

Pandemic Postings

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National

Impacts of influenza pandemic on New Zealand economy [Treasury, March 2006](#). Treasury released a policy perspectives paper in March assessing the possible detrimental effects of an influenza pandemic on the New Zealand economy. The following extract is taken from the paper's summary: "Our approach is to model the impact of a pandemic as simultaneous supply and demand shocks. Supply shocks arise primarily from workers stopping work due to sickness, care of others, or fear of infection. New Zealand's import supply may also be disrupted. The labour force would be permanently reduced due to deaths caused by influenza. Demand shocks arise due to lower export demand, higher uncertainty, "social distancing" caused by fear of infection and public health measures, and consequential effects on income. There is a great deal of uncertainty around the potential size of these shocks. However, the results of this paper do suggest that a severe pandemic has the potential to generate a significant loss of output and income growth." For the most severe scenario (40% of the population become infected with the virus and 2% of the infected die), the paper's authors consider that the impact would be in the range of a 5 to 10% reduction in annual real GDP in the year of the pandemic. A pandemic of the scale of the 1958/1967 pandemics would have a greatly reduced economic impact, in the order of 1-2% reduction in GDP in the first year.

International

Situation in Egypt [WHO, 21/04/06](#). Confirmation of eight cases of human infection with H5N1 avian influenza brings the total number of confirmed cases in Egypt to 12. Of the 12 cases, four have died, one remains hospitalised in a stable condition, and seven have fully recovered. All have been children or young adults (the oldest is a 32-year-old farm worker), and all have had a history of close contact with dead or diseased poultry. One patient became sick in Jordan after a visit to Egypt during which he had been involved in slaughtering poultry.

Situation in China [WHO, 19/04/06](#); [WHO, 21/04/06](#); [WHO, 27/04/06](#). Two further cases of human infection with H5N1 avian influenza have been confirmed in China since 13 April. The first of these was a 21-year-old man from Hubei Province who became sick on 1 April and died on 19 April. No recent poultry outbreaks have been reported in Hubei Province; this man's source of exposure is under investigation. The second case is an 8-year-old girl from Sichuan who became with symptoms of fever and pneumonia on 16 April; she remains hospitalised. Poultry deaths had occurred recently near her home.

Ivory Coast awaits tests [CIDRAP, 27/04/06](#). Ivory Coast officials reported the two suspected poultry outbreaks of H5N1 to the World Organization for Animal Health (OIE) on Apr 25. The disease is suspected on the basis of clinical signs and tests at two laboratories in the country, the report said. The OIE reference lab in Padua, Italy, is running confirmatory tests. The sick birds included 16 backyard ducks and chickens and one sparrow hawk in two communes in the Abidjan district of the Lagunes region.

Current global avian influenza activity
 Newly-confirmed human cases of avian influenza A/(H5N1), 13 April - 27 April 2006,¹ and outbreaks of highly-pathogenic avian influenza H5N1 in poultry, 14 April - 21 April 2006,² by country. The complete list of human cases and poultry outbreaks to date can be found on the [ARPHS website](#).

	Human ¹		Poultry ²
	cases	deaths	outbreaks
China	2	1	-
Egypt	8	2	-
Indonesia	1	1	-
Pakistan	-	-	1
Turkey	-	-	5
TOTAL	11	4	6

Notes:

- As reported to [World Health Organization](#)
- As reported to [World Organisation for Animal Health \(OIE\)](#)

Background

Special issue of *Science* focusing on influenza [Science, 21/04/06 \(Ash and Roberts\)](#). A special issue of the journal *Science* contains reviews and articles examining many of the key underlying issues in describing and understanding influenza in animals and humans. Articles included are as follows:

- Global patterns of influenza A virus in wild birds** [Science, 21/04/06 \(Olsen et al\)](#). This paper outlines the network of influenza among migratory birds
- Host species barriers to influenza virus infection** [Science, 21/04/06 \(Kuiken et al\)](#). Examines the routes through obstacles to interspecies transmission of influenza: "Viral evolution can help surmount species barriers, principally by affecting virus-host interactions; however, evolving the capability for sustained transmission in a new host species represents a major adaptive challenge because the number of mutations required is often large."
- H5N1 virus attachment to lower respiratory tract** [Science, 21/04/06 \(van Riel et al\)](#). Brief paper that shows that the virus preferentially binds to cell types bearing specific surface receptors found deep in the lungs, which may partly explain its poor human-to-human transmissibility.
- Structure and receptor specificity of the hemagglutinin from an H5N1 influenza virus** [Science, 21/04/06 \(Stevens, et al\)](#).
- Predictability and preparedness in influenza control** [Science, 21/04/06 \(Smith\)](#). This paper summarises the models that have been developed for tracing the rate and spread of pandemic influenza through human populations, including scenarios for the deployment of drugs and development of vaccines.
- Emergence of drug-resistant influenza virus: population dynamical considerations** [Science, 21/04/06 \(Regoes and Bonhoeffer\)](#). This paper discusses possible implications for the epidemiological spread of drug resistance, and finds that generation and transmission of resistant strains could happen quickly although more data is needed to model accurately.
- Synchrony, waves, and spatial hierarchies in the spread of influenza** [Science, 21/04/06 \(Viboud et al\)](#). Models annual waves of infection using a large existing dataset on seasonal influenza in the US.