

Professor Roy Anderson, Rector of Imperial College London and a leading British expert on epidemiology, speaks to **Amresh Gunasingham** about the risk of a global disease pandemic.

'The next one will strike suddenly'

THE United Nations and World Bank have warned that a pandemic is one of the world's biggest threats, likely to hit up to 70 million people and to cost as much as US\$5 trillion (S\$4.5 trillion). Professor Roy Anderson, who was in town last week to establish a joint PhD programme between Imperial College London and Nanyang Technological University, talks about what it could happen and how we can prepare for it.

■ **The World Health Organisation (WHO) and other leading experts have warned that the bird flu virus could be the basis for the next pandemic, which is imminent. What do you think?**

A pandemic is certain in the near future, which is within the next 10 to 20 years. The current focus is on the bird flu virus, or H5N1, which has an unusual property in that it causes very high mortality rates among humans. Thankfully, however, the virus has been very poorly transmissible in human communities to date. But I suspect the next major mortality-inducing infectious agent will be a surprise. Rather like the HIV virus and SARS, it will come out of nowhere.

■ **What do you see as the global trends relating to the spread of infectious diseases?**

The emergence of new infectious agents in the coming century is likely to accelerate for three very important reasons: increased population density; the increased connectivity of the world, particularly enhanced by airline travel; and our need to feed ourselves. With increasing concentrations in large mega-cities, which typically have populations of over 10 million, livestock has been brought into closer intimacy with hu-

mans. As a consequence, we acquire most of our infections from wildlife and livestock.

■ **Singapore is buying 2.6 million doses of the bird flu vaccine while other countries such as Japan have started vaccination programmes. Are these precautionary measures effective? Singapore can afford to do it because it has a small population...and it is probably a sensible precaution.**

The vaccine against the H5N1 virus is still in phase II developmental trials and what countries have done is pre-purchase the vaccine for when it is ready. But it is not certain that the next influenza pandemic will be H5N1 virus at all.

■ **So we could be caught unprepared?**

Let's hope not. With the H5N1 virus, the two subscripts - H subscript 5 and N subscript 1 - are genetic types of two important proteins on the surface of the influenza virus.

But if a different mutation of the virus were to break out, we would be unprepared. At the same time, however, if we were vaccinated against the H5N1 virus and the one that broke out shared one of these subscripts, say H5N1 for example, evidence suggests we would have some protection because of the

shared property.

■ **What else can Singapore do to prepare for a pandemic?**

I know there are plans here because of the shortage of trained doctors to think about setting up a new medical school. I am biased, but I hope the school will cater to research on public health, infectious diseases and genomics because these are important domains.

This is where the greatest medical need is. You want to develop medical advances to be able to diagnose and cure novel infectious diseases. Also, the health-care sector is a sophisticated commercial market and there are tremendous commercial opportunities for spin-offs of high-tech companies. The biomedical and biotechnology fields, which are an interface between medicine and engineering, are prime examples of this.

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While the current focus is on the bird flu virus, the next pandemic could come out of nowhere, like HIV and SARS, says Prof. Anderson, WHO's H5N1