

Do Children's Hospitals Present Opportunities for Appropriate Opioid Disposal?

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Introduction

- The opioid epidemic is an ongoing serious medical and societal issue in the United States
- Orthopaedic surgeons rank fourth among the top prescribers of opioid medications (Volkow, JAMA 2011)
- 12.9% of high-school seniors report non-medical use of prescription opioids (McCabe, Ach. Ped. Adolesc. Med 2012)
- Of high-schoolers using opioids recreationally, 80% report obtaining them from a previously legitimate prescription
- Among patients undergoing surgery for adolescent idiopathic scoliosis, 67% planned to dispose of opioids postoperatively, while 33% planned to keep the medications for future use (Grant, JBJS 2016)

Purpose

This investigation sought to identify whether public controlled substance disposal opportunities exist at or near major pediatric hospitals

Methods

- A database of major pediatric hospitals was established using the following criteria:
 - POSNA-Accredited Fellowship training program
 - American College of Surgeons designated Pediatric Level I or II trauma center
- The presence of a controlled-substance public disposal at each hospital was assessed using the US Drug Enforcement Administration's Diversion Control Website
 - Website was recommended as a patient resource by the POSNA Advocacy Committee (Raney et al, JPO 2018)



The image shows a screenshot of the U.S. Department of Justice Drug Enforcement Administration Diversion Control Division website. The header features the department's logo and the text "U.S. DEPARTMENT OF JUSTICE ★ DRUG ENFORCEMENT ADMINISTRATION" and "DIVERSION CONTROL DIVISION". Below the header is a search utility titled "Controlled Substance Public Disposal Locations - Search Utility". The search form includes a "Zip Code:" label with a text input field, a "-Or-" separator, and a "City:" label with a text input field.

<https://www.deadiversion.usdoj.gov/pubdispsearch>

Methods (Cont.)

- Pediatric opioid overdose death rates were ascertained using the CDC WONDER database
- Data Assessed for each children's hospital:
 - Presence of controlled substance disposal location on hospital campus
 - Distance to nearest public disposal location
 - Number of disposal locations within 10 miles
 - Rate of pediatric opioid overdose deaths in each hospital's respective County and State (deaths/100,000)

<https://wonder.cdc.gov/>

Results

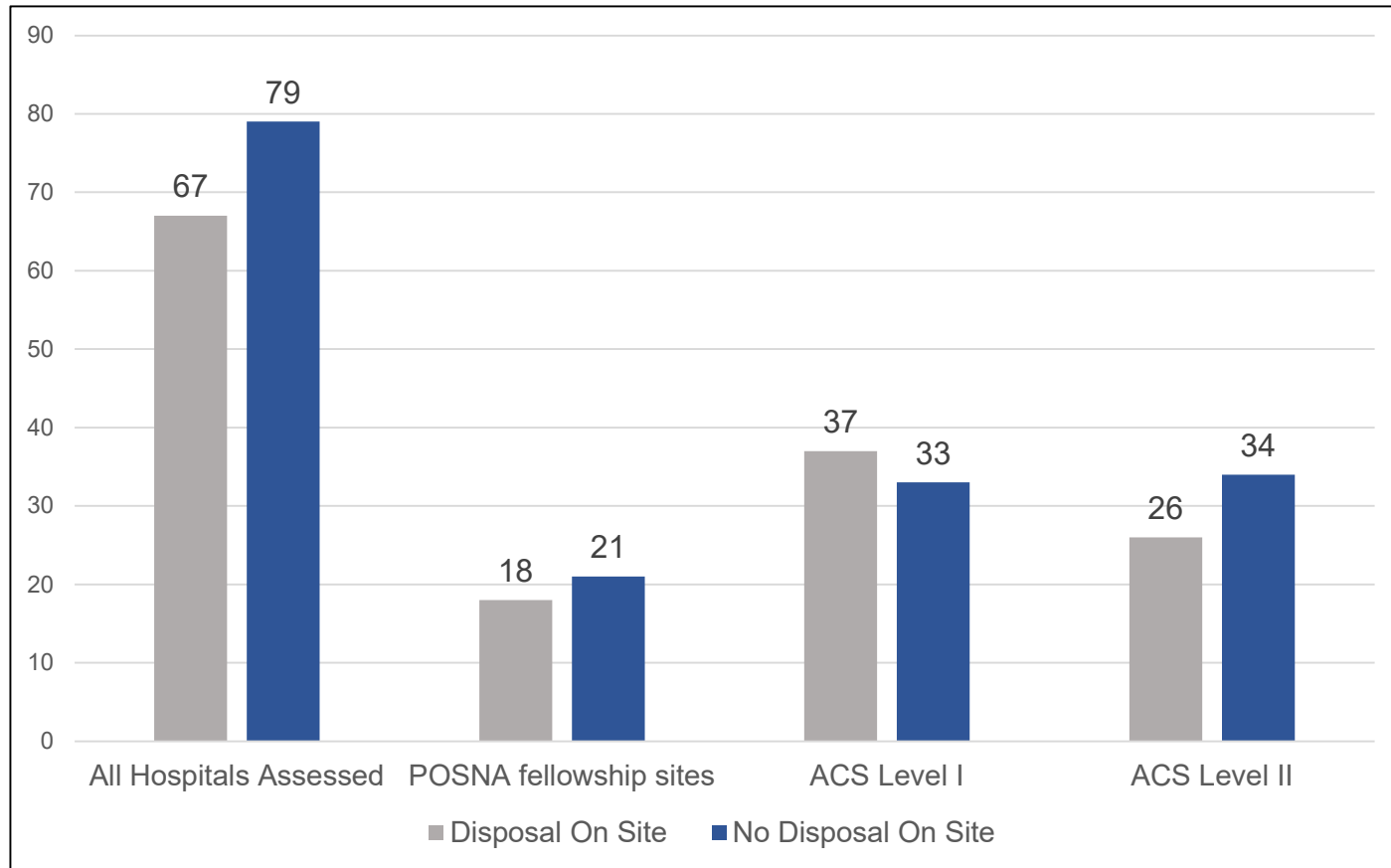


Figure 1. Breakdown of major pediatric hospitals by the presence or absence of on-site controlled substance public disposal (CSPD) location

On-site controlled substance disposal is offered in 45.8% of all children's hospitals, 46.1% of POSNA fellowship sites, 52.8% of ACS level I, and 43% of ACS level II pediatric trauma centers

Results

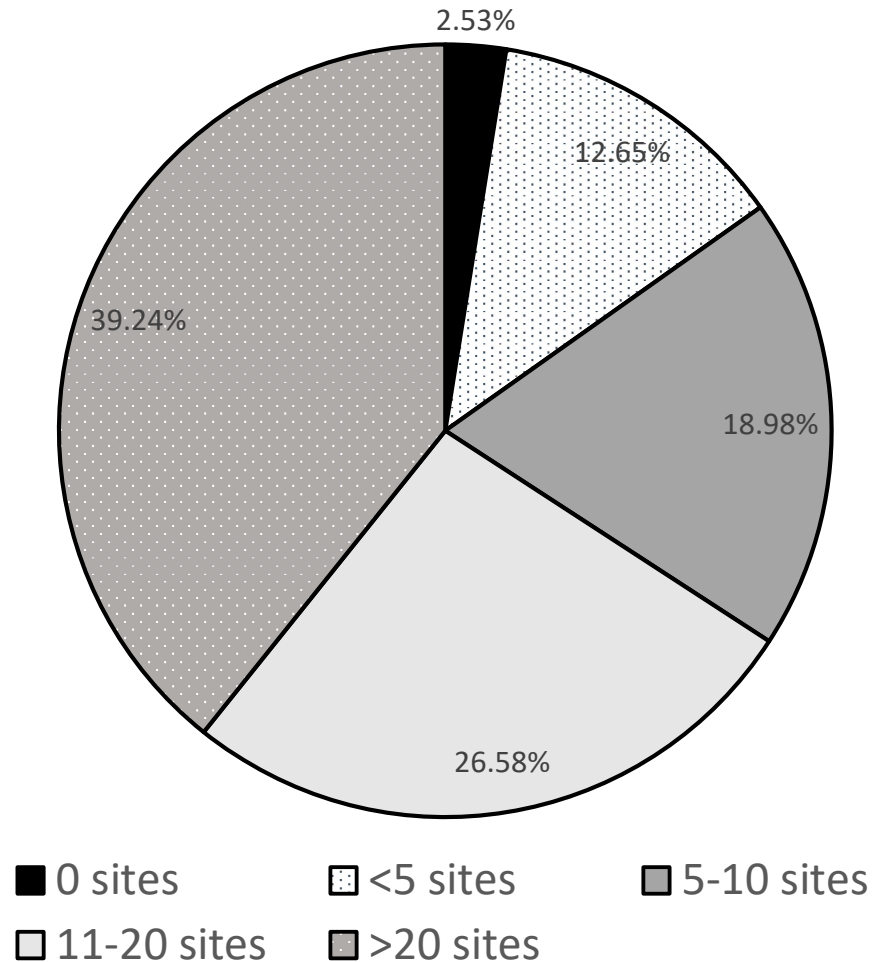


Figure 2. Number of CSDP sites within ten miles of children's hospitals that do not offer on-site CSDP

Hospitals that do not offer on-site CSDP have an average of 24 off-site CSDP locations within 10 miles. The mean distance to the closest off-site CSDP location is 2.3 miles away.

Results

Hospital Type	Disposal On Site	No Disposal On Site	Total	P value
All Hospitals Assessed	67	79	146	
POSNA fellowship sites	18	21	39	
ACS Level I	37	33	70	
ACS Level II	26	34	60	
Distance to closest site (Miles)	0	2.3		
Number of sites within 10 miles	24.7	23.3		0.71
Rate of Opioid Deaths in hospital's County (per 100,000 people)	0.71	0.66		0.52
Rate of Opioid Deaths in hospital's State (per 100,000 people)	0.59	0.54		0.12

Table 3. Children’s hospital distance to nearby CSPD sites and rate of pediatric opioid overdose deaths

There is no correlation between the number of CSPD sites within ten miles and a children’s hospital’s County or State pediatric opioid mortality rate (p=0.59 & 0.07). The County and State opioid overdose rate is not significantly higher in pediatric hospitals without an on-site CSPD location (p=0.85 & 0.63)

Conclusion

Less than 50% of major US children's hospitals offer on-site public opioid disposal

Offering pediatric patients and families the opportunity to dispose of excess opioid medications at their children's hospital is a prime opportunity to prevent drug diversion