

Don't react, think

From swine flu to mistakenly locking people up, grappling with risk means juggling our emotional and analytical selves, says **David Spiegelhalter**

THE British players in the unfolding swine-flu drama are providing a riveting case study of different responses to risk. While the government tries to look cool, controlled and consistent, tabloid newspapers hunt sensation and citizens exhibit every emotion from nervous anxiety to stoical acceptance. In the meantime, mainland Europe revels in portraying the UK as a land gripped by pestilence. Perhaps we all need a crash course in considering the unintended consequences of overreacting to events.

Take a couple of memorable overreactions. In the year after the terrorist attacks on the US on 11 September 2001, so many people avoided airline travel in the US by driving that there were about 1500 additional deaths on the roads, or six times the number of air passengers that died on 9/11.

Then there is the trouble that officials can cause when they panic. In 1995, an urgent fax was sent out to doctors in the UK warning that third-generation oral contraceptives were associated with a doubling of the risk of deep vein thrombosis. Women stopped taking the pill in droves, there were thousands of subsequent additional abortions, and all because of an overreaction to a risk of 1 in 7000 being doubled to 2 in 7000.

Perhaps the greatest danger of overreaction, though, happens when a government feels it must respond to popular clamour after a high-profile event involving an innocent or vulnerable victim. When a baby is killed, or there



is a murder by someone identified as mentally ill or someone on probation, people are reasonably shocked and feel that “something must be done” to prevent such things happening again.

Why do they think that extra bureaucracy will help? While the causes of individual tragedies may be apparent, this does not mean that similar events can be easily prevented in future. That’s because they are essentially unpredictable: the underlying problem is that the most shocking “bad” things happen to, or are done by, people deemed to be low-risk, and so attempts to prevent all “bad” things often have a high cost for little apparent

gain. This idea is probably best explained through an example.

Let’s consider what are officially termed “serious further offences” (SFOs) in the UK. Suppose 1 in 1600 of the total number of people on probation commits such an offence, but that some are more likely to offend than others. These high-risk people offend at three times the rate of the low-risk. Suppose 7.5 per cent of probationers are classified as high-risk. If you locked them all up, what might be the consequences?

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It is counter-intuitive, but you would make very little impact, and all for considerable cost and loss of liberty.

How so? Imagine you had 8000 people on probation. Of these, 600 (7.5 per cent) are high-risk, and 1 of them commits an SFO. The other 7400 are low-risk – only one-third as likely to commit an SFO – and 4 of these offend. Overall, by locking up all high-risk cases you will prevent only 1 out of the total of 5 offences: 80 per cent of the SFOs will still occur. So what appears to be a reasonable policy could be an overreaction.

A group of deaths provokes even more concern and the expectation of action. For example, vast sums are spent on rail safety after high-profile accidents. This has had a substantial impact: not a single passenger was killed in a train accident in the UK in 2008, compared to 60 years ago when there were at least 50 every year.

However, it is easy to overlook the fact that 279 members of the public were killed on UK railways in 2008, around the same number as 60 years ago, nearly all of them trespassers and suicides. Deaths that occur singly and are seen as the victim’s fault arouse little demand for action.

Contrary to popular opinion, senior civil servants are well aware of the tendency to overreact to risk. The UK has had a series of semi-official bodies set up to identify official overreaction and discourage excessive interference in people’s lives, including the recently disbanded Risk and Regulation Advisory Council.