

THIS WEEK

EDITORIALS

ECOLOGY The troubled tale of the wolf, the moose and the ice **p.132**

WORLD VIEW German court verdict ends scientist's surreal nightmare **p.133**

PESTICIDES Evidence of chemical damage to bumblebees **p.134**



Suicide watch

Despite a high death toll, public-health efforts to combat suicide lag far behind those focused on preventing accidents and diseases such as cancer. A US initiative aims to redress the balance.

Some 38,000 people killed themselves in the United States in 2010. That's more than were killed in traffic accidents (34,000) or by prostate cancer (29,000), and more than twice the number murdered (16,000). Shocking though that is, many other countries monitored by the Organisation for Economic Co-operation and Development have even higher suicide rates. So why do public-health authorities put less effort into preventing death from suicide than they do death from accidents or diseases such as prostate cancer?

One institution that has started to take the matter very seriously is the US army. Since 2008, the suicide rate among soldiers has exceeded that of the general population, and in the past few years the army has lost more soldiers to suicide than to combat. In 2009, the army launched a US\$65-million, six-year project called Army STARRS to collect genomic, medical, psychological and lifestyle data from more than 100,000 soldiers to try to identify suicide risk factors and prevention measures, as well as biomarkers of resilience such as epigenetics or brain connectivity. In 2010, it co-launched the National Action Alliance for Suicide Prevention, a public-private partnership, which last week released a pioneering 172-page report on suicide and how it might be tackled.

The report, produced and published in partnership with the US National Institute of Mental Health in Bethesda, Maryland, outlines a strategy to reduce suicide rates in the general population by 20% over the next five years. It also makes shockingly clear how little is known about suicide. There is no standard way to define and so recognize what it means to be suicidal. Relevant statistics are not routinely collected, which makes it hard to know, for example, the effect of round-the-clock crisis teams, and good follow-up care for those who attempt suicide.

Cases of suicide linked to cyber-bullying in young people feature prominently in the media, but few studies have addressed how social media might increase suicide risk through bullying or contagion (prompting copycat suicides). In any case, people over the age of 65 kill themselves much more frequently than do young people.

Two things we do know. First, a high number of people with a psychiatric disorder such as schizophrenia, depression or substance abuse kill themselves — somewhere between 50% and 90% of all suicides are thought to be associated with mental illness. Second, stressful life events, particularly during childhood, greatly increase suicide risk. However, most people who are under stress or mentally ill do not kill themselves. And even as the use of psychiatric medications has soared in the past two decades, suicide rates in the United States and most other countries have remained stable. So what is going on? And what might help?

It will never be possible to eliminate suicide, but it should be possible to reduce rates in different risk groups by attacking the problem from many sides. Biological approaches could identify and help the vulnerable, and sociological interventions could reduce stress in societies.

More long-term studies such as Army STARRS are required to shed light on the biology. And clinical trials can identify therapies that target personality traits or feelings likely to lead to suicide — impulsivity and

helplessness, perhaps. One large clinical trial that directly addressed suicide and psychiatric disease indicated that the antipsychotic drug clozapine could help to cut suicide rates in people with schizophrenia (L. Alphas *et al. Schizophr. Bull.* **30**, 577–586; 2004). And small trials have hinted that lithium may do the same for those with depression.

There are no good animal models for suicide risk at present, so biological investigations will have to rely on work with humans. But much can already be done to reduce suicide numbers, even in the absence of biomarkers. One powerful option, on which the report's strategy for reducing suicides by 20% strongly depends, would be to

reduce people's access to means of suicide.

Surprisingly, many people intent on suicide abandon their plan if their chosen means is not available. Firearms account for about half of US suicide deaths, and modelling work carried out for the new report shows that almost 10% of all suicides could be prevented by

restricting access to guns. In 2010, 735 people

in the United States killed themselves with carbon monoxide from car exhausts; the report suggests that 600 of those deaths might have been prevented if car manufacturers were required to install a sensor inside the vehicle that turns off the engine when carbon monoxide builds up.

The report's 20% target will probably not be achieved in the desired five years, but it opens a useful debate that will help more people to understand that the action of committing suicide needs to be considered in the same way as a disorder — as something that can be addressed, not an unavoidable product of circumstance. ■

"There is no standard way to define and so recognize what it means to be suicidal."

Number crunch

The correct use of statistics is not just good for science — it is essential.

In the fragmented media marketplace, it is a brave publisher that dismisses the professional competence of most of its readers. So sensitive subscribers might want to avoid page 150 of this week's *Nature*.

The criticism in question appears in a News Feature on the thorny issue of statistics. When it comes to statistical analysis of experimental data, the piece says, most scientists would look at a *P* value of 0.01 and "say that there was just a 1% chance" of the result being a false alarm. "But they would be wrong." In other words, most researchers do not understand the basis for a term many use every day. Worse, scientists misuse it. In doing so, they help to bury scientific truth beneath an avalanche of false findings that fail to survive replication.