Enhanced Approaches to Managing Opioid Use Disorder in the Medical Setting

TN Hospital Association Forum

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Opioid Use Disorder Learning Objectives

At the end of session, participants will be able to better understand and describe:

- the history of OUD and stigmatization
- new approaches to clinical management of OUD
- how collaborative care across medical settings improves outcomes for patients with SUD
Case:

- **Allison** is 32-year-old female admitted in septic shock
- **Diagnosis:** CHF, MRSA pneumonia, OUD & withdrawal
- Used opioids IV over 5 years
- No IV access: PICC line
- **Plan:** Rx IV antibiotics x 4-6 weeks
- Needs Mitral valve replacement

**Abbreviations:**
- **CHF** Congestive Heart Failure
- **MRSA** Methicillin-resistant Staphylococcus aureus
- **OUD** Opioid Use Disorder
- **IVDU** Intravenous drug use
- **PICC** Percutaneous Intravenous Central Catheter
Audience Participation
Obstacles to care?
Opium, Laudanum, Opiates and Opioids

500+BC Hippocrates.

1845-55

First hollow needle

1500s

Laudanum

1898

Heroin

1804

Chemical structure of morphine

1968

Fatal dose of fentanyl (2 mg or 2000 mcg)

Fatal dose of carfentanil (0.02 mg or 20 mcg)
Paul MacLean’s Triune Brain
The Neurobiology of Addiction

• Changes in frontal lobe function (executive functioning; the inhibition of impulses to use)

• Impairment in control and preoccupation have an anatomical/physiological substrate in the brain.
Addiction Changes: 
Brain Structure and Function

Decreased Heart Metabolism in Coronary Artery Disease
Healthy heart

Decreased Brain Metabolism in Addiction
Healthy Brain
Visualizing Recovery

BRAIN RECOVERY WITH PROLONGED ABSTINENCE

Healthy Person

methamphetamine use disorder
1 month abstinence

methamphetamine use disorder
14 months abstinence

Positive and negative reinforcement in addiction
RA Wise and GF Koob
Opioid Receptors – Intracellular mechanism

- All are G-protein coupled receptors
- Located on prejunctional neurons
- Inhibits release of transmitters
  - NA, DA, 5-HT, GABA and Glutamate
- Activation reduces cAMP formation
  - opening of K+ channel via μ and δ and
  - suppression of N type of Ca++ channels
- Ultimately Hyperpolarization
  - reduced intracellular Ca++
  - reduced Neurotransmitter release

Patel & Martin 2016
Addiction is a Disease

McClellan, et al JAMA 2000 Comparison of Substance Dependence to Diabetes, Hypertension, Asthma

- Diagnosis of Substance Use Disorders is valid and reliable\(^1\).
- Genetically Heritable
  - **Hypertension**: 0.25-0.50
  - **Diabetes**: 0.8 for type II, 0.3-0.5 for type I
  - **Asthma**: 0.36 to 0.70
  - **Addiction**: 0.34 for heroin addicted males, 0.55 for alcohol addicted males, 0.52 for marijuana addicted females
Addiction is a Disease

Treatment Outcomes

Substance Use Disorders: 40-60% are continuously abstinent at one year follow-up after a 28 day or similar outpatient treatment.

• Another 15-30% have not resumed using at a “dependent rate”

Diabetes II: <60% fully adhere to their medication regimen
Asthma/Hypertension: <40% fully adhere to their medication regimen
Diabetes/Asthma/Hypertension: <30% adhere to the lifestyle/behavioral/dietary changes prescribed to them.

Various treatments work for relapse prevention

- Psychosocial Treatments
- Medication for Addiction treatment (MAT)

Stimulant use disorder
Cannabis use disorder

Alcohol use disorder

Opioid use disorder
Nicotine use disorder

- Medication for Addiction treatment (MAT)
- Psychosocial Treatments

Why so much national attention on buprenorphine-naloxone?
Death
Respiratory depression
Euphoria
No withdrawal symptoms
Pain relief
Treatment of opioid use disorder

Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence (Review)

Mattick RP, Breen C, Kimber J, Davoli M

Long-term outcomes from the National Drug Abuse Treatment Clinical Trials Network Prescription Opioid Addiction Treatment Study

Roger D. Weiss, Jennifer Sharpe Porter, Margaret L. Griffin, Scott E. Provost, Garrett M. Fitzmaurice, Katherine A. McDermott, Emily N. Srisarajivakul, Dorian R. Dodd, Jessica A. Dreifuss, R. Kathryn McHugh, Kathleen M. Carroll

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ABSTRACT

Background: Despite the growing prevalence of prescription opioid dependence, long-term outcomes of treatment response have not been examined. The current study examined long-term outcomes among participants enrolled in the National Drug Abuse Treatment Clinical Trials Network Prescription Opioid Addiction Treatment Study.

Medication Saves Lives

Maryland: 50% reduction in overdose death with opioid agonist treatment

France: 79% reduction in overdose death opioid agonist treatment
Stigmatizing the Stigmatized

WE’LL GET THEM HOOKED ON SUBOXONE
Sales Rep
Drug Company
Dr.
Rehabs
AND TELL THEM THEY’RE SOBER!
<table>
<thead>
<tr>
<th>Commonly used term</th>
<th>Preferred term</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addict, abuser, etc.</td>
<td>Person with a substance use disorder</td>
<td>Focuses on respect, dignity and primacy of personhood</td>
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<tr>
<td>Substance abuse</td>
<td>Substance use disorder</td>
<td>Avoids implication of willful misconduct; also shift in emphasis to chronic disease model (&quot;hazardous,&quot; &quot;risky,&quot; or &quot;unhealthy&quot; use may be preferred for some who do not meet disorder criteria)(18)</td>
</tr>
<tr>
<td>Opioid substitution therapy / replacement therapy</td>
<td>Opioid agonist treatment</td>
<td>Avoids implication of &quot;switching addiction&quot;; pharmacologic classification more in line with other medications (i.e. angiotensin- converting enzyme inhibitors, serotonin reuptake inhibitors, etc.)(19)</td>
</tr>
<tr>
<td>Clean</td>
<td>Sober / abstinent</td>
<td>Avoids value-laden, non-clinical terminology</td>
</tr>
<tr>
<td>Dirty / clean urine</td>
<td>Positive or negative urine drug screen (for X)</td>
<td>Avoids value-laden, non-clinical terminology</td>
</tr>
</tbody>
</table>
STIGMATIZATION: Historical Perspective
Benjamin Rush 1813  Chapter X:  OF DERANGEMENT IN THE WILL

“rescue persons affected with them from the arm of the law, and to render them the subjects of the kind and lenient hand of medicine.”

Lucius Polk Brown 1914 State Food and Drug Commissioner of Tennessee

“I want to make a plea for an intelligent and scientific study of this subject...the drug addict is a sick man both physically and mentally, and should be studied and treated as a sick man and not as one always woefully delinquent”

The Harrison Act 1914

“After passage of this law, this clause (“in the course of his professional practice only was eventually interpreted by law-enforcement officers to mean that a doctor could not prescribe opiates to an addict to maintain his addiction.”

THE AMERICAN DISEASE  David Musto, MD
U.S. IS VOTED DRY
36th STATE RATIFIES DRY AMENDMENT JAN. 16

Nebraska Noses Out Missouri for Honor of Completing Job of Writing Dry Act into the Constitution; Wyoming, Wisconsin and Minnesota Right on Their Heels

JANUARY 16, 1919, MOMENTOUS DAY IN WORLD'S HISTORY
WAR ON DOPE GETS RESULTS

Harry Anslinger Directs Nation’s War On Drug Smuggling

A national drive was described as “the largest round up of big sellers and sources of supply of narcotics that has ever been undertaken in this country.”

Harry J. Anslinger, U.S. Commissioner of Narcotics, inspects part of $7,000,000 seizure by Federal agents. The shoe, held by the commissioner, had secret compartment for narcotics.
This medication appears to have two useful effects:

(1) relief of narcotic hunger, and

(2) induction of sufficient tolerance to block the euphoric effect of an average illegal dose of diacetylmorphine.

Patients have returned to school, obtained jobs, and have become reconciled with their families.

This treatment requires careful medical supervision and many social services. In our opinion, both are essential.
When President Nixon declared war on drugs on June 17, 1971, about 110 people per 100,000 in the population were incarcerated. Today, we have 2-3 million prisoners: 743 people per 100,000 in the population. The U.S. has 5% of the world's population, but 25% of its prisoners. As Senator Jim Webb once put it, Either we are home to the most evil people on earth or we are doing something different and vastly counterproductive.

Maia Szalavitz
SUDs are common in hospitalized patients

< 8% of patients with endocarditis nationally referred for any medications for opioid use disorder

• 8-29% of hospitalized patients have a non-alcohol Substance Use Disorder (SUD)
• 183% increase from 2004-2011
• Only 64% are detected by treating teams

Rosenthal et al., 2016

Case:
• Allison is 32-year-old female admitted in septic shock
• Diagnosis: CHF, MRSA pneumonia, OUD & withdrawal
• Used opioids IV over 5 years
• NO IV access: PICC line
• Rx IV antibiotics x 4-6 weeks
• Needs Mitral valve replacement
Incidence of drug associated Endocarditis


The figure above is a combination bar and line graph showing hospital costs for persons with drug dependence–associated endocarditis and the percentage increase since 2010 in North Carolina during 2010–2015.
What is changing in approaches to inpatient general medical care of patients with SUD?
What do patients want?

“It’s been an Experience, a Life Learning Experience”: A Qualitative Study of Hospitalized Patients with Substance Use Disorders

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BACKGROUND: Individuals with substance use disorders (SUD) have high rates of chronic illness and readmission, yet few are engaged in addiction treatment. Hospitalization may be a reachable moment for initiating and coordinating addiction care, but little is known about motivation for change in the inpatient setting.

OBJECTIVE: To explore the experiences of hospitalized adults with SUD and to better understand patient and system level factors impacting readiness for change.

DESIGN: We performed a qualitative study using individual interviews. The study was nested within a larger mixed-methods needs assessment.

INTRODUCTION

Individuals with substance use disorders (SUD) have high rates of chronic illness, hospitalization, and readmission.1–3 Despite frequent contact with healthcare systems, many people are not engaged in addiction treat-
Addiction consultation services –

Inpatient Addiction Consultation for Hospitalized Patients Increases Post-Discharge Abstinence and Reduces Addiction Severity

Sarah E. Wakeman, MD1,2, Joshua P. Metlay, MD, PhD1,2, Yuchiao Chang, PhD1,2, Grace E. Herman, BA3, and Nancy A. Rigotti, MD1,2

1Division of General Internal Medicine, Massachusetts General Hospital, Boston, MA, USA; 2Harvard Medical School, Boston, MA, USA; 3Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA.

BACKGROUND: Alcohol and drug use results in substantial morbidity, mortality, and cost. Individuals with alcohol and drug use disorders are overrepresented in general medical settings. Hospital-based interventions offer an opportunity to engage with a vulnerable population that may not otherwise seek treatment.

OBJECTIVE: To determine whether inpatient addiction consultation improves substance use outcomes 1 month after discharge.

DESIGN: Prospective quasi-experimental evaluation comparing 30-day post-discharge outcomes between participants who were and were not seen by an addiction consult team during hospitalization at an urban academic hospital.

PARTICIPANTS: Three hundred ninety-nine hospitalized adults who screened as high risk for having an alcohol or from baseline severity, the differences remained statistically significant.

CONCLUSIONS: In a non-randomized cohort of medical inpatients, addiction consultation reduced addiction severity for alcohol and drug use and increased the number of days of abstinence in the first month after hospital discharge.

KEY WORDS: addiction; substance use disorder; addiction consultation; hospitalized patients; post-discharge abstinence.

INTRODUCTION

What does ACT do?

- Risk stratification and guidance on hospital misuse and DC w/ PICC
- Management of detox and induction to MAT
- Assist distinguishing pain and opioid use disorder
- Motivational interviewing, brief intervention and referral to treatment
- Psychiatric care for co-occurring mental illnesses
“Traditional” Model of SUD Care

Acute Care

Inpatient Care

Outpatient Care

Community Based Care
Preventing Fractures in Care

Patient admitted with cellulitis due to injection drug use

- Community Partners / educated PCPs
- Dedicated addiction team
- Recovery (Peer) Coaches
- Expert social worker
- Low-threshold Bridge Clinic

Prevent readmit, M/M
What is a Bridge Clinic?

• 3-month outpatient transitional clinic for patients with SUD
• Allows early discharge from VUH for patients with PICC lines and IVDU – (UAB study)
• Staffed by psychiatry, medicine (including ID), pain anesthesia - Unique model
• Multidisciplinary team includes NP, nurse, medical assistant, social worker and recovery coach
Inpatient stays and ED visits for OUD on rise

- 64.1% \uparrow \text{ in inpatient stays}
- 99.4% \uparrow \text{ in ED visits}

https://www.hcup-us.ahrq.gov/reports/statbriefs/sb219-Opioid-Hospital-Stays-ED-Visits-by-State.jsp
What is changing in ED approaches to patients with SUD?
Why outpatient collaborative care for addiction?

• Patients go to their PCP (82% go once per year)
• Collaborative care is effective in other behavioral health conditions
• There is evidence for various individual components of addiction treatment being used effectively in primary care setting (Bup-Nx, XR-NTX, MI)
Nurse Care Manager
- Most care delivered by RN or some other allied health professional

Shared Medical Appointment
- 8-10 patients seen at once
- Group counseling part of treatment

Traditional
- 1 on 1 with patient
- MD manages care

Collaborative Care
- IM/RN/NP/PharmD + Psychiatrist

Specialty Clinic
- Possibly large, tertiary care clinic
- Multiple provider types/pathways

Most Resource Intensive

Least Resource Intensive
Collaborative Care for Opioid and Alcohol Use Disorders in Primary Care
The SUMMIT Randomized Clinical Trial

Katherine E. Watkins, MD, MSHS; Allison J. Ober, PhD; Karen Lamp, MD; Mimi Lind, LCSW; Claude Setodji, PhD; Karen Chan Osilla, PhD; Sarah B. Hunter, PhD; Colleen M. McCullough, MPA; Kirsten Becker, MS; Praise O. Iyiewure, MPH; Allison Diamant, MD; Keith Heinzerling, MD; Harold Alan Pincus, MD

**IMPORTANCE** Primary care offers an important and underutilized setting to deliver treatment for opioid and/or alcohol use disorders (OAUD). Collaborative care (CC) is effective but has not been tested for OAUD.

**OBJECTIVE** To determine whether CC for OAUD improves delivery of evidence-based treatments for OAUD and increases self-reported abstinence compared with usual primary care.
The continuum of care for OAUDs looked like this; patients could choose whether and what type of treatment to get.
As well as abstinent from alcohol and all drugs at 6 months

Effect estimate 0.13 (0.03-0.23)

*p = 0.01
‘The opioid epidemic is an historic opportunity to improve both prevention and treatment’

Robert L. DuPont
Reduced opioid prescribing & more deaths

Opioid morphine milligram equivalents (MME) dispensed fell by over 15% from 2010-2015

Fentanyl-Related Deaths Surpassed Heroin or Rx Opioids in 2016

Estimate of Total U.S. Drug Deaths in 2016

Graphs from NY Times Article based on CDC MMWR Report 2017
It’s not just opioids!

‘Understanding the forces that are holding multiple sub-epidemics together onto a smooth exponential trajectory may be important in revealing, and effectively dealing with, the root causes of the epidemic.’

Fig. 1. Mortality rates from unintentional drug overdoses. (A and B) Mortality rates for (A) individual drugs and (B) all drugs. Detailed data for individual drugs are only available from 1999 to 2016, although additional data for all drugs are available since 1979 (this area is grayed out). The exponential equation and fit are shown for all drugs. (Synth Opioids OTM: synthetic opioids other than methadone. This category includes fentanyl and its analogs.)
Dr. Willis P. Butler, 1888-1991; his Shreveport narcotic clinic operated from 1919 to 1923.
After more than half a century since the Harrison Act's passage one of the few statements about narcotics on which there is general agreement is that there is no treatment of hard-core addiction which leads to abstinence in more than a fraction of attempts.

DAVID MUSTO
The American Disease:
Origins of Narcotics Control
Conclusion

Chronic disease model improves outcomes

Addiction care is part of medical and psychiatric care

Integration and collaboration are the only way to reach many patients effectively
In closing, I want to make a plea for an intelligent and scientific study of this subject. It is so new, and the mental position of the large majority of the medical profession toward it has been of such a nature, that it has not had from alienists [psychiatrists] and from men specializing in allied lines [other mental health professionals] the attention to which its importance entitles it.

It appears moreover to deserve the best thought of the medical profession generally, and in such work the physical [biologic] aspect of the case should never be overlooked.

The drug addict is a sick man both physically and mentally, and should be studied and treated as a sick man and not as one always willfully delinquent.
References

Table 1
Agreement among U.S. Adults with Arguments Opposing and Supporting Safe Consumption Sites, 2017 (N = 1004).

<table>
<thead>
<tr>
<th>Argument</th>
<th>Anti-Safe Consumption Site Arguments</th>
<th>% Agree (95% CI)</th>
<th>Pro-Safe Consumption Site Arguments</th>
<th>% Agree (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund Treatment: Safe consumption sites should be illegal because funding should be spent instead on opioid use treatment and recovery.</td>
<td>57.6 (54.3, 60.8)</td>
<td>Better Alternatives: Safe consumption sites should be legal because they are a better alternative to dealing with opioid use than arresting people, which does not address their substance use.</td>
<td>42.7 (39.5, 46.0)</td>
<td></td>
</tr>
<tr>
<td>Opioids are illegal: Safe consumption sites should be illegal because use of heroin and other opioids is illegal.</td>
<td>56.3 (53.1, 59.5)</td>
<td>Reduce Infectious Diseases: Safe consumption sites should be legal because they would reduce HIV and hepatitis C by encouraging safer injection practices, such as using sterile syringes for each injection, among people who use opioids.</td>
<td>41.8 (38.7, 45.0)</td>
<td></td>
</tr>
<tr>
<td>Allow Continued Use: Safe consumption sites should be illegal because they allow people to continue using opioids.</td>
<td>53.7 (50.4, 57.0)</td>
<td>Decrease Costs: Safe consumption sites should be legal because they would reduce opioid-related emergency room visits and hospital admissions, which would decrease healthcare costs.</td>
<td>41.6 (38.5, 44.8)</td>
<td></td>
</tr>
<tr>
<td>Increase Drug Use: Safe consumption sites should be illegal because they would increase illegal drug use by making it easier for people to use opioids.</td>
<td>51.9 (48.6, 55.1)</td>
<td>Connect to Treatment: Safe consumption sites should be legal because they would reduce opioid use by connecting people who use opioids to drug treatment.</td>
<td>41.5 (38.3, 44.7)</td>
<td></td>
</tr>
<tr>
<td>Increase Illegal Activity: Safe consumption sites should be illegal because they would lead to more illegal activities in the neighborhoods where they are located.</td>
<td>51.0 (47.8, 54.2)</td>
<td>Law Enforcement Focus: Safe consumption sites should be legal because they allow law enforcement to focus more on violent crime instead of low-level drug offenses.</td>
<td>40.2 (37.0, 43.4)</td>
<td></td>
</tr>
<tr>
<td>Encourage Harmful Behavior: Safe consumption sites should be illegal because medical professionals would be encouraging harmful health behaviors like opioid use.</td>
<td>50.1 (46.8, 53.3)</td>
<td>Reduce Fatal Overdoses: Safe consumption sites should be legal because they would reduce fatal opioid overdoses by providing a place for people to have medical supervision while they use opioids.</td>
<td>39.4 (36.3, 42.6)</td>
<td></td>
</tr>
<tr>
<td>Government Tolerance: Safe consumption sites should be illegal because the government should not tolerate illegal activities such as opioid use.</td>
<td>49.0 (45.7, 52.2)</td>
<td>Reduce Public Use: Safe consumption sites should be legal because they would reduce the use of opioids in public places.</td>
<td>36.1 (33.1, 39.3)</td>
<td></td>
</tr>
<tr>
<td>Helped in Other Countries: Safe consumption sites should be legal because they have helped to reduce fatal opioid overdoses in other countries.</td>
<td></td>
<td>Helped in Other Countries: Safe consumption sites should be legal because they have helped to reduce fatal opioid overdoses in other countries.</td>
<td>34.0 (31.0, 37.1)</td>
<td></td>
</tr>
<tr>
<td>Safe Site: Safe consumption sites should be legal because they would provide a place for people who use opioids to stay safe while they are using drugs.</td>
<td></td>
<td>Safe Site: Safe consumption sites should be legal because they would provide a place for people who use opioids to stay safe while they are using drugs.</td>
<td>33.2 (30.2, 36.3)</td>
<td></td>
</tr>
<tr>
<td>Dignity and Respect: Safe consumption sites should be legal because they would create a space where people who use opioids are treated with dignity and respect.</td>
<td></td>
<td>Dignity and Respect: Safe consumption sites should be legal because they would create a space where people who use opioids are treated with dignity and respect.</td>
<td>27.3 (24.5, 30.3)</td>
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The Effectiveness and Risks of Long-Term Opioid Treatment of Chronic Pain
Nonmalignant chronic pain was **not** routinely treated with opioid analgesics before the 1990’s:

- Change in attitudes – NEJM 1980 (Jicks)
- New opioid formulations (Oxycontin in 1996)
- American Pain Society advocacy (Portenoy)
- Big Pharma – The Sackler Family
- FDA regulation
- Overprescribing
- Managed Care – Fragmented Insurance Reimbursement
- Joint Commission – 5\textsuperscript{th} vital sign:
- Wong-Baker Faces Pain Scale
- Tn legislature
ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients, Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

JANE PORTER
Hershel Jick, M.D.
Boston Collaborative Drug Surveillance Program
Waltham, MA 02154 Boston University Medical Center

Chronic Use of Opioid Analgesics in Non-Malignant Pain: Report of 38 Cases
Russell K. Portenoy and Kathleen M. Foley PAIN 1986

• Few substantial gains in employment or social function attributed to ... opioid therapy.

• A safe, salutary and more humane alternative ... in those patients with intractable non-malignant pain and no history of drug abuse.
The ‘Fifth Vital Sign’

Activity
Ambulate with Assistance As Tolerated

Medication
A new medication has been ordered.

PAIN SCALE

0  2  4  6  8  10
Notwithstanding any other provision of law, a physician may prescribe or administer dangerous drugs or controlled substances to a person in the course of the physician’s treatment of a person for intractable pain to provide adequate pain treatment.