Substance Use Disorders: What Research has Taught Us About Treatment.

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Advances in Science Have Revolutionized Our Fundamental Views of Drug Abuse and Addiction
Advances in Science Are Bringing Us New Understanding of Drug Abuse & Addiction

This Knowledge Is Allowing Us To Develop More Targeted Strategies for Its Prevention and Treatment
Your Brain on Drugs - Then

this is your brain on drugs.
Your Brain on Drugs – Now

Source: Breiter & Rosen, Ann N Y Acad Sci 1999
What have we learned?
Drug Abuse is a Preventable Behavior
Drug Addiction is a Treatable Disease
Why do people take drugs?

To feel good
To have novel:
  Feelings
  Sensations
  Experiences
  AND
To share them

To feel better
To lessen:
  Anxiety
  Worries
  Fears
  Depression
  Hopelessness
  Withdrawal

Drawings courtesy of Vivian Felsen
Drug Abuse Risk Factors

Community

Peer Cluster

Family

Individual
Genetics

Gene/Environment Interaction

Environment
Science Has Generated A Lot of Evidence Showing That...

Prolonged Drug Use Changes the Brain In Fundamental and Long-Lasting Ways
Circuits Involved In
Drug Abuse and Addiction

CONTROL
INHIBITION
CONTROL

MOTION/DRIVE

REWARD

MEMORY/LEARNING

PFC
ACG
OFC
SCC
Hipp
NAcc
VP
Amyg
That’s Why Addicts Can’t Just Quit
That’s Why Treatment Is Essential!
Addiction is the Quintessential Biobehavioral Disorder
The Most Effective Intervention Strategies Will Attend to All Aspects of Addiction:

- Biology
- Behavior
- Social Context
Different approaches for different levels of Severity

LOTS

In Treatment ~ 4,000,000

Addiction ~ 22,000,000
(Focus on Treatment)

“Harmful Use” – 68,000,000
(Focus on Early Intervention)

LITTLE

Little or No Use
(Focus on Prevention)
Past Year Perceived Need for and Effort Made to Receive Specialty Treatment among Persons Aged 12 or Older Needing But Not Receiving Treatment for Illicit Drug or Alcohol Use: 2010

Did Not Feel They Needed Treatment

\( (19.5 \text{ Million}) \)

Felt They Needed Treatment and Did Not Make an Effort

\( (676,500) \)

Felt They Needed Treatment and Did Make an Effort

\( (348,500) \)

20.5 Million Needing But Not Receiving Treatment for Illicit Drug or Alcohol Use

Source: NSDUH 2010
Unintentional Drug Overdose Deaths
United States, 1970–2007

27,658 unintentional drug overdose deaths


Total number of prescriptions dispensed for ER/LA and IR opioids from U.S. outpatient retail pharmacies, Year 2000 - 2009

ER - Extended Release, LA - Long-Acting, IR - Immediate Release
70% obtained from friend or relative*

*Percentage from friend or relative is derived before rounding of individual components.

Source: SAMHSA, 2009 National Survey on Drug Use and Health (September 2010).
So what have we learned that can address this critical problem?
We Need to View and Treat Addiction As A Chronic, Relapsing Illness
The Acute Care Treatment Model

Substance Abusing Patient

Treatment

Non-Substance Abusing Patient
Outcome In Diabetes

Pre - During - Post

Treatment Research Institute
Outcome In Hypertension

Pre - During - Post

Treatment Research Institute
Outcome In Addiction

pre - Post

Treatment Research Institute
Relapse Rates Are Similar for Drug Dependence and Other Chronic Illnesses

Addiction vs. Other Chronic Illnesses

- Recovery can be long-term process
- May require multiple episodes of treatment
- May require “check ups” for sustained recovery
- Relapses can occur
- Participation in self-help support program is helpful for abstinence (NIDA, 2000)
If we treat a diabetic and symptoms don’t subside....what do we do?

Would we increase the dose?
Would we change medications?
Would we change treatment approaches?

Would we fail to provide ongoing treatment for a diabetic?
A Continuing Care Model

Primary Care

Specialty Care

Primary Continuing Care
Longitudinal Trends in Recovery  
(Pathways \(N=1326\))

A eight-year perspective on the relationship between the duration of abstinence and other aspects of recovery. Eval. Rev.
We Have A Variety Of Effective Treatment Options In The Clinical Toolbox
Different approaches for different levels of Severity

- **In Treatment**: ~ 4,000,000
- **Addiction**: ~ 22,000,000 (Focus on Treatment)
- **“Harmful Use”**: ~ 68,000,000 (Focus on Early Intervention)
- **Little or No Use**: (Focus on Prevention)
For those not yet addicted...

- We need attractive, accessible interventions to prevent "harmful use" from becoming "addiction."

- **Screening and Brief Interventions** in primary care offices
Major Advances in Brief Interventions

• “Harmful use” identified in 2–3 questions.
  – Prevalence rates of 20 – 50% in healthcare
  – 60% of all ER admissions (10 million/yr)

• Brief counseling (10 minutes) produces big savings
  – Medicaid savings $8 million /year Washington
For those who are already addicted....

- We do not have a cure... But we do have effective treatments

- We need **continuing care** to prevent relapse & promote self-management.

- *But we don’t have the system to deliver that kind of care!*
EFFICACIOUS BEHAVIORAL TREATMENTS FOR DRUG DEPENDENCE

- COGNITIVE BEHAVIORAL THERAPY (cocaine dependence)- also for benzodiazepine withdrawal in panic disorder patients

- MOTIVATIONAL INTERVIEWING / MOTIVATIONAL ENHANCEMENT THERAPY (developed at UNM)

- CONTINGENCY MANAGEMENT (WITHOUT CRA) (methadone-maintained opiate & cocaine abusers)

- LOWER-COST CONTINGENCY MANAGEMENT (cocaine dependent people in methadone-maintenance)
EFFICACIOUS BEHAVIORAL TREATMENTS FOR DRUG DEPENDENCE

• BRIEF STRATEGIC FAMILY THERAPY (certain sub-populations of Hispanic adolescent polydrug abusers)

• MULTIDIMENSIONAL FAMILY THERAPY African-American polydrug-abusing adolescents)

• BEHAVIORAL COUPLES THERAPY (methadone-maintained opioid-addicted men; drug-abusing women)

• 12-STEP FACILITATION (manualized)
Medications for Nicotine Addiction Treatment

- Bupropion (Wellbutrin, Zyban)
- Varenicline (Chantix)
- Nicotine Replacement Therapy (gum, lozenge, patch, inhaler)
Medications for Alcohol Addiction Treatment

- Disulfuram (Antabuse)
- Oral naltrexone (Revia)
- Injectable extended release naltrexone (Vivitrol)
- Acamprosate (Campral)
Medications for Cocaine & Methamphetamine Addiction Treatment

- None are approved by the FDA
- Several medications have shown promising results
- Several compounds are under development
Medications for Opioid Addiction Treatment

- Methadone
- Buprenorphine (Subutex)
- Buprenorphine/Naloxone (Suboxone)
- Oral Naltrexone (Revia)
- Injectable extended release Naltrexone (Vivitrol)
Opioid Antagonist Treatment

- Oral Naltrexone
  - Highly effective pharmacologically
  - Hampered by poor patient adherence
  - Useful for highly motivated patients
- Injectable formulation (Vivitrol ®)
  - FDA-approved alcohol dependence and opiate dependence
  - Effective for about 30 days
## Medications for Addiction Treatment: Highly Studied

<table>
<thead>
<tr>
<th>Name of Med</th>
<th>Cochrane Reviews</th>
<th># Scientific Papers in PubMed</th>
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<tbody>
<tr>
<td>Antabuse</td>
<td>NO</td>
<td>3,640</td>
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<tr>
<td>Naltrexone</td>
<td>YES</td>
<td>7,215</td>
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<tr>
<td>Acamprosate</td>
<td>YES</td>
<td>552</td>
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<tr>
<td>Methadone</td>
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<td>Buprenorphine</td>
<td>YES</td>
<td>3,869</td>
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</table>
The Acute Care Treatment Model

Substance Abusing Patient

Treatment

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A Continuing Care Model

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Detox is **NOT** Treatment

It is a part of treatment
Treatment Does Not Equal Recovery

- Treatment is part of recovery – but it is not equal to recovery.
- The goal of treatment is absence of symptoms; the goal of recovery is holistic health.
- Treatment alone does not address other challenges, such as family, employment, housing, etc.
- Recovery is different for each individual, and the social determinants of health need to be addressed before the recovery process can move forward.
The Recovery Process

Recovery from alcohol and drug problems is a process of change through which an individual achieves abstinence and improved health, wellness, and quality of life.

Source: CSAT National Summit on Recovery, 2005
Challenges for a Traditional Approach

- Traditional treatment approaches provide challenges that translate into less cost-effective use of funds:

- 56.8% of those admitted to U.S. public substance abuse treatment programs in 2009 were re-entering treatment:
  - 21.3% for the second time, 19.1% for the third or fourth time, and 16.4% for the fifth or more time.¹

- One recent study found that median time from first treatment to 1 alcohol- and drug-free year was 9 years – with 3 to 4 episodes of treatment.²

¹SAMHSA, Office of Applied Studies. Treatment Episode Data Set (TEDS). Highlights - 2009. National Admissions to Substance Abuse Treatment Services
Drug Abuse Treatment Core Components and Comprehensive Services

Core Treatment
- Intake Assessment
- Treatment Plans
- Group/Individual Counseling
- Abstinence Based
- Pharmaco-therapy
- Self-Help (AA/NA)

Medical
- Urine Monitoring
- Case Management
- Continuing Care

Mental Health

Financial

Housing & Transportation

Child Care

Family

AIDS / HIV Risks

Educational

Vocational

Legal

Etheridge, Hubbard, Anderson, Craddock, & Flynn, 1997 (PAB)
Values Underlying Recovery Oriented Systems of Care (ROSC)

- Person-centered
- Self-directed
- Strength-based
- Participation of family members, caregivers, significant others, friends, and the community
- Individualized and comprehensive services and supports
- Community-based services and supports
Examples of Recovery Support Services

- Employment services and job training
- Case management individual services coordination, with linkages to other services
- Relapse Prevention
- Housing assistance & services
- Child care
- Parent education & child development support services
- Transportation to and from treatment, recovery support activities, employment, etc.
- Family/marriage counseling
- Education (including substance abuse education)
- Peer-to-peer mentoring and coaching
- Self-help & support groups (including spiritual & faith-based)
The Importance of Evidence-Based Practices in ROSC

• One of ROSC’s Operational Elements – Service quality and responsiveness – relies on the use of evidence-based practices.

• Evidence-Based Practices (EBPs) provide scientifically-validated evidence that the program is effectively meeting goals.

• Why use EPBs?
  – When services are informed by the best available evidence, the quality of care is improved.
  
  – Using EBPs increases the likelihood that desired outcomes will be obtained.
  
  – By employing these practices, available resources are often used more efficiently.
National Registry of Evidence-based Programs and Practices (NREPP)

• The National Registry of Evidence-based Programs and Practices (NREPP) is a searchable online registry of mental health and substance abuse interventions that have been reviewed and rated by independent reviewers.

• The NREPP website helps states, territories, community-based organizations, and others to identify service models that may address your particular regional and cultural needs, and match your specific resource capacity.

• In December 2009, a new search feature was added to the NREPP Web site that allows users to identify NREPP interventions that have been evaluated in comparative effectiveness research studies.

• http://www.nrepp.samhsa.gov/
We Have A Variety Of Effective Treatment Options In The Clinical Toolbox

...But We Need To And Can Do Better
Treating A Biobehavioral Disorder Must Go Beyond Just Fixing The Chemistry
The Most Effective Treatment Strategies Will Attend to All Aspects of Addiction:

- Biology
- Behavior
- Social Context
We Need to Treat the Whole Person!
The Acute Care Treatment Model

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Longitudinal Trends in Recovery
(Pathways N=1326)

After 5 years – if you are sober, you probably will stay that way.

It takes a year of abstinence before less than half relapse

A Continuing Care Model

Primary Care

Specialty Care

Primary Continuing Care
In Treating Addiction...

We Need to Keep Our Eye on the Real Target

Abstinence

Functionality in Family, Work and Community
Where Do We Need to Go From Here?

We Need to...

Advance the SCIENCE,

Translate what we’ve learned into practice...and

End the STIGMA and Discrimination
Thank you for all you do

Tcondon @unm.edu
Methadone and Buprenorphine

- Activate the opioid receptors
  - Although buprenorphine is weaker than methadone at higher doses and therefore has better safety profile
- Reduce heroin craving
- Alleviate withdrawal

- Block heroin’s euphoric effects
Buprenorphine Blocks Opioid's Effects

Change in Opioid Effects

Buprenorphine Dosage (mgs.)
Where are methadone & buprenorphine provided?

• Opioid Treatment Programs (OTPs)
  – Methadone (mostly) or buprenorphine
  – Counseling & drug testing
  – Clinic administered dosing
    • Take home doses contingent on performance
Substance Dependence or Abuse among Adults Aged 18 or Older, by Major Depressive Episode in the Past Year: 2008

Had Major Depressive Episode in Past Year

Did NOT Have Major Depressive Episode in Past Year

Drug or Alcohol Dependence or Abuse

Drug or Alcohol Dependence or Abuse

Alcohol Dependence or Abuse

Source: SAMHSA NSDUH 2009
What is the difference between opioid agonists & antagonists?

![Graph showing the comparison between Methadone, Buprenorphine, and Naltrexone in terms of Opioid Effect vs Dose of Opioid.](image)
What is the difference between heroin addiction and opioid agonist treatment?

<table>
<thead>
<tr>
<th></th>
<th><strong>Heroin Addiction</strong></th>
<th><strong>Opioid Agonist Treatment</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Route</strong></td>
<td>Injected</td>
<td>Oral or Sublingual</td>
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<tr>
<td><strong>Onset</strong></td>
<td>Immediate</td>
<td>Slow</td>
</tr>
<tr>
<td><strong>Euphoria</strong></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Dose</strong></td>
<td>Unknown</td>
<td>Known</td>
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<tr>
<td><strong>Cost</strong></td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>4 hours</td>
<td>24 hours</td>
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<tr>
<td><strong>Legal</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Lifestyle</strong></td>
<td>Chaotic</td>
<td>Normal</td>
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