

## How far did the UK government over-respond to the 2009 threat of Swine Flu?

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***Managing major risks creates problems for governments when probabilities are hard to estimate and outcomes are uncertain. Reviewing the experience of the 2009 swine flu pandemic fear, [Adam Oliver](#) argues that the UK government over-reacted in some key respects. Partly underlying this response was an 'aversion to ambiguity' pattern of behaviour that has long been studied by social scientists. Ambiguity aversion led to an under appreciation by ministers of the opportunity costs of acting, resulting in the government prolonging an insufficiently targeted use of antivirals, and the purchasing of more flu vaccine than was necessary, at an additional cost of perhaps £500 million.***

In the spring of 2009, the UK government claimed that the country was well prepared to respond to the global swine flu outbreak. The response was based upon a feared outbreak of avian flu. Swine flu ultimately proved milder and less deadly than a worst case avian flu outbreak, which has led some to conclude that the government overreacted to the 2009 threat. One possible explanation for an excessive response from the government is given by ambiguity (or 'uncertainty') aversion. That is, the behaviour of the swine flu virus was unknown, and thus the government attached disproportionate weight to the worst possible outcome of the threat. A dislike of ambiguity, or [ambiguity aversion](#), implies that people will pay a high price to avoid it, or, when it cannot be avoided, they adopt a pessimistic approach and overweight the slight possibility of the worst outcome occurring.

The potential drivers of the government's strong response were manifold. For example, [Sir Liam Donaldson](#), the Chief Medical Officer for England at the time, had for many years invested much effort in highlighting the threat of pandemics. Moreover, the initial information from Mexico appeared to suggest that the virus was associated with rapid spread and high fatality. In parallel, the modellers that the government relied on to predict the outcome of the 2009 outbreak relied on parameters that reflected more accurately the greater severity of the avian flu outbreak, and fears provoked by previous pandemics had a significant influence on the government. For instance, the Asian flu and Hong Kong flu outbreaks in 1957 and 1968-69, respectively, had each killed 1-4 million people, and the Spanish flu outbreak of 1918-19 is estimated to have killed up to 40 million people worldwide.

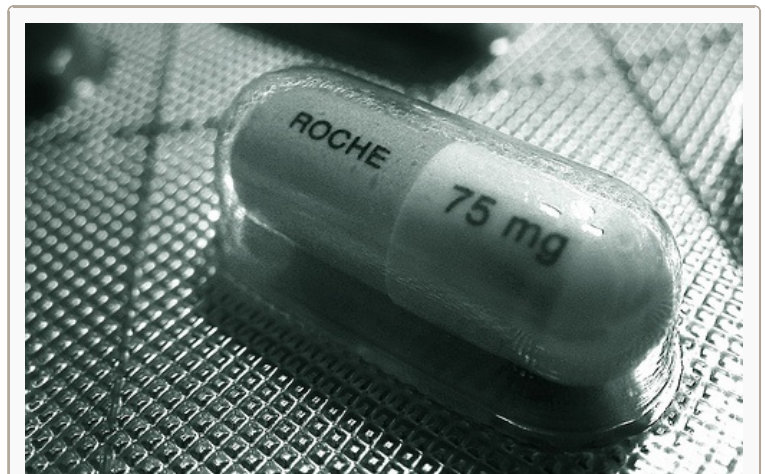


Image Credit: Tim Snell

Between 27 April and 2 July 2009, the government focused upon a swine flu containment strategy, the focal point of which centred on the use of antiviral medications. The government implemented a policy of recommending antiviral use by those who had come into contact with anyone infected with the virus, in the hope that this would slow the spread and thus give more time to learn about the virus' characteristics before it had spread extensively throughout the population. The English government adopted a 'treat all' approach with respect to antivirals, meaning that all those with swine flu symptoms were advised to take the medications. However, by mid May the Health Protection Agency recommended that the use of antivirals be reduced, due to the observed side effects of the medications, the large number of people who were not completing the courses of the drugs, and the risk of causing drug resistance. The English government did not change its policy until the beginning of July, and thus its actions regarding the use of antivirals can reasonably be viewed as excessive. However, in this case, any excessive reaction is perhaps less likely to have been motivated by ambiguity aversion *per se*; rather, the principal motivation may well have been to maintain public confidence.

Losing public confidence is a possible opportunity cost of *not* acting aggressively, but there are also

opportunity costs of acting too aggressively that the government may have insufficiently considered. Initially, the reasonable worst case scenario specified up to 65,000 deaths, intended for planning purposes, but used by some in the media as a prediction. This may have incited a degree of fear within the population. Aside from the disutility felt from personal anxiety, fear can lead to attention and resources being directed away from interventions that are potentially more health-enhancing and life-saving. In an independent review of the government's swine flu policy ([the Hine Review](#)), it was estimated that the response consumed £1.2 billion in direct costs. If a part of this spending could have been avoided with a more measured response, it could have been used to significant effect elsewhere. On the flipside of provoking short term fear is the danger of desensitising people to risk in the longer term. That is, in the longer term, the government could face accusations of 'crying wolf'.

By 2 July 2009, the government moved onto a treatment strategy, and focused on more targeted antiviral use. However, the stand-out feature of the treatment phase was the development and later use of a swine flu vaccine. In the Spring of 2009, Ministers had to choose between buying 30 million doses and 132 million doses of the vaccine, with the latter being sufficient to vaccinate the whole population effectively. The decision to purchase 132 million doses was confirmed on 17 June. This quantity of vaccine was ultimately not required. It took until 21 October before the vaccine was developed and cleared to administer, almost six months since the first UK cases of illness had been recorded on 27 April. The process could not have been significantly quicker. It has been estimated by some experts that a worst case pandemic would largely be over within four months of the first cases being recorded, which raises the question of whether a vaccine is likely to negate an outbreak significantly.

The government announced that high risk groups would initially be targeted for vaccination. These included those aged between six months and sixty-five years with low immunities or certain chronic illnesses, pregnant women, the non-healthy over sixty-fives, and frontline health care workers; in total, 13 million people. The government anticipated that 75 per cent of these would choose to be vaccinated. However, only 5.5 million people in total vaccinated themselves against the virus. Although it is likely that more people would have vaccinated themselves had the full threat been realised, the government would have been well advised of the likelihood that a significant percentage of the population would not have done so. The government thus purchased sufficient vaccine for a worst case scenario, which appears to lend itself to ambiguity aversion, but even if the worst case is certain to happen, a policy of purchasing vaccine for the whole population is questionable. By the time the vaccine is ready, the peak of the pandemic is likely to be over, many will have natural immunity, and a great number will not in any case vaccinate themselves.

To conclude, most of us are ambiguity averse. We will think of the opportunity costs of *not* acting, and be influenced by a 'what if' effect. Erring on the side of caution in such cases feeds into a basic human need for security. However, at the policy making level, it ought to be recognized that in addition to the opportunity costs of not acting (e.g. the potential political costs, the possible loss of public confidence, the loss of life *if* the worst happens), there are opportunity costs of acting (e.g. provoking unnecessary fear, the repercussions from 'crying wolf', the lives and health lost by diverting resources away from other services) that should not be overlooked. The contention here is that, in part due to an aversion to ambiguity, the government in England overlooked to some extent the opportunity costs of acting, which led them to prolong an insufficiently targeted use of antivirals, and to purchase more vaccine than they ought to have done.

*This is a synopsis of a seminar for policy-makers and academics from many disciplines held at the LSE on Wednesday October 13. [Click here](#) to download a PDF version of Adam Oliver's draft paper.*

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