

Table 1
Comparison of the diagnosis of Syrian and Iraqi patients.

	Diagnosis	Iraqi	Syrian	p-Value
Adult ED	Upper respiratory tract infection	1610	198	0.003*
	Soft tissue injury	1093	160	0.8
	Abdominal pain	371	81	0.001*
	Forensic examination	297	28	0.01*
	Chest pain	271	30	0.1
Child ED	Upper respiratory tract infection	1887	285	0.01*
	Lower respiratory tract infection	223	28	0.1
	Fever	220	88	<0.0001*
	Abdominal pain	162	12	0.003*
	Acute gastroenteritis	153	33	0.1
Gynecology ED	Pregnancy	623	445	<0.0001*
	Pregnancy-related anemia	67	36	0.6
	Dysmenorrhea	52	28	0.6
	Hyperemesis	50	8	0.0001*
	Vaginal bleeding	43	28	0.7

* The result is significant at a p-value < 0.05.

A total of 12,572 refugees were admitted to the ED during the study period. Of these patients, 10,482 were Iraqi, and 2090 were Syrian.

The majority of the patients presented in winter months. The mean ages for Iraqi patients and Syrian patients were 21.8 and 20.9, respectively.

Of the Iraqi patients, 3595 (34.2%) were pediatric patients, 3447 (33%) were male and 3440 (32.8%) were female. The mean age of the 5852 patients admitted to adult ED was 31 and 41% were female. The most common complaint was URTI ($n = 1610$, 27.5%), followed by soft tissue injury ($n = 1093$, 18.6%).

Of the pediatric patients, the mean age was 5.6 years and 50.3% were female. The most common complaint was determined to be URTI ($n = 1887$, 52%), followed by fever ($n = 220$, 6%).

The mean age of the 1035 female patients was 26.7 years and the most common reason for admission was pregnancy.

Of the Syrian patients, 1074 (51.3%) were female, 411 (19.6%) were male and 609 (29.1%) were children. The mean age of 868 (41.5%) male adults admitted to our adult ED was 29.6 and 52.6% were female. The most common complaint was URTI in 198 (22%) patients, followed by soft tissue injury ($n = 160$, 18%).

Of those 605 (29%) patients admitted to pediatric ED, mean age was 3.9 years and 59.5% were female. The most common complaint was URTI ($n = 285$, 47%), followed by fever ($n = 88$, 14%).

Additionally, 617 (29.5%) female patients were admitted to the gynecologic ED and the mean age of the patients was 29.7. The most common reason for admission was pregnancy followed by anemia related to pregnancy ($n = 36$, 6%).

When the two subgroups were compared, it was determined that URTIs, abdominal pain and forensic examination were significantly higher in Iraqi patients. In child ED, URTIs, fever and abdominal pain were significantly higher in Iraqi children. Pregnancy and hyperemesis were also found to be significantly higher in Iraqi patients admitted to gynecologic ED. See the Table 1 for details.

Due to civil wars in Syria and Iraq, thousands of innocent people are injured or killed and millions are forced to flee to neighboring countries and to the European Union [5].

In a study, it was determined that the median age of Syrian refugee patients is 19. The most frequently visited clinic was the emergency clinic. In June, there were significantly more admissions compared with other months. The most common diagnoses were diseases of the respiratory system [4]. In our study, mean ages for Iraqi patients and Syrian patients were found to be 21.8 and 20.9, respectively and a higher admission incidence was determined in winter months due to higher incidence of URTIs in cold weather when younger people tend to spend their time in indoor spaces with close contact with other people.

Refugees generally live in crowded and unsanitary conditions, which may lead to the spread of respiratory, skin, gastrointestinal, and genital system infections [2].

This finding may also explain immune system weakening as a result of inadequate food intake.

Higher incidence of forensic examination in Iraqi patients is another remarkable finding in our study. Iraqi people have been living for a longer time in Turkey, so they probably participate in daily life more often. This fact may result in higher rates of conflicts and crimes.

Pregnant refugee women face many difficulties that increase the prevalence of antenatal complications. In a study, caesarean section, higher rate of anemia, a lower neonates' weight and APGAR scores in refugees were obtained when compared to their Jordanian counterparts [6]. In our study, we determined that the most common reason for gynecologic ED was pregnancy. Anemia related to pregnancy was also common which may predict iron insufficiency as a result of poor nutrition.

In conclusion, our study revealed that refugee patients contribute to overcrowding in EDs in Turkey. Preventive measures and treatment of these patients in appropriate facilities such as primary health units may reduce the number of ED applications.

Conflict of interests and funding

None to declare.

Tuba Sariaydin, MD
Ali Kemal Erenler, MD*
Mehmet Oğuzhan Ay, MD

Hitit University, School of Medicine, Department of Emergency Medicine,
Çorum, Turkey

*Corresponding author.

E-mail address: akerenler@hotmail.com (A.K. Erenler).

1 February 2018

<https://doi.org/10.1016/j.ajem.2018.03.035>

References

- Centers for Disease Control (CDC). Public health consequences of acute displacement of Iraqi citizens—March–May 1991. *MMWR Morb Mortal Wkly Rep* 1991;5:40(26): 443–7.
- Doganay M, Demiraslan H. Refugees of the Syrian civil war: impact on reemerging infections, health services, and biosecurity in Turkey. *Health Secur* 2016;14:220–5.
- Duzkoylu Y, Basceken SI, Kesilmez EC. Physical trauma among refugees: comparison between refugees and local population who were admitted to emergency department—experience of a state hospital in Syrian Border District. *J Environ Public Health* 2017;2017:8626275.
- Silbermann M, Daher M, Kebudi R, Nimri O, Al-Jadiry M, Baider L. Middle eastern conflicts: implications for refugee health in the European Union and middle eastern host countries. *J Glob Oncol* 2016;2:422–30.
- Mateen FJ, Carone M, Al-Saedy H, Nycs S, Ghosn J, Mutuerandu T, et al. Medical conditions among Iraqi refugees in Jordan: data from the United Nations Refugee Assistance Information System. *Bull World Health Organ* 2012;90:444–51.
- Demirci H, Yildirim Topak N, Ocakoglu G, Karakulak G, Gomeksiz M, Ustunyurt E, Ulku Turker A. Birth characteristics of Syrian refugees and Turkish citizens in Turkey in 2015. *Int J Gynaecol Obstet* 2017;137:63–6.

Emergency physician resistance to a take-home naloxone program led by community harm reductionists



1. Background

Although recent increases in opioid use do not appear to be predominantly driven by emergency physicians [1], emergency departments (EDs) play an important role in reducing opioid-related morbidity and

mortality [2-5]. One technique is to provide naloxone, an inverse agonist at the μ -opioid receptor used to reverse opioid overdoses, directly to opioid users. Naloxone use by peers has saved thousands of lives [6], largely through initiatives run by people who use drugs and their supporters.

EDs have practiced harm reduction through syringe exchange [7], opioid substitution therapy [8], and take-home naloxone [9], but none have become common. One study found that most emergency physicians supported harm reduction, identifying lack of knowledge, time, and institutional support as the main obstacles to implementation [10]. To overcome these barriers, we studied whether experienced, non-credentialed, community-based harm reductionists could initiate a take-home naloxone program in an ED which had no prior exposure to harm reduction.

2. Methods

This was a prospective observational cohort study conducted every day in a suburban university hospital for one month. The interventions were provided by two experienced harm reductionists from a local syringe exchange who were also medical students affiliated with the university. This study was approved by the Institutional Review Board of the University of California, Irvine.

All patients over 18 years old at risk of opioid overdose were eligible. Patients with opioid- or overdose-related chief complaints, chronic opioid use, multiple abscesses, injection sites, or who received naloxone prior to arrival were screened for inclusion. Those who declined to participate, were unable to consent, or whose treating physician was unwilling to prescribe naloxone were excluded.

Participants completed a brief survey, were educated in overdose response and naloxone usage by the harm reductionists, and prescribed naloxone by their treating physician to be filled after discharge. The total time required was approximately 15 minutes per participant. Participants were called approximately 3 months post-discharge to identify barriers to filling naloxone and whether it was used.

Table 1
Demographics and substance use history of study participants.

N	24
Age range	29–76
Sex	
Male	16 (67%)
Female	8 (33%)
Substances used	
Heroin	15 (63%)
Methamphetamine	10 (42%)
Methadone	11 (46%)
Buprenorphine	3 (13%)
Other opioids	8 (33%)
Route of use	
Injecting	16 (67%)
Smoking	10 (42%)
Muscling	9 (38%)
Oral	7 (29%)
Nasal	5 (21%)
Rectal	1 (4%)
Number of overdoses ^a	
0	14 (58%)
1–2	4 (17%)
3–4	2 (8%)
5+	2 (8%)
Number of witnessed overdoses ^a	
0	6 (25%)
1–5	7 (29%)
6–10	5 (21%)
11+	4 (17%)

^a Two participants did not report number of overdoses or number of witnessed overdoses.

3. Results

Participants ranged in age from 29 to 76 years. 67% were male. Most used heroin (15, 63%), but all regularly used at least two or more addictive substances, including prescription opioids. 8 participants (33%) had themselves overdosed and 16 (67%) had witnessed others overdose (Table 1).

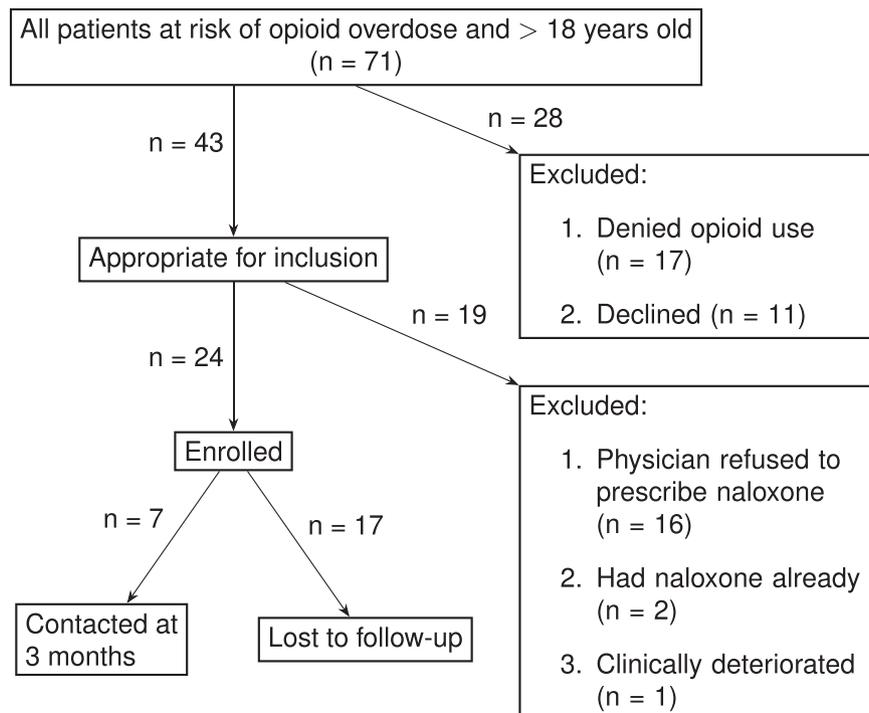


Fig. 1. Participant enrollment.

71 patients were identified as candidates. 17 (24%) denied a history of opioid use, 11 (15%) declined, and the remaining 43 were appropriate for inclusion. Of these, the treating physician refused to prescribe naloxone for 16 (37%), 2 (5%) already possessed naloxone, and 1 (2%) clinically deteriorated and was no longer able to participate. The remaining 24 (56%) were enrolled (Fig. 1).

At the 3 month follow-up, 7 (29%) participants were successfully contacted, of which 2 (29%) had chosen to fill their prescription. None reported obstacles to obtaining naloxone.

4. Limitations

Our sample size was small and larger studies would be necessary to generalize our results. The harm reductionist team had hospital privileges by virtue of being medical students and did not require funding, which may not be true elsewhere. Therefore, other programs may require further steps to incorporate harm reductionists into the ED. Larger studies may also be able to demonstrate the effectiveness of specific educational tools in the emergency setting and their translation to real-world overdose response.

5. Discussion

The greatest barrier to naloxone prescription in our study was physician resistance, despite the program being approved by the department chair and research director. This underscores the need to improve physician education about the efficacy of harm reduction. Our study implies that commonly stated objections (such as time constraints and inadequate staffing) may be only part of the cause for physician opposition to harm reduction interventions.

This study demonstrates that collaborations between an ED and community harm reductionists without formal credentials can result in delivery of meaningful overdose prevention education and naloxone to patients without compromising their care or ED throughput. As many departments lack the staff, funding, resources, and knowledge to develop a comprehensive harm reduction program, our approach offers a potential alternative. We encourage harm reduction programs with sufficient resources to consider reaching out to local hospitals to expand the scope of harm reduction services.

Although the majority of eligible patients received our educational intervention and a naloxone prescription, few filled that prescription. Due to internal pharmacy policies, we had been unable to provide take-home naloxone directly at discharge, and we believe this led to the low portion of participants ultimately obtaining naloxone. We recommend that future similar programs provide naloxone directly to participants, and attempt to understand factors causing emergency physician hesitance to prescribe naloxone.

Funding and conflicts of interest

None.

Kyle Barbour, MD candidate^{*,1}

Miriam McQuade, MD candidate¹

University of California, Irvine, Department of Emergency Medicine, 101 the City Drive, Route 128-01, Orange, CA 92868, United States
Orange County Needle Exchange Program (OCNEP), c/o the LGBT Center OC, 1605 N Spurgeon St, Santa Ana, CA 92701, United States

^{*}Corresponding author at: 101 The City Drive, Route 128-01, Department of Emergency Medicine, Orange, CA 92868, United States.

E-mail addresses: kyle.barbour@uci.edu (K. Barbour), mquadem@uci.edu (M. McQuade).

Shashank Somasundaram, BS
Bharath Chakravarthy, MD, MPH
University of California, Irvine, Department of Emergency Medicine, 101 the City Drive, Route 128-01, Orange, CA 92868, United States
E-mail addresses: ssomasun@uci.edu (S. Somasundaram), bachkrav@uci.edu (B. Chakravarthy).

14 March 2018

<https://doi.org/10.1016/j.ajem.2018.03.036>

References

- [1] Chen JH, Humphreys K, Shah NH, Lembke A. Distribution of opioids by different types of Medicare prescribers. *JAMA Intern Med* 2016;176:259–61. <https://doi.org/10.1001/jamainternmed.2015.6662>.
- [2] Rudd RA, Seth P, David F, et al. Increases in drug and opioid-involved overdose deaths – United States, 2010–2015. *MMWR Morb Mortal Wkly Rep* 2016;65:1445–52. <https://doi.org/10.15585/mmwr.mm65051e1>.
- [3] Barnett ML, Olenki AR, Jena AB. Opioid-prescribing patterns of emergency physicians and risk of long-term use. *N Engl J Med* 2017;376:663–73. <https://doi.org/10.1056/NEJMs1610524>.
- [4] Butler MM, Ancona RM, Beauchamp GA, et al. Emergency department prescription opioids as an initial exposure preceding addiction. *Ann Emerg Med* 2016;68:202–8. <https://doi.org/10.1016/j.annemergmed.2015.11.033>.
- [5] Cantrill SV, Brown MD, Carlisle RJ, et al. Clinical policy: critical issues in the prescribing of opioids for adult patients in the emergency department. *Ann Emerg Med* 2012;60:499–525. <https://doi.org/10.1016/j.annemergmed.2012.06.013>.
- [6] McDonald R, Strang J. Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria. *Addiction* 2016;111:1177–87. <https://doi.org/10.1111/add.13326>.
- [7] Masson CL, Sorensen JL, Perlman DC, et al. Hospital- versus community-based syringe exchange: a randomized controlled trial. *AIDS Educ Prev* 2007;19:97–110. <https://doi.org/10.1521/aeap.2007.19.2.97>.
- [8] D'Onofrio G, O'Connor PG, Pantaloni MV, et al. Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial. *JAMA* 2015;313:1636–44. <https://doi.org/10.1001/jama.2015.3474>.
- [9] Dwyer K, Walley AY, Langlois BK, et al. Opioid education and nasal naloxone rescue kits in the emergency department. *West J Emerg Med* 2015;16:381–4. <https://doi.org/10.5811/westjem.2015.2.2490>.
- [10] Samuels EA, Dwyer K, Mello MJ, et al. Emergency department-based opioid harm reduction: moving physicians from willing to doing. *Acad Emerg Med* 2016;23:455–65. <https://doi.org/10.1111/acem.12910>.

System-wide process changes improve procedural sedation billing in the pediatric emergency department



1. Introduction

Procedural sedation and analgesia is common in the emergency department (ED). Data from the Nationwide Emergency Department Sample found that at least 80 children are sedated in the ED every day across the United States, accounting for 0.1–1.5 sedation cases per 1000 visits [1,2]. Laceration repair, fracture reduction, and abscess incision and drainage are the top conditions requiring PSA in the ED [3]. PSA has been shown to be safe and effective in the hands of trained multidisciplinary practitioners in the ED [3,4].

PSA is complex, requiring close monitoring and the presence of a minimum of two providers [5–8]. Often the bedside nurse is responsible for monitoring physiologic parameters and assisting in any supportive or resuscitation measures. The PSA provider is responsible for the administration of medications and sedation oversight, while sometimes performing the procedure as well. The PSA provider must have sedation knowledge, ability to provide rescue techniques, apply monitoring described in guidelines such as those by the American Academy of Pediatrics, and manage complications for a level deeper than the intended sedation state [8].

¹ Both authors contributed equally to this work.