TERRY REILLY

Your Health. Our Mission.

Opioid Use Disorder: Implementation and Troubleshooting Collaborative Medication Assisted Treatment (MAT) In The Primary Care Setting

IDAHO CONFERENCE ON ALCOHOL AND DRUG DEPENDENCY

May 16, 2019

12:00pm – 1:30pm

Introductions

Terry Reilly Health Services

Debby Woodall, LCSW, ACADC

Katie Weigand, ACAD Counselor

Chris Reinders, MD

Our Mission: "Terry Reilly, in the tradition of our founders, is a community health center dedicated to providing affordable, comprehensive health care to everyone in our community to improve health and quality of life."

Required Disclosures

- No actual or potential conflict of interest in relation to this presentation
  - No Relevant Financial Relationships
  - No Relevant Nonfinancial Relationships
- Some presentation materials adapted with permission from:
  - Provider Clinical Support System (PCSS)
  - RAND Corporation

Learning Objectives

- Understand origins of opioids
- Review the scope and consequences of the opioid crisis
- Identify causes of significant underreporting of opioid overdose deaths in Idaho
- Discuss proposed etiology and responses to the opioid crisis
- Identify gaps and barriers to treatment
- Recognize different treatment philosophies and approaches to opioid use disorder
- Understand the basic pharmacology mechanism of action as it relates to MAT for opioid use disorder (how it works)
- Discuss co-occurring substances and MAT for opioid use disorder
- Understand that MAT with buprenorphine is not just substitution of one drug with another and provides mortality benefit
- Discuss collaborative care (including "CoOp" model) and psychosocial interventions for opioid use disorder
- Understand patient selection and importance of level / venue of care and consequences of undertreatment or overtreatment
- Discuss barriers to MAT integration into primary care

What's All The Buzz?-What Are Opioids?

- Originally derived from the opium poppy
- Utilized throughout the world for various uses for thousands of years for both recreational and medicinal purposes
- Most active substance in opium is morphine—named after Morpheus, the Greek god of dreams

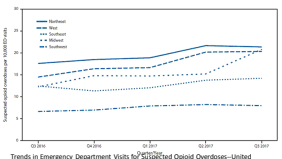
- 1800's: Morphine and Heroin marketed commercially as mediations for pain, anxiety and respiratory problems
  - Invention of hypodermic syringe allowed for rapid delivery to the brain
- Many different opioid derivatives (both natural and synthetic)
- Stimulates the opioid receptor in the brain and decreased pain but with side effects such as euphoria and respiratory depression

Mrs. Winslow's Soothing Syrup

- Widely marketed in North America and the United Kingdom in the late 19th and early 20th centuries
- Cure-all medicine for fussy babies
- Primary ingredients of the syrup were morphine and alcohol
- Approximately 65 mg of morphine per fluid ounce
- Pure Food and Drug Act instituted in United States in 1906
  - Mrs. Winslow's Soothing Syrup was forced to remove morphine from their syrup and remove "soothing" from their brand name
  - Sold until the 1930s
- Were there fussy babies prior to 1906?

Opioid Crisis

- National Crisis Affecting
  - Public Health
  - Social and Economic Welfare- $78.5 billion a year (CDC Estimate)



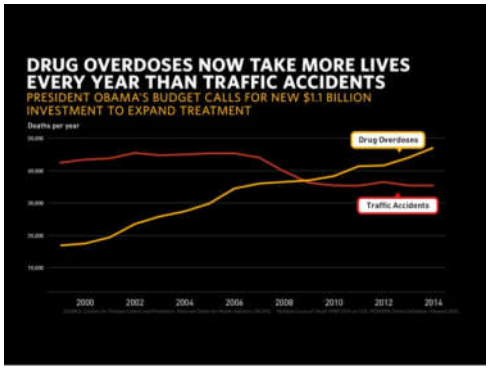
Trends in Emergency Department Visits for Suspected Opioid Overdoses--United States, July 2016-September 2017

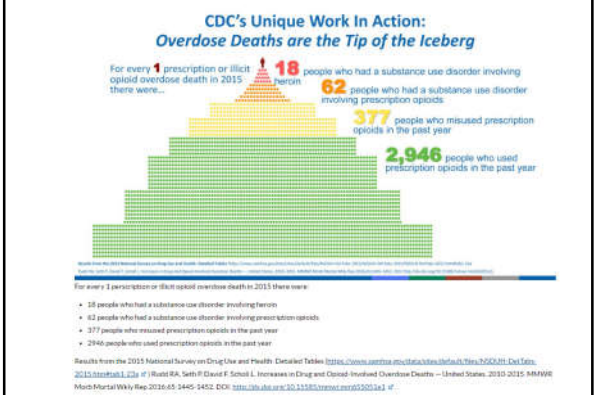
- 130 deaths daily
- Roughly 21 to 29 percent of patients prescribed opioids for chronic pain misuse them
- Between 8 and 12 percent develop an opioid use disorder
- An estimated 4 to 6 percent who misuse prescription opioids transition to heroin
- About 80 percent of people who use heroin first misused prescription opioids
- Opioid overdoses increased 30 percent from July 2016 through September 2017

Opioid Crisis

- 5 million Americans report using prescription opioids non-medically
- 2.5 million meet criteria for opioid dependence
- Drug overdoses > MVAs for leading causes of death
- 1 in 5 pregnant women filled an opioid prescription during the pregnancy

Substance Abuse and Mental Health Services Administration 2012





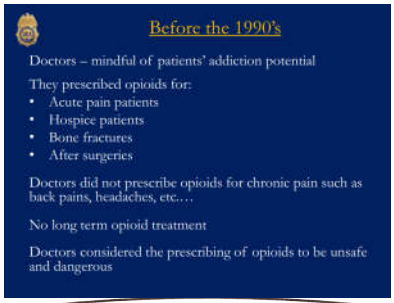
How Did This Happen?

- In the late 1990s, pharmaceutical companies reassured the medical community that patients would not become addicted to prescription opioid pain relievers---If I only knew then what I know now--
- Medical education / Policy – Pain as the "5th Vital Sign"
  - Liability and medical malpractice cases for failure to assess and treat pain
- Healthcare providers began to prescribe opioids at greater rates
- This subsequently led to widespread diversion and misuse of these medications before it became clear that these medications could indeed be highly addictive
- Opioid overdose rates began to increase
  - In 2017, more than 47,000 Americans died as a result of an opioid overdose, including prescription opioids, heroin, and illicitly manufactured fentanyl
  - That same year, an estimated 1.7 million people in the United States suffered from substance use disorders related to prescription opioid pain relievers, and 652,000 suffered from a heroin use disorder (not mutually exclusive)

NIH-National Institute on Drug Abuse: Advancing Addiction Science: January 2019 https://www.drugabuse.gov/drugs-abuse/opioids/opioid-overdose-crisis#ten

DEA Trends & Update

Pharmacy Diversion Awareness Conference-October 2017



DEA Trends & Update: Pharmacy Diversion Awareness Conference: Luis Carrion, Staff Coordinator- Liaison and Policy Section, Diversion Control Division

DEA Trends & Update

Pharmacy Diversion Awareness Conference-October 2017

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Before the 1990's

During chronic pain:

a. Non controlled drugs were prescribed
b. Muscle relaxants
c. Therapeutic remedies
d. Acupuncture
e. Use opioids as the last resort

NO "EASY FIX" CONCEPT

DEA Trends & Update

Pharmacy Diversion Awareness Conference-October 2017

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Around mid 90's – Change takes place

Pain Advocates encouraged a shift of how the medical field was practicing medicine

- Opiates started to get used more frequently
- Two campaigns: Marketing & Education

Convinced the medical community:

- Opioids were under prescribed
- Patients suffered from unnecessary pain
- Opioids were not addictive
- Opioids were safe

Result: Doctors started to freely prescribe opioids

DEA Trends & Update

Pharmacy Diversion Awareness Conference-October 2017

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DEA Trends & Update

Pharmacy Diversion Awareness Conference-October 2017

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Prescription Drug Abuse is driven by

Indiscriminate Prescribing

Criminal Activity

What About Idaho?

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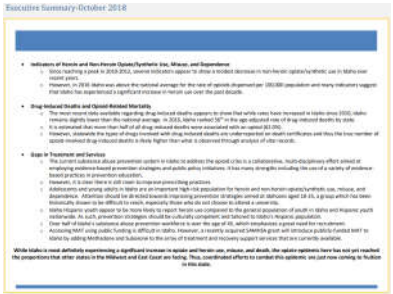
***Above national average for opiates dispensed per 100,000 population**

***Indicators suggest Idaho has experienced a significant heroin use increase over the last decade**



***Drug induced deaths increased since 2010: Ranked 36th by state**

***Drug induced deaths are UNDER REPORTED**

Opioid-Related Mortality in Idaho: The Most Recent Data Available for Opioid-Involved Drug-Induced Deaths

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- In Idaho, death certificates for drug-induced deaths may report one drug, more than one drug, or no drugs (i.e. only states "accidental drug overdose").
  - Many counties do not have facilities to complete forensic toxicology testing
  - Limited or NO funding to send samples for forensic toxicology testing
- The type of drug(s) involved with drug-induced deaths are underreported throughout the state.
  - Certain counties (including some of Idaho's largest counties, such as Bonneville and Canyon county) have a particularly large percentage of drug deaths with no drug(s) specified on the death certificate.
  - Consequently, the number of true opioid-involved drug-induced deaths is likely significantly higher than what is observed here.
- The lack of standard and consistent reporting of drug-induced deaths across the state also makes comparing rates across counties difficult.
- Drawing conclusions based on the rate of opioid-involved drug-induced deaths is problematic in Idaho as the small population size of many counties can cause even one death to drastically change the county's rate.
  - As such, population-standardized rates are not presented in the State's Opiate Needs Assessment.
- Reported deaths are based on the decedent's county of residence.
  - The death may have occurred in their county of residence, in another county in Idaho, or out of state.

Gaps in Treatment and Services

- The current substance abuse prevention system in Idaho to address the opioid crisis is a collaborative, multi-disciplinary effort aimed at employing evidence-based prevention strategies and public policy initiatives.
- It is clear there is still room to improve prescribing practices.
- Adolescents and young adults in Idaho are an important high-risk population for heroin and non-heroin opiate/synthetic use, misuse, and dependence.
  - Attention should be directed towards improving prevention strategies aimed at Idahoans aged 18-25, a group which has been historically shown to be difficult to reach, especially those who do not choose to attend a university.
- Idaho Hispanic youth appear to be more likely to report heroin use compared to the general population of youth in Idaho and Hispanic youth nationwide.
  - As such, prevention strategies should be culturally competent and tailored to Idaho's Hispanic population.
- Over half of Idaho's substance abuse prevention workforce is over the age of 45, which emphasizes a great need for recruitment.
- Accessing MAT using public funding is difficult in Idaho.
  - Recently acquired SAMHSA grant will introduce publicly-funded MAT to Idaho by adding Methadone and Suboxone to the array of treatment and recovery support services that are currently available.
  - Many treatment providers believe that Medicaid expansion will be of significant benefit for access to treatment services

Idaho Opioid Needs Assessment – 2018 (https://healthandwelfare.idaho.gov/Portals/0/Medical/SUD/IROC/IROC%20Needs%20Assessment%202018.pdf)

Opioid Needs Assessment 2018 (Page 35)

- Policy & Legislation Proposed or Enacted in Idaho Related to the Opioid Overdose Crisis; including the Overall Socio-Political Environment that is Supportive of MAT
  - "Idaho is a very conservative state. Priding itself on agriculture and the great outdoors, you will frequently hear that **"Idaho is a pick-yourself-up-the bootstraps state"** in the halls and session rooms of the State Capitol. Idaho takes a very conservative approach to social service provision, emphasizing local community and faith responses to need, rather than "another government program" saving the day. In this same vein, the Idaho State Legislature is not keen on accepting federal mandates and has, more than once, fought back in the court room over such mandates. In this environment, it is no surprise that Idaho has not expanded Medicaid"
  - IDHW, along with its many partners, has put significant amount of effort into educating lawmakers, the public and just about anyone else who will listen on the fact that addiction is a disease and we must treat it as such

https://healthandwelfare.idaho.gov/Portals/0/Medical/SUD/IROC/IROC%20Needs%20Assessment%202018.pdf

And Now-The Response

- Dramatic swing in prescribing practices
  - civil and criminal penalties ("pill mills" and other "negligent" prescribing practices)
  - state limits on quantity / days supply / refills
- U.S. Department of Health and Human Services (HHS) is focusing its efforts on five major priorities
  - improving access to treatment and recovery services
  - promoting use of overdose-reversing drugs
  - strengthening our understanding of the epidemic through better public health surveillance
  - providing support for cutting-edge research on pain and addiction
  - advancing better practices for pain management
- National Institutes of Health (NIH) working on new and better ways to prevent opioid misuse, treat opioid use disorders, and manage pain
  - safe, effective, non-addictive strategies to manage chronic pain
  - new, innovative medications and technologies to treat opioid use disorders
  - improved overdose prevention and reversal interventions to save lives and support recovery

The DEA is Cracking Down!

- February 5 2016
- Precedent Setting Case:
  - LA doctor charged with second degree murder of 3 patients, sentences to 30 years to life in prison
  - Dr. Tseng wrote that she lacked sufficient training in prescribing addictive narcotics and was in denial about what was going on in her practice.
  - "I told myself that my patients' conduct was beyond my control," she wrote.
  - Multiple "red flags"
    - Knew or should have known about the abuse and diversion
- Defense: Doctor was in over her head

https://www.cnn.com/2016/02/05/health/california-overdose-doctor-murder-sentencing/index.html

Southern California doctors arrested in opioid prescription crackdown

By JOEL RUBIN

A yearlong investigation by federal drug agents has resulted in criminal charges against several physicians and other healthcare providers accused of writing bogus prescriptions or selling painkillers and other drugs on the black market.

"Opiate dependency and addiction does not discriminate — it doesn't matter your occupation, your income or your race,"

Calif. Doctor Arrested After 5 People Overdose on Opioids

Federal authorities also contend that the doctor sent a text message expressing concern that Borderline Bar and Grill mass killer David Ian Long had prescription drugs in his possession that he had prescribed for someone else.

By City News Service

United States Department of Justice: US Attorney's Office, District of Idaho

FOR IMMEDIATE RELEASE Thursday, September 8, 2016

Boise Doctor Convicted of Controlled Substance Delivery

BOISE – Michael Mims, 50, of Boise, Idaho, was sentenced today to eight years in federal prison on five counts of unlawfully distributing controlled substances outside the usual course of professional practice and not for a legitimate medical purpose, U.S. Attorney Wendy J. Olson announced. Senior U.S. District Judge Edward J. Lodge also ordered Mims to pay an $80,000 fine and to forfeit proceeds of $6,000. During the sentencing hearing, Judge Lodge stated that "doctors must be part of the solution, not the source of the problem." Mims was convicted in May at the end of a 14-day federal jury trial in Boise.

"The lengthy prison sentence imposed by the Court will serve the interests of justice in this case," said Olson. "Medical doctors who knowingly prescribe powerful and addictive painkillers without a legitimate medical purpose are no different than drug dealers. They abuse the trust of their patients, and they create both a public safety and a public health problem."

In April 2014, a federal grand jury charged Mims with 146 counts of distributing a controlled substance. On May 6, 2016, the jury returned a verdict of 80 counts guilty and 59 counts not guilty. The United States dismissed seven counts during trial.

Evidence at trial showed that Mims knowingly and intentionally prescribed controlled substance outside the usual course of professional practice and not for a legitimate medical purpose. The controlled substance Mims illegally distributed was primarily oxycodone 30 mg, but the jury also found Mims guilty of distributing fentanyl and hydromorphone. The jury heard evidence that Mims wrote prescriptions for extraordinary dosages, such as 240, 300, and even 450 oxycodone 30 mg. It also heard evidence that he often wrote prescriptions at intervals of two or three weeks, but wrote dosage instructions on the prescriptions indicating that it was a month's supply. The jury also heard evidence that Mims wrote prescriptions for drugs that present a risk of negative interaction with oxycodone, such as benzodiazepines, sedatives, and muscle relaxers. Mims generally charged $100 cash for an appointment. Several former employees testified that Mims's practice transformed over time from a standard family practice to one catering to patients claiming chronic pain and seeking opioid narcotics. Many of Mims's patients testified that the prescriptions issued by the defendant fed the patients' addiction and resulted in substantial negative effects on their lives.

Mims operated the River Medical Family Practice in Eagle until his arrest in June of 2014. He had been released pending trial. During that time, Mims has been prohibited from writing prescriptions and from engaging in the practice of medicine except for the limited purpose of transferring patient records so that patients may see other providers. He also was required to relinquish any prescription pads in his possession. Mims has been in custody since his conviction at trial.

The case was investigated by the Drug Enforcement Administration (DEA) led Tactical Diversion Squad which is comprised of law enforcement personnel from the DEA, Ada County Sheriff's Office, Boise Police Department, Idaho State Police, Meridian Police Department, Nampa Police Department and U.S. Department of Health and Human Services Office of Inspector General.

Opioid Use Disorder

- It's a huge problem
- It's getting to be more of a problem
- Prevention is key
- Treatment is available
- A message of hope and compassion for those who are suffering and their families!

Opioid Use Disorder Treatment

Treatment Goals

- Range of treatment goals

Minimization of harms from ongoing use ⟷ Sustained recovery with abstinence from all substances

***ASAM: Recovery from addiction is an active process of continual growth that addresses the biological, psychological, social and spiritual disturbances inherent in addiction, and includes the following factors:**

1. The aim of improved quality of life and enhanced wellness as identified by the individual
2. An individual's **consistent pursuit of abstinence** from the substances or behaviors towards which pathological pursuit had been previously directed or which could pose a risk for pathological pursuit in the future
3. Relief of an individual's symptoms including substance craving
4. Improvement of an individual's own behavioral control
5. Enrichment of an individual's relationships, social connectedness, and interpersonal skills
6. Improvement in an individual's emotional self-regulation.

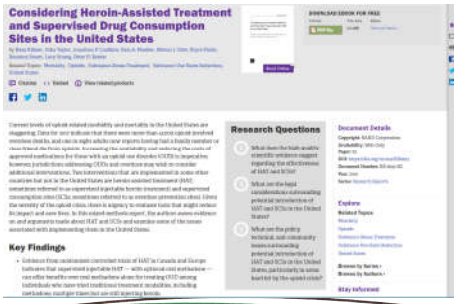
However, the term 'recovery' in the field of addiction is still surrounded by controversy, but The World Health Organization defines recovery as 'maintenance of abstinence from alcohol and/or other drug use by any means' (WHO, 2017)

*Adopted by the ASAM Board of Directors April 11, 2018

Treatment Philosophies

- Harm Reduction
  - Practical strategies and ideas aimed at reducing negative consequences associated with drug use
  - Managed use to abstinence to meet users "where they're at"
  - Naloxone availability
  - Syringe access / exchange
  - Drug checking (adulterant screening)
  - Supervised Consumption Services (overdose prevention centers and supervised injection facilities)
  - Opioid maintenance treatment
    - Heroin Assisted Treatment
  - Medication Assisted Treatment (MAT)
    - Methadone
    - Buprenorphine
    - Naltrexone
  - Others
- Abstinence
  - Harm reduction is not at odds with abstinence; instead, it includes abstinence as one possible goal across a continuum of possibilities
  - Pros and cons to both philosophical points of view wen considering abstinence vs harm reduction models
  - Not every patient is able to achieve abstinence -nor is it a realistic expectation
  - Most experts agree that the goals of treatment of opioid use disorder include discontinuation or marked reduction of the use of illicit opiates
  - Stigma (across the board but even among those in recovery)

2018: Considering Heroin-Assisted Treatment and Supervised Drug Consumption Sites in the United States



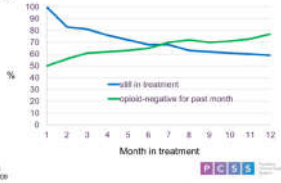
Treatment Options: Federations of State Medial Boards

- Partial agonist (Buprenorphine) at the mu receptor (OBOT or OTP)
- Agonist (Methadone) at the mu receptor (OTP)
- Antagonists (Naltrexone) at the mu receptor
- Simple detoxification and no other treatment
- Counseling and or peer support without MAT
- Referral for residential treatment (short or long term)

MAT Promotes Retention In Treatment

Treatment Retention and Decreased Illicit Opioid Use on MAT

- Buprenorphine promotes retention, and those who remain in treatment become more likely over time to abstain from other opioids



Pharmacology: mu-receptor

Major Features of Methadone

Full Agonist at mu receptor

Long acting

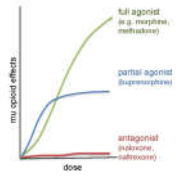
- Half-life ~ 15-60 Hours

Weak affinity for mu receptor

- *Can be displaced by partial agonists (e.g. buprenorphine) and antagonists (e.g.naloxone, naltrexone), which can both precipitate withdrawal*

Monitoring

- Significant respiratory suppression and potential respiratory arrest in overdose
- QT prolongation



CSAT, 2005

PCSS

Pharmacology: mu-receptor

Major Features of Buprenorphine

Partial agonist at mu receptor

- Comparatively minimal respiratory suppression and no respiratory arrest when used as prescribed

Long acting

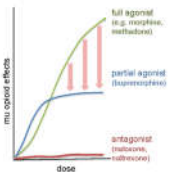
- Half-life ~ 24-36 Hours

High affinity for mu receptor

- *Blocks other opioids*
- *Displaces other opioids*
  - Can precipitate withdrawal

Slow dissociation from mu receptor

- *Stays on receptor for a long time*



SAMHSA, 2016
Orman & Keating, 2009

PCSS

Pharmacology: mu-receptor

Major Features of Naltrexone

Full Antagonist at mu receptor

- Competitive binding at mu receptor

Long acting

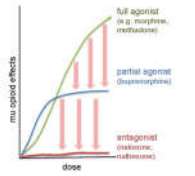
- Half-life:
  - Oral ~ 4 Hours
  - IM ~ 5-10 days

High affinity for mu receptor

- *Blocks other opioids*
- *Displaces other opioids*
  - Can precipitate withdrawal

Formulations

- *Tablets: Revia®: FDA approved in 1984*
- *Extended-Release intramuscular injection: Vivitrol®: FDA approved in 2010*



SAMHSA, 2016

PCSS

The Details Are Important

How Does Buprenorphine Work?

- AFFINITY is the strength with which a drug physically binds to a receptor
  - Buprenorphine has strong affinity; will displace full mu receptor agonists like heroin and methadone
  - Receptor binding strength, is NOT the same as receptor activation
- DISSOCIATION is the speed (slow or fast) of disengagement or uncoupling of a drug from the receptor
  - Buprenorphine dissociates slowly
  - Buprenorphine stays on the receptor a long time and blocks heroin, methadone and other opioids from binding to those receptors

NOTE: It is unlikely to block all effects from an opioid taken after initiation of buprenorphine treatment. Because binding to mu receptors is a dynamic process; while effects may be less, they are not likely to be completely eliminated.

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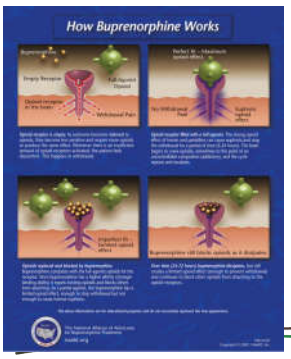
Pharmacokinetics



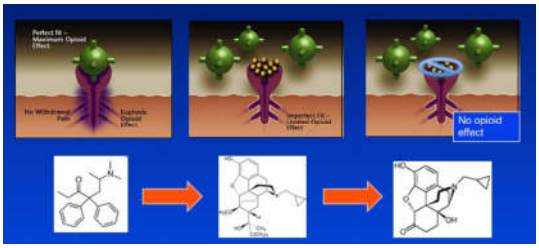
Full agonist like Heroin: Perfect "fit" = strong receptor activation = maximum opioid effect

- **Decrease pain**
- **Euphoria**
- **Respiratory depression**
- **Others (other "adverse" effects)**

***Partial agonist like Buprenorphine: Imperfect fit = less receptor activation**

***High Affinity: Binds VERY strong = displaces full agonists from the receptor (precipitated withdrawal)**
***Slow dissociation: Remains bound to the receptor for a long time**
***Limited opioid effect (but enough to prevent withdrawal)**

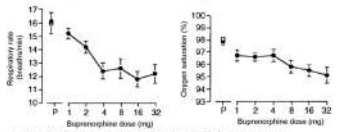
"Fit" and Receptor Activation



Cognitive/Psychomotor/Respiratory

Buprenorphine Dosing: Safety

- Cognitive and psychomotor effects appear to be negligible.
- Respiratory rate slowed but has as a plateau effect in adults.



- Nearly all fatal poisonings involve multiple substances

Hakkinen et al., 2012
Walsh et al., 1994

PCSS

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Combining Buprenorphine with Naloxone

Rationale for the Combination of Buprenorphine with Naloxone

- When used as prescribed (sublingual or buccal administration), there is minimal bioavailability of naloxone
- Compared to buprenorphine alone, the buprenorphine/naloxone combination:
  - was developed to decrease IV misuse
  - is more likely to precipitate a withdrawal effect if injected by a current opioid user.
  - produces a slowed onset effect when injected or insufflated in those who are physically dependent buprenorphine.
  - per prescription, is less likely to be diverted

Corser et al., 2010
Jones et al., 2015
Stoller et al., 2001

PCSS

The Data: Treatment Retention

Buprenorphine vs Placebo vs Methadone maintenance for opioid dependence

- Cochrane Review of 31 trials with over 5,400 participants found:
  - Buprenorphine is an effective medication for retaining people in treatment at any dose above 2 mg, and suppressing illicit opioid use (at doses 16 mg or greater) based on placebo-controlled trials
  - Buprenorphine appears to be less effective than methadone in retaining people in treatment, if prescribed in a flexible dose regimen or at a fixed and low dose (2 - 6 mg per day)
  - However, Buprenorphine prescribed at fixed doses (above 7 mg per day) was not different from methadone prescribed at fixed doses (40 mg or more per day) in retaining people in treatment or in suppression of illicit opioid use

Mattick et al., 2014

PCSS

Co-Occurring Substances: Benzodiazepines (HOT TOPIC)

Buprenorphine and Benzodiazepines

- Benzodiazepines are present in most fatal poisonings involving buprenorphine

Human studies	Minimal effects on respiration when both are taken at therapeutic doses
Animal studies	May remove the protective "ceiling effect" and allow buprenorphine to produce fatal respiratory suppression in overdose

- Used as prescribed benzodiazepines in combination with buprenorphine have been associated with more accidental injuries, but not with other safety or treatment outcomes

Bardy et al., 2015
Jones et al., 2012
Hakkan & Taylor, 2005
Schuman-Olivier et al., 2013

PCSS

Warnings-Changes

Changes in FDA Recommendations

08/2016	09/2017
• Boxed Warning for combined use of opioid medicines with benzodiazepines or other CNS Depressants (e.g. Alcohol) • Risks of slowed or difficult breathing; Sedation; Death	• Buprenorphine and methadone should not be withheld from patients taking benzodiazepines or other drugs that depress the central nervous system (CNS). • The combined use of these drugs increases the risk of serious side effects; however, the harm caused by untreated opioid addiction can outweigh these risks. • Careful medication management by health care professionals can reduce these risks.

FDA, 2016, 2017

PCSS

Risk vs Benefit

FDA Guidance for Health Care Professionals

- Take several actions and precautions and develop a treatment plan when buprenorphine or methadone is used in combination with benzodiazepines or other CNS depressants:

  - Educate patients about the serious risks, poss. death
  - Taper the benzodiazepine or CNS depressant to discontinuation if possible.
  - Verify the diagnosis for anxiety or insomnia and consider other treatment
  - Recognize that patients may require MAT medications indefinitely and their use should continue for as long as patients are benefiting and their use contributes to the intended treatment goals.
  - Coordinate care to ensure other prescribers are aware of the patient's buprenorphine or methadone treatment.
  - Monitor for illicit drug use, including urine or blood screening

FDA, 2017

PCSS

Alcohol

Buprenorphine and Alcohol

- Overall recommendation is to generally avoid CNS depressants with buprenorphine
- Some evidence that treatment with buprenorphine can help decrease craving for alcohol, ethanol intake and the Addiction Severity Index (ASI) subscale of alcohol use score
- Alcohol use disorder is associated with higher rates of relapse to opioid use

Clark et al., 2015
Hakkinen et al., 2012
Nava et al., 2008

PCSS

Diversion

Diversion of Buprenorphine

- Has intravenous misuse potential
- Most estimates suggest that, per dose, tablets are more likely to be diverted than films, and mono product tablets more likely than combined buprenorphine/naloxone
- In a survey of more than 4,000 patients in treatment programs in the United States, relative rates of diversion per prescribed dose were:
  - **buprenorphine/naloxone film: 1** (reference)
  - **buprenorphine/naloxone tablet: 2.2**
  - **buprenorphine tablet: 6.5**
- Combination product is therefore the standard of care for general use

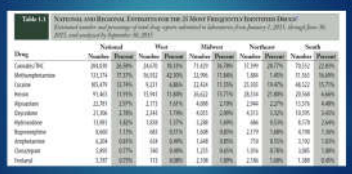
Comer et al., 2010
Jones et al., 2015
Larance et al., 2014
Lavonas et al., 2014

PCSS

Diversion: Another Opioid Crisis?

The Scope of the Problem

- Buprenorphine is the 4th most diverted controlled substance in the U.S.



NFLIS Data available at: https://www.nflis.deadiversion.usdoj.gov.

Diversion: Another Opioid Crisis?

The Scope of the Problem

- According to the Drug Abuse Warning Network, an estimated 21,483 emergency department visits were associated with nonmedical use of buprenorphine in 2011, nearly five times the 4,440 estimated number of buprenorphine ED visits in 2006.
- RADARS [Researched Abuse Diversion Addiction Related Surveillance], reported past-month prevalence in the United States of IV BUP and BUP/NX misuse of 45.5% and 16.3%, respectively, by individuals presenting for opioid abuse treatment

DEA Buprenorphine Briefing, July 2013
RADARS Data Dart, 2011

Diversion: Another Opioid Crisis?

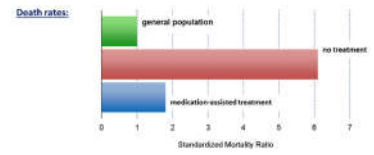
Buprenorphine Diversion - Finland

- Most widely abused opioid
- Most widely abused intravenous drug
- Misuse increased around 2001 when the availability of heroin decreased
- Among those entering treatment for opioid dependence, Aalto *et al.* found that 29 of 30 patients (97%) reported buprenorphine as their primary drug of abuse
- Among a larger sample of syringe exchange program (SEP) participants in Finland (n=176), buprenorphine was the most frequently abused injection drug (73% of respondents), yet a significant portion of these individuals reported using buprenorphine in a therapeutic manner, to self-treat withdrawal or addiction

Yokell MA., et al. Curr Drug Abuse Rev. 2011 March 1; 4(1): 28–41.

Why Bother?

Benefits of MAT: Decreased Mortality



Dupouy et al., 2017
Evans et al., 2015
Sordo et al., 2017

PCSS

MAT is NOT: Take a Pill = Cure

- Medication Assisted Treatment-Opioid Agonist
  - Alleviate physical withdrawal
  - Opioid blockade
  - Alleviate drug craving
  - Help to normalize deranged brain changes physiology/chemistry with improvements in:
    - Illicit opioid use
    - Other drug use (maybe indirectly)
    - Needle sharing and infectious disease transmission
    - Pro-social activities
    - Employment
    - Mental health and interpersonal interactions / behaviors
  - Team Based Approach (multiple departments / disciplines)

MAT is NOT: Take a Pill = Cure (cont.) and Eight Dimensions of Wellness

MAT is NOT: Take a Pill = Cure (cont.) and Collaborative Care

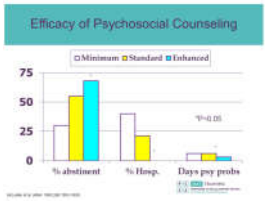
- OBOT Stakeholders that may be involved in or influence care / decision-making:

Front desk / schedulers	Psychiatrists / PNP
Medical assistants	Referral sources (patients in)
MAT prescribers	Referral providers (patients out)
Primary care providers	Contracted payer sources
Behavioral Health Consultants	Pharmacy, Clinical Pharmacy Services
ACADC (and others)	Administrative / Executive Leadership

Addressing concerns / bias is important for a successful program
- Stigma (staff, community)
- Treatment philosophies of the organization as a whole and individual providers
- Treatment requirements for the program
- Many others

*PCSS MAT Training: Module 7, Slide #9

Psychosocial Interventions



The APA guideline notes that while "psychotherapy can enhance the effectiveness of pharmacotherapy," it also emphasizes, "pharmacotherapy enhances the efficacy of psychotherapy since these two treatments have different mechanism of action and targeted effects that can counteract the weaknesses of either treatment alone" (APA, p 38)

Formal Counseling: Short term evidence not superior to good medication management –BUT
- No long term data
- **"absence of evidence is not evidence of absence"***

ASAM National Practice Guideline:
- Psychosocial treatment is recommended in conjunction with any pharmacological treatment of opioid use disorder. At a minimum, psychosocial treatment should include the following:
  - Psychosocial needs assessment
  - Supportive counseling
  - Links to existing family supports and referral to community services
  - Treatment individualized, HOWEVER:
  - "Psychosocial treatment is generally recommended for patients who are receiving opioid agonist treatment (methadone or buprenorphine)"

*PCSS MAT Training: Module 7, Slide #10

Patient Selection-Office Based Opiate Treatment

- Level 1 Office Based Opioid Treatment is the lowest level of care for MAT with opioid agonist (buprenorphine only – different than OTP)
  - Meets diagnostic criteria (moderate to severe)
  - Can patient reasonably be expected adhere with treatment requirements?
    - Ready to engage?
  - Are the psychosocial circumstances of the patient stable and supportive?
  - Taking other medications (prescribed or illicit) that may interact?
  - Required internal resources available?
  - Are there local resources for referral if more intensive level or service needed?
- Standardized tools
  - **The venue in which treatment is provided is as important as the specific medication selected (multidimensional assessment)**

Evaluation and determination of therapeutic service need

Levels of care are as follows:

1.	Level 0.5	Early Intervention
2.	OTP-Level 1	Opioid Treatment Program
3.	Level 1	Outpatient Services
4.	Level 2.1	Intensive Outpatient Services
5.	Level 2.5	Partial Hospitalization Services
6.	Level 3.1	Clinically Managed Low-Intensity Residential Services
7.	Level 3.3	Clinically Managed Population-Specific High-Intensity Residential Services
8.	Level 3.5	Clinically Managed High-Intensity Residential Services
9.	Level 3.7	Medically Monitored Intensive Outpatient Services
10.	Level 4	Medically Managed Intensive Inpatient Services

Evaluation and determination of therapeutic service need (cont)

Six Dimensions of Multidimensional Assessment:

1. **Acute intoxication and / of withdrawal potential**
2. **Biomedical Conditions and Complications**
3. **Emotional, Behavioral, or Cognitive Conditions and Complications**
4. **Readiness to Change**
5. **Relapse, Continued Use or Continued Problem Potential**
6. **Recovery/Living Environment**


EXAMPLE CHART FOR ADULT LEVELS OF CARE

Patient Selection-Office Based Opiate Treatment (cont.)

- OBOT and Concurrent SUDs and / or Non-Prescribed Medication Use
  - Other concurrent substance use disorders
    - May benefit from completion of more intensive treatment such as as Intensive Outpatient Programs or Residential Treatment prior to care at OBOT
  - Buprenorphine is a treatment for opioid use disorder, not other drug use disorders. No direct impact on cocaine, amphetamine, cannabis, alcohol (though reductions may occur indirectly as a result of monitored treatment)
  - Misuse of other drugs (such as stimulants or sedatives) can be prevalent among opioid use disorders and may interfere with the overall treatment adherence
  - Misuse of other prescribed medications (gabapentin) is a significant concern

Patient Selection-Office Based Opiate Treatment (cont.)

- Neurontin (gabapentin)-2018 data and **HOT** topic
  - Not a controlled substance in Idaho
    - Controlled in multiple other states
  - Complex or "mixed" opiate deaths implication
    - Found in one in five prescription opioid-only deaths
    - Noted in toxicology of 22% of all drug overdoses in one study
    - In Kentucky, gabapentin was listed as a contributing drug on the death certificate in 40% of the overdose deaths with gabapentin-positive toxicology; in North Carolina this percentage was 57%.
  - Combination of gabapentin and opioids might be an indicator of high-risk opioid misuse but requires further study

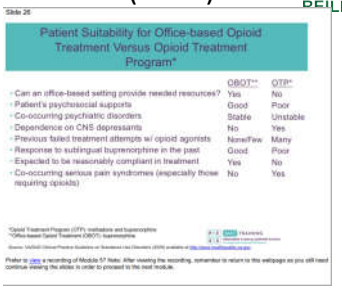
Prevalence of gabapentin in drug overdose postmortem toxicology testing results: Drug and Alcohol Dependence Volume 186, 1 May 2018, Pages 80-85

Patient Selection-Office Based Opiate Treatment (cont.)

Many considerations for venue of care: WHY?

Over time, substance abuse services system has shifted from primarily residential to non-residential settings

- Prompted the need to understand if substance abuse treatment processes and outcomes vary across service setting
- Formal predictive ability analysis of the ASAM-PPC was conducted in 2003
- **Undertreatment = Clinical harm (poorer outcomes)**
- **Overtreatment = Wasteful with no better outcomes**


Slide 26

Patient Suitability for Office-based Opioid Treatment Versus Opioid Treatment Program*

	OBOT**	OTP*
Can an office-based setting provide needed resources?	Yes	No
Patient's psychosocial supports	Good	Poor
Co-occurring psychiatric disorders	Stable	Unstable
Dependence on CNS depressants	No	Yes
Previous failed treatment attempts w/ opioid agonists	None/Few	Many
Response to sublingual buprenorphine in the past	Good	Poor
Expected to be reasonably compliant in treatment	Yes	No
Co-occurring serious pain syndromes (especially those requiring opioids)	No	Yes

MAT Integration Into Primary Care

- Organizational and Prescriber philosophies
- Widespread bias and misinformation (all stakeholders)
- Resources (facilities / staff); Including lack of prescribers
- Involvement other disciplines (clinical pharmacy, BHC,)
- Policies and Procedures / Treatment Protocols
- Community Partners

Organizational and Prescriber Philosophies

- Important to be on the same page before initiation of MAT services
  - Harm reduction vs abstinence models (or continuum as neither are mutually exclusive)
  - Outcome / quality measures
    - ?As long as decreased opiate use – doing ok regardless of other factors?
    - What about cocaine, methamphetamine etc?
    - What about participation in other recovery related activities?
  - Sometimes Executive Leadership needs to make the final call on some issues
    - Engage leadership early and often

Widespread bias and misinformation (all stakeholders)

- Bias / Stigma very difficult to overcome
  - Results in difficult interactions for both patients and staff
  - Places inappropriate barriers to care
  - Provider interview: "I don't want to work with those patients!"
- Internal education – Disease model
- Community outreach / education
  - Ongoing national and local efforts

Resources (facilities / staff); Including lack of prescribers

- Implementation of SUD treatment (MAT) takes resources away from other functions / patient care
- Identification and optimal utilization of space
- Identification and training of engaged staff (front desk/ medical assistants, prescribers)
- Lack of waivered prescribers and underutilization of those who have been trained
  - Prior studies show that 44-66% of waivered prescribers were prescribing (multiple perceived barriers for the prescribers)
  - Of those prescribing, 77% had less than waiver cap
- Prescriber education/training imperative for expanded access
  - Some employers have resorted to considering MAT prescribing mandatory for employment

Team Based Care

- Utilization of true team based care approach
  - Workflow improvements
  - Allow all to work at "top of licensure"
- Consider and develop / improve workflows and communication for:
  - Social Workers
  - Behavioral Health Counselors
  - Case Management
  - ACADC
  - Clinical Pharmacy
  - Retail Pharmacy
  - Medical Assistant
  - Primary Care Providers
  - MAT Prescribers

Policies and Procedures Treatment Protocols

- Develop and approve all necessary policies, procedures and treatment protocols prior to initiation of services
  - Buy in from team members (treatment philosophies)
  - Inclusion and exclusion criteria (higher level of care)
  - Zero tolerance infractions need to be defined up front and enforced: Defining and tracking outcomes (quality data)
  - Infractions / issues that result in required increase in intensity of care (internal, before referral to higher level)
  - Required activities / engagement
  - What about other substances (methamphetamine etc.)
    - What about marijuana?

Community Partners

- After 8 months of negotiations we were finally able to approve internal processes (executive leadership ended up making the final decisions in some areas such as benzodiazepine use and other substances)
- Need to develop community partners and other relationships to help facilitate transitions of care (both to higher level such as to OTP as well as back to Level 1 Office Based once stable) when needed
  - Dr. Ken Stoller (Johns Hopkins) CoOP – A model of coordinated care

Office Based Opiate Treatment Partnering With OTP

- Dr. Stoller notes that OTP's can help with encouraging waivers and support office based opiate treatment (Office Based Buprenorphine or OBB) with strategic partnerships and addressing perceived concerns:
  - Initial assessment: time consuming
  - Induction: initially intimidating
  - Instability (relapse, diversion, non-adherence): help to intervene to avoid consequences to office, community and patients
  - Improved access and quality with OTP prescriber mentorship to OBB prescribers (not just access should be optimized) and facilitate care transitions
  - Something I'm working on now – more to come

Collaborative Opioid Prescribing ("CoOP") Model*

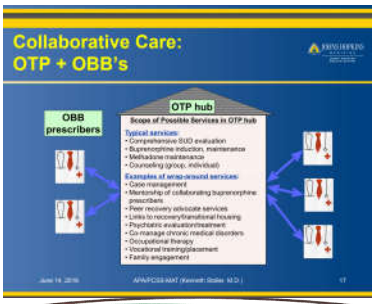
TERRY REILLY

- Aim: Increase access to and effectiveness of OBB through concurrent OTP-based counseling, case management, collaborative stepped care, and expert consultation
- Adaptive Stepped Care, Multi-Provider, Multi-Site System for Buprenorphine Treatment:
  - Critical Components:
    - Opioid Treatment Program (OTP)
    - Office-Based Buprenorphine (OBB) prescriber
    - Adaptive stepped care evidence-based model

*Stoller, K.B., 2015. A collaborative opioid prescribing (CoOP) model linking opioid treatment programs with office-based buprenorphine providers. Addiction Science & Clinical Practice 10, A63 (published abstract).

Collaborative Opioid Prescribing ("CoOP") Model*

TERRY REILLY



Collaborative Opioid Prescribing ("CoOP") Model*

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	OTP	OBB practice
Ongoing primary or psychiatric care		✓
Comprehensive SUD/psychosocial evaluation	✓	
Decide which (if any) MAT to use	✓	
Buprenorphine dispensing, (induction, stabilization)	✓	
Counseling, case management	✓	
Ongoing buprenorphine Rx's		✓
Maintain communication	✓	✓
Mentorship activities	✓	✓

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Collaborative Opioid Prescribing ("CoOP") Model*

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- Ongoing communication: OTP←→OBB
- Adaptive stepped care system*:
  - Adherence and tox screens determine:
    - ➢Counseling intensity
    - ➢Prescription duration
    - ➢Periods of OTP dispensing
- Consistent nonresponders or poorly-engaged are offered treatment plan change

*Adapted from Brooner, R.K., et al. (2004). J Subst Abuse Treat 27, 223-232.

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Collaborative Opioid Prescribing ("CoOP") Model*

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Examples of treatment plan changes for consistent poor/partial response (adherence, tox screen) at highest step:

- Switch to methadone
- Referral to higher (e.g., partial or ICF) level of care
- Mandatory pro-recovery activity
- AMA buprenorphine taper if refuses to engage

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Collaborative Opioid Prescribing ("CoOP") Model*

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Step	Opioid Agonist Medication	Prescribing or Dispensing Location	Prescribing or Dispensing Frequency	OTP Counseling Intensity
1. Stable OBB	Buprenorphine	OBB office prescription	1 month prescription	Low
2. Intensive OBB	Buprenorphine	OBB office prescription	1 week prescription	Intensive
3. Intensive OTP	Buprenorphine	OTP dispensary	Daily dispensing	Intensive
4. Methadone OTP	Methadone	OTP dispensary	Daily dispensing	Intensive

Stoller, K.B., 2015. A collaborative opioid prescribing (CoOP) model linking opioid treatment programs with office-based buprenorphine providers. *Addiction Science & Clinical Practice* 10, A63 (published abstract).

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Collaborative Opioid Prescribing ("CoOP") Model*

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OTP Incentivized	OBB Prescriber is incentivized
Provides wider spectrum of services	Previously untreated addiction is addressed
Treatments individualized to patients	Facilitates buprenorphine provision (or methadone vs other)
Generates patient volume / revenue	Support and ready access to expertise
More prescribers to refer patients to	Provides partners in managing behaviorally challenging cases
Collaboration with medical providers regarding complex co-occurring conditions	Improved medical adherence, morbidity

Collaborative Opioid Prescribing ("CoOP") Model*

TERRY REILLY

CoOP: Case Example

Adm → Present

54 y.o. woman admitted to OTP for opioid, cocaine use. HTN, COPD, sarcoid, DJD, disk herniations. Inducted onto buprenorphine, assigned IOP counseling.

Step:	Medication	Bup, Meth location	Med frequency	Counseling intensity
1: Stable OBOT	Bup/Nal	PCP script	1 mo Rx	Low
2: Intensive OBOT	Bup/Nal	PCP script	1 wk Rx	Intensive
3: Intensive OTP	Bup/Nal	OTP	Daily onsite	Intensive
4: Methadone OTP	Methadone	OTP	Daily onsite	Intensive initially

Collaborative Opioid Prescribing ("CoOP") Model*

TERRY REILLY

CoOP: Case Example

Adm → Present

Coordinated care with PCP, and within 2 weeks PCP took over prescribing.

Step:	Medication	Bup, Meth location	Med frequency	Counseling intensity
1: Stable OBOT	Bup/Nal	PCP script	1 mo Rx	Low
2: Intensive OBOT	Bup/Nal	PCP script	1 wk Rx	Intensive
3: Intensive OTP	Bup/Nal	OTP	Daily onsite	Intensive
4: Methadone OTP	Methadone	OTP	Daily onsite	Intensive initially

Collaborative Opioid Prescribing ("CoOP") Model*

TERRY REILLY

CoOP: Case Example

Adm → Present

Later that month OTP counseling intensity was reduced due to continued stability while receiving Rx's from PCP

Step:	Medication	Bup, Meth location	Med frequency	Counseling intensity
1: Stable OBOT	Bup/Nal	PCP script	1 mo Rx	Low
2: Intensive OBOT	Bup/Nal	PCP script	1 wk Rx	Intensive
3: Intensive OTP	Bup/Nal	OTP	Daily onsite	Intensive
4: Methadone OTP	Methadone	OTP	Daily onsite	Intensive initially

Collaborative Opioid Prescribing ("CoOP") Model*

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CoOP: Case Example

Adm → Present

At 6 months, cocaine+ tox at OTP. "My housemate put it in my ice tray." Started missing OTP counseling. Move to IOP.

Step:	Medication	Bup, Meth location	Med frequency	Counseling intensity
1: Stable OBOT	Bup/Nal	PCP script	1 mo Rx	Low
2: Intensive OBOT	Bup/Nal	PCP script	1 wk Rx	Intensive
3: Intensive OTP	Bup/Nal	OTP	Daily onsite	Intensive
4: Methadone OTP	Methadone	OTP	Daily onsite	Intensive initially

Collaborative Opioid Prescribing ("CoOP") Model*

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CoOP: Case Example

Adm → Present

Stabilized within 1 month (negative tox, good attendance). Reduce counseling. Still getting Rx's from PCP

Step:	Medication	Bup, Meth location	Med frequency	Counseling intensity
1: Stable OBOT	Bup/Nal	PCP script	1 mo Rx	Low
2: Intensive OBOT	Bup/Nal	PCP script	1 wk Rx	Intensive
3: Intensive OTP	Bup/Nal	OTP	Daily onsite	Intensive
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Collaborative Opioid Prescribing ("CoOP") Model*

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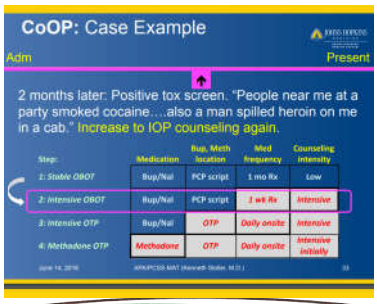

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Collaborative Opioid Prescribing ("CoOP") Model*

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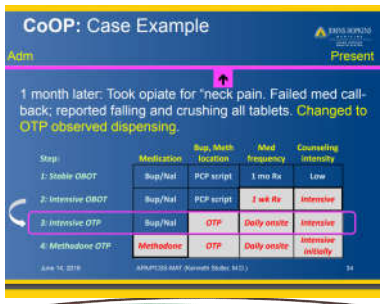

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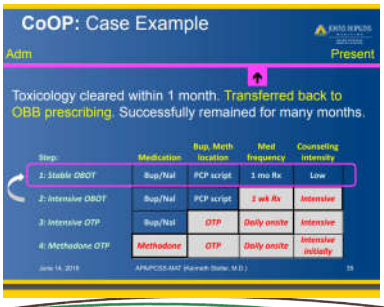

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Collaborative Opioid Prescribing ("CoOP") Model*

TERRY REILLY

- Successful in other areas
- Increased access to MAT
  - Increased prescribers waiver trained
  - Greater use of waivers
  - Positive response from prescribers in training
    - Early exposure in training is a significant predictor for offering MAT in practice after training concludes
- Likely best practice
  - Coordination of SUD, medical, psychiatric care
  - Rapid, effective management of relapse

APA/PCSS-MAT (Kenneth Stoller, M.D.)

Questions / Discussion?

TERRY REILLY