Paradigms of Substance Use and Abuse

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Paradigms of Substance Use and Abuse
What do you experience when you encounter a substance abuser?

What do you bring to the interaction?
A Social Failing?
Or
A Disease?
Disease Defined

- A departure from health of the body and it’s function
- Identifiable risk factors
- Known pathophysiology
- Recognizable group of signs and Sxs
- Predictable morbidity, mortality, natural Hx
- Responds to Tx
Addiction: A Disease.... or Something Else?

- The impaired model
- The Dry Moral Model
- The Wet Model
- The Wet Moral Model
- The Chronic Disease Model
The Impaired Model

Addicts are flawed in their nature
They cannot/will not change
They will always use alcohol or drugs
They cannot quit, not really
They will always come back and get sick
They always come back when I’m on call…
Assume addicts are easily recognizable....

But....

90% function in society and have normal jobs, family, pay taxes...

“Looking good” patients and families
Assume treatment doesn’t work…

- Reduces drug use 40-60%
- Decreases criminal behavior up to 50%
- Reduces risk of HIV, Hep C, Hep B by X6.
- Increases employment rates by 40%
- More effective than DM, HTN, or asthma Tx

Assumes treatment not worth it...

- 1 yr methadone: $4,700
- 1 yr Buprenorphine: $3,300-$7,500
- 1 yr prison: $30-$40,000+

$1.00 in treatment $12.00 savings in crime and health care costs

Dry Moral Model

Reagan’s…..Just say no!!...
Prohibition
War on drugs

Implication:
-Alcohol and drugs are evil
-People who use are morally weak
-People should be abstinent
The Wet Moral Model

Every time is the right time for Miller time
Especially the night, which belongs to Michelob
Because you know it doesn’t get any better than this
As long as you know when to say when
The Wet Moral Model Assumptions

- Everyone can and should use socially
- Social use is good, makes you popular, friendly, socially competent
Wet Model Fallacies

12-15% of Americans who try to drink socially will develop alcoholism

The majority of patients with chemical dependency can never use socially
Disease Re-defined

- A disorder of the body and its function
- Identifiable risk factors
- Known pathophysiology
- Recognizable group of signs and Sxs
- Predictable morbidity, mortality, natural Hx
- Responds to Tx
Known Risk Factors

- **Adverse Childhood Experiences (ACES)**
  - *Felliti et al* 1998
  - Family Hx prevalence studies
  - Adoption studies
  - Twin studies
  - Studies of sons of alcoholics
Neuropathophysiology

“Hijacked Reward System”

THE MANY TRIGGERS OF ADDICTION

Drugs of abuse and excessive behaviours seem to trigger a similar rise in dopamine release in the reward circuits of the brain—a crucial step on the way to addiction.

Responsible for impulsivity and planning

FRONTAL LOBE

Dopamine signals

Nucleus accumbens

Amygdala

Substantia nigra

Ventral tegmental area

THE MANY TRIGGERS OF ADDICTION

EXERCISE

GAMES

GAMBLING

SHOPPING

SEX

Drugs of abuse

DOPAMINE RELEASE SYSTEM
Neurophysiology 101

Endorphins bind Mu receptors on GABA neurons in the ventral tegmental area

- decrease GABA
- increased dopamine output in nucleus accumbens

- **Rewards**...modulates obsessive thought and impulsivity in the cortex and limbic systems

- **Permanent changes** seen in activated MRI/PET scan
  - cognitive impairment
All major classes of addictive drugs work at the same point on these pathways: the reward pathways—eating, love, sex, fight or flight.
# Recognizable group of Signs and Symptoms

- Tolerance
- Dependence
- Withdrawal
- Continued use despite negative consequences

- Using more than intended
- Denial (vs short/long term cognitive impairment)
- Rationalization
- Failure of normal social functioning
# Predictable Morbidity and Mortality: Alcohol

<table>
<thead>
<tr>
<th>Hangovers</th>
<th>Gastritis/ulcers</th>
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<tbody>
<tr>
<td>Increased BP</td>
<td>Balance problems</td>
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Predictable morbidity and mortality: **IV opiates**

- Constipation
- Nausea
- Anorexia
- Malnutrition
- Skin infections
- Hepatitis B

- Hepatitis C
- HIV
- Endocarditis
- Brain abscess
- Inadvertent overdose
- Death
Predictable Natural History

Hazardous Use
- Increased risk of co-morbidities and trauma
- Progression to abuse

Abuse
- Recurrent hazardous use
- Continues use despite medical/social/legal problems

Dependence
- Tolerance
- Withdrawal
- **Loss of control over use**
- Continued use despite consequences
- Use replaces social obligations/functioning

Death
Not just a disease....

A Chronic Disease
Medical Impact: Alcohol

Those who drink over 2 drinks/day (women), 3 drinks/day (men) at risk for:
- Liver disease
- Cardiomyopathy/Afib
- Stroke
- Cancer
- Accidents/physical injury: 50% all U.S. trauma deaths/nonfatal injuries; 40% MVA, 40% Pedestrians killed

Anderson et al, 1993; Dawson, 2000
Social Impact

**Suicide**

The major reversible cause for depression

Factor in 30% of completed suicides

Those who drink 2x likely to commit suicide

Drinking causes work problems → 6x risk suicide
Economic Impact

U.S. $184,636,000,000/yr:
- Alcohol services
- Medical consequences
- FAS direct costs
- Lost earnings a/w FAS (FAE not included)
- Premature death: lost earnings
- Lost earnings a/w crime/victims
- Crashes/fires /criminal justice

NIAAA 2000
Responds to Treatment

- Reduces drug use by 40-60%
- Methadone (less data buprenorphine) decreases criminal behavior 50%
- Reduces risk if HIV/Hep C infection and spread to community
- Increases employment rates up to 40%
- 50-75% maintain long-term sobriety
- NOT DEAD
Show Unwavering Compassion and Regard for the Patient With This Disease

Your patient is **not immoral**.

Your patient is **not weak**.

Your patient is **not a loser**.

Your patient is **sick and afraid** that you will find out and **dislike them**/fire them.
Use
Consequences
Repetition
Loss of control, preoccupation, compulsivity, phys. dep.

ABST  NON-PROB USE  AT-RISK USE  ABUSE  DEP

-  +  +  +  +  +
-  - -/+ +  ++
-  -  -  +  +

Use
Consequences
Repetition
Loss of control, preoccupation, compulsivity, phys. dep.
Let go of our prejudices!

No one chooses to be an addict!!!

- Treat patients who suffer with substance abuse issues with respect they deserve.
- It’s a disease where our intervention has greater impact on morbidity, extended length of life, and social costs than our intervention in coronary artery disease.
- Act like we care and mean it.