

Less than a week after first cases of severe flu were linked to a mutant Swine Flu virus, by April 29th 2009, Swine Flu was confirmed in Mexico, US, UK, Spain, Israel, New Zealand with over 10 other nations reporting suspected cases. Swine Flu has spread further and faster than Sars did in 2003 - a virus which caused massive business disruption and social chaos in some parts of the world for several months.

Our world is right on the brink of an unstoppable global pandemic - whether or not this occurs will probably become clear within the next 2-3 weeks. Fortunately, early indications are that those infected are responding well to antiviral therapy, plus treatment of secondary chest infections with antibiotics.

Repeated warnings about mutant flu / other new viruses

Since 1987 I have been predicting the great vulnerability of our world to new mutant viruses or mutations of existing ones, in my book *The Truth about AIDS*, and again in *Futurewise* published in 1998 (now in a 4th edition). The Swine Flu virus currently causing such global concerns is just one of a large number of totally new agents emerging each year, the vast majority of which are relatively harmless causing combinations of aches, pains, fevers, rashes, gut problems and other symptoms.

Twenty years ago medical students were trained to diagnose virus infections by their typical symptoms and skin rashes, but today the range of low-grade viral infections is huge and rapidly growing. Few are formally diagnosed. Doctors just tell people they are suffering from a "self-limiting condition" which is another way of saying there's no treatment but it is unlikely to kill you. But that was before SARS.

We can expect many companies to restrict travel to some areas, or more widely, until the situation becomes clearer. Tourism will also be badly affected in nations with significant numbers of cases.

How Swine Flu may mutate further

A huge uncertainty is how the virus itself will evolve. All flu viruses tend to go on mutating - they can become more or less dangerous and more or less infectious. A real risk is that Swine Flu virus will infect someone who is also carrying ordinary flu, and that their cells could get muddled about which virus to make, so that a new combination of genes happens. This could change the virus radically in behaviour.

But Swine Flu could also become milder than in Mexico at present, with a death risk which could end up similar to a bad dose of normal human flu. We need to remember that normal flu kills 50,000 a year in the US, and around 75,000 across the EU. Doctors are used to seeing death rates three or four times normal every decade or two so US death rates from Swine Flu of - say - 150,000 would not be that far from normal year on year variations.

Summer weather in Northern Hemisphere may help many nations

The fact that Swine Flu is starting to spread globally in late April 2009 rather than in Autumn may help the world manage what could easily become a global pandemic. It will be October 2009 before vaccination becomes possible on a large scale - it just takes that long to analyse a new virus and multiply up production capacity. Between now and then, depending on the virulence of the virus and its ability to spread, we may face very serious challenges to slow down spread.

A helpful factor is that Summer is coming for the Northern Hemisphere where a huge amount of the world population lives, and in these months Flu viruses usually spread more slowly for reasons we do not fully understand.

Lessons from Sars chaos

Sars virus spread rapidly in 2003 but there were only 862 deaths and only around 8600 cases. Yet China faced a national crisis with thousands fleeing cities like Beijing, possibly carrying infection with them across many SARS-free areas. Normal life in some places ceased. After much delay the government went to the other extreme, with draconian measures including quarantine for entire buildings, thousands of workers, entire hospitals, severe limitations on travel, cancellation of public holidays, huge fines for spreading false rumours and so on.

Southern China is a place where new viruses often emerge, sometimes jumping from animals

to humans. Mexico is not a usual place for new viral mutations.

Bird flu and H5 mutant viruses

Viruses have the capacity to recombine with new genetic material as they spread. Most viruses are species-specific but occasionally they cross over. We saw this in 1998 with a severe outbreak of bird flu in Hong Kong which killed several people and only halted after over 1.3 million chickens were slaughtered. We have seen it again in April 2003 in the Netherlands with a further outbreak affecting humans and the slaughter of over a million chickens there. Fortunately the virus does not seem to be able to spread very well between humans.

In 2002 we saw a new virus emerge called H5, also in Hong Kong. It killed 50% of those infected but fortunately proved difficult to catch. However, another of these recent mutant viruses is of course HIV, which already has spread to 1% of the entire world's 15-55 year olds, with almost 100% death rates from AIDS. Another, a hundred years ago, killed 30 million people - Spanish Flu in 1918-1919.

Most new viruses are either harmless or relatively uninfecious, or both. HIV is an example of a dangerous virus that is far harder to catch than Sars or Swine FLu, yet a global menace because people can live for many years in an infectious state without realising they are a potential risk to others.

Expect more mutant viruses - urgent need for better antivirals

With 6.7 billion people alive today, a small risk of viral mutation every time a single person is infected with any existing viral type, dense urbanisation in many countries, dramatic growth in international travel, and the lack of an antiviral equivalent to penicillin, conditions have been perfectly set for some time for just such outbreaks as Swine Flu or Sars. We should therefore expect more to follow - less or more dangerous than Swine Flu.

All this underlines the urgent need to develop effective antiviral medication. It is shocking that 60 years after the discovery of penicillin we still do not have a single antiviral that is as effective as the earliest antibiotics. When we do, we will have a cure for common cold, flu, polio, smallpox, viral meningitis and viral pneumonia - amongst many other conditions. Genetic engineering may be a key weapon in vaccine development.

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