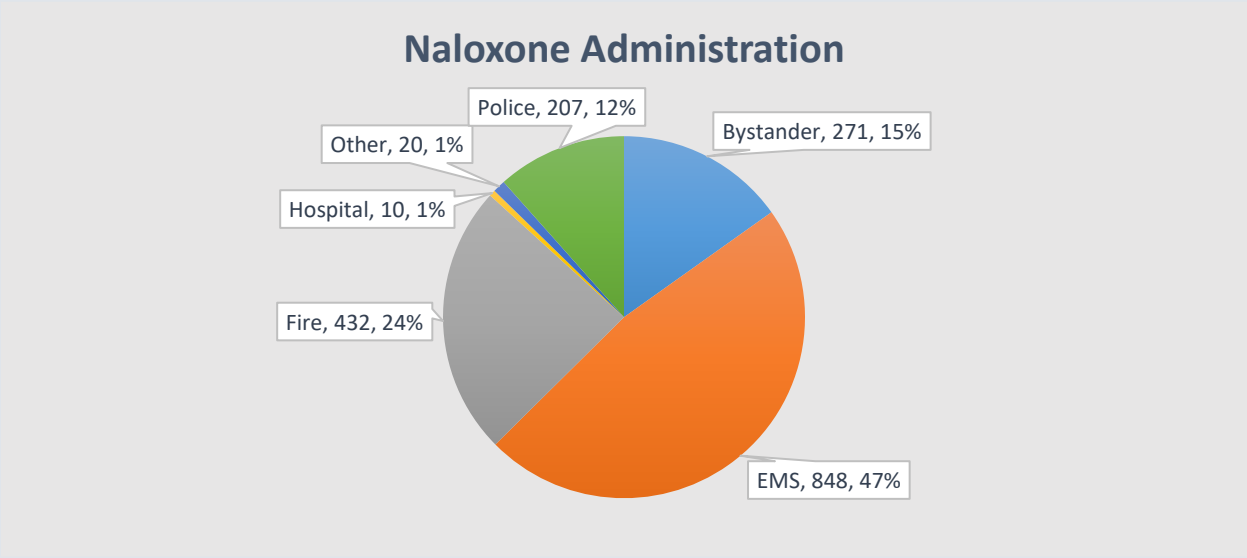
There were 4148 non-fatal suspected overdoses reported for which naloxone administration was known. Figure 15 shows the first three months of reporting saw a higher number of overdoses reported where naloxone was not administered. In these cases, the patient was often roused simply with stimulation. The reason for lower naloxone administration is not known, but there is speculation that some EMS responders believed that overdoses should only be reported when naloxone was given.

Figure 16. Fatal Naloxone Administration



There were 336 fatal suspected overdoses reported (Figure 16) for which naloxone administration was known. Naloxone was not administered in a high proportion of fatal suspected overdoses cases, as the patient may have already been deceased at the time of EMS arrival.

Figure 17. Who administered Naloxone



SWORD began collecting data on "Who administered naloxone" when the variable was added to ODMAP at the national level in November 2019. In Figure 17, there were 1788 overdoses for which these data were available. Nearly half of the reported naloxone administrations were done by EMS (n=848, 47%). In 15% of the overdoses when 911 services was called, the patient received naloxone prior to the arrival of first responders. This does not account for the many instances when laypeople may have given naloxone to overdoses patients and 911 was not called.

Scene Disposition

Figure 18. Overdose Victims involving Hospital Transport

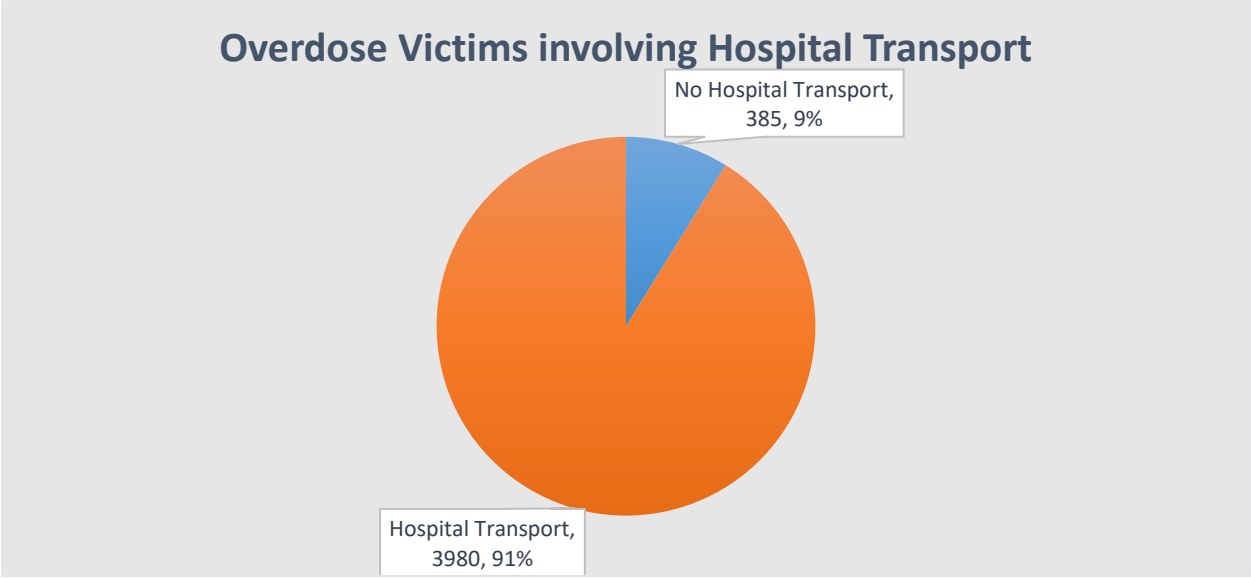
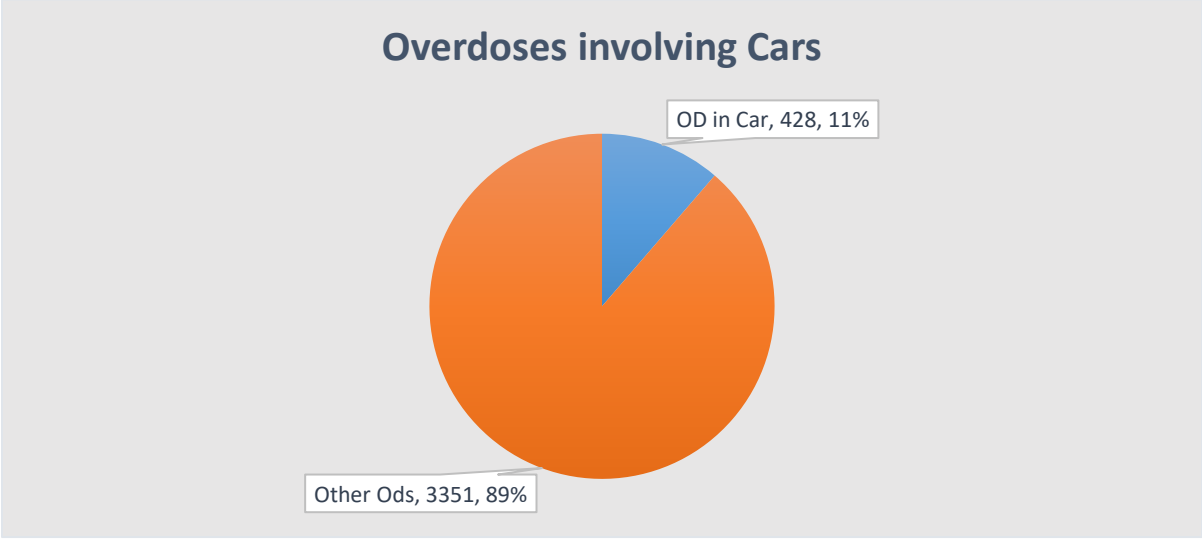


Figure 18 shows the majority of suspected overdose patients were transported to the hospital (n=3980).

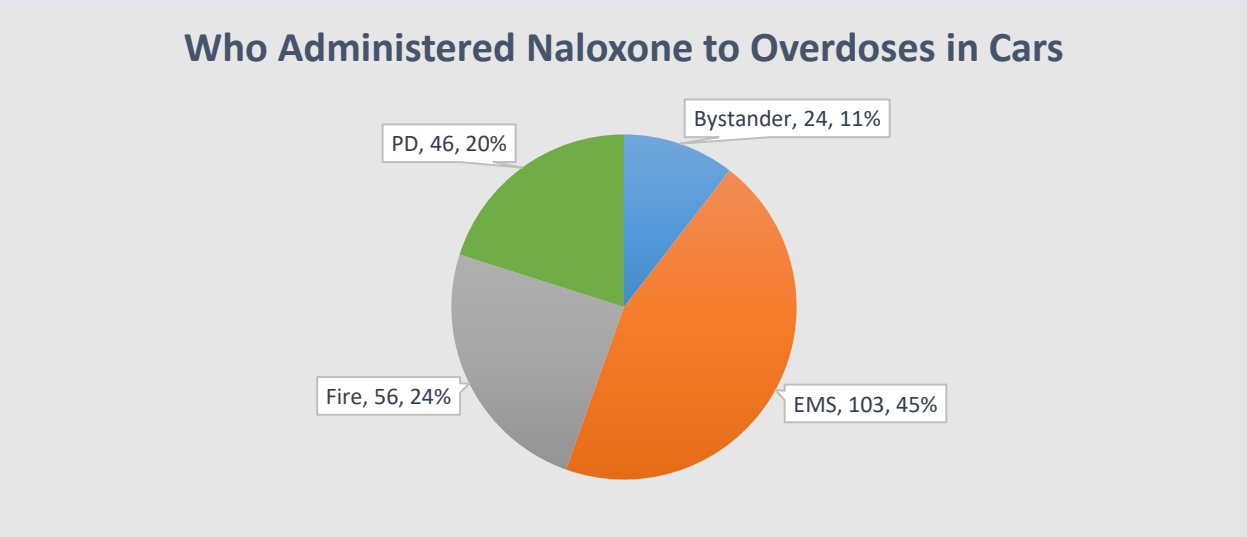
Motor Vehicle Involvement

Figure 19. Motor Vehicle Involvement



11% of overdoses occurred in motor vehicles (Figure 19). This includes parked cars, as well as vehicles with the motor running. Men were involved in the majority of motor vehicle-involved overdoses (n=326, 77%).

Figure 20. Naloxone Administration among Motor Vehicle Involved Overdoses



Shown in Figure 20, EMS and Fire most often administered naloxone to people who overdosed in cars. However, police officers administered naloxone on these overdose scenes with a greater frequency (20%) than overall overdoses (12%, Figure 17).

Spike Alerts

ODMAP enables users to create "spike alerts" which are triggered when suspected overdoses reach a predetermined level within any 24 hour period. State and local health officials utilize the data to respond to sudden spikes and to plan resources to address discovered trends

The incident threshold, or spike, is the number of suspected overdoses in a certain timeframe. Spike alerts can be set-up to notify an agency by email, if the total overdoses in an area meets or exceeds a pre-determined incident threshold within a 24-hour period. Spike alerts can be established for an agency's own county, as well as nearby or neighboring counties. By establishing spike alerts for nearby counties, the program can serve as an early warning system; if a spike in overdoses occurs in a neighboring area, officials can anticipate a spike in their area and prepare. Each agency is able to set up their own spike alerts, which does not impact spike alerts set by other agencies. Alternatively, ODMAP suggests a value and allows an automatic update to its recommended value, two standard deviations above the mean. At this time, the only geographic area for which a spike alert can be set is at the county level.

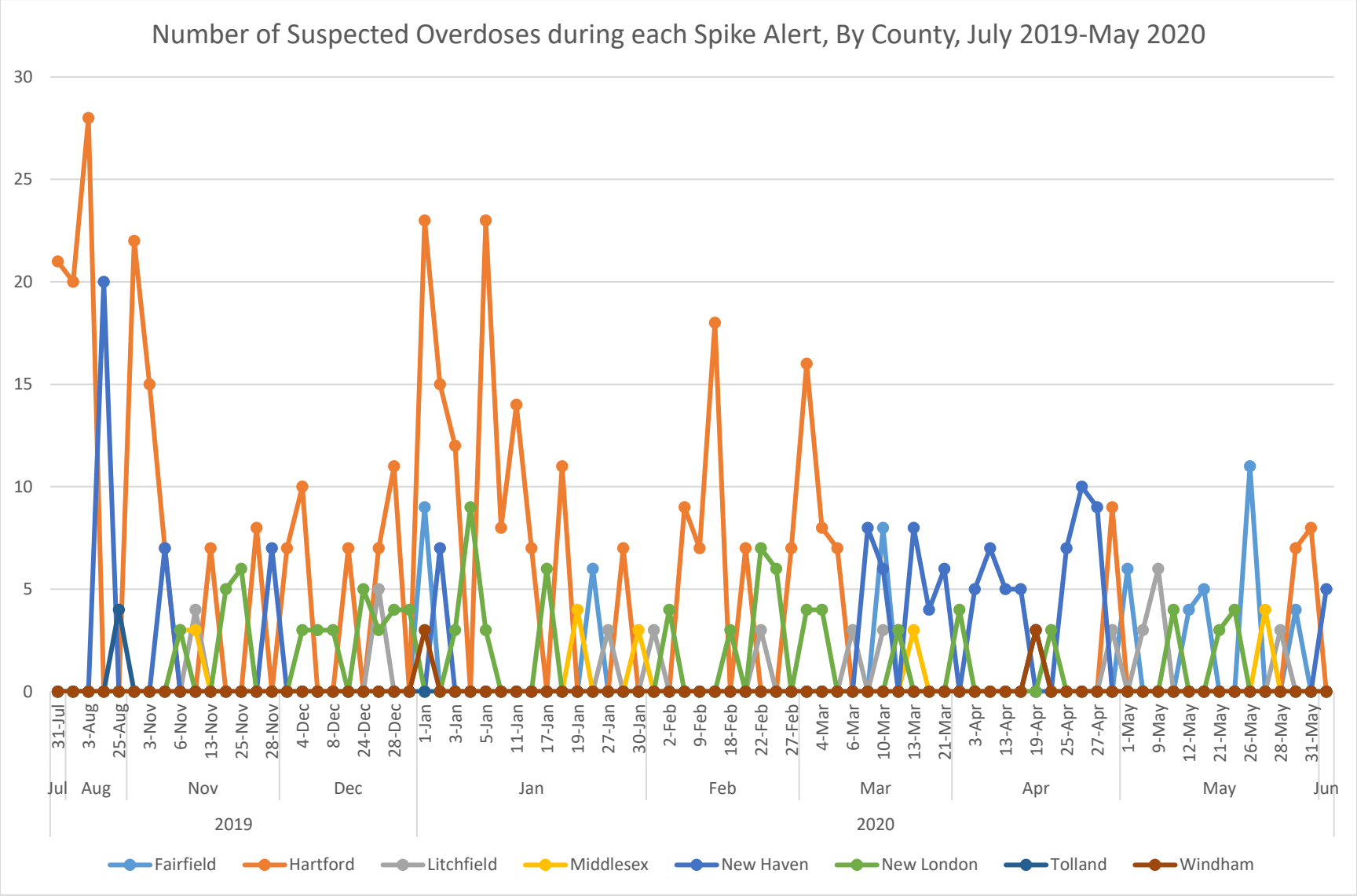
This portion of the report looks solely at the history of spike alerts set at the CT Department of Public Health, which have been adjusted over time to either increase or decrease sensitivity accordingly with the frequency of alerts. DPH first began setting spike alerts in July 2019 for each county in Connecticut.

Table 5. History of Spike Alerts: Number of Spike Alerts at Each Overdose Threshold, by County

		Overdose Threshold							
	County	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**Total Spike Alerts**
Number of Spike Alerts meeting or exceeding Overdose Threshold	Fairfield		8		2				10
	Hartford					39	1	6	46
	Litchfield	13							13
	Middlesex	6							6
	New Haven		8	8		3		2	21
	New London	31							31
	Tolland	1	1						2
	Windham	2							2
	Total	**53**	**17**	**8**	**2**	**42**	**1**	**8**	**131**

The incident threshold, or spike, is the threshold an agency sets to trigger a notification of a "spike alert." Table 5 above shows the interaction between each spike alert "incident threshold" and the number of corresponding times the spike alert was triggered at that threshold. For some counties, the spike alert threshold was adjusted upward or downward, depending on the frequency it was triggered.

Figure 21. Number of Suspected Overdoses During Spikes



This graph (Figure 21) shows the number of suspected overdoses for each incident in which a spike alert was triggered.

Role of ODMAP Spike Alerts at DPH

Connecticut Department of Public Health (CT DPH) staff determine whether information received about suspected overdoses requires a public health response, and if so, how to initiate and guide the response. An overdose spike is an abrupt rise in the number of overdoses reported to the CT DPH. Official reporting sources received and reviewed by CT DPH are: 1.) SWORD-CPCC-ODMAP (EMS data, fatal & non-fatal), 2). EpiCenter Syndromic Surveillance (SyS) (ED data, fatal & non-fatal), and 3). Office of the Chief Medical Examiner (OCME) (death data). If a determination is made that the spike represents an actionable incident, notifications to internal and external stakeholders commence with a local response to the incident. Examples of internal stakeholders are: Office of Injury and Violence Prevention and the Injury and Violence Surveillance Unit, Office of Emergency Medical Services, Communications, Commissioners' Office, Office of Public Health Preparedness and Local Health, the Tuberculosis, HIV, STD, and Viral Hepatitis Section, Syringe Services Program, and Infectious Disease. Examples of external stakeholders are: New England High Intensity Drug Trafficking Area (NE HIDTA) Program, Office of the Chief Medical Examiner, Local Directors of Health, Local Acute Care Hospitals, Department of Mental Health and Addiction Services (DMHAS), Regional DEMHS Coordinator(s), Regional or Local Treatment Locations, Local EMS Agencies, Local Law Enforcement, Local Fire Departments, syringe services programs and community organizations like harm reduction coalitions.

Quality Assurance and Improvement

OEMS began tracking certain EMS agency compliance with SWORD and assigning these agencies a compliance percentage in December 2019.

Methodology for tracking compliance includes:

1) manually comparing SWORD numbers to each individual agency's run forms and
2) comparing SWORD reporting to EpiCenter Syndromic Surveillance (Sys) (ED reporting).

For the manual comparison, CPCC generates a report by EMS agency for the previous month and sends to staff at OEMS. Next, a report is generated by each participating EMS agency through their electronic patient care reports (ePCR), containing the actual number of suspected opioid overdose response for service calls, both fatal and non-fatal, regardless whether naloxone was administered, and sent to staff at OEMS. These two numbers are then reviewed by OEMS staff to look at 1. SWORD call-ins, and 2. ePCR actual service calls, and a compliance percentage is calculated.

For comparison tracking with Sys, an epidemiologist at DPH obtains SWORD data and compares to ED visits giving a graph comparison of the two systems.

Table 6. EMS Compliance Reporting

Number of EMS Companies Providing Compliance Data	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Total
17	72%	74%	66%	72%	62%	69%

Of the twenty-seven (27) targeted EMS agencies contacted to participate in SWORD compliance reporting, only seventeen (17) report on a regular monthly basis. Of the seventeen (17) that report, we estimate compliance for the first year to be approximately 70% per Table 6 via the manual tracking method. This

lack of compliance reporting creates limitations in the representativeness of the data and knowledge gaps across the state, as well as risks associated with delayed detection of spikes.

Some of the roadblocks to compliance reporting for EMS agencies are:

- Lack of staff to analyze data
- Variations in ePCR software: Many different platforms are used throughout the state, with some of the ePCR platforms allowing for faster and easier on demand report formatting, thus enabling fast and accurate suspected overdose quantities to be analyzed.
- EMS Management lack of awareness of provider noncompliance: OEMS has found that, often, EMS Management at low SWORD compliant agencies took effective action to improve reporting after being made aware.

Some of the successful strategies for overcoming low SWORD compliance have included:

1) Re-education: The SWORD TRAIN online course, the OEMS SWORD website page, and education specifically addressing HIPAA concerns.
2) Increased awareness campaigns: Management posting SWORD Newsletters, SWORD pocket cards, and SWORD posters and brochures on provider bulletin boards and, or, throughout the agency and in the ambulances.
3) Increased staffing at CPCC to decrease wait times: An additional CPCC specialist was added during high call volume hours.

ODMAP Statewide Expansion and Response Grant Overview

OEMS was one of eight (8) states who was competitively awarded $700,000 for the period of 9/1/2019 through 8/31/2021 through the Overdose Detection Mapping Application Program (ODMAP) Statewide Expansion and Response grant project. The grant is coordinated by the Institute for Intergovernmental Research (IIR) on behalf of the U.S. Department of Justice (DOJ) Bureau of Justice Assistance (BJA) and the U.S. Department of Health and Human Services Centers for Disease Control and Prevention (CDC). It is designed to support statewide adoption of ODMAP, as well as support the development of highly coordinated public safety, behavioral health, and public health responses to the data, focusing on "hot spots" and trends of concern.

This grant will allow OEMS to hire a project coordinator, as well as to award monies to five (5) local health departments in CT to expand their opioid data analysis through ODMAP, create a spike response plan, further outreach and education to families of, and people with opioid use disorder, among other things, including purchasing naloxone for distribution within their communities.

Practical Applications of ODMAP Data

Early Response to Suspected Overdose Spikes

ODMAP data has allowed for early detection of clusters, followed by early response action. Scene detail provided by EMS, combined with ODMAP location mapping and early warning alerts that provide surveillance across town boundaries provides public health and safety leaders and epidemiologists with

critical information that can help the state both respond rapidly to spikes and to provide long term planning and resource management.

A cluster was observed on the first day of statewide ODMAP implementation. On June 1, 2019 paramedics reported to the CPCC a case of two people who used crack cocaine but required naloxone to be resuscitated despite their later denial of using opioids. Based on this and other similar reports, multiple agencies were notified, and a response was quickly formed. While local public health and safety officials searched for the source of the contamination, local harm reduction agencies deployed workers to identify hard to reach people who identified as using crack cocaine to provide education and distribute fentanyl test strips and naloxone kits. The cluster continued for five days, with CT DPH reporting a total of 22 overdoses and 6 fatalities. The rapid identification and early notification of the cluster by the SWORD surveillance system played a major role in mitigating the impact. By the sixth day, there were no further cases identified in this cluster.

Targeting Resources

Analyzing age and gender can help local health departments and community leaders better target prevention and treatment programs. Hot spots, areas with high frequency of reported overdoses, can be identified and resources mobilized to better provide education, harm reduction supplies, outreach, and treatment.

GPS data obtained from reports were used to create heat maps that can assist harm reduction agencies and other local and community-based agencies with planning the location of drop-in centers, syringe access programs, and targeted naloxone trainings (Appendix D). The non-fatal overdoses Kernel density maps are created annually using ODMAP data. These maps are part of Connecticut Syringe Services Programs (SSPs) community mapping and outreach activities. They are distributed to SSP staff and organizations providing drug user health and harm reduction services in Connecticut. These maps help organizations make decisions on where to conduct overdose prevention outreach, establish new locations for drug user health and harm reduction services, recruit new drug user health and harm reduction clients, and distribute naloxone/Narcan to people at risk of overdose.

Research

Research projects using SWORD data have targeted topics such as overdoses in motor vehicles, the incidence of repeat patients, and side effects of high-dose naloxone that can provide clues to better treatment and response.

For years the emergency medical services role in the opioid epidemic was limited to overdose treatment. Today, their contributions extend to near-real time data collection and early warning surveillance, all of which is leading to lives saved.

Limitations

These data are dependent on EMS compliance with the directive. They represent only those overdoses where 911 was called and EMS later reported the result to the Connecticut Poison Control Center. A pilot project conducted in Hartford from May 2018-April 2019 found EMS compliance was 72%. We estimate compliance for the first year of SWORD to be approximately 70% via the manual tracking method described previously.

Fatal overdoses are underreported because EMS lacks the ability to determine cause of death in the absence of eyewitness reports or presence of drug paraphernalia. Additionally, some patients transported to the hospital may die in the hospital after the EMS report has been completed.

Conclusion

As the SWORD project enters its second year, we are hopeful that working with emergency medical services (EMS) will improve the overall compliance and timeliness of overdose reporting to provide as near real-time and accurate picture of suspected opioid overdoses in the state as possible. We know that curbing this epidemic will require meaningful contributions across a broad range of disciplines touched by this issue and encourage open communication and action.

- *EMS*: continue collecting and reporting data which empower community level intervention
- *Local public health*: continuously analyze suspected overdose data in the context of other locally available data to identify, plan for, and implement prevention and response activities
- *Community coalitions*: seek active engagement with diverse partners to develop all levels of community and resource-specific prevention and response plans
- *Law enforcement*: identify and communicate public safety risks and collaborate with local public health organizations to support evidence-based strategies on improving health outcomes among people who use drugs
- *Community health and harm reduction*: in partnership with local coalitions, target harm reduction strategies and community outreach in areas of high risk

We are hopeful that the SWORD data will continue to provide not only near-real time actionable intelligence to our state and local health, public safety and community partners, but the basis for detailed data analysis to better understand and fight against the ever evolving opioid overdose epidemic.

Resources

- CT DPH Office of Emergency Medical Services SWORD Home page for the SWORD program
- Overdose Detection Mapping (ODMAP) Training and agency access information for ODMAP
- Legislative Analysis and Public Policy Association Documents:
    - Model Overdose Mapping and Response Act a model law designed for policymakers to use in developing statewide legislation addressing overdose incident reporting
    - Overdose Mapping Application Program (ODMAP) Fact Sheet (HIPAA) provides basic information about the ODMAP including interaction with federal laws
- ODMAP Statewide Expansion and Response Grant resource providing overview of grant projects
- ODMAP Spike Response Framework provides guidance for responding to spikes
- NORA Saves a free app from the DPH designed to prevent, treat, and report opioid overdose
- LiveLOUD coordinated efforts to confront and prevent the increase in opioid addiction across CT
- The Connecticut Opioid REsponse Initiative (CORE) a 2016 Connecticut focused strategic plan and mechanism for focusing opioid related response efforts
- CDC Framework for Opioid Response overview of data driven strategies for reducing overdoses

- Health and Human Services (HHS) Opioid Epidemic Strategy opioid epidemic general resources from the Department of Health and Human Services

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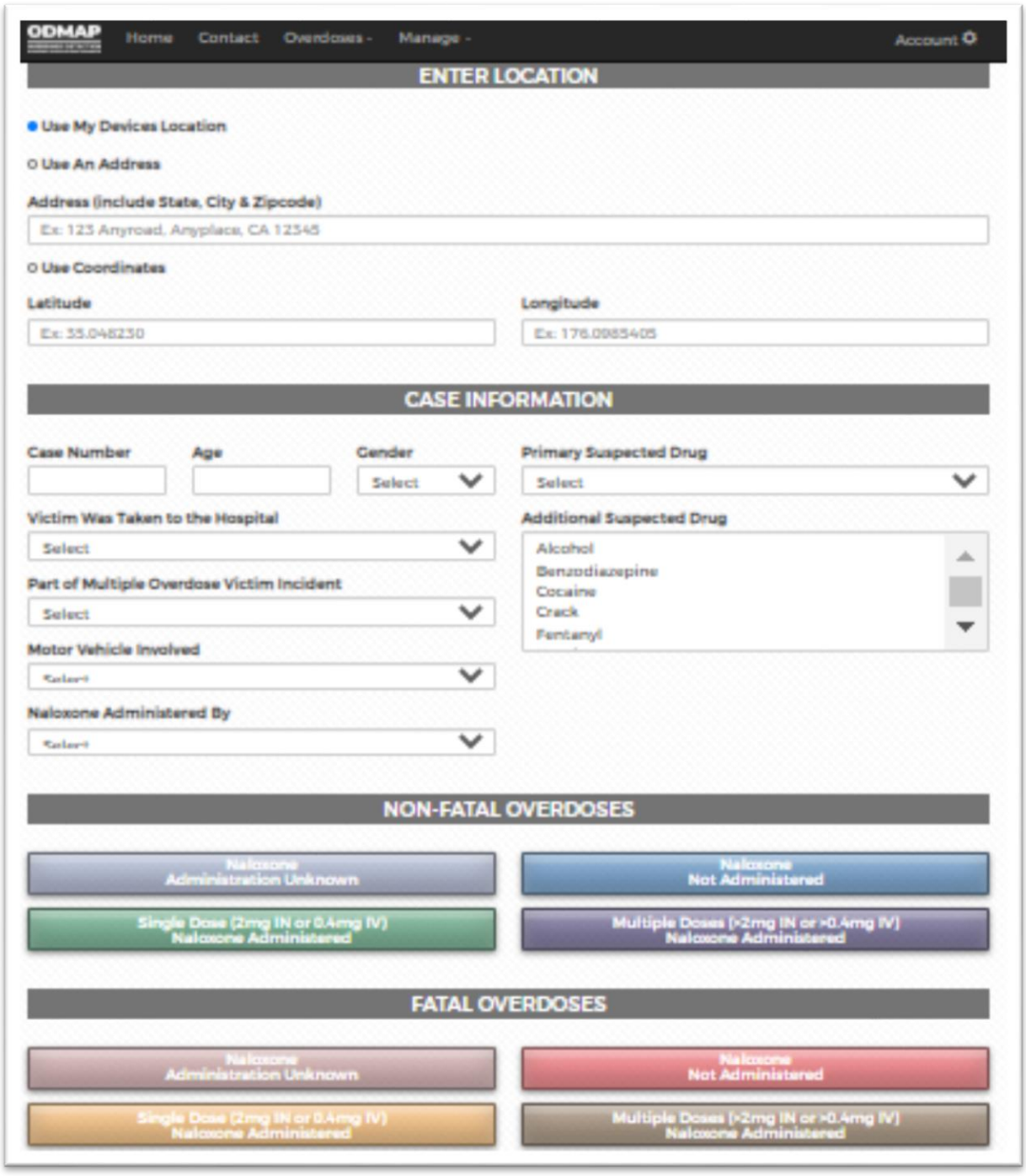
Appendices

Appendix A. ODMAP Data Collection Screen



Appendix B. SWORD Pocket Card

Back Cover

Thank you for your participation!

DPH
Connecticut Department of Public Health

UCONN HEALTH

POISON Help
1-800-222-1222

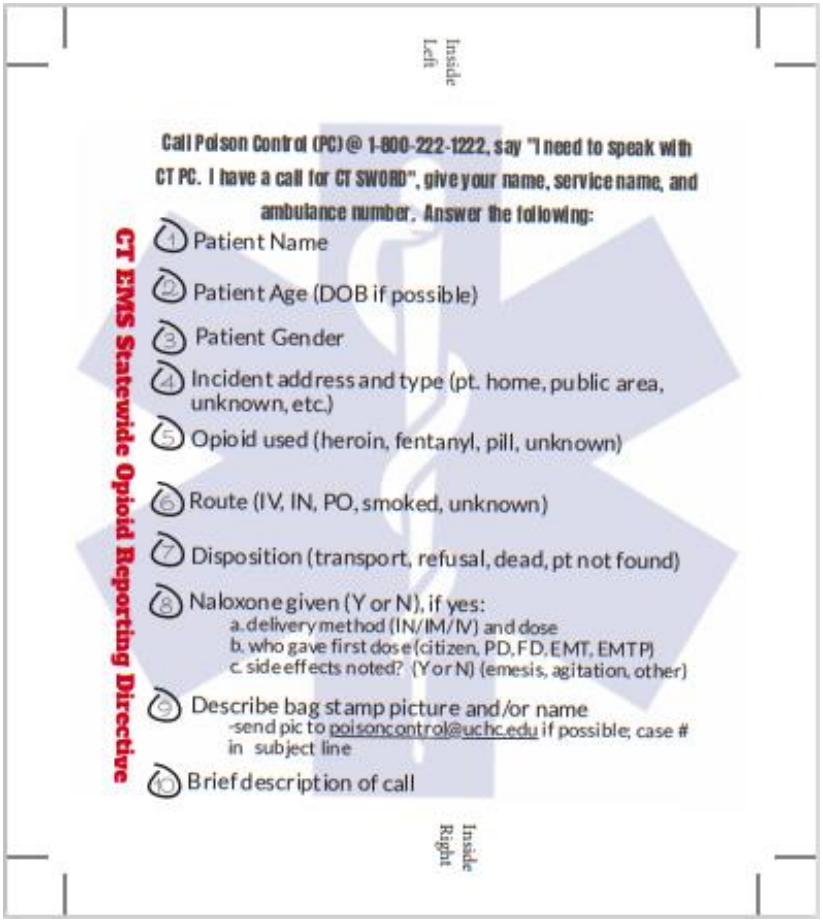
Front cover

CT EMS

Statewide Opioid Reporting Directive

- Call CT Poison Control after any call where the patient is suspected of opioid use, causing decreased responsiveness, respiratory depression or death.
- Call whether naloxone was administered or not.

SWORD



Inside Left

Call Poison Control (PC) @ 1-800-222-1222, say "I need to speak with CT PC. I have a call for CT SWORD", give your name, service name, and ambulance number. Answer the following:

CT EMS Statewide Opioid Reporting Directive

1. Patient Name
2. Patient Age (DOB if possible)
3. Patient Gender
4. Incident address and type (pt. home, public area, unknown, etc.)
5. Opioid used (heroin, fentanyl, pill, unknown)
6. Route (IV, IN, PO, smoked, unknown)
7. Disposition (transport, refusal, dead, pt not found)
8. Naloxone given (Y or N), if yes:
   a. delivery method (IN/IM/IV) and dose
   b. who gave first dose (citizen, PD, FD, EMT, EMTP)
   c. side effects noted? (Y or N) (emesis, agitation, other)
9. Describe bag stamp picture and/or name
   -send pic to poisoncontrol@uchc.edu if possible; case # in subject line
10. Brief description of call

Inside Right

Appendix C. Connecticut Agencies Registered and Approved in Level 1 ODMAP

Agency Name	Agency Type	County
Aetna Ambulance Service	Local	Hartford
American Ambulance Service, Inc	Local	New London
American Medical Response	Local	Fairfield
Bantam Fire Company	Local	Hartford
Bethel Health Department	Local	Fairfield
Branford Fire Department	Local	New Haven
Bridgeport Health Department	Local	Fairfield
Bridges Healthcare	Local	New Haven
Bristol Hospital EMS, LLC	Local	Hartford
Bristol-Burlington Health District	Local	Hartford
Brookfield health Department	Local	New Haven
Burlington Volunteer Fire Department	Local	Hartford
Central Connecticut Health District	Local	Hartford
Chatham Health District	Local	Middlesex
Chesprocott Health District	Local	New Haven
City of Danbury	Local	Fairfield
City of New Haven Health Department	Local	New Haven
City of Torrington Fire Department	Local	Litchfield
Colchester Vol Fire Dept	Local	New London
Connecticut Dept. of Public Health, Office of EMS	State	Statewide
Connecticut Judicial Branch Court Support Services	State	Statewide
Connecticut Mental Health Center	State	Statewide
Connecticut Poison Control Center	State	Statewide
Cromwell Health Department	Local	Middlesex
CT River Area Health District	Local	Middlesex
Danbury Fire Department	Local	Fairfield
Danbury Hospital	Local	Fairfield
Danbury Police Department	Local	Fairfield
Darien Emergency Medical Services	Local	Fairfield
Darien Health Department	Local	Fairfield
Deep River Ambulance Association	Local	Middlesex
Department of Mental Health and Addiction Services	State	Statewide
East Haddam Ambulance	Local	Middlesex
East Hartford Fire Department	Local	Hartford
East Hartford Police Department	Local	Hartford
East Haven Police Department	Local	New Haven
East Shore District Health Department	Local	New Haven
East Windsor Ambulance Association	Local	Hartford
Echo Hose Ambulance	Local	Fairfield

Enfield EMS	Local	Hartford
Essex Ambulance Association Inc.	Local	Middlesex
Fairfield Health Department	Local	Fairfield
Farmington Police Department	Local	Hartford
Glastonbury Health Department	Local	Hartford
GMR - Northeast	State	Middlesex
Granby Ambulance Association	Local	Hartford
Greenwich Department of Health	Local	Fairfield
Hartford Health and Human Services Department	Local	Hartford
Hartford Police Department	Local	Hartford
Hunter's Ambulance Service	Local	New Haven
Killingworth Health Department	Local	Hartford
Madison Emergency Medical Services	Local	New Haven
Manchester Health Department	Local	Tolland
Manchester Police Department	Local	Hartford
Meriden Department of Health and Human Services	Local	New Haven
Middlesex Hospital EMS	Local	Middlesex
Middletown Health Department	Local	Middlesex
Mohegan Tribal Fire Department	Tribal	New London
Naugatuck Ambulance	Local	New Haven
Naugatuck Police Department	Local	New Haven
Naugatuck Valley Health District	Local	New Haven
New Britain EMS	Local	Hartford
New Canaan Health Department	Local	Fairfield
New Haven Fire Department	Local	New Haven
New Milford Community Ambulance Corps.	Local	Litchfield
New Milford Police Department	Local	Litchfield
Newtown Health District	Local	Fairfield
Newtown Volunteer Ambulance	Local	Fairfield
North Windham Fire Department	Local	Windham
Northeast District Department of Health	Local	Windham
Norwalk Health Department	Local	Fairfield
Norwalk Hospital EMS	Local	Fairfield
Norwalk Police Department	Local	Fairfield
Old Lyme South End Volunteer Ambulance	Local	New London
Plainville Southington Regional Health District	Local	Hartford
Plymouth Volunteer Ambulance Corps	Local	Litchfield
Pomperaug Health District	Local	New Haven
Quinnipiack Valley Health District	Local	New Haven
Southbury Ambulance Association	Local	New Haven
St. Vincent's Medical Center	Local	Fairfield

Stony Hill Fire Department	Local	Fairfield
Stratford EMS	Local	Fairfield
Stratford Health Department	Local	Fairfield
The Bridgewater Fire Department Inc	Local	Litchfield
Torrington Area Health District	Local	Litchfield
Torrington Police Department	Local	Litchfield
Town of East Hartford, Health Department	Local	Hartford
Town of Essex Health Department	Local	Middlesex
Town of Winchester	Local	Litchfield
Trumbull EMS, Town of Trumbull	Local	Fairfield
Trumbull Health Department	Local	Fairfield
U.S. Attorney's Office	Federal	New Haven
Uncas Health District	Local	New London
Vernon Police Department	Local	Tolland
Wallingford Fire Department	Local	New Haven
Warehouse Point Fire Department	Local	Hartford
Waterbury Department of Public Health	Local	New Haven
West Hartford Fire Department	Local	Hartford
West Hartford-Bloomfield Health District	Local	Hartford
Western Connecticut Health Network, Aff. Inc	Local	Fairfield
Westport EMS	Local	Fairfield
Westport Weston Health District	Local	Fairfield
Wethersfield Police Department	Local	Hartford
Willimantic Fire Department	Local	Windham
Windsor EMS	Local	Hartford
Windsor Health Department	Local	Hartford
Yale New Haven SHARP Team	State	New Haven
*Hartford Hospital	Local	Hartford
*Old Saybrook Police Department	Local	Middlesex
*awaiting approval		

Appendix D. Non-Fatal Overdose Kernel Density Maps