US ED Opioid-Related Visits Increase, While Use of Medication for Opioid Use Disorder Undetectable, 2011–2016

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BACKGROUND

Opioid use disorder (OUD) and the opioid epidemic have been declared a national emergency in the USA with nearly 400,000 deaths from 1999 to 2016.¹ Emergency Departments (EDs) often serve as the first point of contact for patients with OUD with ED visits for overdose increasing by over 30% from 2016 to 2017.² ED initiation of medication for opioid use disorder (MOUD), specifically buprenorphine, with linkage to outpatient follow-up, is known to increase engagement with outpatient addiction treatment and reduce self-reported illicit opioid use.^{2, 3}

However, trends in ED MOUD utilization since 2011 are unknown.⁴ Given the emergence of evidence supporting ED-initiated buprenorphine induction since 2015,^{2, 3} an updated examination is needed to better understand current practice patterns.

METHODS

We performed a retrospective analysis to describe trends in ED buprenorphine administration or prescription among opioid-related ED visits using the 2011–2016 National Hospital Ambulatory Medical Care Survey (NHAMCS) and opioid-related outpatient visits from National Ambulatory Medical Care Survey (NAMCS) as a comparator. We also examined trends in other MOUD (methadone and naltrexone).

We used previously validated ICD-9 or ICD-10 codes corresponding to primary diagnosis related to OUD⁵ to calculate opioid-related visits. We included visits resulting in discharge only in order to focus on ED administration or prescription with planned outpatient follow-up, as recommended by recent

studies. Buprenorphine use was identified using the variable “medications administered or prescribed.” All medication administrations were analyzed and medication administration frequencies were tabulated using the Multum nomenclature.

Unweighted and population-weighted frequencies for all opioid-related visits were calculated accounting for the survey-weighted design; visits by patients under age 18 and those resulting in hospital admission were excluded. US census data for each corresponding year was employed to compute visit rates per 100,000. Unweighted and weighted medication administration frequencies of MOUD were calculated. Descriptive statistics were generated and frequencies were tabulated using SAS University Edition [Version 9.4m5].

RESULTS

Opioid-related visit rates increased by 41.8% from 2011 to 2016, from 203.8 per 100,000 to 289 per 100,000 in 2016. Over the same time period, there were fewer than thirty recorded administrations of buprenorphine, methadone, or naltrexone across all years (Fig. 1a). Because population weights for events with unweighted frequencies below 30 are unreliable,⁶ we were unable to calculate weighted frequencies. In comparison, from NAMCS data, outpatient utilization of buprenorphine steadily increased from 2011 to 2016 in NAMCS, from 8,367,931 weighted administrations in 2011–2012 to 11,348,466 weighted administrations in 2015–2016, representing a 35% relative increase (Fig. 1b).

DISCUSSION

In this nationally representative sample of ED visits, utilization of all types of MOUD, including buprenorphine, has remained undetectable, with no appreciable increase in administration and prescription from 2011 to 2016 despite opioid-related visits steadily increasing by nearly 42% over the same time period. In contrast, outpatient utilization of buprenorphine has substantially increased with a 35% increase from 2011 to 2016. In light of the nationwide burden of OUD, our findings suggest an important

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Figure 1 a US opioid-related ED visits and BUP use, 2011–2016. b ED and outpatient BUP use, 2011–2016.

public health gap. The fact that buprenorphine utilization has increased in outpatient clinic settings, while ED utilization remains undetectable, is of particular concern because the ED serves as a safety net for vulnerable populations who may particularly benefit from MOUD. Further research investigating barriers to ED administration and prescription of MOUD from the ED—including barriers to the expansion of buprenorphine prescription waivers among ED clinicians, prescription buprenorphine coverage, and access to outpatient follow-up—are urgently needed.

Our study is limited by the administrative nature of the data, including potential inconsistencies in ICD-9 or ICD-10 diagnosis for opioid-related visits, and by changes in survey sampling approach between years, resulting in year-to-year variation in response rates and medication counts.

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Compliance with Ethical Standards:

Conflict of Interest: The authors declare that they do not have a conflict of interest.

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REFERENCES

1. Scholl L, Seth P, Karisa M, Wilson N, Baldwin G. Drug and Opioid-Involved Overdose Deaths – United States, 2013–2017. *WR Morb Mortal Wkly Rep*. 2018. Accessed February 3, 2019.
2. D'Onofrio G, McCormack RP, Hawk K. Emergency departments – a 24/7/365 option for combating the opioid crisis. *N Engl J Med*. 2018;379(26):2487–2490.
3. D'Onofrio G, O'Connor PG, Pantalon MV, et al. Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial. *JAMA*. 2015;313(16): 1636–44
4. Crane EH. Emergency Department Visits Involving Buprenorphine. The CBHSQ Report. Rockville: Substance Abuse and Mental Health Services Administration (US); 2013.
5. Moore BJ, Barrett ML. Case Study: Exploring How Opioid-Related Diagnosis Codes Translate From ICD-9-CM to ICD-10-CM. ONLINE. April 24, 2017. U.S. Agency for Healthcare Research and Quality. Available: https://www.hcupus.ahrq.gov/datainnovations/icd10_resources.jsp. Accessed 12 Nov 2018.
6. McCaig LF, Burt CW. Understanding and interpreting the National Hospital Ambulatory Medical Care Survey: key questions and answers. *Ann Emerg Med*. 2012;60(6):716–721.

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