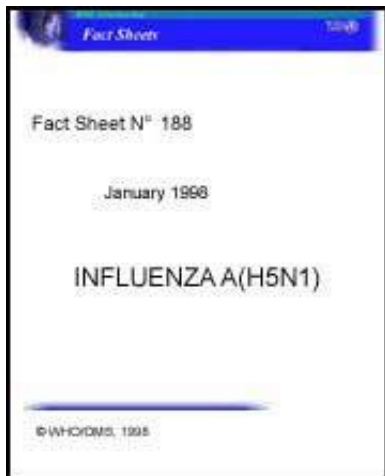



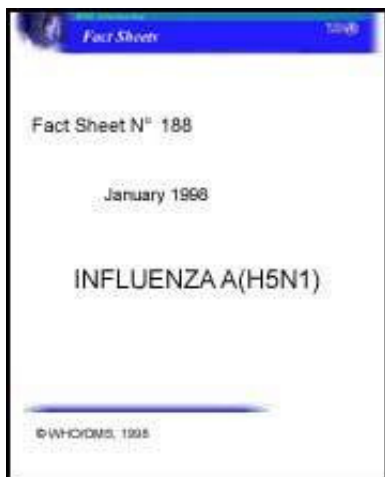





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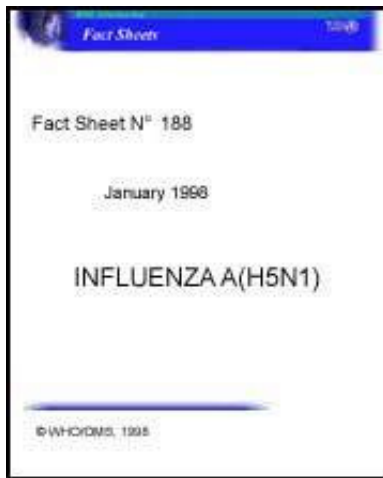
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  **INFLUENZA A(H5N1)**

INFLUENZA A(H5N1)

Influenza viruses are divided into types A, B and C, plus subtypes of A. Types A and B circulate in human populations and mutate constantly, resulting in the need for a modified vaccine every year. At times a new influenza virus appears to which nobody is immune because no one has previously been exposed to it. This is called an antigenic shift and it occurs at irregular intervals. Some antigenic shifts result in local epidemics or global pandemics.

Influenza was first described by Hippocrates in 412 BC and the first well-described pandemic of influenza-like disease occurred in 1580. Since that time 31 such possible influenza pandemics have been documented, with three occurring in this century: in 1918, 1957 and 1968. There is evidence that the viruses which caused these epidemics originated from animals (1918 = swine, 1957 and 1968 = avian strains). In 1976, a new influenza virus from pigs caused human infections and

severe illness. A vaccine against swine influenza was developed and administered in some countries, although no pandemic in fact occurred.

The most devastating of the 20th-century influenza pandemics was that known as the Spanish Flu which killed more than 20 million people around the globe between 1918 and 1920. The virus responsible for this pandemic is now known as influenza A(H1N1).

In May 1997, influenza A(H5N1) virus was isolated from a child who died with Reye's Syndrome* in Hong Kong. Prior to this, the H5N1 virus was known to infect only various species of birds, including chickens and ducks. It was first discovered in terns in South Africa in 1961 and can be deadly to chickens: in spring 1997, thousands of chickens died in Hong Kong after contracting it.

**** Reye's Syndrome, involving the central nervous system and the liver, is a rare complication in children who may have ingested salicylates (e.g. Aspirin); it occurs mainly in children with influenza type B and less frequently in young children with influenza type A or chickenpox.***

After the first human case occurred in May 1997, intensive surveillance revealed 15 additional cases by the end of 1997, all of them in Hong Kong, Special Administrative Region of China. Although the exact means of transmission of H5N1 to humans have not yet been identified, there is no clear-cut evidence of any human-to-human transmission. Infection with the virus is believed to come through contact with infected birds.

Symptoms: In humans, the spectrum of illness caused by influenza virus infection

in general can range from asymptomatic to fatal. Initial symptoms include fever, cough and chills, and most influenza infections cause only self-limited illness that does not require hospitalization. While the elderly and young age groups tend to have more severe illness from influenza in general, symptoms after infection with the H5N1 strain are severe in other age groups as well.

Up to the end of 1997, there were four deaths among people infected by the H5N1 virus: the first case, the two year-old boy who died of complications from Reye's Syndrome, a 54 year-old man, a 13 year-old girl and a 60 year-old woman. However, the severity of infections identified so far may not be representative of the spectrum of illness caused by H5N1 infection in humans, as milder cases may not have come to hospitals for treatment.

Monitoring and surveillance: Intensified influenza surveillance was initiated during August in Hong Kong and Guangdong Province, China following the identification of the first case of human H5N1 infection. Most surveillance activities were focused in hospitals, with some increased surveillance in outpatient facilities and, beginning on December 8, influenza surveillance was further intensified to include all outpatient facilities in Hong Kong. Surveillance of the production and transport of pigs and fowl for market has also been stepped up in regions of China neighbouring Hong Kong.

Based on present knowledge, there appears to be no risk of transmission of the H5N1 virus to humans from raw, chilled or frozen poultry foods. While H5N1 is unlikely to be transmitted through consumption of foods, the application of the WHO Ten Golden Rules for Safe Food Preparation is recommended to provide adequate protection from all poultry-borne diseases. In particular, attention

should be given to the thorough cooking of foods, avoiding contact between raw and cooked foods, and diligent hand washing during food preparation.

Next steps in investigating the virus: The investigation is now focussing on determining specific characteristics of viruses isolated from the confirmed cases of human influenza H5N1 and on determining how these persons became infected, whether other persons in Hong Kong and Southern China are being infected with the influenza H5N1 virus and whether there is evidence of human-to-human transmission of H5N1 viruses. At the same time, studies of birds and other animals are being conducted to identify the natural reservoir of the virus and the extent of its spread in the animal population. Chickens are not thought to be an efficient reservoir because the infection causes fatal disease in this species.

Vaccine development: At present, WHO does not recommend the production of a specific H5N1 vaccine. However, WHO's Collaborating Centres on influenza are working with various H5 strains to prepare high growth reassortants which could be used for vaccine production, in case of need. This work is complicated by the fact that the original virus isolates from Hong Kong also kill fertilized eggs which are used for vaccine production. The preparation of a vaccine would take several months after the selection of a suitable virus strain.

To minimize any potential risk to laboratory staff or others who may come into contact with the virus, work with the live pathogenic H5N1 virus is restricted to laboratory containment BSL-3 and strains for research in such laboratories will only be made available after approval of the local safety committee, national veterinary and public health authorities and WHO, Geneva.

In the meantime, the WHO Collaborating Centre for Influenza at the Centers for Disease Prevention and Control (CDC) in Atlanta, USA has prepared a kit of reagents for diagnosis of H5N1 which has been despatched to the 110 National Influenza Centres in 82 countries which make up the WHO network for influenza surveillance.

Isolates from the first and second H5N1 cases are sensitive to amantadine and rimantadine in laboratory experiments, and WHO is recommending prophylaxis using either of these drugs for hospital staff and other people in close contact with influenza patients. There is no reason to impose travel restrictions or quarantine in Hong Kong or elsewhere.

WHO has long-standing collaboration with the Government of China and the authorities in Hong Kong in the monitoring and surveillance of influenza, and is strengthening these activities in conjunction with its Collaborating Centres in Atlanta, USA, London, UK, Melbourne, Australia, and Tokyo, Japan. WHO has been working with its Collaborating Centres on Influenza to ensure that vaccine and other tools to combat the emergence of new strains of influenza viruses are developed in a timely manner.

Interepidemic activities/Pandemic planning: Two years ago WHO created a Task Force of Experts on Influenza. The Task Force includes the directors of WHO's three Collaborating Centres for Reference and Research on Influenza (Australia, UK, USA), the Director of the WHO Collaborating Centre for Influenza Epidemiology (Japan), WHO staff, and representatives from three of the 110 national influenza centres which collaborate with WHO on influenza surveillance.

The Task Force has developed a draft plan for the Global Management and Control of an Influenza Pandemic. Elements of this plan include augmented surveillance for and identification of potential pandemic viruses, dissemination of information, logistic and other support to national health authorities, and the promotion of high growth seed virus for vaccine and the facilitation of vaccine production and international distribution. Moreover, the Plan calls for each national health authority to develop its own pandemic emergency response plan.

Two of the key constituents of WHO's draft plan for pandemics are surveillance and vaccine preparation. Surveillance is maintained throughout epidemic and interepidemic periods by the 110 national influenza centres. These centres are constantly isolating influenza virus from humans and animals so that emerging strains are rapidly identified. They provide human isolates to one of the three WHO Collaborating Centres, where virus is sequenced and genetically characterized. Some collaborating centres also deal with animal specimens. Results from the influenza network are reviewed each February in Geneva by Task Force members and vaccine manufacturers and a recommendation for the antigenic composition of the next year's influenza vaccine is made to and adopted by WHO and then passed on to vaccine manufacturers.

WHO stimulates vaccine research on tissue culture and other methodologies for vaccine production to reduce the dependence on fertilized eggs (which are a constraint to vaccine production as the stock is limited) and consequently speed up production when urgent, unforeseen requirements make the provision of large amounts of vaccine necessary.

The current outbreak of H5N1 influenza in Hong Kong is the first one in which

WHO pandemic planning has been used, and it provides the opportunity to adjust WHO's draft plan in line with experience. Through this stepwise and systematic process, the scientific information necessary to make rational decisions on control of influenza outbreaks is being accumulated.

For further information, journalists can contact Health Communications and Public Relations, WHO, Geneva. Telephone (41 22) 791 2584. Fax (41 22) 791 4858.

All WHO Press Releases, Fact Sheets and Features as well as other information on this subject can be obtained on Internet on the WHO home page <http://www.who.ch/>

