

August 22, 2017

Greater New Orleans Substance Use Health Dashboard¹

Substance Use and Mental Health-related Emergency Department (ED) Visits

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Highlights

- From August 2014 through July 2017, substance use and mental health contributed to an *increasing* proportion of emergency department (ED) visits. During this recent three-year period, the proportion of weekly total ED visits that were **substance use-related visits increased 15.2 percent annually** while the proportion of weekly total ED visits that were **mental health-related visits increased 14.7 percent annually**.
- From August 2014 through July 2017, drug and alcohol use contributed to an *increasing* proportion of emergency department (ED) visits. During this recent three-year period, the proportion of weekly total ED visits that were **drug use-related visits increased 23.7 percent annually** while the proportion of weekly total ED visits that were **alcohol use-related visits increased 7.9 percent annually**.
- From August 2014 through July 2017, opiate use contributed to an *increasing* proportion of emergency department visits. During this recent three-year period, the proportion of weekly total ED visits that were **opiate use-related visits increased 21.2 percent annually** while the proportion of weekly total ED visits that were specifically **heroin use-related visits increased 11.9 percent annually**.

¹ Prepared for the Greater New Orleans Drug Demand Coalition by ARC Associates. For further information contact Robert J Gallati at Bob.Gallati@ARC-Associates.net.

Brief Description of Louisiana Early Event Detection System (LEEDS)

Louisiana Early Event Detection System (LEEDS) is a web-based syndromic surveillance system that, on a daily basis, automatically processes hospital emergency department data to identify visits indicative of specific syndromes tracked by the Infectious Diseases Epidemiology Section of the Louisiana Office of Public Health (OPH). LEEDS receives daily electronic data files from emergency departments. Specific data items reported to LEEDS include Facility Name, Date of Visit, Time of Visit, Age, Date of Birth, Gender, Patient's Residence Zip Code, Emergency Department Chief Complaint (text and/or ICD code), Emergency Department Discharge Disposition, and Emergency Department Discharge Diagnosis. To assure patient confidentiality, OPH does not ask for patient name or address. However, because of the potential need to investigate an outbreak or cluster detected through LEEDS, participating facilities include a unique, facility-defined patient identifier (ID) for each record submitted so that follow-up is possible. Eleven of the 13 hospital emergency departments in Greater New Orleans' four parishes report to the LEEDS system, representing about 95 percent of all emergency room visits.

Syndromic Surveillance is the collection and analysis of pre-diagnostic as well as non-clinical disease indicators using pre-existing electronic data, typically collected on a daily basis. The goal of Syndromic Surveillance is to rapidly detect early warning signs of both natural and man-made disease trends or outbreaks that might impact the health of the public. Syndromic Surveillance uses pre-diagnostic data in order to provide: *earlier detection and awareness* of outbreaks or disease trends of public health significance; *ongoing monitoring* of syndromes of public health importance; monitoring of *seasonal disease trends*, such as influenza during winter months; *situational awareness* during any identified cluster of cases or outbreak, during natural or man-made emergencies, or during high-profile events; and the potential to track other events such as *hospital acquired infections*, injuries and infections during hurricanes, *environmental exposures*, *poisonings*, *bioterrorism* events, exposure to *toxins*, and *drug abuse* trends.

Definition of Substance Use and Mental Health-related Syndromes

Substance use and mental health-related visits are episodes in hospital emergency departments (EDs) or urgent care facilities in which patients are treated for a substance-induced or use condition or mental health condition, or in which substance use or mental health is a complicating factor. (Analysis will be limited to EDs at this time.) LEEDS indicators are based on analysis of descriptive text of patient's chief complaint or admit reason and diagnostic codes. LEEDS reporting requires that descriptive text be entered; however, entry of a diagnostic code is not required for completion of a LEEDS report. Therefore, a diagnostic code is often not included.

Substance use and mental health-related ED visits are identified using syndrome definitions applied to descriptive text and diagnosis codes, which consist of lists of words or phrases that rule in or rule out identification of the syndrome. The Office of Public Health has developed syndrome definitions for alcohol use, other drug use and mental health-related visits as well as for heroin and other opiate use-related visits.

Identification of a visit as substance use or mental health-related does not imply a principal or secondary behavioral health diagnosis nor that the patient was treated for a behavioral health condition, but only that a substance use or mental health issue was noted in the clinical record during

the ED visit. At the same time, unless a behavioral health condition is the principal presenting problem or a major complicating condition, it may not be noted.

A single individual may have multiple behavioral conditions related to an ED visit, for instance both substance use and mental health conditions contributing to or complicating care. However, it is likely that only the most obvious condition will be recorded, especially when the principal condition to be addressed is biomedical, e.g., sickness or physical injury. As a result, there is minimal reporting of co-occurring behavioral health conditions in the LEEDS system, to the point that there is essentially no analyzable data regarding co-occurring conditions. So, while LEEDS indicators are likely to underestimate the contribution of behavioral conditions to emergency department utilization in general, the incidence of individual syndromes may be further underestimated to the extent that they are co-occurring. The true value of LEEDS indicators for substance use needs assessment is to *measure trends* in misuse of those substances most likely to result in emergent medical problems.

Proportion of ED Visits by Behavioral Health Syndrome

Participating hospital emergency departments should report all visits to LEEDS every day. However, this is not always possible. The number of ED visits reported will vary over time due to the number of EDs participating and the completeness of reporting, rather than just the number of actual visits. In these circumstances, epidemiologists typically analyze the proportion of total visits that meet criteria for a specific syndrome, rather than the raw number of such visits.

In 2016, over 5 percent of all emergency department visits reported to the LEEDS system were identified as behavioral health-related. There were slightly more mental health-related (2.73%) than substance use-related (2.43%) visits.

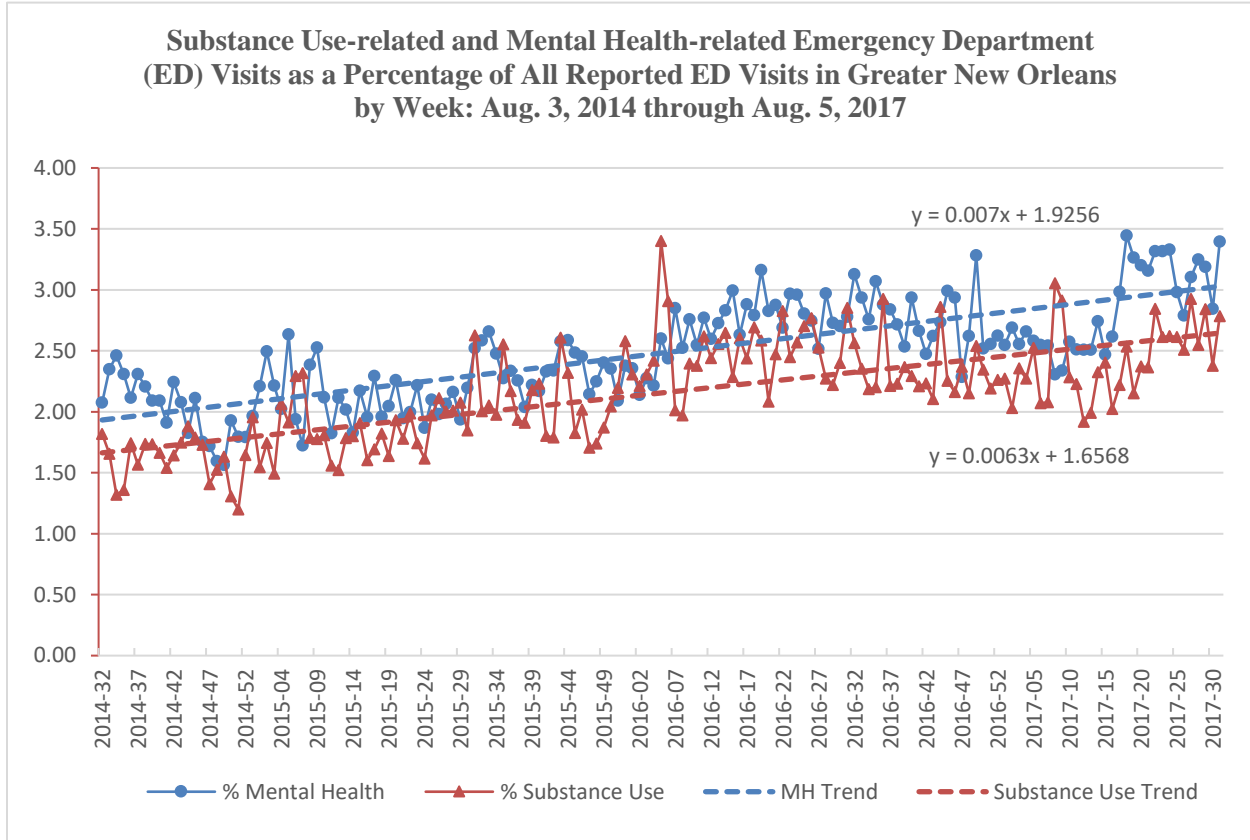
Of the substance use-related ED visits in 2016, alcohol use accounted for about three-fifths (1.46%) while drug use accounted for about two-fifths (0.96%).

Of drug use-related ED visits in 2016, opiate use was identified in about one-third (0.33%) of the visits while heroin was identified in about one-tenth (0.10%) of the drug use-related visits.

Syndromes Defined	2014	2015	2016
All Emergency Dept. Visits	100.00%	100.00%	100.00%
Behavioral Health-related	3.73%	4.02%	5.15%
Mental Health-related	2.09%	2.21%	2.73%
Substance Use-related	1.73%	1.95%	2.43%
Alcohol Use-related	1.20%	1.36%	1.46%
Drug Use-related	0.60%	0.67%	0.96%
Any Opiate Use-related	0.20%	0.23%	0.33%
Heroin Use-related	0.08%	0.08%	0.10%

*Since an individual patient may present with more than one syndrome (alcohol, drug use and/or mental health) the sum of the syndrome-specific visits will be greater than the total behavioral health visits.

Trends in Substance Use and Mental Health-related ED Visits

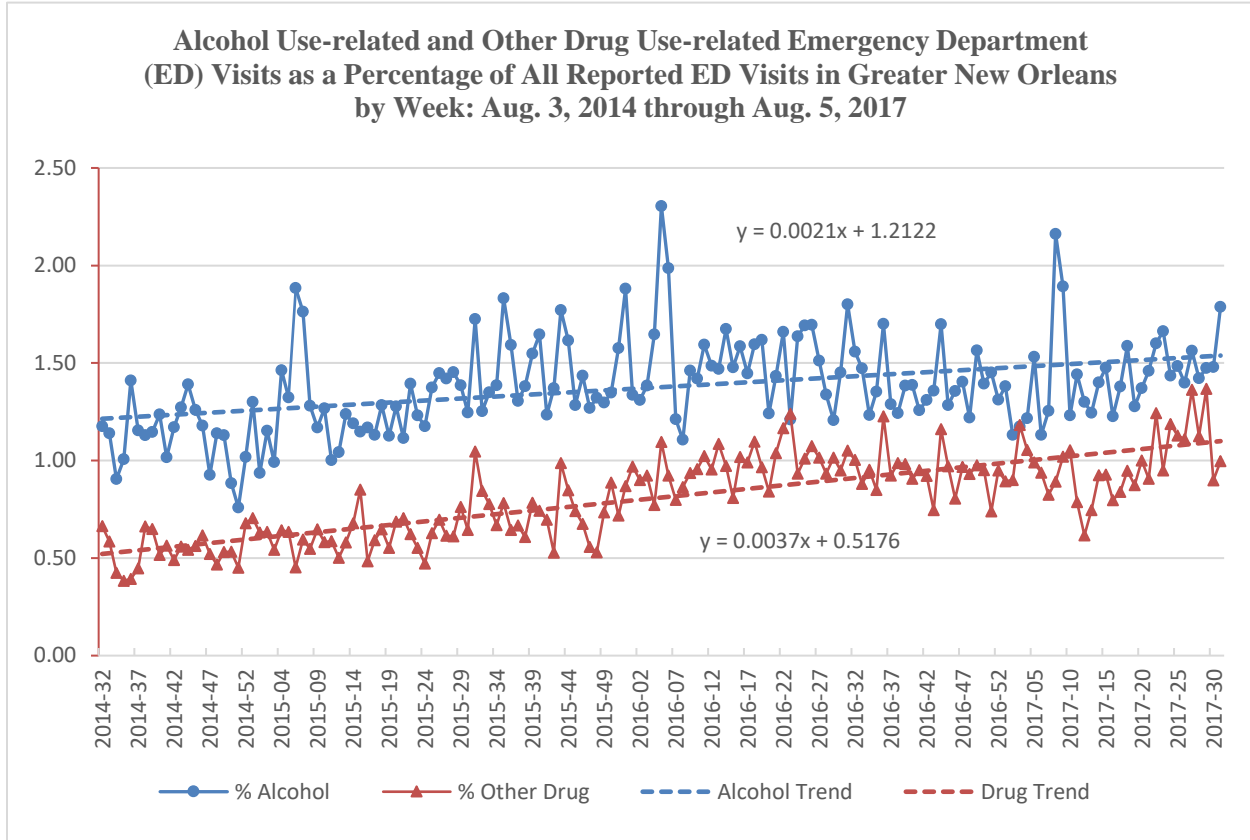


Weekly substance use-related and mental health-related emergency department (ED) visits in Greater New Orleans for triage dates from August 3, 2014 through August 5, 2017 (a 3-year period) were analyzed as a percentage of all ED visits during the week. The proportion of total ED visits that are substance use or mental health-related varies from week to week.

- On average, substance use-related visits represented 2.15% of total weekly ED visits during this three-year period. The proportion of substance use-related visits peaks in late February coincident with Mardi Gras and secondarily at New Years while the proportion is generally low in November-December and post Mardi Gras.
- On average, mental health-related visits represented 2.48% of total weekly ED visits during this three-year period. Visual inspection does not suggest a cyclical pattern in the proportion of mental health-related ED visits; however, the proportion appears to have been low during the winter of 2017.
- Substance use and mental health accounted for an *increasing* proportion of emergency department visits. The proportion of weekly total ED visits that were **substance use-related visits increased 15.2 percent annually** while the proportion of weekly total ED visits that were **mental health-related visits increased 14.7 percent annually**.²

² Based on linear trend analysis. Take the regression coefficient for the trend line and multiply by 52 (weeks per year) to obtain an annual percentage point increase. Divide the percentage point increase by the average (mean)

Trends in Drug and Alcohol Use-related ED Visits



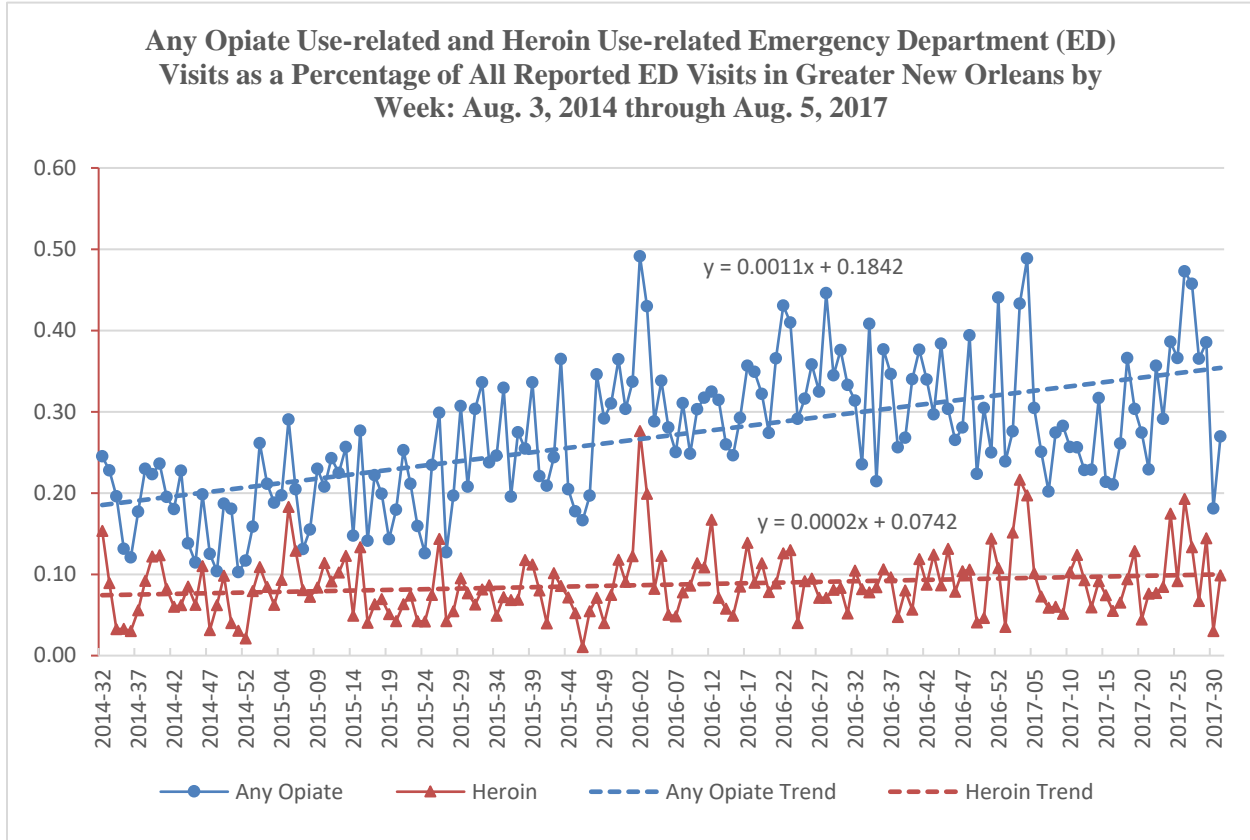
Weekly drug use-related and alcohol use-related emergency department (ED) visits in Greater New Orleans for triage dates from August 3, 2014 through August 5, 2017 (a 3-year period) were analyzed as a percentage of all ED visits during the week. The proportion of total ED visits that are drug or alcohol use-related varies from week to week.

- On average, drug use-related visits represented 0.81% of total weekly ED visits during this three-year period. While the proportion of visits that were drug use-related grew substantially during this period, the proportion was low in the late winter and early spring of 2017.
- On average, alcohol use-related visits represented 1.38% of total weekly ED visits during this three-year period. The proportion of alcohol use-related visits peaks in late February coincident with Mardi Gras while, generally, the proportion is low post Mardi Gras and during the November-December period.
- Drug and alcohol use accounted for an *increasing* proportion of emergency department visits during this three-year period. The proportion of weekly total ED visits that were **drug use-related visits increased 23.7 percent annually** while the proportion of weekly total ED visits that were **alcohol use-related visits increased 7.9 percent annually**.³

percentage of all visits for the period (2.15% for substance use-related and 2.48% for mental health-related) to estimate the annual percentage increase.

³ Based on linear trend analysis. Take the regression coefficient for the trend line and multiply by 52 (weeks per year) to obtain an annual percentage point increase. Divide the percentage point increase by the average (mean)

Trends in Opiate-related ED Visits



Weekly emergency department (ED) visits related to any opiate use, and specifically, to heroin use, in Greater New Orleans for triage dates from August 3, 2014 through August 5, 2017 (a 3-year period) were analyzed as a percentage of all ED visits during the week. The proportion of total ED visits that are drug or alcohol use-related varies from week to week.

- On average, any opiate use-related visits represented 0.27% of total weekly ED visits during this three-year period. For 2016 and 2017, the proportion of opiate use-related visits peaks in January and July. Visual inspection of trend data suggests that the rate of growth of opiate use-related visits may have attenuated beginning in February 2017.
- On average, heroin use-related visits represented 0.09% of total weekly ED visits during this three-year period. Heroin use-related visits peaked in January 2016, January 2017 and early July 2017.
- Opiate use accounted for an *increasing* proportion of emergency department visits during this three-year period. The proportion of weekly total ED visits that were **opiate use-related visits increased 21.2 percent annually** while the proportion of weekly total ED visits that were specifically **heroin use-related visits increased 11.9 percent annually**.⁴ During this period, the proportion of any opiate

percentage of all visits for the period (0.81% for drug use-related and 1.38% for alcohol use-related) to estimate the annual percentage increase.

⁴ Based on linear trend analysis. Take the regression coefficient for the trend line and multiply by 52 (weeks per year) to obtain an annual percentage point increase. Divide the percentage point increase by the average (mean)

use-related visits in which heroin was indicated *decreased*. In calendar 2016, heroin was indicated in only 29 percent of opiate use-related visits.

Appendix: Demographic Tables

Behavioral Health Emergency Department Visits in Greater New Orleans Reported to the Louisiana Early Event Detection System (LEEDS) by Patient's Place of Residence during Calendar 2014 and 2015 (2 years)

Patient's Place of Residence	Behavioral Health ED Visits			
	Total*	Alcohol	Drug Use	Mental Health
<i>Percent of Visits</i>				
Orleans	43.4%	48.4%	42.4%	40.9%
Jefferson	33.9%	24.8%	37.7%	38.2%
St. Bernard	1.7%	1.4%	2.2%	1.6%
Plaquemines	1.4%	1.0%	1.7%	1.6%
St. Charles	3.7%	1.8%	4.1%	4.7%
Outside NOLA	10.6%	15.3%	9.0%	8.2%
blank zip code**	5.2%	6.9%	2.8%	4.7%
missing zip code	0.1%	0.3%	0.1%	0.0%
Total	100.0%	100.0%	100.0%	100.0%

*Since an individual patient may present with more than one syndrome (alcohol, drug use and/or mental health) the sum of the syndrome-specific visits will be greater than the total behavioral health visits.

**Due to a vendor coding error, patient zip codes beginning with "0" are recoded to "blank". Since it is possible that blank zip code data were originally received by LEEDS, it is not possible to determine to what extent blanks represent missing data or the coding error. This error effects the zip codes for New Jersey and the New England states.

Behavioral Health Emergency Department Visits in Greater New Orleans Reported to the Louisiana Early Event Detection System (LEEDS) by Patient's Gender, Calendar 2015

Patient's Gender	Behavioral Health ED Visits			
	Total*	Alcohol	Drug Use	Mental Health
<i>Percent of Visits</i>				
Female	43.3%	29.4%	37.9%	52.3%
Male	56.7%	70.5%	62.1%	47.7%
Total	100.0%	100.0%	100.0%	100.0%

*Since an individual patient may present with more than one syndrome (alcohol, drug use and/or mental health) the sum of the syndrome-specific visits will be greater than the total behavioral health visits.

**Gender is missing for two visits; these visits presented with an alcohol use syndrome.

percentage of all visits for the period (0.27% for any opiate use-related and 1.09% for heroin use-related) to estimate the annual percentage increase

**Behavioral Health Emergency Department Visits in Greater New Orleans
Reported to the Louisiana Early Event Detection System (LEEDS)
by Patient's Age Group, **Calendar 2015****

Patient's Age	Behavioral Health ED Visits			
	Total*	Alcohol	Drug Use	Mental Health
<i>Percent of Visits</i>				
Age 0-11	2.2%	1.2%	0.9%	3.1%
Age 12-17	6.7%	2.1%	2.8%	10.2%
Age 18-24	11.7%	10.7%	12.5%	11.8%
Age 25-34	21.5%	19.1%	28.9%	20.9%
Age 35-44	16.4%	16.0%	21.6%	15.6%
Age 45-54	18.9%	25.5%	17.5%	15.8%
Age 55-64	13.4%	18.7%	10.4%	11.2%
Age 65-115	9.2%	6.7%	5.4%	11.4%
Total	100.0%	100.0%	100.0%	100.0%

*Since an individual patient may present with more than one syndrome (alcohol, drug use and/or mental health) the sum of the syndrome-specific visits will be greater than the total behavioral health visits.