



Opinion

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Addiction Medicine Needs Scientific Evidence-Based Interventions to Improve Patient Outcomes. A Model Related to the City of Hope is Proposed as a Step towards Improving Addiction Outcomes Worldwide



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Opinion

The National Institute of Health (NIH) is a \$37 Billion campus dedicated to finding new and improved treatments for all diseases in the USA. In the USA the National Institute of Drug Abuse (NIDA) a branch of NIH has dedicated \$3 Billion to address the opioid crisis within its HEAL Initiative (Help Eliminate Addiction Long Term). The focus of this work is to fund research on ways to lower Opioid deaths, train nurses, doctors, family members and First Responders on ways to prevent overdoses using Narcan administered intra-nasally. Includes an effort to also introduce patients to Medication Assisted Treatment. That is using a drug that is an agonist to dopamine to reduce the euphoric effect of say heroin or Opioid legal drugs on dopamine receptors thereby blocking the euphoric effect of these drugs. It's not too dissimilar to give Type1 Diabetes needles filled with insulin to keep diabetics alive with daily injections before meals. An estimated 77,000 people will die in The USA in 2019 from Opioid Overdoses. Many became addicted to legal pain medication after an injury, operation or other medical procedure. Additionally, family, friends, nurses and doctors can be trained to administer a medicine that could save an overdose victim with a squirt into the victim's nose. Most people see addiction as a moral weakness or lack of willpower. However, Addiction is a complex brain disorder with a genetic predisposition. This longstanding stigma attached to addiction is

now nearly 100 years old. People born with a certain set of 78 genes have a greater euphoric effect in their brain when using than most people. Regardless of their home life Identical twins raised apart with these genes have higher probability of becoming addicted than other people. Lifestyle of your parents or adoptive parents have little impact good or bad on whether a twin gets addicted, but genes do.

Addiction takes over the brain by activating the primal midbrain which focuses on Fight, Flight, Euphoria and Reproduction. Over time the dopamine receptors (which cause a euphoric effect) require more of the drug to reach the same effect. This then largely reduces the cerebral cortex's rational thinking in the brain causing self-destructive out of control behavior. Unlike most all diseases only 10% of addicted patients ever get help for their addiction per se. Think about that for a moment, can you name any other disease in which so few are diagnosed and referred to a specialist soon after symptoms show up. Yet, the stigma around this killer disease is powerful. Most MDs do not diagnose and refer these patients. From 1934 until 1979 addiction was excluded from payment by Blue Cross-Blue Shield as a non-covered benefit. I helped get the American Medical Association to pass a resolution in the House of Delegates that it must be covered same as any other killer disease. Then the AMA President and I

got the Health Insurance Association to do the same resolution demanding coverage from all other insurance carriers. Lastly, we got the World Health Association to require addiction coverage too. MD training and diagnosing addiction is way behind most diseases. MDs rarely diagnose addiction and refer and if they do refer are not given feedback by addiction treatment centers even if they do refer. This is unlike any other disease. General Practitioners are the gatekeepers of referral for all diagnoses. Yet, society, families and individuals with addiction tend to deny its existence often with tragic consequences.

The cost of all addiction to America is huge in comparison to most diseases. More is spent on the judicial system than on treatment centers. Jail cells don't cure addiction. Substance abuse costs our Nation over \$600 billion annually and treatment can help reduce these costs. Addicted people cause accidents in cars, trucks, trains, and get arrested or cause major lawsuits. It is estimated that the majority of the costs of addiction goes to the judicial system, for judges, juries, jails and parole officers not to mention drug smuggling prosecutions. According to several conservative estimates, every dollar invested in addiction treatment programs yields a return of between \$4 and \$7 in reduced drug-related crime, criminal justice costs, theft and other medical care of all kinds. When savings related to healthcare are included, total savings can exceed costs by a ratio of 12 to 1. Major savings to the individual and to society also stem from fewer interpersonal conflicts; greater workplace productivity; and fewer drug-related accidents, including overdoses and deaths.

In the US and worldwide addiction medicine has some major challenges ahead. Last year an estimated 77,000 opioid overdoses occurred nationwide. And these senseless deaths continue despite the \$3B being spent to stem this tide. Part of the challenge we have in addiction is that we are dealing with a complex brain disorder. And science has not yet resolved how the brain is impacted by drugs of all kinds. The brain itself has more dopamine connections than the Milky Way galaxy by far the most complex organ on earth. And we do not yet fully understand how it works completely. Identical twins raised apart have a high probability of being addicts despite their adoptive parents or family life. We also know that the single most important trait to being successful in life is the ability to delay gratification. Such a trait is often woefully missing in people who become addicts, alcoholics, gamblers, smokers, sexually hyperactive, etc.

We know that home and family life play a role in the spread of addiction as do biological and genetic factors. All drugs of

abuse affect the brain pleasure and reward systems in different ways. Growing evidence points to structural brain changes that drugs of abuse can trigger depression, and genetic factors which impact dopamine receptors along with those impacting Serotonin. Reductions in Serotonin has been associated with Depression and relapses. We still don't understand the human brain fully. And that barrier is rendering our existing treatment regimens inadequate in improving outcomes. Today, patients once discharged from a random treatment center in the US will show 60% of patients will relapse within 6 months. Sometimes with little to no means to track these patients going forward. However, there is a new company seeking to address this inadequacy with a sophisticated system that tracks patients thru treatment from the perspective of clinicians treating them; family members; discharge planners and other patients as well. This data is collected and can be shared (with confidentiality of patient names) with third party payors.

Is it time for addiction treatment to be more like other diseases such as cancer where a large campus is created by a nonprofit 501C3 Foundation (tax deductible) that co shares newly developed innovations resulting from a collaborations of treatment centers internationally that have collaborations with medical device, biotech, Pharmaceutical, Imaging, and genetic companies whose research collaborations can obtain patents on new innovative diagnostic and treatment new discoveries that can be reviewed by a heterogeneous Medical Advisory Commission. This would not be an echo chamber with only recovering addicts and alcoholics along with Board Certified Addiction Medicine Medical Doctors. It would include perhaps geneticists, oncologists (who understand how cancer spreads with the help of genetics), Nobel Laureates in Brain neuroscience, geneticists, detoxification experts, etc. Such a freestanding nonprofit organization would be in a position to look more objectively at the science of the brain and its impact on the rest of the body. And in turn focus on a cure for addiction in a way that a for profit entity might be hampered by as well as an aggregation of Universities competing for grant money and not as much focus on a cure.

The creation of the Addiction Medicine Institute was inspired by the above model that resembles the City of Hope for Cancer in Duarte California. My goal was to catalyze a private nonprofit entity that is focused on the discovery of new and better treatments for addiction. Such an entity is generally lacking worldwide. I would be interested in hearing from other addiction clinicians, researchers and innovators who might want to collaborate with such an entity on behalf of addicts and alcoholics worldwide.



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