WHO ad hoc scientific teleconference on the current influenza A(H1N1) situation
29 April 2009

On 29 April 2009 WHO hosted a teleconference that included more than one hundred participants from all of the WHO Regions. The objectives of the teleconference were to gain a better understanding of the situation in affected countries; to update and share preliminary epidemiological, clinical and virological information and to identify key knowledge gaps needed to address immediate public health questions.

The format of the teleconference was a series of situation updates followed by a moderated question and answer session. Listeners were given the opportunity to submit questions electronically. Information was provided by the following agencies and organizations: the Dirección General de Epidemiología (DGEPI) and the Instituto de Diagnostico y Referencia Epidmiologicos (INDRE); the US Centers for Disease Control and Prevention (CDC); the New York City Department of Health and Mental Hygiene; the California Department of Public Health and the Public Health Agency of Canada.

Each of the following situation updates includes a brief history of how cases were first identified, ongoing surveillance activities and available clinical, epidemiological and virological information. ***The information should be considered preliminary as the situation is rapidly evolving and investigations are ongoing.***

Mexico
Editorial note: Since the teleconference, a detailed and updated report of the initial and ongoing investigation of influenza A(H1N1) has been published at:
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0430a2.htm.

Initial detection
Routine influenza surveillance first detected an increase in the number of cases and outbreaks of influenza-like illness (ILI) in late January/early February 2009. The reports were considered to be typical of seasonal influenza and a mix of seasonal influenza A and influenza B viruses were identified. Mexican health officials believe that the outbreak of the newly emerged influenza A(H1N1) virus likely began in mid-March. Surveillance began to identify cases of ILI at a time when seasonal outbreaks typically are declining. By mid-April, cases and clusters of severe pneumonia, primarily in previously healthy young adults, were occurring. On 14 April clinicians treating a hospitalised patient with atypical severe pneumonia in Oxaca State grew concerned about the unusual nature of the case. The patient was a previously healthy young adult (age in late 30s) who recently had been diagnosed with uncomplicated diabetes. The patient died following a rapidly

progressive course. Clinicians considered severe acute respiratory syndrome (SARS) as a possible cause but the patient tested negative for SARS. This case prompted enhanced surveillance throughout Mexico. Post-mortem testing done after the new influenza A(H1N1) virus had been identified in Mexico determined that the patient had been infected with the newly emerged influenza A(H1N1) virus.

Specimens were sent to the Public Health Agency of Canada's National Microbiology Laboratory on 22 April. On 23 April influenza A(H1N1) was identified in 17 of 18 samples tested.

Surveillance information

On 17 April, Mexican health officials began enhanced surveillance for severe respiratory disease. Surveillance was expanded on 23 April to include *suspect cases* (i.e. severe respiratory disease); *probable cases* (i.e. a suspect case with laboratory evidence of influenza A); and *confirmed cases* (i.e. a probable case with laboratory evidence of the newly emerged influenza A(H1N1) virus).

For the period 17-27 April, 26 confirmed cases (7 deaths), 286 probable cases and 1551 suspect cases (84 deaths) have been reported. Cases are being reported throughout the country with suspect cases in all states. Most of the confirmed cases and deaths have been reported from the Federal District of Mexico; cases have also been confirmed from Mexico State, Veracruz State and Oxaca State.

Most infected persons have been between 20 and 55 years of age; among confirmed cases, age has ranged from 4 and 58 years. The age distribution is similar for fatal cases.

Clinical information

A spectrum of illness ranging from severe respiratory disease to mild illness has been reported. Among the first 25 confirmed cases, all of whom were hospitalised with severe pneumonia, approximately 90% had cough, fever, malaise and headache. Few data are available at this time regarding secondary bacterial infections. Typical hospital-acquired pathogens, such as *Pseudomonas aeruginosa*, have been detected in a few patients who were hospitalized for prolonged periods of time.

In a small community in the State of Veracruz, an outbreak of mild ILI affected about 50% of the population.

Among ill persons who were not found to have the newly emerged influenza A(H1N1), other pathogens that have been isolated include seasonal influenza A and B, parainfluenza (23 samples), respiratory syncytial virus (1 sample) and adenovirus (1 sample).

Epidemiological information

Investigations are underway to assess community and hospital contacts of confirmed cases. Follow-up of contacts of one fatal case found a clinical attack rate of 20% and 45% among 106 community and 105 hospital contacts, respectively. None of the contacts for this case patient had severe disease.

Clusters of confirmed cases have been found in hospitals but it is uncertain if these represent hospital- or community-based transmission. A small number of cases have been reported in health care workers. However, it has not been possible to determine the source of their infection. Most of the health care workers had household contacts that developed illness at about the same time. There are no data available at this time to indicate that health care workers are at increased risk.

Case control studies are in progress to assess possible risk factors for infection, outcome and other epidemiological parameters. Further study of the small community in the State of Veracruz that experienced an outbreak of mild ILI also is planned.

Virological information

During the period 15 March - 29 April, 112 specimens were tested from suspect and probable cases and 48 were confirmed as influenza A(H1N1). Sequencing of the first 25 strains has found that all are similar to the viruses isolated from cases in California.

Some samples collected 6-7 days after the onset of illness have tested positive by real-time RT-PCR. Only respiratory specimens have been tested.

United States

Editorial note: Detailed reports of the initial investigations of influenza A(H1N1) in California and Texas have been published at:

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0421a1.htm;
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0424a1.htm.

Initial detection

CDC first identified influenza A(H1N1) infections in two children with a febrile respiratory illness in adjacent counties in southern California. Shortly thereafter, four additional cases were reported from California and two from Texas.

Surveillance information

At the time of the teleconference, 64 confirmed cases had been identified from 14 states. The first confirmed death was reported on 29 April in a 23 month old child. Enhanced surveillance for additional cases is ongoing throughout the United Sates.

Clinical information

Initial cases had mild illness. However, more severe manifestations have been found in some recent cases. A small number of cases have been hospitalised; all of these patients were at increased risk for complications of seasonal influenza (e.g. young infant or person with chronic underlying medical condition). Most cases have reported upper respiratory tract symptoms, fever and muscle aches; approximately 20% to 25% had gastro-intestinal symptoms such as vomiting or diarrhea.

Epidemiological information

To date widespread transmission has not been observed in the United States. However, it is likely that ongoing human-to-human transmission is occurring in a number of areas such as New York City.

Virological information

Triple reassortant influenza viruses (containing genes from human, North American lineage swine viruses and North American lineage avian influenza A viruses) have circulated among swine in the United States since 1999 and caused sporadic human infections. The majority of the genes in the new H1N1 virus, including the hemagglutinin (HA) gene, are similar to those of previously circulating swine viruses. However, the genes coding for the neuraminidase (NA) and matrix (M) proteins are similar to the swine influenza viruses circulating in Europe and Asia (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0421a1.htm). All of the gene segments in this new quadruple reassortant virus have been previously found in swine from the United States, Europe or Asia. However, this combination of swine influenza virus segments has not been detected previously among swine or human isolates.

Efforts are underway to develop a vaccine seed strain using reverse genetics techniques. Molecular sequence analysis of the HA gene has found that all isolates to date are nearly identical which will facilitate vaccine development.

New York City

Editorial note: Since the teleconference, a detailed and updated report of the initial and ongoing investigation of influenza A(H1N1) has been published at:
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0430a1.htm

Initial detection

On 23 April the New York City Department of Health and Mental Hygiene was notified of increased absenteeism among students in a private secondary school in the borough of Queens. Of nearly 2700 enrolled students, approximately 200 students reported an ILI and sore throat. Eight specimens were obtained and confirmed to be influenza A(H1N1) on 26 April. The school was closed on 27 April and remains closed.

Surveillance information

At the time of the teleconference, a total of 44 confirmed cases had been identified. An on-line survey of students suggests that there are likely hundreds more additional cases of illness among students, teachers and household contacts. Several students reported in the on-line survey that they had travelled to Mexico during the week before 20 April; however, none of these were among the confirmed cases.

A number of reports of ILI have been received from other schools. A second school was closed in New York City on 28 April in response to reports of ILI in 10 to 12 students and some staff members; siblings of the students in this second school attend the school in Queens.

There are many reports of travellers with mild ILI who have not been tested. There is one probable case in a 19 month old Mexican child with no history of travel or other epidemiologic links to cases in the secondary school. Officials believe that there are likely hundreds more unconfirmed and/or undetected cases.

Clinical information
Among the 44 confirmed cases, 80% or more reported each of the following symptoms: cough, subjective fever, fatigue, headache, chills, sore throat, runny nose, and muscle aches. A few cases have had diarrhea, stomach pain and joint pain. Illness has been mild in all reported cases to date and has resolved spontaneously without treatment in some instances. Health officials are contacting 65 hospital intensive care units each day for suspicious cases of severe respiratory disease; none have been found to date.

Epidemiological information
Secondary transmission has been documented from students to household contacts.

Virological information
A small number of non-respiratory specimens (type not specified) are being tested but results are not yet available.

California
Initial detection
Two children with the onset of ILI in late March were identified through routine surveillance along the California-Mexican border. Initial testing determined that they were infected with an unsubtypable influenza A virus that was later determined to be influenza A(H1N1) virus (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0421a1.htm). On 24 April, four additional cases were reported in California (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0424a1.htm) .

Surveillance information
At the time of the teleconference, a total of 10 confirmed cases had been reported.

Surveillance for ILI has been enhanced along the border with Mexico and among sentinel providers; unusual increases in ILI have not been detected. Additional surveillance efforts are focused on patients with ILI in hospitals and out-patient settings; persons in contact with a confirmed case, persons in closed settings such as homeless shelters, schools and prisons, travellers who have returned from an area with confirmed cases and clusters of ILI.

Once a confirmed case has been identified as part of a cluster, further testing of cluster members is not being pursued to preserve resources. If a probable case is identified in a school student, the school has been closed until confirmatory testing results are available.

Clinical information

Most cases have had a mild ILI; only two cases have been hospitalised; one had an autoimmune disorder and the second had two unspecified underlying medical conditions. Antiviral drugs have not been used to treat any patients to date.

Canada

Initial detection

Suspect cases were first reported on 23 April. On April 26 four cases of influenza A/H1N1 from Nova Scotia and two cases from British Columbia were confirmed. All six cases are the same strain of human swine influenza found in the Unied States and Mexico.

Surveillance information

At the time of the teleconference, 13 laboratory confirmed cases had been identified from four provinces (British Columbia, Ontario, Nova Scotia and Alberta Vancouver).

Epidemiological information

All of the confirmed cases have travel linkages to Mexico with the exception of some cases in the Nova Scotia cluster.

Clinical information

All of the cases to date have had mild illness.

Virological information

The National Microbiology Laboratory is undertaking development work for diagnostic tests and vaccines.