2016 Heroin Overdose Report

Exploring Narcotic Related Illness in Boston

June 2016

BOSTON REGIONAL INTELLIGENCE CENTER

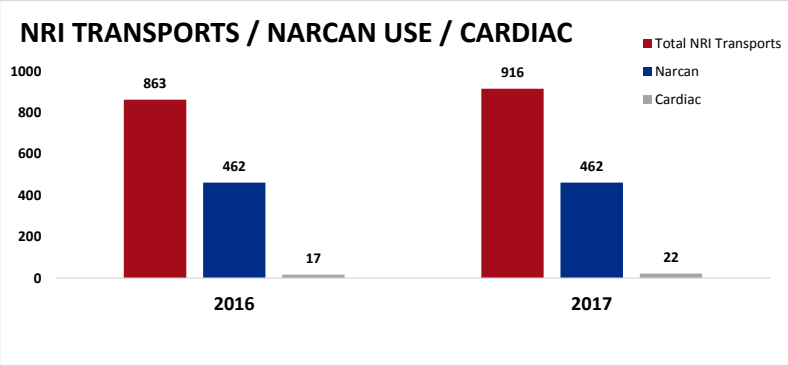
Scope

This report examines Boston Emergency Medical Services (Boston EMS) data pertaining to Narcotic Related Illness (NRI) to determine if there was a significant change in 2016 when compared to previous years. This information is being provided to inform law enforcement, the medical community, and state and federal agencies of current trends in opiate use in Boston to enhance the delivery of public safety services.

Key Findings

There was a significant increase in transports attributed to NRI in Boston in 2016. While patients with multiple transports remain a significant issue, they accounted for fewer transports than they did in 2015. The area around the Boston Medical Center, where there are multiple shelters and clinics, as well as access to the highway, continues to be a major hotspot. Fentanyl was present in the vast majority of deaths ruled on by the Medical Examiners (ME)'s office. Additionally, the use of multiple drugs was also prevalent. Reporting indicates that cocaine is being mixed with Fentanyl, which suggests that cocaine users may be at an increased risk for NRI. A significant number of the victims are homeless or live outside of Boston, which suggests that people are travelling to the city to buy and use heroin. This experience may or may not be unique to Boston, and it is possible that newer users from outside towns will migrate to Boston in the future. A significant portion of the patients have open criminal cases, and there appears to be an avenue for convincing patients to seek longer term treatment through the judicial system.

2017 YTD

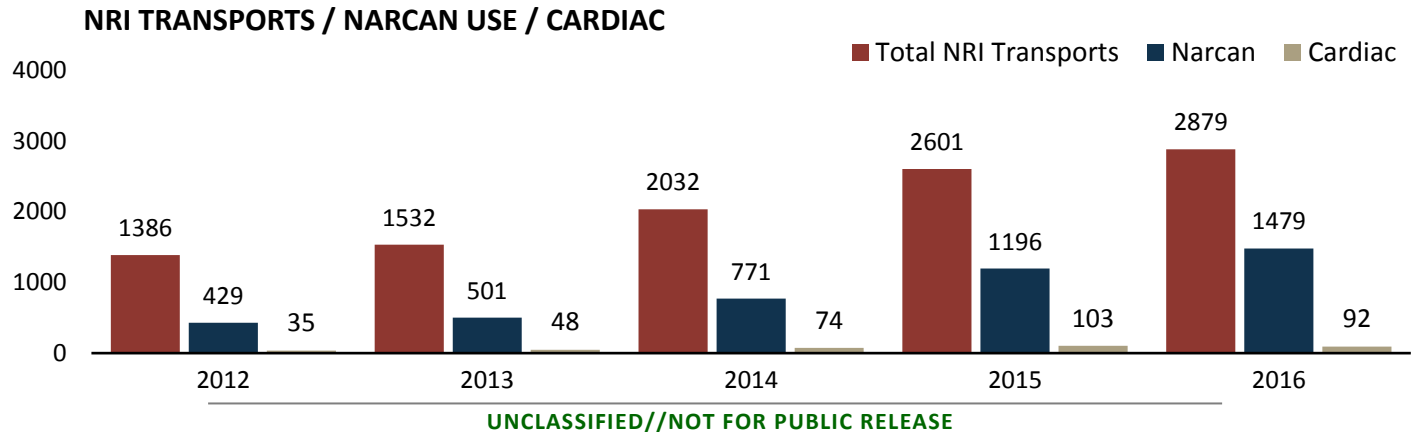


2017 YTD – Through 5/2/17

Year to date in 2017, there has been a 6% increase in NRI transports citywide. There has been no change in the number of Narcan administrations. There has been a 29% increase in patients in Cardiac arrests. These figures may suggest that there is an increase in the prevalence of Fentanyl citywide.

2016 Analysis

Citywide Overview

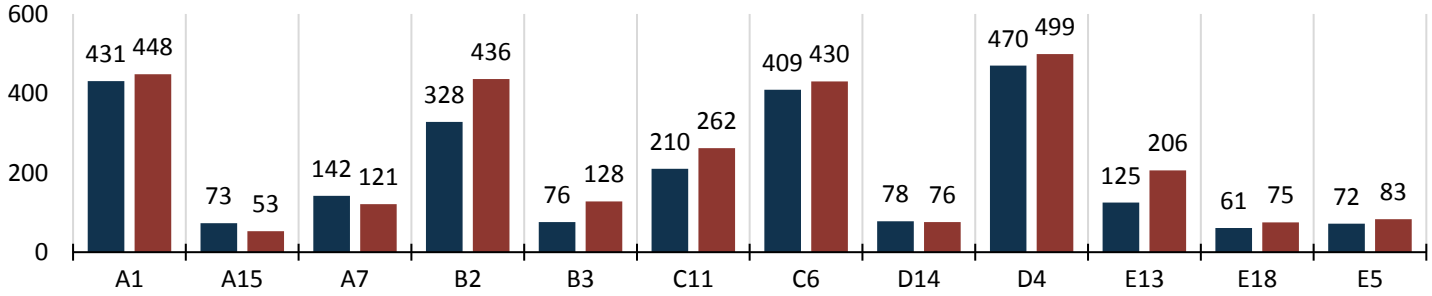


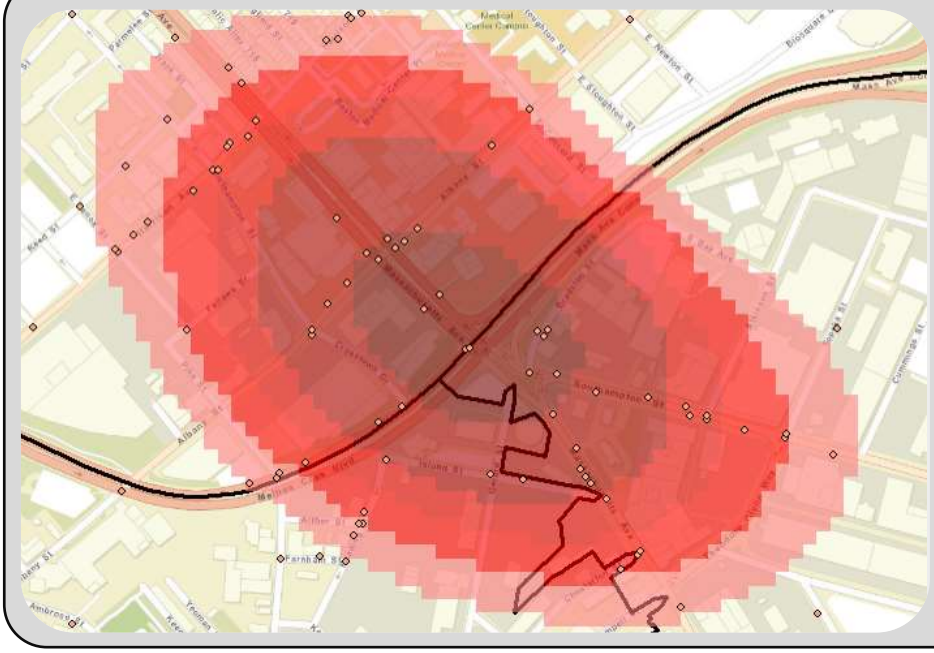
In 2016, there was an 11% increase in NRI transports citywide and an 11% decrease in fatal overdoses. This follows increases of 44% and 28% respectively from 2013-2014 & 2014-2015. In 2016, there was a 24% increase in Narcan[tm] administrations. This increase may be due to an increase in the availability of Narcan. Boston Police Officers (BPD) accounted for 4% of Narcan administrations citywide. Overall there was a 165% increase in Narcan administrations by BPD. Civilians (persons not employed by BEMS/BPD/BFD) accounted for 18% of the Narcan administrations citywide, which further demonstrates the increase in the availability of Narcan. Assuming Narcan availability will remain the same or increase, there will likely be an increase in Narcan administrations in 2017.

Geographic Breakdown

Nearly every Boston neighborhood has been affected by the ongoing heroin epidemic. Overall, the citywide hotspots were focused near transit hubs, shelters and housing developments. There have been some changes in these areas since 2015. Most notably, the Mass. Ave. / St. Botolph and Back Bay Station areas are no longer very active. Bromley Heath, which was not a hotspot in 2015, became one in 2016. The addition of this area coincided with a 65% increase in NRI transports in E13 in 2016 compared to 2015. The 3 most active districts in 2015 (D4, A1, & C6) only had slight increases in 2016. The most significant increases occurred in B3 (68%), E13 (65%), and B2 (33%). B2 was the third most active district in 2016. In past years B2 had been the 4th or 5th most active district.

NRI TRANSPORTS BY DISTRICT: 2015 - 2016





Mass. & Melnea Hotspot Area

The area around Mass. Ave. / Melnea Cass Blvd. continues to be the most significant hotspot. There were 351 NRI transports reported in that area during 2016. In 2015, this area accounted for 15% of the NRI transports citywide. Activity in the area can be attributed to geographical features including the presence of clinics, hospitals, shelters, and the easy access to the public transportation as well as the highway. Six of the top 10 repeat locations are located within this hotspot. Of the 351 patients transported from the area, 152 (43%) identified themselves as being homeless and 59 (17%) of the patients identified themselves as living outside of Boston. The majority of transports were not Boston residents.

Time and Date of Overdoses

Day of week and time of day patterns in 2016 were consistent with the patterns experienced in 2015. NRI transports occurred most frequently between 12:00 PM and 8:00 PM. More broadly, activity increases after 10:00 AM, and then drops off by 10:00 PM. As in 2015, transports occurred most frequently on Thursdays, Fridays and Saturdays. Consistent with both 2014 and 2015, Sundays were the least active days for transports. In a comparison of time periods, from 2015 vs 2016, the largest increases were experienced between 12AM-2AM (55 incidents), and 4AM-6AM (41 incidents).

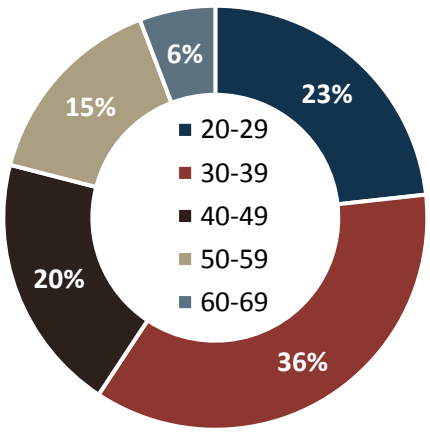
	12A-2A	2A-4A	4A-6A	6A-8A	8A-10A	10A-12P	12P-2P	2P-4P	4P-6P	6P-8P	8P-10P	10P-12P	Total
Sun	23	17	11	11	11	26	51	39	27	40	26	28	310
Mon	24	7	5	12	17	32	44	47	54	53	47	19	361
Tues	29	8	11	16	18	35	57	44	54	48	49	37	406
Weds	30	11	13	14	28	36	53	53	63	53	40	26	420
Thur	28	15	15	16	28	42	60	52	51	57	42	30	436
Fri	29	5	19	16	34	40	55	68	52	73	58	37	486
Sat	42	17	15	20	23	45	55	45	58	52	27	30	429
Total	**205**	**80**	**89**	**105**	**159**	**256**	**375**	**348**	**359**	**376**	**289**	**207**	**2848**

Patient Profile

1. Demographics

In 2016, 73% of patients were males. This is a slight increase from 2015, where 68% were male. This is the only year since 2010 where the percentage total for males was above 70%. It is unknown why the gender gap increased in 2016. The average age was 39. Patient age has been consistent since 2010; with the average age for females is 37 and the average age for males is 40. Examining age by count, we find the most commonly reported ages are between the ages of 28-36. 34% of all patients are in their 30s. Another finding is that the age groups with the largest increases were individuals in their 60's (43%) and individuals in their 50's (38%). This does align with the belief that the current epidemic grew from the popularity of Oxycontin from 5-10 years ago.

NRI TRANSPORTS BY AGE GROUP



2. Geographic Profile

In 2016, 23% of patients transported reported that they lived outside of Boston, and 21% of patients transported reported that they were homeless. Only one Boston neighborhood, Dorchester, which accounted for 11%, accounted for more than 10% of the transports. Residential reporting data may be skewed as some transports are listing transitional homes within Boston as an address. The fact that there are so many patients coming from outside the city may be due to the price of heroin being lower in Boston as compared to the suburbs.

3. Contact with Law Enforcement

Beginning in late February of 2016, an analysis was done of individuals transported by EMS to assess involvement in the criminal justice system. It was found that 88% had at least one arraignment in Massachusetts. Of the individuals with an arraignment, 51% had an arraignment within 365 days prior to their transport. 16% were on probation or parole at the time of their transport, and 16% of the individuals had an active warrant at the time of their transport. 48% had at least one open charge at the time of their transport. These findings do indicate the potential for court based diversion strategies in the effort to reduce overdoses.

4. Frequent Transport Patients

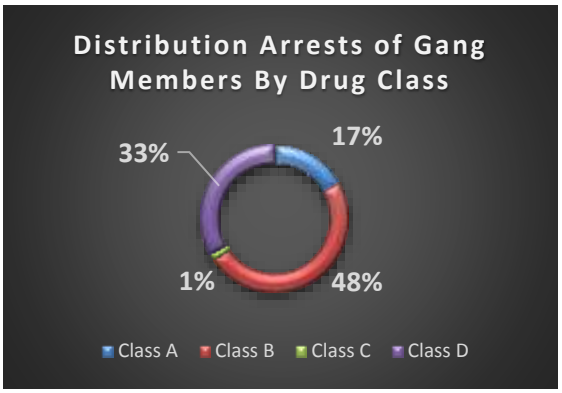
In 2016, there were 136 patients with 3 or more transports. Collectively these individuals account for 559 (20%) of the NRI Transports citywide. This is a decrease from 2015 when there were 154 repeat transports, accounting for 685 (26%) of the

transports citywide. Several of the repeat transport patients from 2015 were transported in 2016. It is unclear why this decrease has occurred. This is a surprising finding, as there was a significant increase in the number of frequent transport patients in 2015 as compared to 2014. This would suggest that there were more unique patients in Boston in 2016 than in previous years.

Drug Composition

While Medical Examiners' data is not available for all Boston cases in 2016, findings on the majority of cases received before September 2016 were available. The available data showed that in 86% of the cases referred to the ME's office, Fentanyl was present. In 73% of the cases, there was poly-drug use. This figure includes alcohol. In 11% of the cases, the cause of death was the combination of heroin and Fentanyl, without any other drugs being present. In 33% of the cases, cocaine was present with Fentanyl. This finding supports anecdotal evidence suggesting that some cocaine users may be experiencing overdoses because they have been receiving cocaine cut with Fentanyl. This finding has two serious implications: first responders should be aware that when they are dealing with what appears to be cocaine, there may in fact be Fentanyl present; and we may see increases in deaths among users who are not known or documented heroin users.

Who is Selling the Heroin?



An analysis was conducted on individuals who were arrested for Trafficking Class A in Boston to analyze demographic patterns. Another analysis was done on arrests of gang members for drug distribution and drug trafficking charges. The focus was to answer the question as to whom was controlling drug sales in Boston. Is the sale of heroin the domain of street gangs, or is it the domain of trafficking organizations. The first finding was that gang members were more often involved in the sale of Cocaine/Crack or marijuana, than in the sale of heroin. 48% of the drug distribution arrests of gang members were for Class B drugs, and 33% of the arrests of gang members for distribution were for Class D drugs. Only 17% of the distribution arrests of gang members were for Class A Drugs. Citywide, 26% of distribution arrests are for Class A drugs, 44% are for Class B drugs, and 25% are for Class D drugs. Gang members accounted for only 13% of the Class A Distribution arrests citywide, while accounting for 21% of Class B Distribution arrests, and 25% of Class D Distribution arrests. Notably, very few gang members were arrested for drug distribution inside of the heroin overdose hotspots around BMC or downtown.

An analysis of Class A Trafficking arrests showed that 39% of the arrestees claimed to have been born in the US, 26% claimed to have been born in Puerto Rico, and 65% were born in another country. 84% of those who reported that they were born in another country stated they were born in the Dominican Republic. It should be noted that for many of these arrests, the AFIS records listed multiple places of birth. There has been open source reporting that Dominican drug traffickers will use identities stolen from Puerto Rico to acquire Drivers Licenses in Massachusetts, and in other states. An analysis was done to see if there were signs of identity fraud or use of aliases by those arrested for trafficking. In 44% cases where a person was arrested for Trafficking Class A in 2015 or 2016, and listed a place of birth other than the US, there were signs of past identity fraud or use of different names at booking. In 59% of the cases where the suspect listed Puerto Rico as their place of birth, there were signs of identity fraud or use of aliases. This would suggest that heroin trafficking in Boston is largely controlled by Dominican drug organizations.

Outlook

Intelligence Gaps and Unknowns

One significant intelligence gap concerns how heroin users are funding their habit. Since the beginning of the heroin epidemic in 2011, Part 1 Crime has been decreasing across almost all crime types. While it is highly likely that some users are funding their habits through crimes such as burglary, larceny, and robbery, it is unlikely that the majority of users are engaged in these crimes. There have been no spikes in any of these crime categories, nor have there been significant changes to traditional crime type hotspots. If it is the case that users are not legally earning money to fund their drug use, and Part One Crime is decreasing, then other possibilities include Part Two Crimes, such as Fraud or Prostitution, or un-reported crimes. Filling this intelligence gap may require reviewing data outside of traditional police incident records.

Another major intelligence gap is the organizational structure of the heroin distribution networks that exist in Boston. Anecdotal evidence from past incident reports has suggested that there are multiple means of purchasing heroin in Boston with varying levels of complexity. There is evidence of a "dispatcher" based network that operates like a taxi company. The buyer calls into the dispatcher, who then routes a driver to a location to make the sale. There are also dealers who work in open air markets and in drug houses. Based on the known pricing of heroin in New England, namely that heroin is cheaper in Boston than in a lot of other cities and towns, in would stand to reason that a lot of buyers from outside towns would travel to Boston to make bulk purchases. What is unknown is to what extent are bulk purchases happening.

Methodology

In Boston, BEMS responds to all requests for service that come in via 911 – in 2016, there were 125,585 recorded. Of these incidents, 2,879 were patients with suspected Narcotic Related Illness (NRI), which represents 2.3% of all Boston EMS responses.

In order to generate accurate numbers for illnesses reported on calls for service, all contact with patients is documented via an electronic patient care report (ePCR). Daily reports are created through a program that pulls data from the ePCRs and 911 computer aided dispatch (CAD). The analyst's definition for a suspected NRI case is "altered mental status and pinpoint pupils (myosis)." Additionally, alerts are issued when specific words (i.e. heroin, overdose, Narcan™) appear in an ePCR. These reports and alerts are examined daily by a medical intelligence analyst to assess if they reach the case definition of an opiate overdose.

A medical intelligence analyst categorizes NRI calls as either Heroin Observed (HO), Heroin Mentioned (HM), or Other Abuse (OA). Of the 2,879 NRI calls in 2016, the majority (2,067) were coded as HO. This is done in an effort to differentiate between the use of heroin and that of other narcotics such as oxycodone or methadone.

If the report fits the criteria of a NRI, it is then then broken down by type of opiate, the severity of the overdose, and the demographics of the patient. This process aims to prevent the inclusion of other types of overdoses (i.e. cocaine, cannabis, and methamphetamine). EMS personnel who were present at the scene are contacted for additional clarification when necessary.

There are limitations to this process. Some NRI data is subjective and can be subject to biases, both during the initial response and in the follow-up analysis. Additionally, all opiate deaths should be considered suspected deaths, as only an official toxicology report done by the medical examiner can confirm an opiate overdose. This results in higher numbers recorded by the medical examiner, as the analyst will only categorize the death as an NRI incident based on physical evidence and witness statements.

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