

Vaccinate Yourself Against Addiction

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Today, *Exponential Investor* is looking at the latest research in mental health and addiction.

Previously coverage has looked at how cannabis is helping people [overcome crack addiction](#). It's one of many medical uses for marijuana. The changing legal status of cannabis, along with the burgeoning research literature on medical uses, means that the sector is ripe with profit opportunities. You'd be well advised to swot up on how you can make money from cannabis.

Addiction is a significant economic issue – responsible for a huge proportion of preions. *Scientific American* reports that one in six US adults took psychiatric medication in 2013. Zoloft and Xanax (both Pfizer) were the most prescribed. That's doubtless lucrative for their investors, but such large-scale prescribing is worrying.

Mental health is also has a very large effect on time off work, along with other measures of life impact. Therefore, from a public health point of view, it is a significant issue – and previous neglect has pushed it right up the healthcare agenda.

When we focus on mental health economics, two conditions stand out. These are probably the most widespread, and economically significant.

Addiction and depression are huge public health problems

Addiction and depression both cause frequent early death, as well as the loss of economic productivity due to time off work.

Addiction additionally imposes large burdens on both acute healthcare and the criminal justice system. As a result, there's a very strong political impetus for tackling it.

Similarly depression also leads to much time off work. It also has a further devastating effect, which removes some of the most financially valuable people from the economy. Yes, suicide is sadly one of the leading causes of death among young men. I've personally felt the impact of this – as two of my friends committed suicide in early adulthood.

As well as being a personal tragedy, the economics of suicide are a significant social problem. Its typically young victims have received costly education and childhood healthcare – but have yet to pay back society for that investment. More practically, suicide events themselves often cause disproportionate economic disruption – as rail commuters will attest.

Here are the latest breakthroughs in suicide prevention

Buprenorphine, an opioid (generic – eg, Subutex from Reckitt Benckiser) has the power to reduce suicidal thoughts – and, hopefully, suicide attempts. This new treatment approach is characterised by an alternative way of thinking about mental health – not in terms of depression, but rather in terms of mental pain. It's termed “psychache”. People who are experiencing mental anguish are likely to be at for greater risk of suicide – yet there have previously been few pharmacological interventions specifically relevant for this group of people.

New biomarkers for suicide

A new blood test looks for biomarkers associated with people at risk of suicide. Widespread use of such tests would make it more likely that meaningful treatment can be provided in time. The evidence shows that people at risk of suicide frequently present to healthcare professionals in the days and weeks before they kill themselves. A routine test would help direct those in particular danger to urgent intervention. This new test looks for the stress hormone cortisol, and mitochondrial DNA in the blood. Mitochondrial are like little power stations, giving our cells the energy they need. If their DNA is circulating in the blood, it implies they are being broken down.

An alternative is to look at real-world suicidal behaviour. Brian Mishara, at the University of Quebec in Montreal, has recently published a paper analysing the movements of suicide victims at rail stations. This is part of a programme of work, aimed at helping artificial intelligence (AI) to spot pending suicide attempts – and then automatically slow or stop oncoming trains. Not only does this project have the capacity to prevent hundreds of deaths per year in the US alone, it could have wider benefits. Only around one in three subway suicides attempts in Montreal are successful – and failed attempts lead to huge economic costs, from healthcare and disability.

Together, these tests and interventions will potentially help spot impending suicide, and appropriately treat those at risk.

Here's what's coming for addiction

This is, to some extent, a golden age of addiction intervention. There have been huge strides forward in smoking cessation

treatments – notably nicotine replacement therapy. That's most obviously characterised by the astonishing rise of vaping in recent years. Vaping is now a serious threat to regular smoking. I've long regarded e-cigarettes as a great "double bottom line" investment – one that benefits society, as well as your wallet.

Tobacco majors are clearly rattled by vaping. They're variously trying to either invest, or put up regulatory barriers to adoption. Every time you see a media scare story about vaping, you ought to be questioning who's pushing it.

BAT and Philip Morris are unsurprisingly working to capture the vaping market – but I personally would stay clear of these majors. They risk large lawsuits, and are tied to a dying (and killing) product. Vape-only alternative stocks include Turning Point and Hale Vaping.

Agony

This might be a controversial one, but new clinical trials have been green-lighted to examine the use of MDMA (ecstasy) in the treatment of chronic, treatment-resistant alcoholism. The theory is that people with untreated psychological trauma are prone to using alcohol to blot out painful memories, or to control anxiety symptoms (we're all familiar with stories of hard-drinking former soldiers).

MDMA already has a proven use case in assisting people with post-traumatic stress disorder (PTSD) to overcome their fears. By using this therapy with alcoholics, it's hoped that it will break the cycle of addiction. This has obliquely impacted my own life: a friend-of-a-friend spiralled into chronic alcoholism after a car crash. It would be wonderful to have a treatment that can piece together these broken lives.

Jabs for addicts

Anyone who's seen *Trainspotting* will be familiar with the use of opiate blockers, which are used to treat overdose. A sustained-release monthly injection of Vivitrol (Alkermes) can be used to block the high from both opiates and alcohol. This has proved to be a clinically effective treatment in controlling addiction.

A more revolutionary technology is the idea of a vaccine for addiction. This has been tried for a number of addictive drugs, and has not yet met with commercial success. Nevertheless, we may soon see vaccines for common addictive drugs – and cocaine and nicotine are promising candidates.

Simply explained, these vaccines trigger the to treat the drug as an incoming pathogen, destroying it before it reaches the brain. If children are vaccinated before they take up smoking or try cocaine, then the first hit will not be sufficient to get them hooked. It's a promising field of research – with vast social consequences.

I hope this article has illustrated how important addiction and mental health can be from a social, public health economics, and investment point of view. It's a fascinating area of research – and one I hope to return to in *Exponential Investor* in future.

Please do send in your views on this controversial and interesting investment area to: andrew@southbankresearch.com.

Best,

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