Naloxone and Medication for Opioid Use Disorder (MOUD) in US Emergency Departments

Scott G. Weiner[1], Prateek B. Sharma[2], Craig Rothenberg[3], Sam Shahid[2], Megan Sambell[2], Pawan Goyal[2], Arjun Venkatesh[3], Kathryn Hawk[3]

[1]Brigham and Women's Hospital, Boston, MA; [2]American College of Emergency Physicians, Dallas, TX; [3]Yale University, New Haven, CT

Introduction

- Emergency departments (EDs) are important locations for treatment for opioid use disorder (OUD) and harm reduction.
- The American College of Emergency Physicians (ACEP) guidelines recommend that "emergency physicians offer to initiate opioid use disorder treatment with buprenorphine in appropriate patients and provide direct linkage to ongoing treatment for patients with untreated opioid use disorder".
- Additionally, naloxone is a fundamental harm reduction tool, and the ED is promising location for providing naloxone and naloxone distribution.
- The **goal of our study is to assess the current practices surrounding OUD in a large sample of EDs participating in a quality improvement initiative**.
- The secondary aim was to determine if there are patient- and department-level characteristics associated with the primary outcomes.

Methods

- Data were obtained from EDs that participate in the American College of Emergency Physicians' Emergency Quality Network (E-QUAL) substance use disorder program, a national practice-based quality improvement initiative.
- ED sites abstracted key data elements from a random sample of adult patient visits with diagnosis codes suggestive of opioid overdose (selected from ICD-10 T.40) or opioid use disorder (selected from ICD-10 F.11).
- Data were captured in March 2023 and October 2023.
- Only visits in which the patient was discharged from the ED were included.
- Collected data included a) demographics, b) if the ED visit was for opioid overdose, c) if naloxone was prescribed or dispensed, and d) if MOUD was administered or prescribed.
- Two multivariable analyses were performed:
  - to determine patient- and department-level characteristics associated with being prescribed or dispensed naloxone
  - to determine characteristics associated with being prescribed or dispensed MOUD. (patients documented as already being on MOUD were excluded).

Table 1: Multivariable analysis determining patient- and emergency department-level characteristics associated with provision (either prescription or dispensation) of naloxone after a visit for an opioid use disorder-related problem. n=6,749 visits.

Variable	Level	aOR	95% CI	p
age	15-17	**3.69**	**1.33-10.20**	**0.01**
	18-24	1.00	0.80-1.25	0.98
	25-49	ref		
	50-64	**0.83**	**0.69-1.00**	**0.05**
	65-97	**0.62**	**0.44-0.88**	**0.008**
sex	female	ref		
	male	**1.34**	**1.17-1.53**	**<0.001**
race	White	ref		
	Black	**1.49**	**1.21-1.82**	**0.0002**
	AIAN	2.67	0.77-0.26	0.12
	API	0.80	0.28-2.34	0.69
insurance	private/commercial	ref		
	Self-pay/uninsured	**1.33**	**1.06-1.67**	**0.0135**
	Medicaid	**1.63**	**1.34-2.00**	**<0.0001**
	Medicare	1.29	0.97-1.71	0.0755
visit for overdose	no	ref		
	yes	**6.09**	**5.28-7.02**	**<0.0001**
ED visit volume	0-20,000	ref		
	20,001-40,000	**1.27**	**1.08-1.50**	**0.0039**
	40,001-60,000	1.15	0.94-1.41	0.179
	60,001+	0.80	0.51-1.27	0.352
>20% non-English speakers	no	ref		
	yes	**0.66**	**0.55-0.80**	**<0.0001**
rural/CAH	no	ref		
	yes	**0.60**	**0.51-0.69**	**<0.0001**

Table 2: Multivariable analysis determining patient- and emergency department-level characteristics associated with provision of medication for opioid use disorder after a visit for an OUD-related problem, excluding patients already reported to take it. n=5,997 visits.

Variable	level	aOR	95% CI	p
age	15-17	0.87	0.10-7.45	0.9
	18-24	1.26	0.87-1.81	0.22
	25-49	ref		
	50-64	**0.48**	**0.32-0.72**	**0.0003**
	65-97	**0.23**	**0.11-0.50**	**0.0002**
sex	female	ref		
	male	**1.45**	**1.12-1.86**	**0.0043**
race	White	ref		
	Black	**0.60**	**0.39-0.93**	**0.022**
	AIAN	0.89	0.11-7.18	0.91
	API	1.23	0.14-10.5	0.85
insurance	private/commercial	ref		
	Self-pay/uninsured	0.78	0.50-1.21	0.26
	Medicaid	**1.46**	**1.02-2.09**	**0.036**
	Medicare	1.24	0.75-2.05	0.41
visit for overdose	no			
	yes	**8.15**	**5.88-11.29**	**<0.0001**
ED visit volume	0-20,000			
	20,001-40,000	**0.55**	**0.40-0.76**	**0.0003**
	40,001-60,000	**1.50**	**1.08-2.08**	**0.0159**
	60,001+	1.82	0.98-3.35	0.056
>20% non-English speakers	no	ref		
	yes	**0.68**	**0.49-0.95**	**0.022**
rural/CAH	no			
	yes	**0.49**	**0.37-0.66**	**<0.0001**

aOR = adjusted odds ratio; CI = confidence interval; ref = reference variable; AIAN = American Indian/Alaska Native; API = Asian or Pacific Islander; CAH = critical access hospital status.

Results

- There were **6,749 visits** reported from **300 unique EDs**.
- Most EDs saw <20,000 visits per year (n=139, 54.1%).
- Many EDs were rural or rural/critical access (n=134, 44.7%).
- Patient age: mean 41.1(SD 14.3) years.
- Most were male (60.7%, n=4,097).
- Race: 3,113 (46.1%) White, 785 (11.6%) Black.
- Ethnicity: 1,256 (18.6%) non-Hispanic, 81 (1.2%) Hispanic
- Insurance: 3,225 (47.8%) Medicaid, 1,306 (19.4%) self-pay, 1,146 (17.0%) Medicare, 985 (14.6%) private/commercial
- **Naloxone was either dispensed or prescribed in 1,874 (27.8%) of visits**.
- **MOUD was either administered in the ED or prescribed at discharge 438 times, 7.3% of potentially eligible visits**.

Conclusions

- OUD treatment in this large sample of US EDs was suboptimal
- Characteristics associated with receiving naloxone and MOUD included being male, being Black compared to White, and having Medicaid compared to private/commercial insurance.
- Naloxone and MOUD were more likely to be provided when the visit was for overdose
- EDs that saw larger proportions of patients who did not speak English, and those that are rural/critical access, may benefit from targeted interventions to improve access to these potentially life-saving treatments.

References:
1) Hawk, K., Hoppe, J., Ketcham, E., LaPietra, A., Moulin, A., Nelson, L., Schwarz, E., Shahid, S., Stader, D., Wilson, M. P., & D'Onofrio, G. (2021). Consensus Recommendations on the Treatment of Opioid Use Disorder in the Emergency Department. Annals of emergency medicine, 78(3), 434–442.
2) D'Onofrio, G., O'Connor, P. G., Pantalon, M. V., Chawarski, M. C., Busch, S. H., Owens, P. H., Bernstein, S. L.,& Fiellin, D. A. (2015). Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial. JAMA, 313(16), 1636–1644.
3) Bennett, A. S., & Elliott, L. (2021). Naloxone's role in the national opioid crisis-past struggles, current efforts, and future opportunities. Translational research : the journal of laboratory and clinical medicine, 234, 43–57.
4) Barnett, M. L., Meara, E., Lewinson, T., Hardy, B., Chyn, D., Onsando, M., Huskamp, H. A., Mehrotra, A., &Morden, N. E. (2023). Racial Inequality in Receipt of Medications for Opioid Use Disorder. The New England Journal of medicine, 388(19), 1779–1789.

Conflicts of Interest:
Dr. Weiner discloses that he serves as a consultant to Vertex Pharmaceuticals. Dr. Venkatesh discloses grants from ACEP, CMS, Elevance Foundation, FORE, NIDA.

This work was generously funded by Elevance Foundation and the Foundation for Opioid Response Efforts.