Understanding addiction and addiction treatment

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November 2016

Disclosures

- Braeburn Pharmaceuticals: Site principal investigator for two clinical trials and consultant for development of new treatments in the pipeline
- Indivior: past consultant
- PCM Scientific: honoraria for developing and giving educational talks

Objectives

- Upon completion of this educational activity, you will be able to explain the:

1. Define the core features of addiction
2. Discuss the guiding principals of addiction treatment
3. Describe the relative genetic and environmental contribution to addiction risk

Outline for today's talk

- History of addiction treatment
- Current state
- Define biopsychosocial model
- Other treatments that can accompany MAT
- Learn a behavioral health intervention


BAYER

PHARMACEUTICAL PRODUCTS.

We are now sending to Physicians throughout the United States literature and samples of

ASPIRIN

The substitute for the Salicylates, agreeable of taste, free from unpleasant after-effects.

HEROIN

The Sedative for Coughs,

HEROIN HYDROCHLORIDE

Its water-soluble salt.

You will have call for them. Order a supply from your Jobber.

Write for literature to

FARBENFABRIKEN OF ELBERFELD CO.

40 Stone Street, New York.

1898 – heroin marketed as non-addictive cough suppressant

Brief History: Opioid Addiction & Its Treatment

- Late 1800's ↑ in use: prescribed & OTC (no labels required until 1906)
- Harrison's Narcotic Act 1914 – end of physician treatment
- Lexington Narcotics Farm 1935-1975 – attempt to "cure"
- Drug Abuse Treatment Act of 2000 (DATA 2000)
- Brain Disease expressed as compulsive behavior –
  - Persistent use despite harmful consequences
  - Brain has changed once addicted – what was conscious now to unconscious circuits, motivational/reward circuits clearly altered
  - Developing and recovering from depends on biology, environment/social setting/context, and behavior

Failure to treat as a chronic complicated medical & psychosocial illness individualized to the patient

Lexington's "US Narcotics Farm" opened in 1935 to cure

- >85% relapsed
- Relapse shown study after study after…(*even persons with rx opioid addiction*)
- Deadly disorder:
  - Die 20 years earlier compared to those without SUD
  - Risk factor: loss of tolerance (e.g., after detox, after leave controlled environments like rehab/jails, forced end of mtn med tx)

1. McLellan et al. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. (2000) JAMA. 2. Weiss et al.(2011) Arch Gen Psychiatry

Kentucky Sued In Federal Court Over Drug Treatment Practices (3/10/2015)

"Two law firms have filed a federal lawsuit against the state of Kentucky for its practice of forbidding opiate addicts from receiving medical treatment while under the supervision of the criminal justice system.

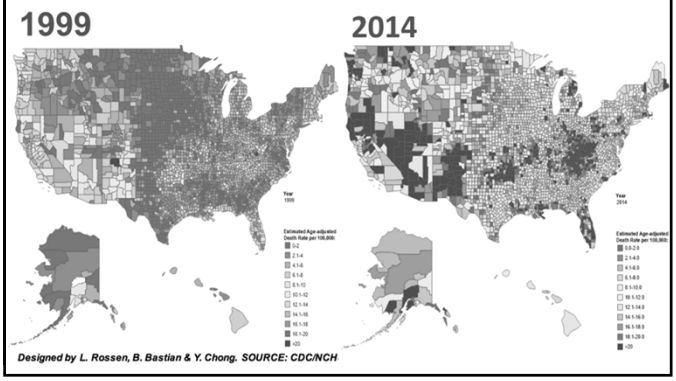
The plaintiff is a nurse with an opiate addiction whose bond conditions forbid her from taking any medications that would be prescribed by her doctor to treat her addiction, such as Suboxone®, Methadone or Vivitrol®. The lawsuit argues that such a ban is unconstitutional and violates the Americans with Disabilities Act, the Rehabilitation Act of 1973 and the patients rights under the Constitution's Equal Protection Clause."

Huffington Post: 03/10/2015

Misconceptions

- Saying it is a brain disease means the individual has no responsibility
- Marker of spiritual flaw
- Should be able to stop on own because it is a behavior
- Medication-assisted treatment is just replacing one addiction for another addiction
- Leads to stigma of evidence-based medical treatments, inadequate treatment and lack of parity with other chronic illnesses

Overdose Death Rates



Consequences: Hospitalizations & Infections

	2002	2012
# Hospitalizations with opioid abuse/dependence	301,707	520,275
LOS in days	5.8	5.2
# procedures	1.1	1.1
Total charges	$4.6 billion	$14.9 billion
# Hospitalizations with opioid abuse/dependence with infection	3,421	6,535
LOS in days	16.8	14.6
# procedures	3.1	3.3
Total charges	$191 million	$701 million

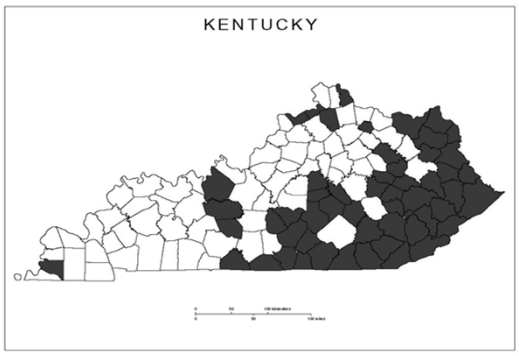
- Hep C: KY: highest rate of acute hep C infection – 3.2 cases per 100,000 population (CDC 2011)

Table data from: Ronan & Herzig Health Affairs no.5 (2016):832-837 doi: 10.1377/hlthaff.2015.1424

Counties most vulnerable to rapid HIV spread if HIV introduced: 220 counties in 26 states

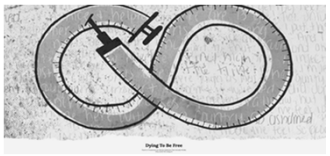
Van Handel et al. Journal of AIDS epub ahead of print DOI: 10.1097/Q AI.0000000000001098

Over 50 counties in KY vulnerable to rapid HIV spread

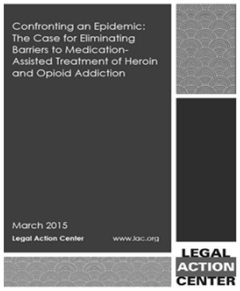


Van Handel et al. Journal of AIDS epub ahead of print DOI: 10.1097/Q AI.0000000000001098

Relevant Current Activities and Highly Recommended Reading



http://projects.huffingtonpost.com/dying-to-be-free-heroin-treatment



Principles of Opioid Dependence Treatment

Addiction is chronic relapsing & remitting medical disorder

The longer the treatment - the better the outcome

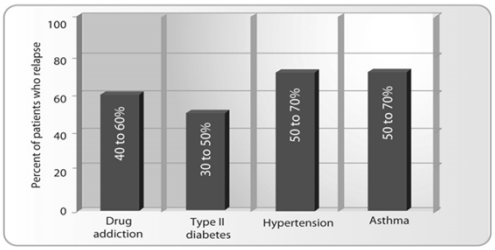
Treatment works

Treatment is more than relieving/treating opioid withdrawal: remember Lexington Narcotics Farm in 1950's – PHS

Treatment must enter into mainstream treatment to meet current demand

Three treatments – methadone*, buprenorphine*, and naltrexone (*=WHO essential medications)

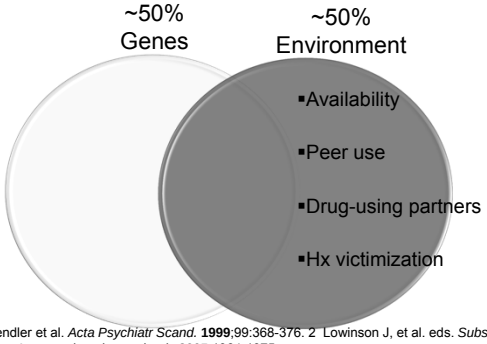
Drug Dependence: A Chronic Relapsing Disorder



But much more unforgiving

McLellan, Lewis, O'Brien & Kleber (2000) JAMA, 284: 1689-1695.

Addiction: Multifactorial Etiology/Complex Disorder



1. Kendler et al. *Acta Psychiatr Scand.* **1999**;99:368-376. 2 Lowinson J, et al. eds. *Substance Abuse: A comprehensive textbook*. **2005**:1064-1075.

Methadone maintenance programs

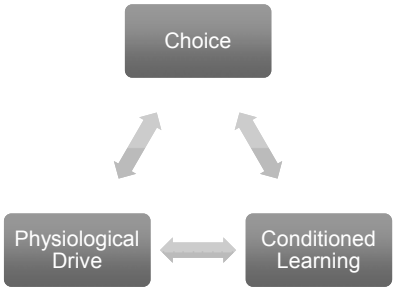
What is treatment? It's a combination of pharmacological and nonpharmacological therapies

Vincent Dole: "Some people became overly converted. They felt, without reading our reports carefully, that all they had to do was give methadone and then there was no more problem with the addict…I urged physicians should see that the problem was one of rehabilitating people with a very complicated problem and that they ought to tailor their programs to the kinds of problems they were dealing with. The strength of the early programs as designed by Marie Nsywander was in their sensitivity to individual human problems. The stupidity of thinking that just giving methadone will solve a complicated social problem seems to me beyond comprehension (Courtwright, 1989, p 338)"

Bio-psycho-social Model: Systems Hierarchy

Engel, GL. Am. J Psychiatry. 1980

Behavior – What an Individual Does



McHugh and Slavney. The Perspectives of Psychiatry.1998

Bio-psycho-social made explicit: Four Perspectives

- Disease perspective – broken part – what a patient *has*
- Dimensional perspective – cognitive capability and personality – what a patient *is*
- Behavior – physiologic drive/choice/conditioned learning – what a patient *does*
- Life story – environments – what a patient *encounters*

Adopting a Chronic Disease Model for Treatment

- Parallels with diabetes & cancer *(if remove stigma of addiction)*:
  - Psycho-social behavioral treatments/modifications
  - Role of meds
  - Monitoring outcomes and adjusting tx to the INDIVIDUAL
  - Tx goals: *Typically NOT curing* – putting into remission, improving organ(s) function, pt function
  - No single trx effective for everyone ---- diverse tx options necessary.
  - Stepped care approach – not everyone needs or responds to intensive counseling (parallel to exercise/diet)
- Screening, diagnosis, & tx must enter mainstream medical tx

McLellan et al. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. 2000. JAMA.

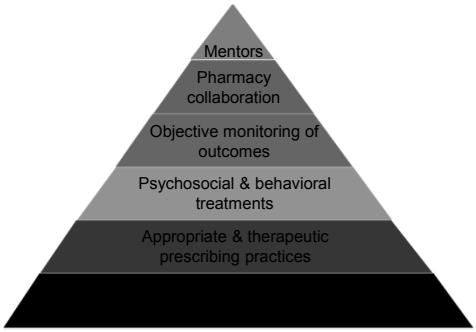
What <u>Pharmacologic</u> Effects are Important in Medication - assisted Treatment?

Reduce illicit and risky drug use by

- suppressing withdrawal symptoms (Methadone, Bup)
- suppressing craving (Methadone, Bup, ?Naltrexone)
- stabilizing dependence level (Methadone, Bup)
- blocking illicit opioid effects to deter use & decrease risk of overdose (Methadone, Bup, & Naltrexone)

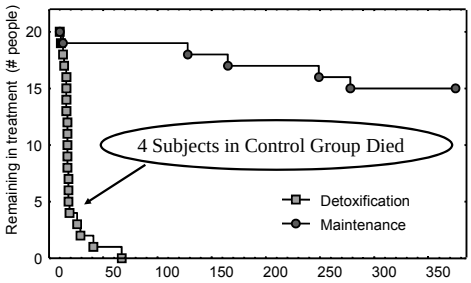
What other treatments beside the medication?

- Monitoring – urine testing, random call-backs, supervision of dosing, exam findings
- Structure
- Supervision
- Treatment of comorbid conditions (medical and psychiatric)



Buprenorphine vs. Withdrawal and Med-Free Treatment for Heroin Dependence

Even with enriched psychosocial services, all in detoxification group dropped out of study by 60 days, but 75% of the maintenance group were retained in treatment – COUNSELING ALONE IS NOT TREATMENT



Kakko J, Lancet 2003

Effects of Psychosocial Services

- Modest benefit of counseling added to med only when med is structured/supervised but may not be cost effective (McLellan JAMA 1993, Review by Saxon & McCance-Katz J Addict Med 2016)
- No benefit of 3 days/per week vs. 1x/week individual counseling (Fiellin et al. NEJM 2006)
- Despite this, we aim to tailor psychosocial services to individual treatment needs (e.g., parenting skills, network therapy)

Contingency Management (CM)

- Behavioral therapy that uses positive reinforcers (rewards) to encourage & promote desired behavioral changes
- Rewards = coming less often to doctor office, getting more days of medication
- Behavioral changes: drug abstinence, gaining network of abstinent supports, & employment

Higgins, S. T. and K. Silverman (2008). Contingency management. The American Psychiatric Publishing Textbook of Substance Abuse Treatment. M. G. Galanter and H. D. Kleber. Washington, D.C., American Psychiatric Press**: 387-400.**

CM Basics

- Choose 1 desired target behavior at a time & define how will measure it. Ex: opioid abstinence as shown in - UDS
- Reward tied to producing that behavior Ex: progressing to visits every 2 weeks
- If stops producing that behavior then reward removed
- Make very clear to patient – write it out

Example of CM

- Once a week for counseling, med check & prescription for 7 days of medication.
- Can progress to once every two weeks & get a prescription for 14 days of medication once have 2 negative consecutive urine drug tests.
- If you don't go for a urine drug test, go late, or test positive, you will need to come every week again until you have 2 negative consecutive tests
- You may come less than every two weeks based on goals made by me and my doctor.

Case of Ms. C

- Ms. C has been a patient for 7 years on B/X 16 mg daily. Since in treatment, she has gone back to school to finish a bachelors and masters degree. She has a full time job and owns her own home. She has not used illicit opioids for 3 consecutive years. Her most random urine test (ELIZA) comes back negative for buprenorphine. The doctor tells her this result and the patient states the test must be wrong because she always takes her medication. The doctor sends the test for confirmatory GCMS testing, which comes back negative for buprenorphine.

Questions

- What should the doctor do?
- Is it appropriate to initiate supervised dosing?
- Is it legal to have the patient bring their medication bottle to the doctor's office and have it stored at the office so that the doctor's staff can dispense it to patient under supervised conditions?
- Can B/X be dosed less frequently than daily?
- Isn't supervision a punishment?

Case of Ms. C (cont.)

- Dr. reviews the initial assessment and is reminded that patient had previously bought and sold alprazolam to help pay for new home furniture.
- Dr. expresses concern for patient's health and talks about addiction as a relapsing illness with high mortality and morbidity, about personal gains patient has made.
- States this test result is a sign indicating something is wrong with the treatment. Patient explains medication was stolen and had 4-5 days with no medication & didn't want to address this. Patient had taken in an unstable drug-using "old friend" who ran into at a gas station.
- Agree upon starting counseling again and having once a week supervised dosing with week-long supplies of medication until "old friend" moves out.

Why is MAT for Opioid Dependence Treatment Important?

- ↓ Adverse health and social consequences
- ↑ Physical and psychological health and wellbeing of individual (and family and community)
  - ↓ Illicit drug use [and eliminate (not always possible)]
  - ↓ Spread of infectious diseases assoc. with illicit drug use (e.g., hep C, HIV)
  - ↓ Criminal behavior
  - ↓ Morbidity and mortality from drugs and drug-related behaviors

http://www.who.int/substance_abuse/activities/treatment_opioid_dependence/en/index.html

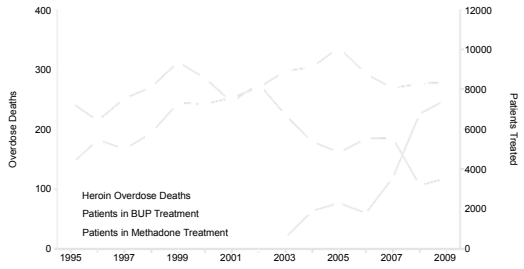
Benefits without Perfection

- *Quality* treatment (there is no perfect treatment) can benefit patients and public health
- IVDU receiving needle exchange services in Norway

	Odd ratios –of persons in treatment with methadone or buprenorphine (N=341) vs. those not in treatment (n>1000)
Non-fatal overdoses	0.5
Committing theft	0.6
Dealing drugs	0.7
Daily/near daily heroin use	0.3

Gjersing and Bretteville, Is Opioid Substitution Treatment beneficial if injecting behaviour continues? Drug Alcohol Depend. 2013

Baltimore: Agonist Treatment & Relationship to Heroin Overdose Deaths



Schwartz, et al., American Journal of Public Health, 2013

Questions

Back-up slide

Prevalence of undesirable behaviors (diversion/ misuse) in US culture

- 2013 National Household Survey on Drug Use :
  - Nearly 17 million persons = ~18% of the population with past year use of rx psychotherapeutics (e.g., stimulants, benzodiazepines, opioid analgesics) not prescribed to them
- Another US national survey:
  - 23% reported sharing their rx drugs & 27% reported that they had borrowed rx medication from someone[1]
  - 25% allergy medications
  - 22% pain relievers
  - 21% antibiotics (diversion/misuse with public health harms - antibiotic resistance, superinfections)

[1]Goldsworthy, Schartz & Mayhorn (2008) Am J Public Health, 98, 1115-1121.