No Specialty Left Untouched – Responding to the Opioid Epidemic Across a Hospital System

RRHA Healthcare Innovations - 11/15/2017

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Disclosures

• No financial disclosures

• Director of Toxicology and of the Toxicology/Addiction inpatient Consultation Service at SMH and Highland Hospital

• Associate Program Director UR Medicine Combined Addiction Medicine Fellowship Program
Mackenzie Weisbeck
1987 - 2016  Obituary  Condolences

Penfield, NY: Our dearest son, Mackenzie John Weisbeck, entered into eternal peace due to a heroin overdose after a courageous struggle with addiction on the evening of February 11th.

He is survived by his father and mother, Jay & Alison; sister, Kirsten; Uncles and Aunts, Mark & Diane, Kent & Colleen, Ted & Jackie Hahin, Tim Mackenzie, Tim & Karen McGuade; his grandmother, Sylvia Mackenzie, and his cousins Meg Hahin, Cam and Hunter Weisbeck. Mac will be embraced by his late Aunt Linda Weisbeck, grandfathers Bob Mackenzie and John Weisbeck Jr. and grandmother Alta Weisbeck.

Mackenzie received an honorable discharge from the U.S. Army after serving in South Korea and active duty in Iraq. He received several commendations for volunteering to go out on second shift patrols as a platoon gunner. We'll remember Mackenzie’s love for animals; he always formed a special bond with each he encountered.

There are so many people who reached out in efforts to help Mac with his battle - a few that deserve special thanks in no specific order - Joe Valerino, Dave Conrad, Mike Gula, Jamarr Miller, Steve Mahoney, Ben Brown, Matt Teal, and Dr. Timothy Weigand - Thank you.

In honor of the Mackenzie Crest tattooed on Mac, Luceo non Uro, "I Shine, not Burn".
K.R.* --another obituary
Animal and human imaging studies have revealed discrete circuits that mediate the three stages of the addiction cycle:

1.) ventral tegmental area and ventral striatum focus $\rightarrow$ binge/intoxication stage

2.) extended amygdala $\rightarrow$ withdrawal/negative affect stage

3.) widely distributed network involving the orbitofrontal cortex $\rightarrow$ craving and preoccupation

Medical Model of Addiction

1.) Expression of addiction (phenotype) is based on a genetic predisposition (genotype) that is influenced by environmental factors. A well-studied biologic mechanism underlying addiction exists.

2.) Treatment compliance is similar to other chronic medical conditions (diabetes, hypertension, asthma)

3.) Addiction follows a relapsing and remitting course that is most effectively managed as a chronic disease.
IV.) Genetic impact is similar as other medical conditions (DM, HTN, asthma – *diseases in which behavioral change is critical to treatment outcome*)

V.) The contributions of environment and personal choice are comparable

VI.) Medication adherence and relapse rates are similar.

VII.) Long term maintenance treatments proven most effective. (*McLellan et al in JAMA 2000*)
Addiction Pedigree – specific examples

- Monozygotic twins have higher concordance rates of addiction than dizygotic twins (*the more genes you share, the more similar your addiction propensity*).

- Men whose parents were alcoholics have an increased likelihood of alcoholism even when adopted and raised by non-alcoholic parents from birth.
Addiction and the genome

- A dopamine receptor gene (A1) allele of the TaqIA D2) has been linked to severe alcoholism and polysubstance dependence.
- A SNP in the gene encoding fatty acid amide hydrolase has been associated with escalating problem use of drugs and alcohol.
- A specific polymorphism of the neuropeptide Y gene has been correlated with increased alcohol consumption.
- SNPs of the gene encoding the mu-opioid receptor correlate with an increased likelihood of heroin abuse.
- Genes that affect metabolism of drugs/alcohol/nicotine affect propensity for dependence.
Heroin
Neighbors disturbed by massive Buffalo drug bust

By Rich Newborg, News 4 Senior Correspondent
Published: August 5, 2015, 6:37 pm | Updated: August 5, 2015, 7:16 pm

Major seizure of fentanyl in Buffalo

BUFFALO, N.Y. (WIVB) – Federal agents say a search of a South Buffalo home in March yielded more than 17 pounds of fentanyl and large quantities of cocaine and heroin.
StreetRx – latest price trends by region
The map below shows the amount of retail opioid prescriptions dispensed per 100 people in 2016.

- Dramatic variation in opioid prescribing across the US, within states, from county to county...
10-15 OD deaths per 100,000 people in New York…some states have > 25 deaths per 100,000
Heat Map Finger Lakes Region 2016

OD deaths

Color intensity is proportional to the # of deaths in region in 2016
• Dramatic increases in OD death rate – Monroe County, NY

Table 1. Total number of Monroe County Office of the Medical Examiner deaths solely related to heroin, opioids, fentanyl, and/or related substances

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<th>Year</th>
<th>Total Number of Deaths</th>
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<td>2011</td>
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<td>2012</td>
<td>30</td>
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<td>2013</td>
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<tr>
<td>2015</td>
<td>85</td>
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<tr>
<td>2016</td>
<td>206</td>
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Fentanyl(s)
U-47700
Heroin
Morphine
Cocaine
Alcohol
BZDs
Oxycodone
Gabapentin

2016 Cases cause of death # by substance

<table>
<thead>
<tr>
<th>Compound / Drug Class</th>
<th>Number of Cases</th>
<th>Percent of Heroin/Morphine/Fentanyl Overdose Deaths</th>
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<tbody>
<tr>
<td>Fentanyl/Analogs</td>
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<td>80.6%</td>
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<tr>
<td>U-47700</td>
<td>21</td>
<td>10.2%</td>
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<tr>
<td>Heroin</td>
<td>99</td>
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<tr>
<td>Morphine</td>
<td>26</td>
<td>12.6%</td>
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<tr>
<td>Cocaine</td>
<td>101</td>
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<tr>
<td>Alcohol</td>
<td>38</td>
<td>18.4%</td>
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<tr>
<td>Benzodiazepines</td>
<td>36</td>
<td>17.5%</td>
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<td>Oxycodone</td>
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<td>Gabapentin</td>
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<td>Methadone</td>
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<td>Cyclobenzaprine</td>
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<td>Amphetamines</td>
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<td>Ketamine</td>
<td>4</td>
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*Note: these data do not include deaths attributed to oxycodone in the absence of heroin/morphine or fentanyl/analogs.

*Includes amphetamine, methamphetamine, and 3,4-methylenedioxymethamphetamine (MDMA, ecstasy)
Monroe County OD death rate

Mean – 35 yrs

Age range from < 20 to 72 yrs

25-34*
Age-adjusted rate of drug OD deaths, state 2010-15

New York 2010 – 8
New York 2015 -- 15

Unintended fallout and unlikely heroes

The opioid epidemic is so bad that librarians are learning how to treat overdoses

By Darran Simon, CNN
Photographs by Michelle Gustafson for CNN
Updated 9:10 PM ET, Sat June 24, 2017

“In the past two years, libraries in Denver, San Francisco, suburban Chicago and Reading, Pennsylvania have become the site of fatal overdoses.”

“The problem got so bad that the library was forced to close for three days last summer because needles clogged its sewer system, said Marion Parkinson, who oversees McPherson and other libraries in North Philadelphia.”
Public Restrooms Become Ground Zero In The Opioid Epidemic

May 8, 2017 - 12:32 PM ET
Heard on All Things Considered

A public restroom on the platform of the Central Square MBTA station in Cambridge, Mass., which people have used as a place for getting high.

Ryan Curran, the day shift operations manager of police and security at Massachusetts General Hospital, stands in front of the bathrooms in the main lobby.

Jesse Costa/WBUR
Man dies of apparent drug overdose in hospital bathroom

By Meg Jones and Crocker Stephenson of the Journal Sentinel

A man traveled from his small town to Milwaukee with his 32-year-old nephew so they could both score some heroin.

The uncle overdosed Monday morning and ended up at Aurora Sinai Medical Center. While he was visiting his stricken uncle, the nephew decided to shoot up, according to a Milwaukee County medical examiner’s report.

When the uncle woke up in his hospital room, his nephew was not around. So the uncle, who was not named in the report, checked himself out of the hospital against medical advice and returned to his home in the Manitowoc County community of Mishicot.

That’s when Chad Chevalier’s family got worried.

Chevalier’s brother called the hospital for help in finding Chevalier, who had struggled with heroin addiction for two years and had accompanied his uncle to Milwaukee to buy heroin, according to the medical examiner.

Security began checking bathrooms at the hospital and found Chevalier in a locked bathroom of the fourth floor waiting room. It appeared Chevalier, who was found face down, had been dead for hours.

In his pockets were rolling papers and $1.01 in coins. A syringe and an empty box of Narcan was found underneath his body.
The opioid crisis has become a public health emergency in our country; an overdose can happen anywhere at any time. When one visitor to BWH overdosed in a public bathroom, tragically, he was unable to be saved despite best efforts by BWH staff to revive him.

BWH is increasing the safety of all who enter our hospital by increasing the availability of and access to the lifesaving medication naloxone, which is used to treat an overdose in an emergency situation.
Green isn’t the first police officer to get sick from synthetic opioids. Two detectives were hospitalized last August in New Jersey after accidentally inhaling drugs during a field test, and the following month 11 SWAT officers fell ill in Connecticut after being exposed to suspected fentanyl powder during a bust. A police K-9 died last November after sniffing fentanyl during a drug raid in Florida.

Patrolman Chris Green was called in as backup on Friday night in East Liverpool, Ohio, to help search a vehicle that had white powder spilled across the floorboards and seats — a substance police believed to be the powerful synthetic opioid fentanyl, or perhaps the elephant tranquilizer carfentanil. Green was wearing latex gloves as a safety precaution, but he took them off to frisk the driver, 25-year-old Justin Buckel.
Case - unintended consequences

• Two ED nurses c/o, “not feeling right,” with dizziness, nausea and sweating after coming into contact with clothes from an OD patient – they noticed some possible whitish powder on the pant legs and some empty plastic ‘bags’ in one of the pockets and some other drug paraphernalia.
Fentanyl analogues and emergency responders

- Fentanyl and its analogs are potent opioid receptor agonists, but the risk of clinically significant exposure to emergency responders is extremely low.
- To date, we have not seen reports of emergency responders developing signs or symptoms consistent with opioid toxicity from incidental contact with opioids. Incidental dermal absorption is unlikely to cause opioid toxicity.
- For routine handling of drug, nitrile gloves provide sufficient dermal protection. In exceptional circumstances where there are drug particles or droplets suspended in the air, an N95 respirator provides sufficient protection.
- Workers who may encounter fentanyl or fentanyl analogs should be trained to recognize the signs and symptoms of opioid intoxication, have naloxone readily available, and be trained to administer naloxone and provide active medical assistance.
- In the unlikely event of poisoning, naloxone should be administered to those with objective signs of hypoventilation or a depressed level of consciousness, and not for vague concerns such as dizziness or anxiety.
- In the absence of prolonged hypoxia, no persistent effects are expected following fentanyl or fentanyl analog exposures.
- Those with small subclinical exposures and those who awaken normally following naloxone administration will not experience long-term effects.
Rapid Overdose Response Teams

• The Opioid Rapid Response Team…
  – Counselor (CASAC) responds with police to offer to rapid link to treatment either pre-hospital or in the ED
  – OD prevention kits
Federal Reserve chair Janet Yellen equated opioid use to a decline in labor participation rates measured by Federal surveys on the economy, known as the Beige Book. Employers mentioned finding applicants able to pass drug tests as a specific hiring barrier.

Managers and owners are trying to figure out ways to deal with drug-addicted workers and job applicants and cite the opioid crisis as one of their biggest challenges. Applicants are unwilling or unable to pass drug tests, employees are increasingly showing signs of addiction on the job and there are also workers with opioid prescriptions that have performance issues.

The opioid crisis is creating a workforce epidemic leading to labor shortage and workplace safety and performance challenges.
Nonmedical use of opioid analgesics

In 2004 over 11.3 million people used prescription opioids non-medically in the US.
Oxycontin® Rx’s/quarter 2008-2010

160mg tablets were not marketed until July 2000.

Monroe County – unique clients/CD dx opioid dx-2016

• Unique clients admitted for any opioid (Monroe County, New York, OASAS programs only 2015) = 2,711 in 2016 first 3 quarters already > 3,000

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<tr>
<td>Unique clients admitted for heroin</td>
<td>695</td>
<td>704</td>
<td>744</td>
<td>798</td>
<td>2,094</td>
<td>758</td>
<td>859</td>
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<tr>
<td>Unique clients admitted for any opioid (incl. heroin)</td>
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<td>894</td>
<td>935</td>
<td>1,001</td>
<td>2,711</td>
<td>966</td>
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A Reuters examination shows steep spending hikes by states targeting opioid addiction, but now that effort faces a gutting under a possible unraveling of Obamacare.

In January 2014, Chuck Oliver ate 50 sleeping pills, saying he hoped to die. He ended up at an Ohio crisis center, where he learned he was eligible for Medicaid, enrolled in a 90-day treatment program, went to a doctor and got medication to treat his hepatitis C. Now, he teaches classes to other men in recovery.

“I got blood drawn, got a physical, found out I needed glasses, got me eyeglasses, and I’ve been on the journey since then,” said Oliver, 43.
Case --what is insurance/Medicaid?


With an academic scholarship in hand, Ryan Brown left Charleston, West Virginia, in 2004 to attend West Virginia University three hours away.

The fall of his sophomore year, his parents, Cecilia and Bobby Brown, found him thin, disheveled and skipping class. He soon left school. Heroin had taken hold.

His parents sent him to Narcotics Anonymous meetings and counseling. Yet they couldn’t get him into deep treatment programs. Ryan lacked health insurance and languished on long waiting lists.

In 2011, Ryan overdosed in the family’s upstairs bathroom. When the police arrived, his father begged them to take Ryan to jail, desperate to keep him away from heroin. The pleas didn’t work.

In April 2014, almost a decade after his fight with addiction began, Ryan’s Medicaid card arrived in the mail. It would have allowed him to afford treatment and the medication intended to wean him off heroin.

Two days later, detectives showed up at Bobby and Cecilia Brown’s doorstep. Inside a department store bathroom, their son had fatally overdosed.
Why is this relevant? More than ever before

• Nearly 60,000 Americans lost their lives in 2016 from opioids – more than gun violence and car crashes combined.

• Nearly 4% of hospitalized patients have diagnosis of opioid use disorder.

• 500% increase in number of people diagnosed with opioid use disorder (“opioid addiction”) from 2010 – 2016 (Blue Cross Blue Shield Survey 2017).

• Every aspect of medicine impacted and struggling to respond to this emergency.
# Monroe County: Opioid overdoses and rates per 100,000 population (data as of March, 2017)

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<td>Overdoses involving opioid pain relievers</td>
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### Deaths

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### Outpatient emergency department visits

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### Hospitalizations

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Treating craving and dependence in hospital

• Addiction does not disappear in the ED or hospital in the hospital…

“I would have conversations with him, testing out different ways of saying something that would work,” he said. “I don’t think anything we said changed his mind. Every day he’d get up and the first thing on his mind was, ‘Where are my drugs coming from?’ The chase just never ended.”
Addicted Patients Inject, Infect Their Own IV Lines

At risk of bloodstream infections, overdose

By Gary Evans, Senior Staff Writer

The national opioid epidemic is causing daily overdoses in the community, diversion drug thefts by healthcare workers, and now a dangerous new aspect at the bedside: Hospitalized patients are injecting illicit drugs and hoarded medications directly into their placed IV lines.

In the process, they may give themselves bloodstream infections — a serious complication in its own right — but in this scenario the risk is compounded by possible overdose. There are some reports of patients overdosing in hospitals, joining the estimated 29,000 people who OD annually on opioids in the U.S.

“I have definitely seen this,” says Kimberly New, RN, JD, founder of Diversion Specialists in Knoxville, TN. “In fact, I am aware of more than one case in which a patient did this and overdosed and died while in a hospital or other healthcare facility.”

Drug Diversion: A New Sheriff in Town

Tough new state law targets traveling surgical techs

By Gary Evans, Senior Staff Writer

After a series of highly publicized drug diversion incidents by healthcare workers and patient outbreaks in Colorado in recent years, the state has passed a law that requires surgical technologists to register and submit to background checks.

Effective Aug. 10, 2016, Colorado law (House Bill 16-1160) requires that surgical techns pass a criminal history check and submit fingerprints to the state Bureau of Investigation. The law also stipulates that employers requiring surgical techs to take a drug test must forward any positive results for a non-prescribed controlled substance to state officials.
Suboptimal Addiction Intervention -

- Retrospective 10 year review endocarditis admits – Boston
- 102 IVDU endocarditis
- 50 (49% readmitted)
- 7.8% had plan for MAT at d/c
- No Rx’s for naloxone*
- 24% addiction consult in hospital
- Addiction (mention) in only 56% d/c plans
- 26 (25.6%) deceased

Abstract

BACKGROUND: Infective endocarditis is a serious infection, often resulting from injection drug use. Inpatient treatment regularly focuses on management of infection without attention to the underlying addiction. We aimed to determine the addiction interventions done in patients hospitalized with injection drug use-associated infective endocarditis.

METHODS: This is a retrospective review of patients hospitalized with injection drug use-associated infective endocarditis from January, 2004 through August, 2014 at a large academic tertiary care center in Boston, Massachusetts. For the initial and subsequent admissions, data were collected regarding addiction interventions, including consultation by social work, addiction clinical nurse and psychiatry, documentation of addiction in the discharge summary plan, plan for medication-assisted treatment and naloxone provision.

RESULTS: There were 102 patients admitted with injection drug use-associated infective endocarditis, 50 patients (49.0%) were readmitted and 28 (27.5%) patients had ongoing injection drug use at readmission. At initial admission, 30.4% of patients had social work consultation, 23.7% had addiction consultation, and 24.0% had psychiatry consultation. Addiction was mentioned in 55.0% of discharge summary plans. 7.8% of patients had a plan for medication-assisted treatment, and naloxone was never prescribed. Of 102 patients, 26 (25.5%) are deceased. The median age at death was 40.9 years (interquartile range 28.7-48.7).

CONCLUSION: We found that patients hospitalized with injection drug use-associated infective endocarditis had high rates of readmission, recurrent infective endocarditis and death. Despite this, addiction interventions were suboptimal. Improved addiction interventions are imperative in the treatment of injection drug use-associated infective endocarditis.

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23 year-old F with IVDU using heroin and cocaine presents with fever and malaise, has cough, pleuritic chest pain. Blood cultures are positive and an echocardiogram shows vegetation on her tricuspid valve. She also has a PE – she has a small septic emboli from a DVT in her L femoral vein. In the ED she is started on Suboxone® for opiate w/d. It is dosed in split fashion and at higher than usual doses to provide pain control. 4+ weeks in the hospital with IV abx.

She doesn’t leave the hospital. Uses only Suboxone as an opioid. No illicit drug use in the hospital. Linked to outpatient after hospital stay. Family reconnects while in the hospital. Meets with peer counselor.
Challenges → Opportunities - Hospital

Treatment of patients with dependence & addiction in the hospital

- Treatment of other underlying conditions
- Treat the dependence and withdrawal (stabilize)
- Educate and establish connections (family)
- Link to outside resources
- OD prevention kits (naloxone)
- Peer counselors
- Meetings (e.g. AA)
Opportunity to provide better care

• SNF support needed, links to appropriate Level... etc

Peer Counselors and Medication Assisted Treatment in IVDU-associated infective endocarditis

Aaron Fields, MD; Timothy Wiegand, MD
University of Rochester Medical Center, Rochester, NY

Introduction
Infective endocarditis (IE) is a life-threatening infection involving the valves of the heart, with in-hospital mortality between 15-30%. Treatment typically includes 4-6 weeks of antibiotics, often requiring surgical repair or replacement of damaged valves. Intravenous Drug Use (IVDU) is a major risk factor for IE, leading to a 10-fold higher rate of death or re-operation between 3-6 months following an index operation for endocarditis. In opioid-dependent individuals, buprenorphine has been shown to reduce IVDU and improve engagement in treatment.

Research Question
Does early initiation of buprenorphine during hospitalization for IE improve patient satisfaction and adherence to treatment?

Methods
Retrospective chart review of three opioid-dependent patients during 2013-16 who were started on sublingual buprenorphine during hospitalization for IE secondary to IVDU.

Case Summaries
Case 1 - 33 year-old opioid-dependent female with intravenous heroin and cocaine abuse, 2 previous episodes of IE, and valve replacement/repair is hospitalized for recurrent IE. SL buprenorphine was started during her hospitalization.

Case 2 - 33 year-old female with intravenous heroin and cocaine abuse is hospitalized for IE and started on SL buprenorphine while receiving antibiotics.

Case 3 - 30 year-old opioid-dependent male with prior IE from intravenous heroin use is re-hospitalized for IE and undergoes valve replacement. SL buprenorphine was started during hospitalization.

Duration of hospitalizations: 45-57 days
Duration of antibiotics: 6 weeks
All patients successfully linked to ongoing outpatient addiction treatment and continued on buprenorphine

Discussion
Previous studies of IVDU associated endocarditis have shown poor outcomes. In our experience, rapid initiation of buprenorphine during hospitalization has enabled patients to tolerate prolonged hospitalization without leaving AMA. Such prolonged hospitalization also represents an opportunity to engage the patient in other meaningful aspects of recovery. Since submission of this abstract, we have also incorporated volunteer peer counselors into our recommended management plans for such patients, which will be presented at the American Society of Addiction Medicine Annual Conference this April.

The addition of buprenorphine MAT into the inpatient management for these patients has been a resounding success—improving patient compliance, patient satisfaction, nursing satisfaction, and physician impressions of patients. At our institution, this management has essentially become the standard of care.

Conclusion
Inpatient management of opioid-dependence during prolonged hospitalization for treatment of infectious endocarditis represents an opportunity for medical toxicology consult services to expand their role in the management of acute withdrawal and the complications of addiction. The early initiation of buprenorphine for such patients can improve patient compliance and successful completion of treatment.
Case - overdose

• A 30 year-old male is brought to the hospital after being found down, “in a drug house.” he was given naloxone on scene and briefly woke, although not completely, vomited and has required oxygen and stimulation to maintain saturation.

• A 19 year-old is given Narcan® after being found down in a McDonald’s bathroom on North Clinton Avenue in Rochester he awakens and is transported to the hospital.
Its not just fatal OD – other morbidity


Morbidity associated with non-fatal heroin overdose.

Werner-Smith M*, Darke S, Day C.

Author information

Abstract

AIMS: To estimate the range and severity of heroin overdose related morbidity.

DESIGN: Cross-sectional survey.

SETTING: Sydney, Australia.

PARTICIPANTS: 198 heroin users.

FINDINGS: Sixty-nine per cent had experienced a heroin overdose, 28% in the preceding 12 months. Of those who had overdosed, 79% had experienced at least one overdose-related morbidity symptom. An ambulance had attended overdoses for 59% of subjects, 33% had required hospital treatment for overdose, and 14% had experienced overdose-related complications of sufficient severity to be admitted to a hospital ward. Indirect overdose-related morbidity included: physical injury sustained when falling at overdose (40%), burns (24%) and assault while unconscious (14%). Direct overdose-related morbidity included: peripheral neuropathy (49%), vomiting (33%), temporary paralysis of limbs (26%), chest infections (13%) and seizure (2%).

CONCLUSIONS: There appears to be extensive morbidity associated with non-fatal overdose. This is clearly an area that requires more research to document the prevalence and nature of these harms, and factors associated with them.

Median f/u of 299 days opioids dispensed to 91% of patients after OD

7% repeat OD (299 days)

At 2 years the cumulative incidence of repeat OD
  - 17% for ‘high doses’ (14-20%)
  - 15% for moderate doses (10-21%)
  - 9% for low doses (6-14%)
  - 8% no opioids
GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN

IMPROVING PRACTICE THROUGH RECOMMENDATIONS

CDC’s *Guideline for Prescribing Opioids for Chronic Pain* is intended to improve communication between providers and patients about the risks and benefits of opioid therapy for chronic pain, improve the safety and effectiveness of pain treatment, and reduce the risks associated with long-term opioid therapy, including opioid use disorder and overdose. The Guideline is not intended for patients who are in active cancer treatment, palliative care, or end-of-life care.

CLINICAL REMINDERS

- Opioids are not first-line or routine therapy for chronic pain
- Establish and measure goals for pain and function
- Discuss benefits and risks and availability of nonopioid therapies with patient
Case 2

• A 27 year-old female who presents in acute withdrawal requiring admission.

• How do we again manage acute withdrawal and the transition to a longer term therapy?
Table 2. Baseline and 30-Day Secondary Outcome Measures Among Opioid-Dependent Patients Treated in the Emergency Department

<table>
<thead>
<tr>
<th></th>
<th>Referral</th>
<th>Brief Intervention</th>
<th>Buprenorphine</th>
<th>P Value&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Days of Self-reported Illicit Opioid Use in the Past 7 Days, Mean (95% CI)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>5.4 (5.1-5.7)</td>
<td>5.6 (5.3-5.9)</td>
<td>5.4 (5.1-5.7)</td>
<td>.001, Treatment effect</td>
</tr>
<tr>
<td>30 d</td>
<td>2.3 (1.7-3.0)</td>
<td>2.4 (1.8-3.0)</td>
<td>0.9 (0.5-1.3)</td>
<td>.02, Interaction effect</td>
</tr>
<tr>
<td><strong>Outpatient Addiction Treatment in the Past 30 Days, Mean (95% CI)&lt;sup&gt;c&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of outpatient visits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>0.38 (0.0-1.0)</td>
<td>1.16 (0.6-1.7)</td>
<td>0.20 (0.0-0.8)</td>
<td>.07, Treatment effect</td>
</tr>
<tr>
<td>30 d</td>
<td>4.99 (3.1-6.8)</td>
<td>5.67 (4.0-7.4)</td>
<td>3.71 (2.1-5.3)</td>
<td>.63, Interaction effect</td>
</tr>
<tr>
<td><strong>ED-Based Addiction Treatment in the Past 30 Days, No./Total (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any addiction-related ED visit</td>
<td>8/104 (7.7)</td>
<td>6/111 (5.4)</td>
<td>5/114 (4.4)</td>
<td>.57</td>
</tr>
<tr>
<td>30 d</td>
<td>15/69 (21.7)</td>
<td>12/82 (14.6)</td>
<td>18/93 (19.4)</td>
<td>.51</td>
</tr>
<tr>
<td><strong>Inpatient Addiction Treatment in the Past 30 Days, No./Total (%)&lt;sup&gt;d&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any inpatient addiction treatment</td>
<td>10/104 (9.6)</td>
<td>7/111 (6.3)</td>
<td>7/114 (6.1)</td>
<td>.55</td>
</tr>
<tr>
<td>30 d</td>
<td>31/84 (36.9)</td>
<td>32/91 (35.2)</td>
<td>11/100 (11.0)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Abbreviation: ED, emergency department.

<sup>a</sup> All patients were screened and referred to a community-based treatment service. Patients in the brief intervention group received a 10- to 15-min manual-driven, audiotaped Brief Negotiation Interview and facilitated referral to treatment services. Patients in the buprenorphine group received a Brief Negotiation Interview and ED-initiated treatment with buprenorphine if they exhibited moderate to severe opioid withdrawal until a scheduled appointment within 72 hours in the hospital’s primary care center could be arranged.

<sup>b</sup>χ<sup>2</sup> Test with 2 degrees of freedom used to test for differences in inpatient and ED treatment. Mixed-model procedures used to test for differences in days of self-reported illicit opioid use and outpatient addiction treatment; thus, all patients in the sample were included. Treatment × time effect = interaction effect.

<sup>c</sup> Includes both office-based and addiction treatment center visits.

<sup>d</sup> Includes residential and hospital-based treatment.

Table Title:
Baseline and 30-Day Secondary Outcome Measures Among Opioid-Dependent Patients Treated in the Emergency Department<sup>a</sup>
The Heroin Blocker

• 42 year-old African-American Male presents to Suboxone™ clinic for an intake assessment.
• Long history of chemical dependency with primarily opioids (heroin and ‘street’ methadone) and cocaine.
• Prior exposure to ‘street’ buprenorphine through primarily Suboxone™ tabs being purchased when he cannot afford or cannot find heroin (5-8$/tab -8/2 mg Suboxone™ tabs).
• Describes purchasing an 8/2 mg Suboxone™ tab, several hours later coming into some money he purchases a “bundle” (10 bags) of heroin. Use of heroin completely blocked.
Buprenorphine can substitute for other opioid receptor agonists, yet is less apt to produce overdose reactions or dysphoria.

It can block the effects of opioids such as heroin and morphine.

Buprenorphine has good SL bioavailability and a long half-life, making administration on a once daily basis possible.

Discontinuation is associated with only a mild withdrawal syndrome.

Clinical trials have demonstrated that sublingual buprenorphine is effective in both maintenance therapy and detoxification of individuals addicted to opioid.

Formulation combining naloxone with buprenorphine further reduces the risk of diversion to illicit intravenous use.
Specific opioid pharmacology

Full mu opioid agonists activate mu receptors. Increasing doses of full agonists produce increasing effects until a maximum effect is reached (the receptor is fully activated). *morphine, heroin, methadone, oxycodone*…
Dose-effect with buprenorphine

\[ \Delta pCO_2 \]

Log [dose] of opioid

Morphine

Buprenorphine

Ceiling effect
Buprenorphine (C3) is less ‘abusable’ than other opioids (C2)

• Population vs Unique Rates of Drug Diversion using Researched Abuse Diversion and Addiction-Related Surveillance (RADARS®) system Poison Center data.

Dasgupta et al RADARS system presentation
SAMHSA
...of the Children’s Health Act of 2000
Permits physicians who meet certain qualifications to treat opioid addiction with Schedule III, IV, and V narcotic medications that have been specifically approved by the Food and Drug Administration.

Such medications *may be prescribed and dispensed by waived physicians in treatment settings other than the traditional Opioid Treatment Program* (*methadone clinic*) setting.
Who is eligible for the waiver?

• Drug Enforcement Administration (DEA) assigns an ID # if the MD or DO meet one of the following:
  – Addiction Psychiatry board certification
  – Addiction certification from American Society of Addiction Medicine (ASAM) or American Osteopathic Association
  – Complete (not less than) 8 hours of training through classroom, seminars, electronic resources or otherwise provided by AAP, AMA, AOA, ASAM
  – Physician has participated as investigator in clinical trials leading to approval of “narcotic drug” in schedule III, IV or V for maintenance or detoxification
  – State Medical Board says OK (training experience vetted)
  – Secretary of Health and Human Services says OK
Top Prescribers of Buprenorphine, 2009

- General Practice/Family Medicine/DO
- Psychiatry
- Internal Medicine
- Anesthesiology
- Emergency Medicine
- Physical Medicine and Rehabilitation
- Obstetrics and Gynecology
- General Surgery
- All Others

DO indicates doctor of osteopathy.
After one year can → 100 patients/provider

- In December of 2006 OBOT providers (SAMSHA certified) authorized to treat up to 100 patients at any one time.
  - A.) Qualified under DATA 2000
  - B.) At least one year since initial qualifications
  - C.) Must certify their capacity for counseling and referral services
275 waiver for

- Initial year -30
- After 30 certify to 100.

- In appropriate situations can increase to 275 (ABAM certified, appropriate program affiliate)
Advanced Providers

• IN New York limit to 30. Training open.
• 24 hours training and CME.
• 8 hour online or in-person course.

We’ve been talking about the already expanded Suboxone cap for certified physicians (with certain criteria) from prior cap of 100 to new cap of 275. We now have news from ONDCP and a start date for the expansion of MAT to both NPs and PAs...

On Tuesday, November 15th, the Department for Health and Human Services (HHS) announced additional steps to expand access to medication-assisted treatment (MAT) for opioid use disorders.

Starting February 2017, Nurse Practitioners and Physician Assistants will be able to prescribe buprenorphine, a medication typically used to treat opioid use disorders. Once training requirements are met, Nurse Practitioners and Physician Assistants can apply for a waiver to treat up to 30 patients.

Yesterday’s actions build on one of the three main priorities of HHS Secretary Burwell’s initiative to combat the opioid epidemic: increasing access to MAT for opioid use disorder and reflects public input on the issue.

Updates on training information and the waiver application will be available at: http://www.samhsa.gov/medication-assisted-treatment

November 29, 2016

Nurse Practitioners and Physician Assistants Can Begin Buprenorphine Training

ASAM

The Department of Health and Human Services (HHS) announced on November 17 that nurse practitioners (NPs) and physician assistants (PAs) can begin taking the 24 hours of required training to prescribe buprenorphine to treat opioid use disorders. NPs and PAs who complete the required training and seek to prescribe buprenorphine for up to 30 patients will be able to apply to do so beginning in early 2017. HHS is also announcing its intent to initiate rulemaking to allow NPs and PAs who have prescribed at the 30-patient limit for one year to apply for a waiver to prescribe buprenorphine for up to 100 patients. SAMHSA is working quickly with training providers to help them adapt curricula and obtain continuing education credits for this training. Updates on training information and the waiver application will be available on the SAMHSA and ASAM websites.
Not only does the other opioid use drop but…

• Between 2004 and 2007, of the 152,917 US individuals in 34 states newly diagnosed with new HIV infections

• 13% of them (n = 19,687) were IVDU according to the US Centers for Disease Control and Prevention

Improvement in risk factors that would have led to ‘bad things’

• Comparison of drug-related and sex-related risk behaviors in 166 buprenorphine treated individuals at baseline, 12 weeks, and 4 weeks.

• IVDU among buprenorphine treated individuals declined
  -37% at baseline
  -12% at 12 weeks
  -7% at 24 weeks

• 41 year-old F with history of polydrug dependence is jailed for insurance fraud which she was performing to get money to fund her opioid dependence.

• The patient manages to get hydrocodone prescribed for orthopedic injuries during her incarceration.

• Immediately upon release the patient starts using Emergency Departments within Monroe County to support her opioid dependence.
• ED Encounters at single hospital over a 3-month period
  • 1.) 7/28/2011
  • 2.) 7/29/2011
  • 3.) 8/9/2011
  • 4.) 8/19/2011-8/20/2011 (observation – chest pain)
  • 5.) 8/23/2011 (admitted for 2 day observation)
  • 6.) 9/1/2011
  • 7.) 9/7/2011
  • 8.) 10/1/2011
  • 9.) 10/10/2011
  • 10.) 10/14/2011
  • 11.) 10/18/2011
  • 12.) 10/24/2011
  • 13.) 10/31/2011
Patient states "I was in a fight with another female 2 days ago. It was a pretty bad fight. I was thrown against a brick wall". Patient has multiple bruising noted over upper body, arms bi-lateral, left scapula area. Patient c/o back pain with dark colored urine.
Second visit in July, 2011

- Pt to ED with R shoulder pain. States she injured the shoulder 1 week ago and was seen in ed. Denies new injury today ut states she woke with a frozen shoulder. Unable to move it. C/o numbness in R arm.
Outcome of second visit

- **Diagnosis management comments:**
  Patient seen by me today, 7/29/2011 at 4:06 AM

- **Assessment:** 39 y.o., female comes to the ED with assault
- Differential Diagnosis includes kidney laceration, neck soft tissue injury, thoracic wall injury
- **Plan:** cbc, chem 7, ua, ct abdomen, pelvis, thorax, neck, ivf, morphine
• **HPI:** Patient is a 40 year-old female who presents to the ED with left hand/arm pain x 3 days. Patient states she was on a roof 3 days ago (she is a roofer), had a "bundle" over her shoulder and began sliding on the roof. States she fell on the roof onto both her outstretched hands. She complains of left hand, wrist, arm, and elbow pain. Difficulty moving her left upper extremity. Has some numbness in hand.
Outcome of this visit

- Number of Diagnoses or Management Options

- Right shoulder strain:
- Trapezius muscle spasm:
- Diagnosis management comments: Patient seen by me today, 8/19/2011 at the time of arrival 3:28 PM
- Assessment: 39 y.o., female comes to the ED with right shoulder pain
- Diagnosis includes right shoulder strain, trapezius muscle spasm
- Plan: rice, dilaudid and valium- feels better
- Dc- **percocet, valium**
- pcp referral
- Right shoulder- hardware intact, no fracture or dislocation
Case TL continued

- 17 XR’s
- 4 CT scans including 2 CT angio
- Over 30 laboratory assays
- XYZ other?

- Cost?
Relapse is common, success is measured by retention in recovery, decreased morbidity, life improvement.
The emerging buprenorphine epidemic in the United States. (abstract below)

The authors sampled for expanded drug testing of 1,061 urine specimens collected by Maryland Division of Parole and Probation staff. They found an increase in the percentage of individuals testing positive for buprenorphine and found that these specimens often contained other drugs, suggesting misuse. Subsequent interviews with 15 probationers and parolees in Baltimore, Maryland, showed wide-scale availability of buprenorphine on the street and in prisons.


“…CESAR Publishes Report Warning of Emerging Epidemic of Buprenorphine Misuse…”
Voucher or treatment?
Buprenorphine and Perception – the reality

- 1000 patients enrolled from 100 drug abuse treatment programs (US)
- Question: was buprenorphine used in past 30 days “to get high”?
  - 30-35% reported ‘inappropriate or ‘abuse’ of buprenorphine
  - One year later the % dropped to below 20% (lower than methadone)

Conclusions:
I.) Some patients treated with buprenorphine experimented with this medication (special populations – prison, adolescents/teens) but less than other opioids
II.) < 3% of sample provide endorsement of buprenorphine as a primary drug.

• **Study** outcomes of chronic pain pts tx’d with buprenorphine in an outpt psych consult clinic.

• **METHODS:**
  • 43 chronic pain patients with a DSM-IV dx of opioid dependence treated with bup (3 years)
  • All dependent on drugs Rx’d for pain 2 groups: alcohol/drug depend vs no substance use disorder

• **RESULTS:**
  • Most patients male, not working, and between 45-60 years.
  • Treatment with buprenorphine was effective. Most patients had improved pain with treatment of the opioid dependence.
  • There were no differences between those with or without a history of substance abuse.

• **DISCUSSION**
  • Patients with much less preoccupation with pain, and great satisfaction with buprenorphine treatment.
Buprenorphine use on the consult service

- Patient Disposition N 19/23
  - Linked to CDT (n=19; 83%)
  - Lost to follow-up (n=5)
    - Successfully linked (n=14)
      - Detoxification (n=2; 14%)
      - Intensive outpatient programs (n=10; 71%)
      - Inpatient program (n=2; 14%)
  - Not linked to CDT (n=4; 17%)
    - All received counseling/referral
    - Known disposition in 3 patients
      - Tapered prior to d/c
      - Methadone maintenance
      - Oral naltrexone prior to d/c

<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>(n = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age, years (range)</td>
<td>38 (17-60)</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>13 (57)</td>
</tr>
<tr>
<td>Induction Setting</td>
<td></td>
</tr>
<tr>
<td>ED, n (%)</td>
<td>8 (35)</td>
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<tr>
<td>Inpatient, n (%)</td>
<td>15 (65)</td>
</tr>
<tr>
<td>Common Encounter Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Withdrawal, n (%)</td>
<td>8 (35)</td>
</tr>
<tr>
<td>Overdose/withdrawal, n (%)</td>
<td>4 (17)</td>
</tr>
<tr>
<td>Cellulitis, n (%)</td>
<td>4 (17)</td>
</tr>
<tr>
<td>Abscess, n (%)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>Other Substance Abuse</td>
<td></td>
</tr>
<tr>
<td>Cocaine, n (%)</td>
<td>13 (57)</td>
</tr>
<tr>
<td>Benzodiazepines, n (%)</td>
<td>7 (30)</td>
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<tr>
<td>Length of hospital stay</td>
<td></td>
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<tr>
<td>ED only, n (%)</td>
<td>8 (35)</td>
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<tr>
<td>2-5 days, n (%)</td>
<td>7 (30)</td>
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<tr>
<td>6-10 days, n (%)</td>
<td>4 (17)</td>
</tr>
<tr>
<td>11-20 days, n (%)</td>
<td>2 (9)</td>
</tr>
<tr>
<td>&gt;20 days, n (%)</td>
<td>2 (9)</td>
</tr>
</tbody>
</table>
Stigma and misunderstanding of addiction even among medical professionals, says Wiegand, contributes to the lack of treatment. If a diabetic came into the emergency department with a crisis related to their disease, they'd be set up with follow up treatment. That's not the regular course of action when someone comes in overdosing from heroin.

“They don’t leave with the medications they need to help stabilize the disease of addiction. They don’t leave with a physician appointment, typically, for an addiction medicine specialist, and that’s a huge disparity between these two medical conditions,” Wiegand.

Some hospitals are now moving to link patients treated in emergency with a long-term treatment programs. But even with growth in the field, treating the 2.4 million Americans addicted to opioids remains a challenge.

http://wxxinews.org/post/doctors-can-treat-addiction-are-there-enough-trained-field
Just re-read some of the condolences for your beloved son. They sent me back to my son’s obit. from Feb. 2015. He also passed away from a heroin overdose. I did write to you previously, but felt the need to correspond again. I am sorry for your loss. The pain never stops. S

Dear Weisbeck family, Thank you for sharing your story with addiction. It is a horrible disease. Our prayers are with your son, Mackenzie and your family. As I read the obituary that you wrote, it was like reading our son. We went through the exact same situation with our son. He had just started to turn his life around when he accidentally overdosed on pain medication from two back surgery’s. He was 39. Our hearts go out to you and your family. Their is nothing like loosing a child. You did...

I read your article in the Buffalo News and it really hit home. I too, have a son 36 years old who is addicted to heroin. It has been a 20 year struggle for him. He has overdosed several times and each time I wonder, is this it? I pray that you find peace and comfort in his memory.

Thank you for sharing your story. My son served God his entire life until the age of 20 when he moved out. He is now 26. He was addicted to pain pills due to a surgery where he received heroin for a week. For the last two years, he went from percocets to heroin. He overdosed last week but we were able to get to the ER in time. He has a 9 month old and a 2 year old in foster care. I’m trying to get custody. It’s a nightmare. Trying to help but not enable. I wait everyday for the call. My...
Resources and further information

- Dreamland
- http://www.radars.org/ - Researched Abuse Diversion & Addiction Related Surveillance