

The algorithm designed to spot people at risk of suicide before it's too late

Data scientists at Stigma Statistics are hoping tech can help reduce suicide rates and save lives

By [Harry de Quetteville](#) 10 September 2020 • 6:00am

Seven years ago, Matthew Steans was working in a high-rise building when he saw a figure atop the multi-storey carpark opposite his office throw themselves over the parapet. Steans, a New Zealander now aged 33, was “going through a period of depression” himself, and today describes the incident as “a trigger for me to go and get some help”. Once, after emerging from therapy, he found a series of missed calls on his phone. They were from a friend who had killed themselves.

“It was all very raw, and I guess it tipped me off on the crusade to do something about the pain and suffering associated with suicide.”

Last year, suicide numbers in England hit a record high. Across the UK, the latest figures (for 2018) show that 6,859 people killed themselves. By contrast, just 1770 were killed on Great Britain’s roads in the same year.

The most at risk being from suicide are men aged between 45-49. Indeed almost three quarters of those who commit suicide are men. “It might take a woman four years to decide, from low mood to wanting to attempt suicide, whereas with a man it’s a lot less - maybe just four hours. An impulse and the means to do it.”

The importance of data

Data can show far more than victims’ gender, however. It can, for example, reveal that 28pc of those who kill themselves are already known to mental health services, or that 10pc have themselves been bereaved by suicide.

Because, as Steans puts it, far from always being an affliction of lonely and desperate individuals in isolation, suicide can be catching, with rashes of cases wreaking havoc among vulnerable individuals. And like the Covid-19 contagion that we are all facing now, data is critical to understanding outbreaks, to predicting where they might emerge, identifying those most at risk, and intervening to save them.

The result is [Stigma Statistics](#), an internet portal which collates information from the huge variety of organisations, from local authorities to coroners to GPs to - all too often - railway operators - involved when a suicide occurs.

The crucial point is that - with a single family permission - the information can be collected and shared in real time. Traditionally, says Steans, it takes at least nine months for a death officially to be confirmed as suicide in this country. That can delay suicide care services’ own

version of track and trace, while analysis of real-time data can spot trends - geographic, age related, in a school district, say, or reveal that suicides in one area occur at times when a specific mental health drop-in centre is closed.

It might also allow effective interventions to block transmission of the suicide “contagion”, by, for example, offering timely immediate support to relatives, who themselves become statistically far more likely to commit suicide after a family member’s death.

“Public Health England have guidance that if there are three or more suicides in a certain area in three months then there's what's called an ‘escalation plan’,” says Steans. “However, prior to having a platform or anything that was all done retrospectively. You had missed the boat.”

His approach is not unique. Indeed, Steans developed Stigma Statistics, which is currently being used by two county councils - Kent and Cambridgeshire - after working with Gary Slutkin, an American doctor who found that gun violence in the US also followed the patterns of infectious diseases, and argued that understanding, then cutting, “transmission”, through swift data collection was key to an effective response.

Three years ago Steans, now 33, began to try to find a single source of reliable, real-time data, from the many agencies involved in a suicide, only to realise there wasn’t one. Now he is not alone in the effort. QES, a software company based Gloucestershire, has also developed a real-time [suicide surveillance platform](#).

Murky ethics

But, as with many applications of data to sensitive, subjective areas of human existence, preventing suicide by crunching the numbers is a murky ethical world.

“We are developing technology around predictability,” says Steans. “A factory closes, and the football team lost, and it’s a Tuesday in June. These events aren’t regular, but you can build up a picture of that.” With more and more data, however, predictions could be refined, until individuals - who may not themselves even realise they are at risk - are automatically flagged by the system.

Steans has no problem with the concept. “On the ethics, I’m really supportive. It’s better to ask a well worded question than not do it. And if we’ve got all the data, there’s no reason why we can’t ask that question to the right person at the right time.”

Yet if the summer’s exam grading fiasco reveals anything, it is that accuracy does not always make algorithmic prediction publicly acceptable. Nor are such methods guaranteed to be accurate. Predictive policing tools - widely used America - identify crime hotspots. But they also target individuals estimated to be likely to commit offences in future, which has been found open to abuse and lead to harassment. [One such system](#), described by the Tampa Bay Times, described how a police force generated a list of suspects, many under 18, then sent “deputies to find and interrogate anyone whose name appears, often without probable cause, a search warrant or evidence of a specific crime”.

Yet from suicide prevention to the dispatch of SWAT teams, the impact of so-called “predictive analytics” is only likely to increase, particularly under the data-hungry leadership of the Prime Minister’s chief advisor Dominic Cummings.

Just yesterday, the government launched a National Data Strategy to “kickstart the data revolution across the UK” with 500 data-science analysts, working under a new Government Chief Data Officer, promising to “drive efficiency and improve public services.”

The human touch

Today - World Suicide Prevention Day - Matthew Steans is hopeful that revolution will save lives. The existing [Cross-Government Suicide Prevention Workplan](#), published in January 2019, acknowledges the need to “look at innovative ways to improve local data collection and suicide audits through projects such as real-time surveillance of suicides”.

“It’s a very conservative market,” Steans says. “Public health and local authorities are wary of data sharing. But we need to know what’s going on. I want to turn the innovation dial right up.”

In that he has been helped by Covid, which has exposed the prime importance of accurate, real-time data and may be softening such official reluctance.

The arguments are economic as well as ethical. Suicides are expensive. Last year the Department for Transport estimated suicides caused 847,000 minutes of delays on the rail network - at a cost of £68 million. In 2004, [a study put the cost of suicide](#) to families and the wider economy at £1.29m per death, the equivalent of £2m today - £13.7bn for all 6,859 deaths in 2018.

And no matter how automated, how apparently intrusive, suicide prevention becomes in future (and for the moment Stigma Statistics’ analytics merely notifies flesh and blood administrators to follow up, or not) it will, says Steans, always require a human touch at the very sharpest end.

“Someone still has to go to that bridge, to walk up to that person, and ask: ‘How are you?’. Because you need someone to ask. I had no idea that it wasn’t ok to feel like that. A lot of people don’t. Until it’s too late.”

If you are having suicidal thoughts or are worried about someone else, you will find help here: [The Samaritans](#): 24-hour helpline: 116 123. You can also contact them by emailing jo@samaritans.org.uk

If you or a young person you know is struggling to cope, you can also contact Papyrus, the young person suicide prevention line. Their advisers at HOPELINEUK provide confidential advice weekdays 9am-10pm and weekends and bank holidays from 2pm-10pm. Call on 0800 068 4141, text 07860 039 967, or email pat@papyrus-uk.org