

## Swine flu of 1976: lessons from the past



Courtesy of Dr Harvey V Fineberg

Dr Harvey V Fineberg

Dr Harvey V Fineberg is the president of the Institute of Medicine, Washington DC, United States of America (USA). He served as provost of Harvard University from 1997 to 2001, following 13 years as dean of the Harvard School of Public Health. He has devoted most of his academic career to the fields of health policy and medical decision-making. He co-authored *The epidemic that never was*, an analysis of the controversial federal immunization programme against swine flu in 1976. He earned his bachelor's and doctoral degrees from Harvard University in psychology, medicine and public policy.

In 1976, a late winter outbreak of swine flu at a military base in the USA led to fears of a devastating pandemic. President Gerald Ford announced a plan to vaccinate everyone in the country. By the end of the year, 40 million out of some 200 million Americans were vaccinated for the new strain, but no pandemic appeared and public health credibility suffered. Dr Harvey Fineberg tells the *Bulletin* why his 1978 study of that public health response is still relevant today.

*Q: Is the current flu outbreak a replay of the experience of 1976?*

A: There are clear parallels and striking distinctions between the situation then and now. In '76, the virus was detected in a single military installation, at Fort Dix, New Jersey. In the ensuing weeks and months, not one related swine flu case was reported elsewhere in New Jersey, the USA or anywhere else in the world. By contrast, today's H1N1 variant has demonstrated a capacity for multi-generational human-to-human transmission. A second important difference, when it comes to response capacity, is that we now have a wider armamentarium of possible interventions – antiviral medicines in addition to the potential for a vaccine. Third, 9/11 and the anthrax attacks in the USA have led to heightened preparedness for bioterrorism and natural disease outbreaks. The experience of SARS [severe acute respiratory syndrome] and the global notice of avian influenza have likewise stimulated monitoring capacity, preparedness and international cooperation. The open and prompt reporting of cases – that has been a hallmark of the current episode – stands in contrast to the 2003 SARS experience.

*Q: What lessons can we draw from the swine flu response 30 years ago, when dealing with today's threat of a pandemic?*

A: The first lesson is to avoid over-confidence about scientific insights. Major flu pandemics arise on average only about three times every century, which means scientists can make relatively few direct observations in each lifetime and have a long time to think about each observation. That is a circumstance ripe for over-interpretation. For example, in '57 having seen the so-called "Asian flu" of '57 and the so-called "Hong Kong flu" of '68, some experts believed that flu pandemics tended to recur on an 11-year cycle and they were prepared for an outbreak in the late 1970s. The idea of an 11-year cycle turned out to have no predictive value.

*Q: A recurring theme in your study is the difficulty of linking scientific evidence and policy. How do you determine policy when you don't have the hard scientific facts and when a public health threat is probable but not certain?*

A: What we saw back in '76 was that political leaders wanted to do the right thing but lacked technical expertise, and public health experts recognized the uncertainty of the threat yet wanted to convey the seriousness of the risk in a way that would overcome political inertia. The challenge of communication between technical experts and policy-makers is as relevant today as it was in the '70s. Policy-makers and

experts cannot rely exclusively on such semiquantitative qualifiers as "usually", "occasionally" and "possibly." An event is "possible" when its chance of occurring is 1 per 10 and remains "possible" when the odds have dropped to 1 per million. A change in likelihood of over five orders of magnitude has policy implications. Words that suffice for everyday discourse are not adequate for tracking and adjusting to a dynamic situation such as a flu outbreak. The responsibility of the technical expert here is to think hard and precisely about what is known and unknown, to portray the uncertainty in a way that is accurate and adjustable over time as circumstances change, and to communicate this to the policy-maker. Both policy-makers and technical experts face an intensified dilemma of communication when it comes to reaching the public, whose understanding, support and participation may become crucial.

*Q: Was there a question over whether to declare a pandemic in '76?*

A: At that time, there was no generally recognized rating system to describe the potential for a pandemic. Even today, few members of the public can say what pandemic levels four, five or six mean. A natural way to think of it would be analogous to the Saffir–Simpson hurricane scale that is based on maximum sustained wind speed. However, our pandemic potential scale reflects the likelihood of a pandemic and not its severity. Ideally, a pandemic rating system would incorporate likelihood of occurrence, expected scale and expected severity. It's also important for the policy-makers to leave room to explain movement down the scale as well as up.

*Q: Why was the response to the '76 swine flu outbreak deemed a failure?*

A: In the decision-making, the fundamental strategic flaw was combining all aspects of response into a single "go or no-go" decision – the decision to proceed with characterizing the virus into a vaccine, to produce the vaccine, to test it and to deliver it to every man, woman and child in the USA – that was all decided and announced in March '76 in one fell swoop. This big lesson has been absorbed by policy-makers:

separate what needs to be done to prepare for future decisions from reaching conclusions and announcing them, before relevant information is at hand. For example, you can proceed to develop a vaccine, but you do not simultaneously need to decide whether to proceed with immunization, what its scope will be and who priority recipients will be. In the coming months, we will learn a lot from the circulation of the virus in the southern hemisphere or lack of it, from studies of the age distribution of the current outbreak, in field testing about the immunogenicity of the vaccine, and more – all relevant to informing policy choices about a vaccine.

*Q: Was information withheld from the public in '76 for fear of causing panic and damaging politicians' ability to win votes?*

A: I don't think the political side entered the picture. When you talked to the participants, as we did, some technical experts felt decisions that seemed premature must have served a political agenda. At the same time, political decision-makers consistently thought that the scientists were giving them no choice but to go ahead with a mass immunization programme. That's why we put stress on communication and clarity about the nature and change in the uncertainty over time, as this would enable the experts to be heard and the policy-makers to make informed choices.

*Q: The US Centers for Disease Control and Prevention (CDC) lost credibility over the '76 swine flu affair, not only due to about 30 deaths from adverse vaccine reactions?*

A: Once set on its course, CDC did not establish a basis for review and reconsideration of the situation. As facts evolved, such as the absence of

further cases, CDC's pursuit of the original strategy to immunize everyone became more and more controversial and costly in terms of long-term credibility. From technical, political and policy points of view, it is very difficult to deal with low probability–high consequence events – events that are relatively unlikely, but that would have catastrophic consequences should they occur. When you have such an event in prospect, the naysayer who argues that you are over-reacting is more likely to be right than wrong. It is just like the person who says, "Don't buy insurance for your house this year; it's not going to burn down." At the end of the year, for most of us in most years, that would have been an economical decision, but its wisdom can be judged only in retrospect. In prospect, it's foolhardy not to have the insurance. This is a fundamental challenge for policy-makers in the face of many threats of this type, including natural pandemic threats.

---

“It is just like the person who says, ‘Don't buy insurance for your house this year; it's not going to burn down’.”

---

*Q: What other challenges did the '76 response face?*

A: Legal liability issues arose when insurers refused to insure vaccine manufacturers against lawsuits. Field trials suggested children would need two shots to gain adequate protection, complicating the logistics. Administrative problems abounded because states

varied tremendously in their ability to deliver vaccines. If you immunize very large numbers of elderly people, inevitably some will have a heart attack the next day, so you have to prepare the public for such coincidences. In one city, a few elderly people died of heart attacks soon after being vaccinated and immunizations were temporarily suspended. By the end, there were dozens of cases of Guillain–Barré syndrome. That wouldn't have been a blip on the screen had there been a pandemic but, in the absence of any swine flu disease, these rare events were sufficient to end the programme.

*Q: And CDC's lack of understanding of the media in '76 did not help either, especially its understanding of television networks?*

A: In '76, two major networks gathered background on the initial story of an immunization programme in different ways, and that formed differences in attitude on each network that held throughout the entire year. The network that talked to the political figures in Washington came to the conclusion that the immunization programme must have been a scientifically driven decision. The network that talked on background to key experts within the CDC, who believed it was a case of “damned if we do, damned if we don't”, concluded the decision must be political. We are well beyond that today. There is a much greater sophistication in dealing with the mass media today. Working with the media is still crucial. The question now is how public health can also utilize the new media, the web, twitter, the blogs and electronic communication capacities to its advantage. That's a new twist on the old challenge. ■