

## Changes in Emergency Medical Services before and during COVID-19 in the United States, January 2018–December 2020

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## **Abstract:**

### **Background**

As a result of the continuing surge of COVID-19, many patients have delayed or missed routine screening and preventive services. Medical conditions, such as coronary heart disease, mental health issues, and substance use disorder, may be identified later, leading to increases in patient morbidity and mortality.

### **Methods**

The National Emergency Medical Services Information System (NEMSIS) data were used to assess 911 Emergency Medical Services (EMS) activations during 2018–2020. For specific activation types, the percentage of total activations was calculated per week and joinpoint analysis was used to identify changes over time.

### **Results**

Since March 2020, the number of 911 emergency medical services (EMS) activations has decreased, while the percentages of on-scene death, cardiac arrest, and opioid use/overdose EMS activations were higher than pre-pandemic levels. During the early pandemic period, percentages of total EMS activations increased for on-scene death (from 1.3% to 2.4% during weeks 11–15), cardiac arrest (from 1.3% to 2.2% during weeks 11–15), and opioid use/overdose (from 0.6% to 1.1% during weeks 8–18); the percentages then declined, but remained above pre-pandemic levels through calendar week 52.

### **Conclusions**

The COVID-19 pandemic has indirect consequences, such as relative increases in EMS activations for cardiac events and opioid use/overdose, possibly linked to disruptions in healthcare access and health-seeking behaviors. Increasing telehealth visits or other opportunities for patient-provider touch points for chronic disease and substance use disorders that emphasize counseling, preventive care, and expanded access to medications can disrupt delayed care-seeking during the pandemic and potentially prevent premature death.

**Keywords.** COVID-19; Emergency Medical Service; Cardiac Events; Opioid Use Disorder; Risk Perception

**Background:**

The COVID-19 pandemic has had direct and indirect impacts on the healthcare system and on healthcare-seeking behavior. As a result of the continuing surge of COVID-19, many patients have delayed or missed routine screening and preventive services such as annual check-ups (1). The rates of emergency department visits and hospital admissions for conditions not related to or affected by COVID-19 have also decreased during the start of the pandemic in 2020 compared to pre-pandemic times (2, 3). Medical conditions, such as coronary heart disease, mental health issues, and substance use disorder may be identified later than usual given disruptions in availability of health services and changes in health-seeking behaviors, leading to increases in patient morbidity and mortality (4).

Data from 911 Emergency Medical Services (EMS) activations provides a novel source for understanding people's first touch points with the medical system. The information about 911 activations can add insights into resource capacity and limitations. Additionally, EMS response data can complement emergency department (ED) visit data, as it can provide additional information about on-scene deaths, which is not always reflected in ED data.

This study sought to assess changes in the percentages of 911 EMS activations before and during the COVID-19 pandemic for specific medical and behavioral reasons.

**Methods:**

The National Emergency Medical Services Information System (NEMSIS) is the U.S. national database used to standardize, aggregate, and store EMS point-of-care data from states and territories and represents a convenience sample of participating agencies within each state and territory. Reporting to NEMSIS is voluntary and the number of agencies reporting has

increased over time from 9,599 in 2018, to 10,620 in 2019 and 11,257 in 2020. As such, the number of total EMS activations increased by 15% over the study period. To account for the increasing number of agencies and activations, this study examined the percentages of certain activation types (i.e., count of activation type divided by count of all activations) to describe trends over time.

The NEMSIS data was used to assess 911 EMS activations before (January 2018–February 2020) and during (March–December 2020) the COVID-19 pandemic in the United States. Activations were included if the 911 call resulted in patient contact. Activations for encounters related to cardiac arrest, opioid use/overdose, injury, and mental/behavioral health and activations with an on-scene death disposition were examined. Cardiac arrest activations were identified in the NEMSIS national data if the eArrest.01 – Cardiac Arrest field was marked “yes”, meaning there was an “indication of the presence of a cardiac arrest at any time during the EMS event”\*. Opioid-related activations were identified if the *International Classification of Disease 10<sup>th</sup> edition (ICD-10-CM)* codes F11 (opioid-related disorders) or T40.0–T40.4 and T40.6 (poisoning by and adverse effects of opioid related drugs) were found in the NEMSIS elements for primary symptom, or other associated symptoms, or provider’s primary impression, or secondary impressions (eSituation.09-12). Injury activations were identified if the NEMSIS field eSituation.02 - Possible Injury was marked “yes”, indicating there was an injury related with the EMS event; injury type, location or cause was not indicated in this field (16). Mental/behavioral health activations were identified if eSituation.09-12 had any of the following ICD-10-CM codes: anxiety disorder F41.9, F41.1, R41.82; major depressive disorder F32.9; unspecified mental disorder F99; symptoms and signs involving emotional state R45.89, R45.7, R45.82; or symptoms and

signs involving appearance and behavior R46.2, R46. Lastly, eDisposition.12 –

Incident/Patient Disposition was examined to identify on-scene death activations. Any event with “the type of disposition/treatment and/or transport of the patient by the EMS unit” described as “patient dead at scene-no resuscitation attempted (with or without transport)” and “patient dead at scene-resuscitation attempted (with or without transport)” was identified as an on-scene death activation\*.

Percentages of total activations with an on-scene death disposition and with encounters related to cardiac arrest, opioid use/overdose, injury, and mental/behavioral health were calculated annually for 2018, 2019, and 2020 and by calendar week for January 1, 2018, through December 27, 2020 (corresponding to weeks 1 through 52 in each year). The annual counts and percentages of activations were then stratified by sex, age group (12–21, 22–60, and 61+ years), and race/ethnicity. The race/ethnicity groups assessed were American Indian (AI)/Alaska Native (AN), Asian, Black/African American, Hispanic/Latino (H/L), Native Hawaiian (NH)/Pacific Islander (PI), and White. The percent change between the averaged 2018–2019 annual percentages and the 2020 annual percentages was calculated overall and for each of the stratified groups.

Changes in temporal trends in weekly percentage of EMS activations during 2020 were also investigated using joinpoint regression modeling, and a p-value of 0.05 was considered as a significant change (Joinpoint Regression Program, Version 4.8.0.1 - April 2020; Statistical Methodology and Applications Branch, Surveillance Research Program, National Cancer Institute). Joinpoint fits a linear regression model to identify statistically significant changes in the slope of the trend line, i.e. inflection points.

## Results:

The total number of annual 911-initiated EMS activations increased 34% between 2018 (16.9M) and 2019 (22.7M) and 10% between 2019 and 2020 (25.1M). The average weekly count of EMS activations during 2018–2019 was fairly consistent throughout the year. However, in 2020 there was a sharp 26% decrease in total EMS activations from calendar week 10 (March 2<sup>nd</sup> to 8<sup>th</sup>) (n=546,754) to week 16 (April 13<sup>th</sup> to 19<sup>th</sup>) (419,018), which coincided with the start of the COVID-19 pandemic in the United States (Figure 1). Total EMS activations gradually increased back to 2020 pre-pandemic levels during weeks 17–28 (April 20<sup>th</sup> to July 12<sup>th</sup>) then decreased slightly during weeks 29–31 (July 13<sup>th</sup> to August 2<sup>nd</sup>); activations decreased 10% and remained lower than 2020 pre-pandemic levels through week 52 (December 21<sup>st</sup> to 27<sup>th</sup>).

The percentages of EMS activations related to cardiac arrest, opioid use/overdose, injury, and mental/behavioral health and activations with an on-scene death disposition were stable during weeks 1–10 before the pandemic (Figure 2). In 2020, cardiac arrest and on-scene death activations began to increase in week 11 (joinpoint p-values <0.001) (Table 1). During weeks 11–15, the percentage of cardiac arrest activations increased from 1.3% to 2.2% (n=7,260 to 9,411) and the percentage of on-scene death activations increased from 1.3% to 2.4% (n=6,782 to 10,213).

In 2020, the percentage of opioid-related EMS activations increased from 0.6% to 1.1% (n=3,264 to 4,802) during weeks 8–18 (joinpoint p-value <0.001) (Table 1) followed by a gradual decrease (joinpoint p-value <0.001) to 0.7% (n=3,411) by week 43; the percent of activations remained above baseline through week 52 (Figure 2B). The percentage of mental/behavioral health-related EMS activations increased from 7.2% to 8.3% (n=39,145 to

34,829) during weeks 11–16 (joinpoint p-value: <0.001), then declined to 7.0% (n=27,255) by week 48, and increased back above baseline through week 52. The percentage of injury-related activations decreased sharply from 18.5% to 15.4% (n=102,765 to 71,736) during weeks 10–13 (joinpoint p-value=0.007), then increased to 19.6% (n=99,196) by week 23 (Figure 2D). Injury-related activations fluctuated at or below baseline through week 40 and then began another decline (joinpoint p-value <0.001) dropping to 17.3% (n= 56,070) by week 52.

When stratified by sex, age group, and race/ethnicity, the percent change for on-scene death activations increased more among females than males (34.1% vs. 24.5%) and increased more for adolescents and younger adults (12–21 years old) (40.6%) compared to those 22–60 years old (25.8%) and older adults (61+ years old) (30.3%); there was little difference by race/ethnicity (range 27.5% for H/L to 33.6% for NH/PI) (Table 2). For stratified cardiac activations, the percent change increased more among females than males (28.6% vs. 18.9%) and increased more for adolescents and younger adults (41.2%) compared to middle age (23.7%) and older adults (21.5%). Race/ethnicity stratification showed that the percent change increased most among AI/AN (26.8%) and least among Asian (19.1%) and NH/PI (16.1%), and was similar between White, H/L and Black/African American (23.3% for White and Black/African American; 24.6% for H/L). Opioid use-related activations increased more among males than females (39.2% vs. 31.6%). And like with the other activation types, opioid use-related activations increased more for adolescents and younger adults (63.9%) compared to middle age (36.4%) and older adults (20.0%). When examined by race/ethnicity, opioid use-related activations increased more among Asian (44.4%), NH/PI (43.4%), AI/AN (41.2%) and least among White (34.5%) and Black/African American (33.3%).

Percent activation stratified by calendar week in addition to sex, age group, and race/ethnicity was also examined (Supplement Tables). Opioid-related activations for the 22–60 year age group increased from week 7 and continued above baseline (Supplement Table A). Cardiac arrest, on-scene death disposition, and opioid-related activations increased a similar amount among persons of Black/African American race (cardiac=1.38% to 2.08%; on-scene death=1.29% to 2.24%; opioid=0.61% to 1.17%) and White race (cardiac=1.34% to 2.14%; on-scene deaths=1.26% to 2.31%; opioid=0.58% to 1.10%). Cardiac arrest (1.29% to 2.12%) and on-scene death (1.20% to 2.34%) activations also increased among persons of H/L ethnicity (Supplement Table B). There was little change for Asian and AI/AN populations. Percentages were higher for males than females for all activation types (Supplement Table C).

#### **Discussion:**

Findings from this study of EMS activations emphasize the indirect effects of the COVID-19 pandemic. The proportion of mental/behavioral health-related activations increased initially and then returned to baseline levels; while the proportion of injury-related activations decreased and remained below baseline levels. Most notably, our study results show that the proportion of activations with an on-scene death disposition, cardiac arrest, and opioid-related activations remained above 2018–2019 baseline levels during all of 2020, supporting previously reported increase of on-scene death activations (5).

In 2020, EMS activations for cardiac arrests closely followed the trend for on-scene death. Increases in cardiac events have been similarly reported for U.S. emergency room visits (2), while cardiac catheter lab visits have decreased 38% compared with the prior year (1).



Together, these data suggest that cardiac events are increasing while treatment and intervention visits are decreasing. Traditional ambulatory care-seeking behavior has been disrupted and many patients are delaying or deferring necessary care, including preventive care (1,6). However, people with chronic medical conditions like coronary heart disease are at higher risk for poor outcomes without active screening and monitoring by providers (7). Focused messages to providers are needed recommending increased patient telemedicine or other touch point encounters and preventive counseling for patients at risk for cardiac events. Specifically touch points that concentrate on the signs and symptoms of heart disease, may increase access to medications and early intervention. Increasing visit emphasis on cardiac disease prevention and interventions can help detect issues earlier thereby decreasing sudden acute events and may decrease the need for EMS activations and number of on-scene deaths from cardiac arrests.

The U.S. has experienced an increase in opioid overdose deaths since 2013, and the rates of nonfatal drug overdoses involving opioids, cocaine, and amphetamines increased from 2018 to 2019 (8, 9). In December 2020, CDC issued a Health Advisory alert describing substantial increases in drug overdose deaths across the U.S. before and during the COVID-19 pandemic (10) EMS activations for opioid use/overdose were elevated above baseline throughout most of 2020. Precautions taken to slow transmission of COVID-19, including physical distancing and stay-at-home orders, may lead to disruptions in access to medications for opioid use disorder (MOUD), naloxone (an opioid overdose reversal drug), recovery support services, and other forms of treatment for substance use disorder (11). In an effort to help mitigate these effects for individuals experiencing substance use disorder, the U.S.

Substance Abuse and Mental Health Service Administration, the U.S. Drug Enforcement

Administration, and state regulators approved exemptions to expand take-home doses of methadone and buprenorphine, allowing medications to be initiated and maintained during telemedicine visits (12). Because study results support findings that EMS activations for opioid use/overdose events and mental health events have increased during the pandemic, a finding supported in emergency department visits as well, the suggested shift suggests a change in health-seeking behavior from primary care to emergency care. This change emphasizes the need to integrate care for mental health and substance use disorder screening and prevention services into regular touch points of care during the pandemic (13). Primary care providers are urged to continue to emphasize frequent visits and counseling and routinely discuss the availability of naloxone <sup>1</sup>, which may improve adherence and outcome for patients at risk for substance use disorder or opioid overdose. Mental/behavioral health EMS activations were higher than baseline levels in 2020. This finding is supported by results from a nationally-representative web-based survey that showed U.S. adults have experienced higher levels of adverse mental health conditions associated with COVID-19, and that racial/ethnic minority populations, essential workers, and unpaid adult caregivers report increased substance use and elevated suicidal ideation (14). Additionally, higher demand on EMS services on top of COVID-related demands, may also contribute to higher stress and other adverse conditions for EMS workers themselves. Deferring preventative care has indirect cost implications to both the patient and supportive service providers.

There are limitations that should be considered when interpreting these study results.

First, although NEMSIS data accounts for 911 EMS activations from 11,257 agencies (53% total licensed agencies) in 2020 (15), it does not include information from agencies that do

not send their data to NEMSIS. Therefore, results may not be generalizable. Second, the number of total EMS activations varied over time, increasing across the three-year study period as new agencies begin submitting data to NEMSIS and fluctuating throughout the pandemic in 2020, most notably during weeks 10–28 in 2020. The percentage of total activations was used to address the changing denominator and assess trends over time, however, the percentages of total activations during weeks 10–28 of 2020 should be interpreted with caution because of the changing denominator. Increased percentages during this time may be attributed to the smaller denominator rather than an increase in activations for specific causes. Third, multiple EMS units may respond to the same event, which would result in overcounting the total number of activations, however, this effect should be consistent over each year and through the year and is not likely contributing to the overall trend. Fourth, EMS providers are not licensed to make a diagnosis for the patients they evaluate and treat. The ICD-10-CM codes used to identify opioid-related or mental/behavioral health-related activations may be misclassified. Fifth, data for injuries cannot be differentiated by cause of injury, classification or severity, nor by intentionality. Because injury is heterogeneous, and differing types of injuries may have increased while others decreased during the public health crisis, caution is suggested when interpreting the change over the pandemic period. Sixth, readers should consider the fluctuating denominator of total EMS activations over the three-year, annual study period when interpreting trends in the percentage of different activation types. Finally, though the current analysis can identify when a change in a trend occurs, it does not explain reasons for shifts seen in the data. Of note during the study period, no State stopped submitting data, nor was there a notable reduction in the number of reporting agencies, although the frequency with which agencies submit records often fluctuate over a one-year period.

This study brings to light some of the indirect consequences of the COVID-19 pandemic, such as cardiovascular disease and opioid use-related morbidity and mortality, which are likely to persist without directed intervention. Increased opportunities for patient-provider touch points, including telehealth visits may minimize unintended and lasting effects of changed care-seeking behavior. Although access to telehealth visits have increased as a result of the COVID-19 pandemic (16), routine health care visits remains low (17). Increasing touch points that focus on initiating or maintaining care for individuals with chronic diseases and substance use disorders during the pandemic may help prevent acute events requiring 911 emergency activations and premature death.

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## Foot Notes:

\* NEMESIS Data Dictionary v3.4.0. Build 200910. Updated 9/10/20. Available at:  
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## FIGURE LEGENDS

Figure 1. Count of Total Emergency Medical Services (EMS) Activations by Week, for 2018–2019 (baseline) and 2020

This chart illustrates the number of 911 call EMS activations before and during the COVID-19 pandemic. Each line trends the count of EMS activations from the 1st week through the 52nd week of the calendar year. The solid black line represents the 2020-week count of total EMS activations. The blue solid line represents an averaged 2018–2019 baseline count. The blue shading represents the 2020 weeks in which CDC reported community spread of the COVID-19 virus (week 10) and states initiated Stay-At-Home orders (week 12) through when states began to lift restrictions (week 19).

Figure 2. Percent of Emergency Medical Services (EMS) Activations for Cardiac Arrest, On-Scene Death, Opioid Use/Overdose, Mental/Behavioral Health, and Injury by Week, for 2018–2019 (Baseline) and 2020

These charts illustrate the percentage of 911 call EMS activations for A. cardiac arrest and on-scene death, B. opioid use/overdose, C. mental/behavioral health, and D. injury before and during the COVID-19 pandemic. Each line trends the percentage of EMS activations resulting in a patient encounter from the week 1 through week 52 of the calendar year. The solid lines represent the percent of EMS activations in 2020. The dashed lines represent an averaged 2018–2019 percentage baseline. The blue shading represents the 2020 weeks in which CDC reported community spread of the COVID-19 virus (week 10) and states initiated Stay-At-Home orders (week 12) through when states began to lift restrictions (week 19).

Table 1. Percentage of On-Scene Death, Cardiac, and Opioid Use/Overdose Emergency Medical Services (EMS) 911 Call Activations per Week in 2020

Week Number	Cardiac	On-Scene Deaths	Mental/Behavioral	Opioid	Injury
1	1.46	1.33	6.78	0.67	17.83
2	1.37	1.26	6.88	0.61	17.64
3	1.37	1.23	7.02	0.6	18.13
4	1.43	1.28	6.89	0.58	17.91
5	1.38	1.23	7.11	0.63	17.83
6	1.4	1.28	7.17	0.65	17.83
7	1.34	1.19	7.16	0.56	18.04
8	1.37	1.25	7.07	0.60*	17.97
9	1.41	1.25	7.09	0.67	18.22
10	1.38	1.26	7.21	0.7	18.52*
11	1.34*	1.25*	7.24*	0.65	18.17
12	1.53	1.46	7.42	0.71	16.58
13	1.76	1.74	7.7	0.75	15.36*
14	2.08	2.18	7.93	0.85	15.54
15	2.16*	2.35*	8.17	0.81	16.08
16	2.04	2.14	8.33*	0.89	16.5
17	1.93	2.01	8.28	0.88	17.19
18	1.87	1.88	8.28	1.08*	18.14
19	1.86	1.85	8.39	0.96	18.34
20	1.7	1.71	8.2	1.02	18.69
21	1.65	1.63	8.17	0.93	19.03
22	1.58*	1.59*	8.14	0.94	19.44
23	1.55	1.52	8.1	0.96	19.62*
24	1.5	1.49	8.04	0.91	19.96
25	1.48	1.45	8.05	0.9	19.89
26	1.51	1.44	7.98	0.89	19.36
27	1.55	1.49	7.86*	0.87	19.66
28	1.5	1.51	7.82	0.79	18.6
29	1.52	1.55	7.9	0.8	18.72*
30	1.53	1.5	7.88	0.78	18.67
31	1.55	1.54	7.91	0.82	19.02
32	1.54	1.52	7.91	0.85	19.14
33	1.55	1.5	8.02	0.82	19.01
34	1.49	1.47	7.96	0.8	19.27
35	1.49	1.42	7.89	0.79	19.19
36	1.48	1.48	7.88	0.87	19.87
37	1.55	1.5	7.98	0.81	19.37
38	1.49	1.47	7.99	0.79	19.55
39	1.45	1.46	7.82	0.78	19.61
40	1.45	1.44	7.78	0.78	19.68*
41	1.45	1.42	7.84	0.75	19.38
42	1.46*	1.41*	7.71	0.72	19.39
43	1.47	1.43	7.74	0.71*	19.03
44	1.56	1.51	7.65*	0.71	18.8

Week Number	Cardiac	On-Scene Deaths	Mental/Behavioral	Opioid	Injury
45	1.56	1.55	7.69	0.78	18.42
46	1.52	1.55	7.4	0.73	17.74
47	1.6	1.6	7.11	0.78	17.46
48	1.66	1.65	6.98*	0.78	17.08
49	1.64	1.62	7.09	0.78	16.94
50	1.69	1.68	7.34	0.77	17.02
51	1.74	1.78	7.36	0.82	16.98
52	1.79	1.79	7.27	0.82	17.32

\*indicates a significant change in trend from Joinpoint analysis. p-value was  $\leq 0.05$

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Table 2. Annual Counts and Percentage of On-Scene Death, Cardiac, and Opioid Use/Overdose Emergency Medical Services (EMS) 911 Call Activations and Change in Percentage (2018-2019 vs. 2020), Stratified by Sex, Race/Ethnicity, and Age

			2018 N= 16,915,214	2019 N= 22,758,045	2020 N= 25,118,999	2018- 2019 vs 2020 Change in Percentag e of Total Activatio ns (95% CI)
		Activatio n Type	Count (Percentage of Total)			
Overall		On-Scene Deaths	201,210 (1.19)	266,473 (1.17)	382,134 (1.52)	28.8% (28.3%, 29.3%)
		Cardiac	211,404 (1.25)	291,276 (1.28)	391,337 (1.56)	23.3% (22.8%, 23.8%)
		Opioid	94,989 (0.56)	132,342 (0.58)	196,534 (0.78)	36.8% (36.1%, 37.6%)
Sex	Male	On-Scene Deaths	124,214 (1.56)	165,766 (1.54)	237,369 (1.93)	24.5% (24.1%, 25.0%)
		Cardiac	131,251 (1.65)	181,663 (1.68)	243,237 (1.98)	18.9% (18.5%, 19.4%)
		Opioid	61,339 (0.77)	87,162 (0.81)	133,415 (1.10)	39.2% (38.6%, 39.9%)
	Female	On-Scene Deaths	73,550 (0.84)	96,875 (0.83)	140,126 (1.12)	34.1% (33.5%, 34.7%)
		Cardiac	78,783 (0.90)	107,929 (0.92)	146,002 (1.17)	28.6% (28.0%, 29.2%)
		Opioid	32,940 (0.38)	44,430 (0.38)	62,259 (0.50)	31.6% (30.7%, 32.5%)
Race/Ethnici ty	American Indian/Alas ka Native	On-Scene Deaths	1,247 (1.15)	1,175 (1.15)	1,953 (1.53)	33.0% (32.5%, 33.6%)
		Cardiac	1,350 (1.24)	1,244 (1.22)	1,992 (1.56)	26.8% (26.3%, 27.3%)
		Opioid	647 (0.60)	599 (0.59)	1,067 (0.84)	41.2% (40.5%,

						41.9%)
	Asian	On-Scene Death	1,072 (1.19)	1,838 (1.19)	3,189 (1.54)	29.4% (28.9%, 29.9%)
		Cardiac	1,164 (1.29)	1,975 (1.28)	3,185 (1.53)	19.1% (18.6%, 19.6%)
		Opioid	479 (0.53)	849 (0.55)	1,621 (0.78)	44.4% (43.7%, 45.2%)
	Black/African American	On-Scene Deaths	24,105 (1.20)	29,914 (1.17)	55,777 (1.53)	29.1% (28.6%, 29.6%)
		Cardiac	25,050 (1.25)	32,470 (1.28)	56,946 (1.56)	23.3% (22.8%, 23.8%)
		Opioid	11,772 (0.59)	14,800 (0.58)	28,584 (0.78)	33.3% (32.6%, 34.1%)
	Native Hawaiian/Pacific Islander	On-Scene Deaths	342 (1.15)	397 (1.14)	610 (1.53)	33.6% (33.1%, 34.1%)
		Cardiac	366 (1.23)	456 (1.32)	588 (1.48)	16.1% (15.6%, 16.6%)
		Opioid	161 (0.54)	180 (0.52)	303 (0.76)	43.4% (42.6%, 44.1%)
	White	On-Scene Deaths	65,604 (1.18)	82,934 (1.18)	137,171 (1.52)	28.8% (28.3%, 29.3%)
		Cardiac	68,701 (1.24)	91,053 (1.29)	140,803 (1.56)	23.3% (22.8%, 23.8%)
		Opioid	32,142 (0.58)	40,783 (0.58)	70,584 (0.78)	34.5% (33.8%, 35.2%)
	Hispanic/Latino	On-Scene Deaths	7,525 (1.21)	10,655 (1.19)	21,080 (1.53)	27.5% (27.0%, 28.0%)
		Cardiac	7,795 (1.26)	11,334 (1.26)	21,632 (1.57)	24.6% (24.1%, 25.1%)
		Opioid	3,292 (0.53)	5,346 (0.59)	10,726 (0.78)	39.3% (38.6%, 40.0%)
Age (in years)	12-21	On-Scene Deaths	3,683 (0.32)	4,790 (0.32)	6,814 (0.45)	40.6% (39.7%,

						41.6%)
		Cardiac	3,728 (0.33)	5,264 (0.35)	7,296 (0.48)	41.2% (40.2%, 42.1%)
		Opioid	4,594 (0.41)	6,264 (0.42)	10,337 (0.68)	63.9% (63.0%, 64.7%)
	22-60	On-Scene Deaths	71,652 (0.97)	95,395 (0.97)	137,772 (1.22)	25.8% (25.2%, 26.3%)
		Cardiac	75,299 (1.02)	104,104 (1.05)	143,944 (1.28)	23.7% (23.1%, 24.2%)
		Opioid	78,615 (1.07)	111,152 (1.13)	169,425 (1.50)	36.4% (35.8%, 36.9%)
	61+	On-Scene Deaths	115,970 (1.55)	156,810 (1.52)	230,465 (2.00)	30.3% (29.8%, 30.7%)
		Cardiac	123,521 (1.65)	171,862 (1.66)	232,511 (2.01)	21.5% (21.0%, 21.9%)
		Opioid	9,138 (0.12)	13,353 (0.13)	17,677 (0.15)	20.0% (18.4%, 21.6%)

This table provides the total count (and average yearly percent) of EMS 911 calls from calendar week 1 to 52 of each year, stratified by sex, race/ethnicity, and age.

Figure 1

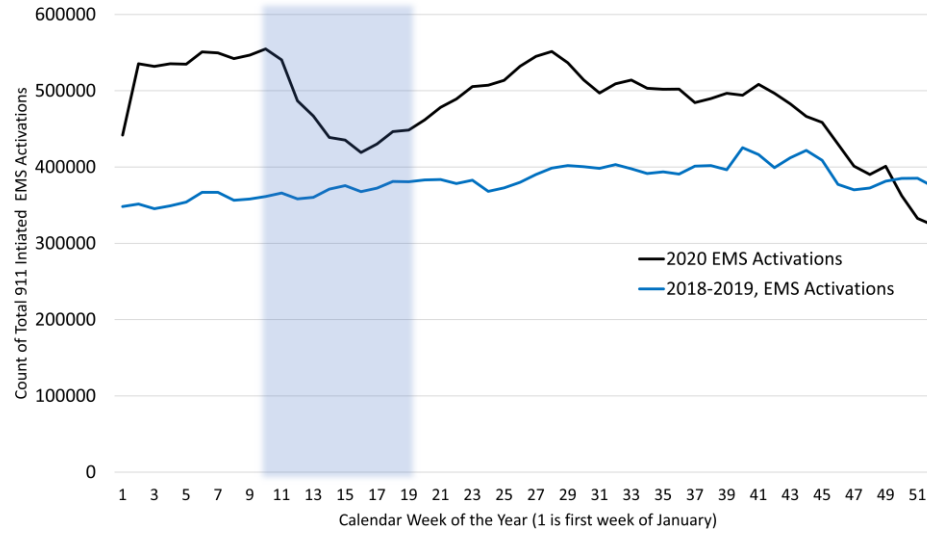
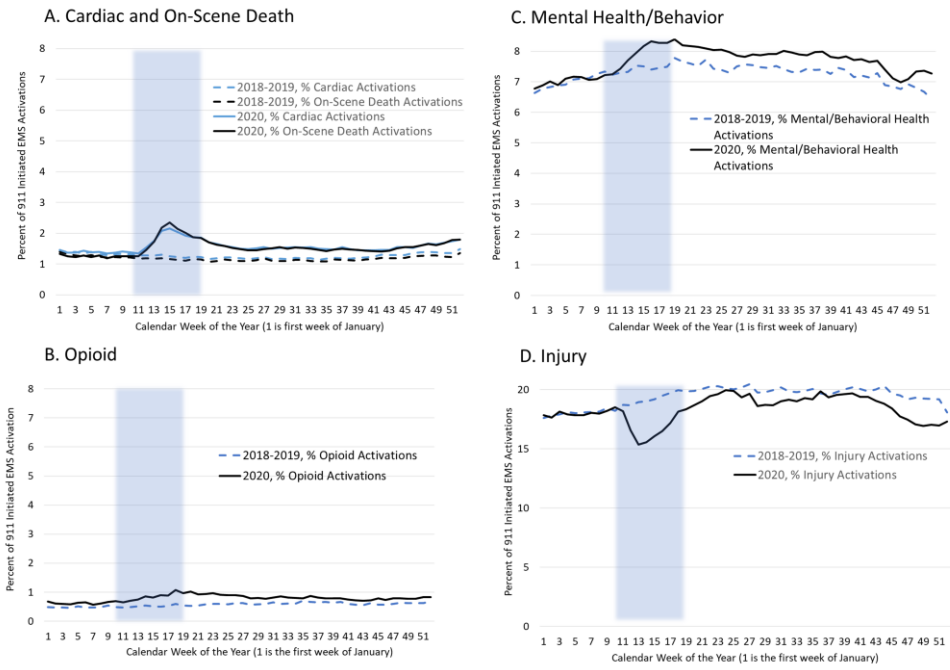


Figure 2



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