

## Bird flu: a real or imaginary threat?

Influenza pandemics have occurred for some time, certainly since the 16<sup>th</sup> century. It would be nothing new if another pandemic took place. Why so much concern?

Why do the epidemics repeat themselves every year? The phenomenon is due to an important characteristic of the influenza A virus, which undergoes regular mutations, so that every year (or every two or three years) the viruses undergo slight modifications, whereby they acquire greater or lesser capacity to cause disease and the immunity developed against the viruses in previous years is not completely protective.

At more extended intervals, these viruses undergo significant changes by which the previously developed immunity confers virtually no protection, and the viruses acquire a capacity to cause severe disease that is much greater than usual for an influenza virus. This can occur directly, with the virus passing from birds to humans, and slowly, undergoing mutations conferring the capacity to transmit directly between humans or to pass from birds to swine and (in the latter) to undergo a recombination with human viruses, infecting swine and humans indistinctly, resulting in a third virus, adapted to transmission between humans and maintaining the virulence of its avian ancestors. This description coincides precisely with what we are witnessing in the H5N1 virus, from Hong Kong in 1997 to the present in Iraq, crossing various Asian countries.

The increased concern at present is because practice has coincided with theory, and it has now become possible to document the entire process. The avian virus isolated from patients in China in late 2005 differs from that isolated from patients in Vietnam in 2003, providing stark proof of constant mutation in the virus.

Clearly the issue is no longer whether we will have a pandemic, but rather its severity. The stage is now being set for the pandemic, and the actors are rehearsing. It appears unlikely that Brazil will experience a situation similar to that of Turkey or China, with a devastating epidemic in poultry and swine, and few (albeit severe) human cases.

Our problem will be when the pandemic actually begins some place in the world, purportedly somewhere in Asia, as with other recent pandemics. The number of trips and travelers has shown an upward trend. International tourism alone, not including other travel, totaled some 763 million trips in 2004, an annual growth rate of 6.5% if one considers that there were 25 million international tourism trips in 1950. There is no control system in ports and airports that will block the introduction of influenza. We must thus concede that if (or when) there is a pandemic, it will reach Brazil.

Brazil belongs to the list of countries with an initial contingency plan in place for the pandemic, and the Ministry of Health has already committed to purchase sufficient antiviral drugs to treat nine million cases. The plan's objective is to maintain social and economic normalcy, reducing the number of cases and deaths, but not necessarily to prevent the disease from occurring, which would be a utopia.

As for a vaccine, we can hardly expect it to be manufactured before the first outbreaks occur, since at present we do not know which virus it will be, simply because the virus does not exist. As discussed above, it will probably be a descendent of the current H5N1, but with characteristics that are impossible to predict.

Plans are merely pieces of paper. But will we really have the capacity to deal with a pandemic? Possibly, but with considerable sacrifice by society, which will need to understand that a significant share of the health system will be focused on dealing with this problem, taking priority over whatever else is not essential.

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