

Mexico shuts down for five days

WHO: All humanity threatened

MEXICO CITY: Mexico took even more drastic action to stamp out a swine flu epidemic, ordering a halt to non-essential businesses and government activities, as the World Health Organisation ratcheted up its pandemic alert, warning that "all of humanity" was threatened.

The dire warning showed that health officials are very worried about the potential for massive numbers of deaths worldwide from the mutated virus, even though the epidemic so far has claimed only a confirmed eight lives in Mexico and one in the United States.

Roughly 170 deaths are suspected of having been caused by the virus in Mexico.

Switzerland and the Netherlands yesterday became the latest countries hit by swine flu.

European Union health ministers held emergency talks in Luxembourg to coordinate efforts to stop the spread of swine flu in Europe.

WHO's Phase 5 alert, indicating a pandemic could be imminent as the virus spread further in Europe, prompted Mexico to announce the re-



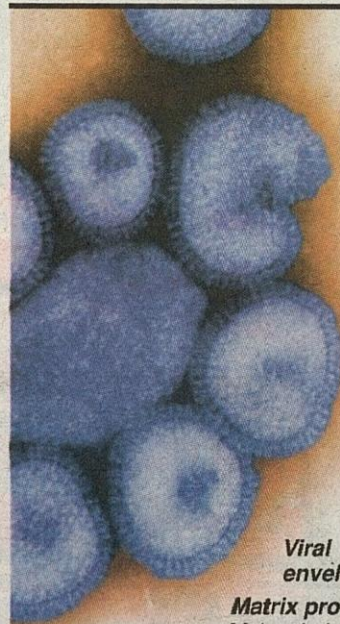
■ Call 03-88810200, 88810300 during office hours or visit www.moh.gov.my for information on swine flu.

fect yourself against catching swine flu, than in your house".

He brushed aside criticisms that his government's response had been slow.

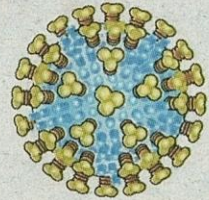
Schooling in Mexico has already been cancelled until May 6. During the shutdown, essential services like transport, supermarkets, trash collection and hospitals will remain open.

The outbreak appeared to be already stabilising in Mexico, the organisation confirmed.



Inside the swine flu virus

The Mexican swine flu virus is a mixture of four different strains: North American swine flu, North American avian flu, human A/H1N1 flu and a swine flu strain found in Asia and Europe



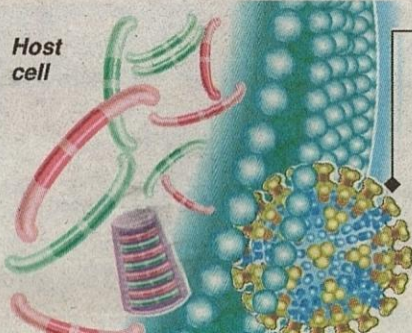
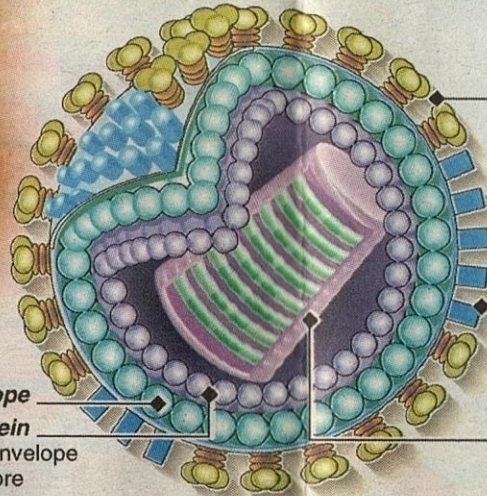
Influenza A: Most common cause of flu in humans. Unlike bacteria, viruses do not contain cellular machinery to reproduce — instead, they must hijack host cell in order to replicate

Haemagglutinin (HA protein)
H of H1N1 enables virus to attach to **receptor** on host cell

Neuraminidase (NA protein)
N of H1N1 promotes **budding** — release of newly formed virus particles from host cell. These spread infection within victim

Virus core — nucleocapsid
Eight single strands of **RNA (ribonucleic acid)** contain genetic blueprint for replication

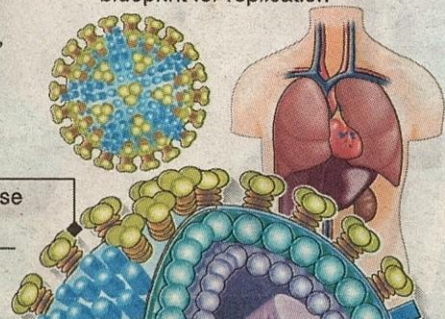
Viral envelope
Matrix protein
Links viral envelope with virus core



Reassortment: If different viral types infect host cell at same time, new viruses budding from cell can contain jumbled mixture of RNA strands. **New subtype emerges abruptly**

Human immune system:

Old antibodies no longer recognise new HA and NA proteins. They may also trigger **cytokine storm** — harmful immune overreaction in body that may be lethal in itself



Mexico to announce the partial May 1-5 shutdown, Mexican Health Secretary Jose Cordova said on Wednesday.

Phase 5 is the second-highest on WHO's threat scale and this is the first time it has been declared.

In Washington, President Barack Obama promised "great vigilance" in confronting the outbreak which has sickened nearly 100 people in 11 states and forced schools to close.

A Mexican toddler who visited Texas with his family died Monday night in Houston, becoming the first fatality in the US, and 39 Marines were confined to their base in California after one came down with the disease.

The virus, a mix of pig, bird and human genes to which people have limited natural immunity, has also spread to Canada, New Zealand, Britain, Germany, Spain, Israel and Austria.

"It really is all of humanity that is under threat during a pandemic," WHO director-general Margaret Chan said in Geneva. "We do not have all the answers right now, but we will get them."

In a televised address, Mexican President Felipe Calderon praised "the heroic work" of doctors and nurses and asked his countrymen to literally stay in their homes between May 1 and May 5, saying "there is no safer place to pro-

co, the epicentre. Confirmed swine flu cases doubled on Wednesday to 99, but new deaths finally seemed to be levelling off following an aggressive public health campaign after the epidemic was declared on April 23.

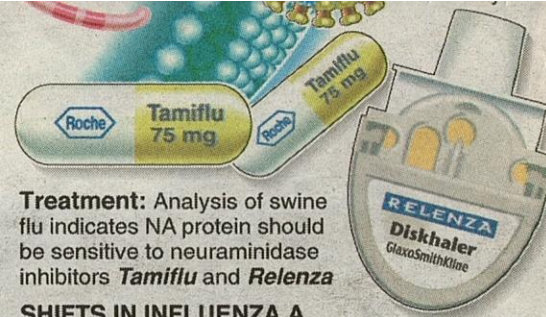
The virus has sickened as many as 2,955 people across the country.

Medical detectives have not pinpointed where the outbreak began. Scientists believe that somewhere in the world, months or even a year ago, a pig virus jumped to a human and mutated, and has been spreading between humans ever since.

China went on the offensive to reject any suggestion it was the source of the swine flu in Mexico.

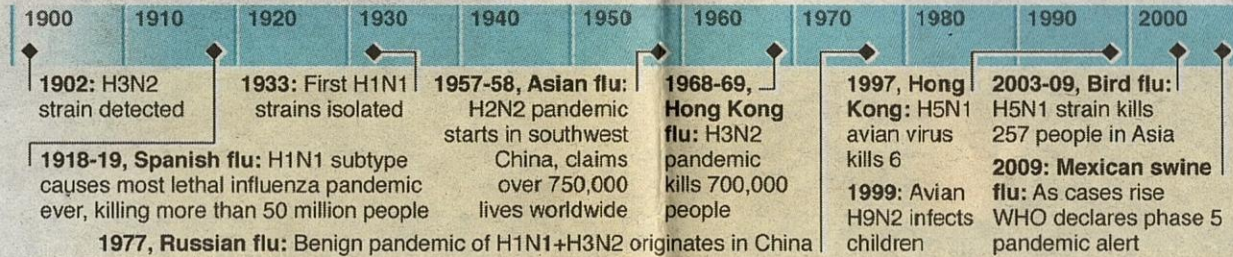
One of the deaths in Mexico attributed to swine flu was that of a Bangladeshi immigrant, said Mexico's chief epidemiologist Miguel Angel Lezana. The unnamed Bangladeshi had lived in Mexico for six months and was recently visited by a brother who arrived from Bangladesh or Pakistan and was ill. The brother has left Mexico and his whereabouts are unknown. Lezana suggested the brother could have brought in the virus.

By March 9, the first symptoms were showing up in the Mexican state of Veracruz, where pig farming is a key industry in mountain hamlets. —AP

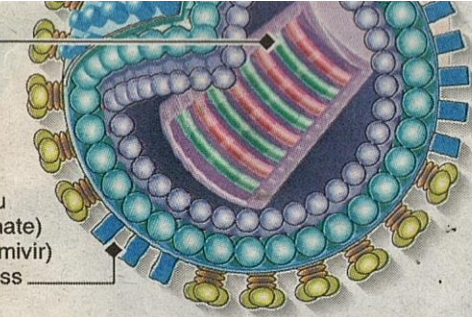


Treatment: Analysis of swine flu indicates NA protein should be sensitive to neuraminidase inhibitors *Tamiflu* and *Releza*

SHIFTS IN INFLUENZA A



Sources: World Health Organisation, Science, Centers for Disease Control and Prevention



New RNA genome—Virus now has potential to spread rapidly between humans

Neuraminidase inhibitors—Tamiflu (oseltamivir phosphate) and Releza (zanamivir) stop budding process

Elderly and very young at greater risk

PARIS: The influenza virus is a tiny, redoubtable foe that survives by stealth and sheer numbers.

Seen through an electron microscope, it resembles a spiky ball, comprising a protective shell studded with rods.

It measures around 100 nanometres (100 billionths of a metre) across, which is about a thousand times smaller than a bacterium.

Because it is so minute, the virus is unable to carry around

the enzyme toolkit that it needs to reproduce. Instead, it hijacks the cells in the throat, nose and lungs to do this.

It first enters the nose or mouth, inhaled in droplets expelled by a cough or a sneeze by an infected person.

A virus can also survive on surfaces for up to 72 hours.

When picked up by the fingers, it can be transferred to mucous membranes if the person touches the nose, eyes or mouth.

Once inside, it releases a package of genetic instructions, called RNA, that use the cell's machinery to make parts for new virus particles to infect other cells.

Cells that are attacked in the throat, lungs and muscles give rise to the classic symptoms of fever, sore throat, respiratory wheeze and muscle ache.

Most people recover without complications after a week or two, but the disease can be dangerous for people with

asthma or heart disease, or for the elderly, very young and those with a weak immune system. It can also lead to bacterial infection, such as bronchitis or pneumonia.

Mexico's swine flu virus presents a new genetic mix for which there may be no immunity and for which it will take months to produce a vaccine.

It is a substrain of H1N1, resulting from a mix of existing viruses of human, pig and avian flu. —AFP

Picture: Associated Press/CDC

© GRAPHIC NEWS