

Opinion

The risk of swine flu? I haven't a clue...

... writes a professor of risk. But I'm still sending my daughter in Mexico some Tamiflu

David Spiegelhalter



It could have been designed to make me feel inadequate. I am a professor of risk, and when my daughter Rosie wanted to spend part of her gap year working on a newspaper, she chose, with a true nose for a story, to go to Mexico.

So it is assumed that I know the chances of her, and everyone else, getting or even dying of, swine flu. But I just don't know; risk is such an odd thing — no instrument can measure it but it constantly changes as we find out more information, just as the odds on Barack Obama being President oscillated wildly in the year before the election. What do we really mean by chance and risk anyway?

In some circumstances we can comfortably put a number on risk: if I spend £1 on a lottery ticket, I can calculate from the number of ways the balls can be drawn that there is a 1 in 14 million chance of winning the jackpot. Doing the sums for swine flu is a different matter: a heavenly compere doesn't pull balls with our names on out of a large bag, so epidemiologists resort to computer models of how epidemics work.

But instead of just having pure unavoidable chance, ignorance of the mechanics of the epidemic starts to dominate the calculations. It's a bit like trying to work out the odds of

winning the lottery when you don't know how many balls there are.

The shape of the epidemic would be a lot more predictable if we knew all about this virus, and in particular something called the "reproductive number", which is how many people each case is expected to infect in an unaffected and unprotected population. For example, each case of measles would be expected to infect twenty people, which is why the fall in MMR vaccinations is viewed so anxiously; for smallpox it's about five and Sars about three.

Epidemiologists and insurers are rushing to estimate this quantity from the limited data: for this virus, it seems to be less than two, so a bit of effort might push it below the magic threshold of one, when the epidemic should disappear.

Meanwhile, my girl in Guadalajara reports that nobody there seems to care much about the reproductive number, and the lack of any clear information has brought a mixture of blind terror and indifference. For every few people not wearing masks someone is wearing four at once, just in case. And it's never long before the wearer's intrinsic Mexican-ness overrides instructions and face masks are yanked down to kiss a cheek or smoke a cigarette. The masks sold out completely on the second day of the scare, leading many people to fashion their own from dishcloths and bits of string.

The health minister in Guadalajara has only just admitted that there may possibly be some local cases, whereas in the UK the papers are providing full histories of every



Rosie reports that for every Mexican without a mask, another has four

contact — invaluable information for the epidemic model. But our ignorance goes beyond not knowing how infectious the virus is and the proportion of cases that die — the virus could mutate or, the feared outcome, join with avian flu to create a new strain: despite the opportunities for flying-pig jokes, this would be no laughing matter.

At least we can think of these possibilities and weigh them up, inevitably using a lot of judgment stirred in with the science. But our journey through ignorance can lead into the pitch-black of deep uncertainty — Donald Rumsfeld's unknown unknowns. It can be disastrous to believe that you have thought of everything — it seems

clear that a big reason for the financial crisis was a belief that risk models were somehow "true" and that the world really worked according to the rules, and there was no preparation for when events did not fit the model.

So we need some humility and to admit that we may be wrong. Pundits may mock the level of uncertainty that says the eventual UK body count could be none or could be a million, but that is simply an expression of honest ignorance. The need is to have emergency systems that are precautionary at first, and then rapidly adapt to new knowledge obtained from good data. Deciding which vaccines to prepare for the winter flu season will require a delicate balance of risks and benefits — a real gamble in the face of uncertainty.

And even if a judgment is inevitable, the reasoning should at least have some science behind it, unlike Egypt's slaughter of the innocent pigs. Perhaps even that is better than the conspiracy theories circulating in Mexico, inviting us to believe that the virus was introduced by the Americans, the pharmaceutical industry or to distract attention from the drug cartels.

Anyway, my gut feeling is that the chances we will see the girl again are looking quite good. But we've sent out Tamiflu just in case.

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Melanie Reid
Why on earth are we banning a mouthy DJ?

Michael Savage must think all his birthdays and Christmases have come at once. One of several American radio polemicists with a predictable line in invective about gays, Muslims, autistic children and illegal immigrants, his career has now been assured by a ban from the British Home Secretary.

Likewise Fred Phelps, a barmy fundamentalist pastor from the Midwest; and Stephen Black, the former Ku Klux Klan grandmaster, who are also included on the 22-strong list of Jacqui Smith's undesirables. These people, who have spent their lives desperately trying to be taken seriously, couldn't have

It's as much of a threat as athlete's foot

bought this kind of publicity.

But why on earth has the Home Office chosen this moment to release a list of banned foreigners? Savage had no intention of visiting Britain. Similarly, why the hoo-ha over Philip Nitschke, the Australian euthanasia campaigner held at Heathrow and treated as dangerously seditious?

Don't be fooled. The argument is not about the beliefs of a few career extremists. Take me to a village pub anywhere in the UK, and I will

In my view Rui Vieira
Flving which flag?