In-Hospital Illicit Drug Use and Patient-Directed Discharge: Barriers to Care for Patients With Injection-Related Infections

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Background. Hospitalized persons who inject drugs are at a greater risk of adverse hospital outcomes including discharge against medical advice, inpatient illicit drug use, overdose, and death. However, there are limited data on the frequency and outcomes of these events in the United States.

Methods. This retrospective analysis included patients with injection-related infections receiving a protocol for injection drug use (IDU) at University of Alabama at Birmingham Hospital from 2016 to 2017. In-hospital IDU was suspected or reported drug usage plus confirmatory drug screen, and documented discharges "against medical advice" were deemed patient-directed discharges (PDD). We analyzed the frequency of and associations between in-hospital IDU, PDD, 30-day readmission, and deaths (between 2016 and 2019) using McNemar's tests. Logistic regression models evaluated the association between PDD, in-hospital IDU, readmission, and death.

Results. Overall, 83 patients met inclusion criteria: 28 (34%) with in-hospital IDU, 12 (14%) PDD, 9 (11%) died, and 12 (14%) 30-day readmission. In-hospital IDU was significantly associated with PDD ($P = .003$), 30-day readmission ($P = .005$), and death ($P = .0003$). Patient-directed discharges and 30-day readmission were not significantly associated with death nor with each other.

Conclusions. In a cohort of patients receiving inpatient care for injection-related infections, illicit drug use, PDD, 30-day readmissions, and death were common. Furthermore, patients who use illicit drugs while hospitalized are significantly more likely to leave early, be readmitted, and/or die. We must design models of care that prevent adverse outcomes, including drug use and PDD, to reduce barriers to evidence-based treatment of infections.

Keywords. AMA; hepatitis C; in-hospital drug use; IVDU; OUD.

For persons who inject drugs (PWID), hospitalization is described as a "reachable" moment, a time when they have access to medical care and addiction services [1]. However, as many as 30% of PWID leave the hospital prematurely, against medical advice (AMA) [2]. Because "AMA discharge" is not a patient-centered term and can further stigmatize PWID, we prefer "patient-directed discharge" (PDD). Most persons who leave in this context have incomplete documentation, incomplete referrals including outpatient parenteral antibiotic therapy (OPAT), and incomplete or no prescriptions sent to a pharmacy. Not only does this abbreviate inpatient care, such as antibiotics, but PDD precludes linkage to outpatient services for substance use disorder and is associated with hospital readmissions and mortality [3, 4]. In one Canadian study of all hospitalized persons with PDD, there was a 3-fold higher risk of death in the following year relative to patients who did not leave early but were matched by age, gender, and hospital admission diagnoses [3]. There was a statistically larger percentage of PWID in the cohort leaving PDD (54%) relative to those who did not (23%, $P < .001$). In addition to PDD, hospitalized PWID are at greater risk of inpatient illicit drug use, overdose, and death [5]. Although drug use and PDD may be amenable to hospital-based interventions, there are limited data on the frequency and relationship between these events in the United States in the context of the opioid epidemic.

For many PWID, the hospital serves as a "risk environment" [6]. Factors outside of a patient's control (ie, stigma, management of withdrawal) interact to exacerbate or improve care [7]. In a study of patients with substance use disorder, Simon et al [8] explored reasons for PDD from the patient perspective. Negative interactions with staff, untreated withdrawal and

pain, and restrictive hospital policies were commonly cited reasons that participants leave the hospital setting prematurely. However, for PWID with serious infections, Addiction Medicine (AM) consultation may be protective. One study demonstrated that AM consultation was associated with a lower likelihood of PDD and a greater likelihood of completing antimicrobial therapy [9].

We previously reported on the University of Alabama at Birmingham (UAB) Hospital protocol for PWID with acute bacterial infections, which included a 9-item risk score to identify those at greatest risk for continued injection drug usage (Supplemental Table). In 2016, the UAB Hospital developed the Intravenous Antibiotic and Addiction Team (IVAT) team, a hospital-based protocol for PWID with acute bacterial infections [10]. The IVAT is an interdisciplinary team including AM and Infectious Diseases (ID) clinicians that was initially designed to provide guidance on the safety of OPAT in PWID for infections such as endocarditis and osteomyelitis, which require intravenous antibiotics for weeks or more [10]. Patients receive IVAT when they have a documented or a suspected history of injection drug use (IDU) and an injection-related infection. Physicians request IVAT consultation for patients who disclose IDU, have documentation of IDU, or display visible signs or symptoms of injection-related infection. In this scenario, the physician orders an electronic IVAT consultation, which triggers both AM and ID consultations. Substance use disorders are diagnosed by the AM consultation team based on patient self-report and history. In cases of opioid use disorders (OUD), our AM providers prescribe medications for OUD (MOUD), which is associated with reduction in illicit opioid use, overdose, death, and retention in treatment [11, 12]. Furthermore, MOUD reduces hepatitis C virus (HCV) and human immunodeficiency virus (HIV) acquisition, improves adherence to treatment for viral infections, and supports HIV suppression [13, 14]. Addiction Medicine consultants may request consultation from the pain management team when indicated. All patients admitted to UAB receive universal HIV and HCV screening.

Patients who are receiving community-based MOUD are continued on this treatment. Because the standard of care at UAB hospital is for ID physicians to write intravenous antibiotic prescriptions at discharge, it is unlikely for patients to be discharged to OPAT without seeing an ID consultant.

The IVAT interdisciplinary team relies on a 9-item risk assessment [10], conducted by AM staff, to classify risk for continued IDU and inform discharge planning. Only those deemed "low risk" as defined by a score of 0–3 are discharged on OPAT. Others are treated in the hospital for the duration of their antibiotic therapy. This scoring system was developed using the expert opinion of our AM faculty to identify "low risk" patients: those unlikely to experience continued drug use on discharge (Supplemental Table). The 9-item risk assessment has not been validated. We have previously described our findings that the IVAT intervention, including the risk score, reduced length of stay by approximately 20 days and hospital costs by 33% [10].

The objective of this study is to evaluate the frequency of and associations between PDD, drug use, readmissions, and death among PWID at UAB. Based on our observations caring for PWID, we hypothesized that in-hospital drug use and PDD would be frequent and contribute to readmissions and mortality. In the secondary analysis, we hypothesized that the 9-item risk score would be associated with adverse hospital outcomes.

METHODS

In this retrospective analysis, we included persons receiving the IVAT intervention at UAB from October 2016 to December 2017. Because the IVAT intervention must be initiated by providers, it is possible that patients with undiagnosed injection drug usage were excluded. Only the first hospitalization during the study period was included in this analysis. Psychiatric diagnoses were defined as a Diagnostic and Statistical Manual of Mental Disorders (*DSM-5)*-specified psychiatric disorder documented by *International Classification of Diseases, Tenth Revision* (ICD-10) code during the hospital period. Hepatitis C virus was identified as patients with a positive HCV antibody on universal screening followed by a confirmatory test, the presence of HCV ribonucleic acid. Patient-directed discharge was defined as a patient leaving the hospital before completion of discharge orders and was obtained from discharge documentation. In-hospital drug use was defined as suspected or reported illicit drug usage (syringes found at bedside, altered mental status, overdose) plus a urine drug screen (UDS) with presence of substances other than what was prescribed including opioid and nonopioid drugs of abuse. For example, if patients were prescribed oxycodone, and the opiate test and oxycodone tests were positive, this was not considered in-hospital illicit drug use due to potential cross-reactivity. The UDS was performed with a qualitative point-of-care immunoassay test, which was ordered in cases of clinical suspicion for substance use. Medications for OUD use was defined as prescription for a US Food and Drug Administration-approved treatment for OUD including buprenorphine, methadone, or extended-release naltrexone at any point during the hospitalization (not for pain control). Readmissions included any readmission within 30-days to a UAB hospital for any reason. Patient-directed discharge, illicit drug use, readmissions, and death were obtained via chart review.

Data on deaths from any cause were obtained from the electronic medical record and death records from the Jefferson County Coroner Medical Examiner's Office, the county in which most of the Birmingham metro area resides, from October 2016 to December 2019. This includes inpatient deaths captured in the electronic medical record and deaths in the community evaluated by the Medical Examiner's office. This

date was selected to include any deaths that occurred from the study start until December 2019.

In the primary analysis, we analyzed the frequency and associations between PDD, in-hospital IDU, 30-day readmission, and death using McNemar's tests. In the secondary analysis, we used univariate and multivariate logistic regression models to explore association with these outcomes. We focused on only 5 factors in the multivariate models due to the overall small sample size, and the specific factors were selected based on univariate results and our clinical observations as members of the IVAT team. Odds ratios (ORs) and associated 95% confidence intervals (CIs) are reported. All analyses were completed using SAS, version 9.4 (SAS Institute Inc., Cary, NC). The study was approved by UAB Institutional Review Board.

RESULTS

Primary Analysis

Overall, 83 hospitalized patients were referred for the IVAT intervention over the study period (Table 1). The median age was 36 years, 47 (57%) were male, 78 (94%) were white, 46 (55%) were uninsured, 68 (82%) reported illicit opioid use before admission, and 33 (48%) of these 68 were prescribed MOUD during admission, 28 (34%) reported methamphetamine use, and 27 (33%) reported polysubstance use (Table 1). There were 28 (34%) with in-hospital IDU, 12 (14%) had PDD, 9 (11%) died, and 12 (14%) experienced a 30-day readmission.

Of those receiving MOUD, most (76%) received buprenorphine and naloxone, 17% received methadone, and 7% received naltrexone. The most common indication for admission in IVAT recipients is infective endocarditis (38%), vertebral osteomyelitis/epidural abscess (13%), osteomyelitis/septic arthritis (21%), bloodstream infection (4%), and skin and soft-tissue infection (12%) [10]. Comorbidities included 61 (73%) had hepatitis C, 3 (4%) had HIV, 40 (48%) had a psychiatric diagnosis, and 10 (12%) had a history of endocarditis (data not shown). Of the 28 with in-hospital IDU, UDS results were as follows: 21 with opioids (75%), 14 with stimulants (50%), 4 with cannabis (14%), 9 with benzodiazepines (32%), and 18 with multiple illicit drugs present (64%). Of these patients, 11 (39%) had evidence of buprenorphine on UDS and 2 (7%) had methadone.

Of the 9 deaths that occurred over the study period, 6 occurred in a hospital: 4 at UAB and 2 at community hospitals. Of the 4 UAB hospital deaths, 2 were during the sentinel admission and 2 were during readmissions. A total of 5 were referred for autopsy, none of whom had detectable levels of buprenorphine on autopsy testing, meaning they were either not prescribed or not taking it. Of those referred for autopsy, the causes of death included the following: 4 opioid toxicity (3 of 4 with fentanyl, occurring after discharge) and 1 trauma (pedestrian hit by motor vehicle).

Using McNemar's test, we found that in-hospital IDU was significantly associated with PDD ($P = .003$), 30-day

Table 1.   Summary of Hospitalized Persons Who Inject Drugs Receiving Care for Injection-Related Infections at an Academic Teaching Hospital, 2016–2017

Characteristics	Overall N (%)	In-Hospital Illicit Drug Use N (%)		PDD Discharge N (%)		30-Day Readmission N (%)		Death N (%)	
		No	Yes	No	Yes	No	Yes	No	Yes
Age (median, years)	36.3	37.1	34.7	36.3	33.6	36.3	37.7	36.2	37.3
Gender									
Male	47 (57)	33 (60)	14 (50)	44 (62)	3 (25)	41 (58)	6 (50)	40 (54)	7 (78)
Female	36 (43)	22 (40)	14 (50)	27 (38)	9 (75)	30 (42)	6 (50)	34 (46)	2 (22)
Race									
White	78 (94)	50 (91)	28 (100)	67 (94)	11 (92)	67 (94)	11 (92)	69 (93)	9 (100)
Black	3 (4)	3 (5)	0 (0)	2 (3)	1 (8)	2 (3)	1 (8)	3 (4)	0 (0)
Other	2 (2)	2 (4)	0 (0)	2 (3)	0 (0)	2 (3)	0 (0)	2 (3)	0 (0)
Insurance									
Public	26 (31)	20 (36)	6 (21)	23 (32)	3 (25)	22 (31)	4 (33)	22 (30)	4 (44)
Private	11 (13)	9 (16)	2 (7)	10 (14)	1 (8)	10 (14)	1 (8)	9 (12)	2 (22)
Uninsured	46 (55)	26 (47)	20 (71)	38 (54)	8 (67)	39 (55)	7 (58)	43 (58)	3 (33)
Opioid Use	68 (82)	43 (78)	25 (89)	58 (82)	10 (83)	58 (82)	10 (83)	60 (81)	8 (89)
Methamphetamine use	28 (34)	18 (33)	10 (36)	21 (30)	7 (59)	26 (37)	2 (17)	26 (35)	2 (22)
Polysubstance	27 (33)	16 (29)	11 (39)	20 (28)	7 (58)	25 (35)	2 (17)	25 (34)	2 (22)
Psychiatric Diagnosis	40 (48)	30 (55)	10 (36)	31 (44)	9 (75)	34 (48)	6 (50)	39 (53)	1 (11)
Inpatient MOUD	33 (40)	15 (27)	18 (64)	27 (38)	6 (50)	29 (41)	4 (33)	31 (42)	2 (22)
9-Item Risk Assessment									
High	40 (48)	21 (38)	19 (68)	30 (42)	10 (83)	36 (51)	4 (33)	35 (47)	5 (56)
Low	43 (52)	34 (62)	9 (32)	41 (58)	2 (17)	35 (49)	8 (67)	39 (53)	4 (44)

Abbreviations: MOUD, medications for opioid use disorder; PDD, patient-directed discharge.

Table 2. Odds of Adverse Hospital Events for Persons Who Inject Drugs

Characteristics	Univariate Model Odds Ratio (95% CI)	P Value	Multivariable Model Odds Ratio (95% CI)	P Value
In-Hospital Illicit Drug Use				
Gender				
Female	1.50 (0.60–3.75)	.39	1.84 (0.53–6.32)	.33
Male[a]	–		–	
Opioid Use				
Yes	2.33 (0.60–9.04)	.22	0.81 (0.15–4.28)	.81
No[a]	–		–	
MOUD				
Yes	4.80 (1.81–12.72)	**<.01**	**3.50 (1.11–11.07)**	**.03**
No[a]	–		–	
Psychiatric Diagnosis				
Yes	0.46 (0.18–1.18)	.11	**0.26 (0.07–0.97)**	**.04**
No[a]	–		–	
9-Item Risk Assessment				
High (5–9)	**3.42 (1.31–8.94)**	**.01**	**3.23 (1.01–10.35)**	**.04**
Low (1–4)[a]	–		–	
Length of stay[b]	1.10 (0.93–1.29)	.27	1.05 (0.87–1.27)	.58
Patient-Directed Discharge				
Gender				
Female	**4.89 (1.22–19.65)**	**.03**	3.31 (0.64–17.19)	.15
Male[a]	–		–	
Opioid Use				
Yes	1.12 (0.22–5.74)	.89	1.51 (0.17–13.13)	.71
No[a]	–		–	
MOUD				
Yes	1.63 (0.48–5.57)	.44	0.83 (0.16–4.31)	.82
No	–		–	
Psychiatric Diagnosis				
Yes	3.87 (0.97–15.51)	.06	2.88 (0.53–15.69)	.22
No[a]	–		–	
9-Item Risk Assessment				
High (5–9)	**6.83 (1.39–33.49)**	**.02**	**7.56 (1.20–47.49)**	**.03**
Low (1–4)[a]	–		–	
Length of stay[b]	0.84 (0.63–1.12)	.23	0.71 (0.47–1.05)	.09

Bold text denotes statistical significance for a P value < .05.

Abbreviations: CI, confidence interval; MOUD, medications for opioid use disorder.

[a]Reference.

[b]Odds ratio for length of stay represents outcome associated with each week of inpatient care. Multivariable models include gender, opioid use, psychiatric diagnosis, and 9-item risk assessment.

readmission (P = .005), and death (P = .0003). Patient-directed discharge and 30-day readmission were not significantly associated with death nor with each other (data not shown). In univariate analysis, we found that receiving MOUD at any point during the admission was significantly associated with in-hospital illicit drug use (OR = 4.8, P < .01) (Table 2). Cravings are a part of the 9-item risk assessment (Supplemental Table) and were present in 28 of 83 (34%) of patients. Cravings were significantly associated with in-hospital drug use (OR = 4.99; 95% CI, 1.87–13.32; P = .0013) (data not shown). Also in univariate models, female gender was significantly associated with PDD (OR = 4.89, P = .03).

Secondary Analysis

Finally, we explored the association of the 9-item risk score and found that a score of 5 or greater was significantly associated with both in-hospital illicit drug use and PDD with an OR of 3.4 and 6.8, respectively. For this reason, we categorized those with a score of 5 or more as "high risk" for the purpose of this secondary analysis evaluating the association of the risk score with adverse hospital outcomes. [Note: This is in contrast to our prior analysis using the 9-item risk score to determine discharge disposition in which a score of less than or equal to 3 was used to determine which patients could be discharged with OPAT based on AM physician expert opinion [10].]

In multivariable models, we found that the 9-item risk is significantly associated with both IDU and PDD when controlling for gender, opioid use, MOUD, psychiatric diagnosis, 9-item risk, and length of stay (Table 2). Furthermore, presence of a comorbid psychiatric diagnosis was associated with in-hospital illicit drug use. Receiving MOUD at any time during the hospital period was associated with in-hospital illicit drug use (adjusted aOR [aOR] = 3.50, P = .03) but was not associated with PDD (aOR = 0.83, P = .82). Using the same variables to model 30-day readmissions, only length of stay was significant: there was a significant reduction in 30-day readmissions for every 7 days increase in length of stay (OR = 0.58, P = .03; data not shown). Because there were only 9 deaths, we did not fit models for this outcome.

DISCUSSION

As ID physicians, we have an essential role in identifying and mitigating hospital risks for PWID [6]. Our findings confirm that hospitalized PWID are highly vulnerable due to a lack of insurance, psychiatric disorders, use of multiple substances, including methamphetamines, and high mortality. Our results support our hypothesis: understudied hospital outcomes for PWID including drug use while hospitalized, PDD, readmissions, and death are surprisingly frequent. Furthermore, these adverse outcomes are strongly linked: illicit drug use in the hospital is associated with PDD, hospital readmission, and death. The implications of suboptimal hospital care due to substance use and PDD are greater in states like Alabama where hospitals are the only safety net for uninsured residents without Medicaid expansion. Because 55% of patients in our study were uninsured, a majority have limited access to primary care, ID, and AM services. Thus, preventing adverse hospital outcomes that truncate hospital care delivery may be lifesaving in PWID with bacterial infections in these regions.

More than one third of our patients were identified as using illicit drugs during admission. This is similar to results by Fanucchi et al [5] who report that approximately 40% of hospitalized PWID (requiring intravenous antibiotics) use drugs during admission. We are unaware of additional literature in the United States describing in-hospital illicit drug use perhaps due to the difficulties in identifying this behavior, which is concealed due to stigma and criminalization [15]. A Canadian study suggests that more than 40% of persons who use drugs reporting ever using drugs while hospitalized [16]. Our findings suggest that in-hospital drug use is strongly associated with PDD, readmissions, and death; however, this topic needs further study in the context of the US drug use epidemic. Nonetheless, because of the harm associated with illicit drug use, it is imperative that health systems begin to implement patient-centered ways to prevent illicit drug usage including the use of MOUD, management of withdrawal, pain, and other triggers for

substance use [17]. We recommend that ID providers inquire about illicit drug use in a nonjudgmental manner and ensure rapid AM consultation, MOUD, and supportive services (eg, peer recovery support) to promote retention in infection treatment [9]. Due to the painful nature and surgeries indicated for injection-related injections, pain should be anticipated and managed aggressively. Uncontrolled pain is a trigger for drug use and potentially leads to PDD [2, 18]. It is worth noting that hospitalized patients report using illicit drugs to manage pain and withdrawal because these symptoms, when untreated, interfere with their medical treatment [6].

The number of patients leaving via PDD (14%) in our population of hospitalized PWID was lower than expected. This is lower than the 20% rate of PDD observed in the overall population of PWID receiving care at UAB through 2018 [19]. Patient-directed discharge in other cohorts of PWID with acute infections varies from 12% to more than 30% [5, 9]. For uninsured PWID, there may be little or no community-based ID and/or primary care access. When a PWID leaves via PDD with a partially treated bacterial infection in a rural state like Alabama, they often face insurmountable barriers to healthcare. In this context, we anticipated that PDD would be associated with readmissions and death, which was not the case. However, it is possible that our small sample size and short follow-up time did not allow us to detect this association. Regardless, leaving via PDD has been associated with poor health outcomes, including as much as a 12-fold increase in 30-day readmissions and a 2-fold increase in deaths [3, 20, 21].

Recent data from Simon et al [8] describe common reasons that PWID leave hospitals via PDD: poorly managed withdrawal, cravings, and/or pain, stigma, and discrimination, and restrictive hospital policies. Hospitals must develop patient-centered interventions to respond to these obstacles and retain patients with severe life-threatening bacterial infections. Creating a safe and healing environment will require prompt evidence-based treatment of withdrawal, pain, mental health comorbidities, and eradication of stigma, especially stigma directed to PWID from providers and staff [15]. Although there are limited data on in-hospital illicit drug use, there are data that AM consultation reduces PDD in PWID. To prevent withdrawal and cravings that may trigger PDD, patients with OUD should receive MOUD. Many patients in our cohort report using multiple drugs, including methamphetamine, for which there is no effective pharmacotherapy. Thus, physicians and staff should work with patients to identify an approach that reduces cravings, withdrawal, and other triggers for substance use. Finally, eradication of stigma from hospital staff is essential to promote healing and reduce PDD [6, 18].

Our findings suggest that this 9-item risk may identify patients at greatest risk for specific adverse hospital outcomes, but the limited study size and single Southeastern site limit the generalizability of results. Because the study inclusion required

documented or suspected IDU, we likely did not capture all patients with a history of drug usage. Thus, results may represent patients with more severe substance use disorder and/or infections. Furthermore, because MOUD was not received by all patients with OUD in this real-world study, it is possible that MOUD was prescribed preferentially for those with the most severe OUD. The results may not be applicable to other hospitals where access to AM and/or ID providers is limited [22]. Our results likely minimize the magnitude of adverse events because readmissions occurring outside of our health system and deaths in the community not reported to county coroners were not captured. Likewise, the use of illicit drugs during hospitalization is difficult to detect as part of routine care given the criminal nature and stigma associated with this activity. The UDS immunoassay that our health system utilizes measures hydromorphone, codeine, hydrocodone, methadone, heroin, oxycodone, and morphine; however, it does not detect fentanyl. Therefore, this study does not capture fentanyl use in the hospital.

It is noteworthy that receiving MOUD at any time during the admission was associated with in-hospital illicit drug use, but we urge caution in interpreting this finding. Due to the observational nature, there was no standardization in time to MOUD initiation, MOUD selection (buprenorphine vs naltrexone vs methadone), or dose. The UDS tests were not collected in standard intervals but instead were often collected reflexively based on patient behaviors (eg, syringes at bedside, intoxication). It is possible that in-hospital drug use was underdiagnosed because patients may have refused UDS or left via PDD. It is also challenging to understand whether MOUD preceded in-hospital illicit drug use or whether MOUD was initiated in response to illicit drug use. We believe there are 3 explanations for the association between MOUD and illicit drug use in the hospital: (1) stimulant, benzodiazepine, and polysubstance use that is not amenable to MOUD; (2) limited MOUD uptake and adherence; and (3) MOUD as a marker of severity of OUD. As noted in the results, a large percentage used stimulants (50%), cannabis (14%), and benzodiazepines (32%) in the hospital, which are not treated by MOUD. Thus, one would not expect these behaviors to respond to MOUD. It is notable that these substance-use behaviors in the hospital are similar to findings by Fanucchi et al [5] (41% stimulants, 35% benzodiazepines). We also found that few patients had MOUD detected on UDS, which suggests that either MOUD had not been initiated, treatment was interrupted, or patients were not taking the medication as prescribed. This is consistent with our findings in a prior evaluation of MOUD uptake among IVAT recipients: patient disinterest, failure to receive AM consultation, and PDD were cited as common reasons that MOUD was not received during admission [23]. Finally, in our prior evaluation of the IVAT team [23], we found that a greater percentage of patients with high-risk scores (62%) received MOUD relative to mild risk (29%). Thus, MOUD is likely a marker for severity of OUD, which may confound results on the relationship between MOUD and illicit drug use. This relationship deserves further study to understand how to optimize MOUD uptake to reduce high-risk behaviors. Despite these limitations, because this is only the second publication of in-hospital illicit drug use in the United States and the first study of this phenomenon in the context of MOUD use, we believe the results are still informative. Furthermore, the results are consistent with reports on the complex, morbid outcomes of hospitalized PWID [3, 4, 6].

CONCLUSIONS

In closing, we hope to inspire ID physicians, staff, and researchers to take an active role in responding to the drug use epidemic. It is impossible to provide evidence based prevention and/or treatment for infections in substance using populations without adequate treatment of the underlying addiction. This is true for severe bacterial infections and bloodborne infections such as HIV. Moreover, it is not sufficient to evaluate hospital care for PWID using the same benchmarks as the general population (eg, length of stay, readmissions). Additional outcomes require investigation including PDD, MOUD uptake, illicit drug use, and overdose while hospitalized. To effectively deliver ID care in the hospital setting and support linkage to community-based care, we must identify patient-centered ways to intervene on the unique health outcomes that contribute to the devastating morbidity and mortality of injection-related infections.

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