Understanding Addiction

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In 2015, 1 in 12 American Adults needed Substance Use Disorder Treatment

Only 1 in 10 of those received it.

The overwhelming majority of people with addiction will not get help.

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Historically, addiction is seen as a moral failing.

- “Just stop”
- “Take your problem elsewhere”
- “How can this be an illness—you made a choice to start using.”
- “I offered you treatment but you declined. This is on you.”

Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry.
People with addiction deserve social compassion and evidence-based medical care

Language Matters and Ours is Broken

- People are more likely to recommend punishment rather than treatment if a person is labeled as a "Substance Abuser" versus "Having a Substance Use Disorder"\(^1\)

- Mental Health Clinicians are less likely to recommend treatment to someone labelled as a "Substance Abuser" versus "Having a Substance Use Disorder"\(^2\)

1. JF Kelly et al. JOURNAL OF DRUG ISSUES; 022-0425/10/04 805–818
Stigma Persists Even Among Clinicians

- Drug Addiction is the most stigmatized condition in the world (WHO study).¹

- Psychiatrists (N = 144) with an average of 20 years experience rated a psychiatric patient with a prior alcohol dependence diagnosis as less compliant, having a poorer prognosis, and more annoying, and were less likely to express sympathy towards the individual when compared to psychiatrists assigned the same case vignette but without the alcohol dependence diagnosis.²


Three decades of biological, epidemiological and social sciences research now give us a much clearer picture of the risks, mechanisms and consequences of addiction.
The Brain Science of Addiction
Beyond Rats Pressing Levers for Cocaine

Research now shifting from acute behavioral effects to chronic, broader neuroadaptive changes that affect:

- Dysphoria
- Cognitive consequences and decision-making
- Developmental trajectories
Distinct Neurotransmitters and Circuits Associated with the Three Stages of Addiction

Binge/Intoxication
Nucleus Accumbens
Ventral Pallidum
(Reward Circuitry)

Withdrawal/Negative Affect
Extended Amygdala
Habenula

Craving/Preoccupation
Basolateral amygdala,
Hippocampus, Prefrontal
cortex, Insula, Default
mode network

Neurotransmitters include Dopamine, Glutamate, Opioids, Cannabinoids, Dynorphins, Corticotropin Releasing Factor
Addicted individuals are driven more by a desire to escape negative emotions than by reward.

Stress and Negative Emotion Systems “Anti-reward”
- Extended Amygdala
- Dynorphins, CRF, others

Reward System
- Nucleus Accumbens
- Dopaminergic

Over time the PFC can no longer control certain deep brain structures

Prefrontal Cortex exhibits reduced control

Basal Ganglia (Impulsivity)

Amygdala (Compulsivity)
The Primary Problem Remains Overwhelmingly Alcohol Dependence

- In 2015, 88,000 died from Alcohol-Related Causes, making them the fourth-leading preventable cause of death in the US.
- Excess drinking responsible for 10% of the deaths of workers between 20-64
- By comparison, opioid overdoses (prescription and illicit) totaled 33,000 deaths in 2015.
- Up to 20% of opioid overdoses involve alcohol.1
- Alcohol related deaths are also trending upward; the intersection at current rates is decades away.

Alcohol Death vs. Opioid Deaths - Economics

- Alcohol: $249 Billion annually or approximately $2.05 per drink
  - Three quarters of the total cost is related to binge drinking.
- By contrast, the total Drug Addiction cost in the US is approximately $193 Billion
  - (These figures include crime, lost productivity and direct healthcare costs)

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Dual Diagnosis (NESARC 2006)

High Prevalence of Drug Abuse and Dependence Among Individuals With Mood and Anxiety Disorders

Higher Prevalence of Mental Disorders Among Patients With Drug Use Disorders

Data in graph reprinted from the National Epidemiologic Survey on Alcohol and Related Conditions (Conway et al., 2006).
#19 Sackler family

2016 America's Richest Families Net Worth

**$13 Billion**

<table>
<thead>
<tr>
<th>Fortune Founded</th>
<th>1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Of Wealth</td>
<td>pain medicines</td>
</tr>
<tr>
<td>Company Headquarters</td>
<td>Stamford, CT</td>
</tr>
<tr>
<td>Number of Family Members</td>
<td>20 (Estimated)</td>
</tr>
</tbody>
</table>

Sackler family on Forbes Lists

- #19 America's Richest Families (2016)
- #15 in 2015
NEJM January 10th, 1980

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

The Opioid Epidemic Was No Accident

- January 1980 Porter and Jick publish NEJM letter arguing addiction is rare with prescribed opiates.
- Pharma, especially Purdue, developed powerful painkillers (1984 MS Contin, 1996 Oxycontin)
- Studies, now debunked and funded by pharma, pointed to a reduced addiction risk.
- Aggressive marketing of pills especially by Purdue
- James Campbell, M.D., president of APS who received consulting fees from pharma declared pain "the fifth vital sign"
- VA adopts "fifth vital sign" and aggressively pushes implementation.
- Essentially fake Patient Advocacy Groups, funded by Pharma, pushed for pain elimination with opiates.
- Lawsuit settlements by Purdue a tiny fraction of the overall societal burden of their products
Implementing the Pain as the 5th Vital Sign Mandate

Implementing Pain as the 5th Vital Sign will require every VHA medical facility to do the following:

- Develop a comprehensive implementation plan for the facility.
- Plan and implement methods for pain screening and assessment.
- Provide for routine documentation of pain scores and assessment.
- Provide education for healthcare providers, e.g., physicians, nurses. Education should include instruction on how to use the NRS, documentation procedures, and interpretation of the results; how to conduct a comprehensive pain assessment and documentation requirements; and how to develop a plan for effective pain management and how to document it.
- Educate patients and families about pain screening, assessment, patient rights and responsibilities related to pain management, and available pain management/treatment options.
ABOUT THE AMERICAN PAIN FOUNDATION

Founded in 1997, the American Pain Foundation (APF) is an independent nonprofit 501(c)3 organization that serves people affected by pain. APF speaks out with people living with pain, caregivers, health care providers and allied organizations, working together to dismantle the barriers that impede access to quality pain care for all.

OUR MISSION

The American Pain Foundation educates, supports and advocates for people affected by pain.

American Pain Foundation Donors 2010 report

- Endo – Opana™, oxymorphone
- King – Embeda™ (bought by Pfizer 2011)
- McNeil – Tramadol “safe”
- Purdue – Oxycontin
- Cephalon – Actiq™ Fentanyl
- Forest – certain oxycodone products

Visionary
(greater than $1 million)
Endo Pharmaceuticals, Inc.

Champion
($100,000 to $999,999)
King Pharmaceuticals
McNeil – PPC, Inc.
Medtronic
Medtronic Foundation
Pfizer Inc.
Purdue Pharma L.P.

Patron
($50,000 to $99,999)
Cephalon, Inc.
Forest Laboratories, Inc.
When Purdue was Under Investigation, James Campbell testified in front of the senate

I have a perspective on the problem of pain in America because I am in the trenches battling with the issue of how to help individual patients who are devastated by the problem of chronic pain. My perspective also arises from my work with the American Pain Foundation. The APF is the nation's leading nonprofit organization devoted exclusively to serving the needs of people with pain. The APF works toward its mission by providing information, education, and advocacy. I founded the APF with the help of several colleagues including Dr. Kathleen Foley, who served for fifteen years as head of the Pain and Palliative Care Services at Memorial Sloan Kettering Hospital, and Dr. Charles Cleeland, Director of the Pain Research Group at M.D. Anderson Cancer Center. We recognized that there was a need for a national grassroots organization that was dedicated to furthering research, providing education, and raising awareness about the problem of chronic and acute pain in America. Purdue Pharma has contributed generously during the ten years that the APF has been in existence.

I am testifying before you today because I believe the adverse publicity and the prosecution of several Purdue Pharma executives in relation to OxyContin risk the welfare of patients in pain. Access to treatment is a major problem affecting millions of patients who suffer with pain. This hearing has the potential to clarify many misunderstood facts about OxyContin and it is in this spirit that I appear before you today.
Evidence-based prevention approaches for alcohol use disorders exist but are inconsistently and poorly applied, mostly due to political concerns.

Evidence-based prevention approaches for opiates are promising but still being researched; evidence on the impact of PDMP's, restricted prescribing guidelines such as the new CDC guidelines, and decriminalization remains severely limited.

It is unlikely that a supply-restriction approach in a vacuum will be effective.
<table>
<thead>
<tr>
<th>Alcohol Policy</th>
<th>Number of states by rating and year of CDC Prevention Status Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>State excise taxes on beer*</td>
<td>3</td>
</tr>
<tr>
<td>(Green: ≥$1.00 per gallon; Yellow: $0.50-$0.99 per gallon; Red: &lt;$0.50 per gallon)</td>
<td></td>
</tr>
<tr>
<td>State excise taxes on distilled spirits*</td>
<td>3</td>
</tr>
<tr>
<td>(Green: ≥$8.00 per gallon; Yellow: $4.00-$7.99 per gallon; Red: &lt;$4.00 per gallon)</td>
<td></td>
</tr>
<tr>
<td>State excise taxes on wine*</td>
<td>2</td>
</tr>
<tr>
<td>(Green: ≥$2.00 per gallon; Yellow: $1.00-1.99 per gallon; Red: &lt;$1.00 per gallon)</td>
<td></td>
</tr>
<tr>
<td>Commercial host (dram shop) liability laws</td>
<td>21</td>
</tr>
<tr>
<td>(Green: Commercial host liability with no major limitations; Yellow: Commercial host liability with major limitations; Red: No commercial host liability)</td>
<td></td>
</tr>
<tr>
<td>Local authority to regulate alcohol outlet density</td>
<td>18</td>
</tr>
<tr>
<td>(Green: Exclusive local or joint state/local alcohol retail licensing; Yellow: Exclusive state alcohol retail licensing but with local zoning authority or other mixed policies; Red: Exclusive state alcohol retail licensing)</td>
<td></td>
</tr>
</tbody>
</table>

Note: *The ratings reflect where each state's tax fell within this range. N/A: Not Applicable.
Sources: Centers for Disease Control and Prevention, (2014) and (2016).
Treatment

Why People Don't Get Treatment (Percentages)

- Not ready to stop: 40.7%
- No HP coverage: 30.6%
- Negative impact on job: 16.4%
- Negative opinion of others: 12.6%
- No transportation etc.: 11.8%
- Desired treatment not available: 11%
- Don't know where to go: 8.3%

Source: NSDUH

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Addiction Treatment is Effective

Percentage of Patients Who Relapse

- **Type 1 Diabetes**: 30 to 50%
- **Drug Addiction**: 40 to 60%
- **Hypertension**: 50 to 70%
- **Asthma**: 50 to 70%

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The Future

Key Questions

My GPS takes me around known open air drug markets or liquor stores tailored to my unique risk factors

My efforts to dial old-using friends texts my sponsor

Poor sleep tracked through wearables and suggestions offered

My wearable tells me what meetings are nearby

My healthy, recovery-oriented choices are supported through gamification (I'm rewarded for healthy choices)

My access to care providers is immediate and mobile

Recovery materials, interactive, coach, and peer support are always accessible

My addiction recovery and other health goals are integrated

Biometrics anticipate problems before they occur (stress etc)

Pharmacogenetics, vaccines, wearables, therables, embeddables
Data that informs interventions

Environmental, Baseline, Demographic, Interventions

How

Every recommended support is altered based on outcomes

The Future of Addiction Will Be Driven By Key Questions

How and whether we answer these is up to us

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Treat Addiction.
Save Lives.