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Mrs PENFOLD (Flinders): Influenza is a disease that must be treated with extreme caution, because it is caused by viruses that have developed the capacity to change as they transfer from one host to another, hence the impossibility to develop a vaccine against it because virtually each strain requires its own vaccine. The virulence of the H5N1 strain (commonly referred to as bird flu) is alarming for the speed of its progress in human beings and the high mortality rate associated with it. Few survive.

Research appears to indicate that the disease is endemic in some species of birds from which, as the name suggests, it is transferred to human beings. The fact that H5N1 has also spread between certain animals—tigers, peacocks, cats, pigs and several different species of birds—suggests that it would be possible for a transmission to become quite efficient from birds to humans. A book on bird flu by Jo Revill (first published in the UK in 2005) states that Hong Kong saved the world in 1997 by its swift and comprehensive reaction to the discovery of the influenza virus that had been transmitted from birds to humans and that the virus was in a lethal form. Revill writes:

The unthinkable had happened. Until this point in history, no-one had imagined that birds could transmit their viral infections directly to human beings. The genetic leap was said to be too great for this to occur.

The culling of all the birds in the colony was ordered and, within the space of three days, 1.5 million chickens, geese ducks and quail were destroyed. The virus reappeared in 2001, 2002 and 2003, and it seemed that the territories would never be free of it. The problem was that the virus was regularly crossing the border from neighbouring Guangdong province in China through the trade of live birds for consumption and also for breeding. Since September 2004, Revill said that the disease had been hitchhiking its way westward across continents, with each new rumour of an outbreak sparking fears, as well as tough farming restrictions to protect national economies.

Migratory birds become possible harbingers of death if infected birds come across national borders during their seasonal flights. No person or group can believe that they are free from risk. It is this realisation that emphasises the importance of being prepared. The federal government has put more than \$600 million into research and preventative measures, nevertheless, it is individuals who will bear the brunt of prevention, detection and action should a pandemic occur. South Australia needs to plan on a statewide basis to cope with an outbreak which many believe is inevitable.

The state government should work with local government in developing strategies so that action can be prompt and confusion eliminated, and the state government should adequately resource and finance local government for the job. A proposal put to the Eyre Peninsula Local Government Association in March is worth implementing on a state basis. The proposal suggests a database of all birds in the state to be used as a control measure in the event of an outbreak of bird flu. Each local government council could compile a database for its region, thus covering all but the out-of-districts areas for the state.

The state government would fund and coordinate the project. A rapid response through the instant availability of this information to any call by a state or federal government for a specific bird cull could save hundreds of lives. Particular species, or those kept under free-range conditions, could be targeted immediately by response crews using the prior knowledge provided through such a database. The mandatory information might consist of the owner's name, exact location or address, all species of birds, numbers of each species, how kept (e.g free range, cage, aviary, loft, indoor, pet, etc.), and whether it is a commercial venture.

Further information could be included, such as whether or not carrier pigeons are being raced, whether live birds are being bought and sold and whether poultry products (eggs, table birds, etc.) are being sold. Information on wild birds and migratory birds could be sourced from private and government departmental knowledge with months of migration and anticipated numbers as nearly as possible. Revill states:

Every year, millions of birds fly on different routes around the world to nest and breed. . . thousands of flight paths run north to south and east to west, but still relatively little is known about how many birds follow each route. . . Our knowledge of migration comes mainly from bird watchers and ornithologists.

Australia is the end destination for some birds migrating through Asia. Therefore, the risk of bird flu being transmitted by this source is real. We must be prepared to deal speedily and efficiently with an outbreak whenever and wherever it occurs. It is easy to imagine the chaos and cost that would result if culling crews were sent out without the above information or had to gather the information on the run while an outbreak was in progress.

Poultry farmers in the United Kingdom have been told to prepare for contamination which, though not inevitable, is much more likely now that the virus has reached France. Trade in exotic birds must be included in any strategy to deal with the disease. Revill discusses an incident in Britain in October 2005 that led to a temporary ban on the importing of all captive birds into the European Union from around the world. This affected a sizeable number of creatures, as nearly one million birds and exotic pets are brought into the European Union every year.

William Karesh, the Director of the Field Veterinary Program of the Wildlife Conservation Society in Britain, said that factors that cause the spread of the disease—for instance, movement of domestic poultry and farming methods, such as intensive farming, both indoor and outdoor—should be a focus in the prevention of the disease and its spread. At present, the bird flu virus spreads only from bird to bird or from bird to human. However, a mutant virus spreading from human to human would have catastrophic effects across the world.

Two academics at the Australian National University—Warwick McKibbin and Alexander Sidorenko—modelled the economic effects of a bird flu pandemic. They looked at four cases:

- x Mild—similar to the Hong Kong flu of 1968-69;
- x Moderate—similar to the Asian flu of 1957;
- x Severe—similar to the Spanish flu of 1918-19;
- x Ultra—similar to the Spanish flu of 1918-19, but without the anomalously high survival rate of the elderly.

The model attempted to comprehensively describe supply and demand conditions in national and international goods, labour and capital markets, then looked at the effects of a variety of national economic variables: gross domestic product, external current account balances, exports, inflation, share prices, interest rates and exchange rates. Labour force figures reflected both fatalities and absenteeism, while demand reflected changes in the level and pattern of spending by consumers owing to social distancing—for example, cuts to travel, tourism and entertainment spending.

Business costs covered such things as absenteeism and the need to disperse people, while national risks took in such things as changes in financial markets due to higher risk premiums for holding assets (following a pandemic outbreak) in accordance with the quality of a country's governance, health policy and financial stability.

The research, while suggestive rather than conclusive, brought out some interesting things. A mild outbreak would, according to the modelling, cost the world 1.4 million lives and close to .8 per cent of gross domestic product or \$US330 billion. In the ultra case, more than 142 million people die and there is an 11 per cent loss of annual global output or \$US4.4 trillion. The researchers stated that, given the scale of these costs, it makes sense at both public policy level and at individual corporate and household levels to invest in preventative strategies. Being prepared will make a colossal difference should a large scale outbreak of bird flu occur.

The modelling showed that the composition of the slowdown differed sharply across countries according to their mortality and morbidity rates, the relative importance of the sensitive industries (trade, air transport, recreational and

other services), and the risk premiums that financial markets will demand from them. Morbidity refers to the occurrence of the disease. For instance, in African countries, where a large percentage of the population is HIV positive, there is likely to be a higher rate of morbidity. Also important is the capacity of governments to ease fiscal and monetary policy to offset economic downturns.

Hong Kong appears to be an economy that would be especially hard hit because of its dense population and extensive links with the rest of the world, leading to a rapid spread of the flu. Other factors also applied to make Hong Kong's case particularly severe. In the worst case scenario, Hong Kong's gross domestic product plummets by more than 50 per cent for at least a year before starting to recover. Most Asian nations would be particularly hard hit. However, Australia, despite its close integration with Asia, fares comparatively well. Even in the ultra case its gross domestic product drops only by 11 per cent; better than Asia (including Japan), though worse than the United States and western Europe. That is the big picture. The small picture comes back to individuals, to preparedness at a community level. This is where the state government can take a lead by implementing the bird data base mentioned previously.

Time expired; motion carried.