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Subject: PRO/AH/EDR> Undiagnosed pneumonia - China (HU) (05): novel coronavirus identified

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UNDIAGNOSED PNEUMONIA - CHINA (HUBEI) (05): NOVEL CORONAVIRUS IDENTIFIED

A ProMED-mail post

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<https://www.wsj.com/articles/new-virus-discovered-by-chinese-scientists-investigating-pneumonia-outbreak-11578485668>

New Virus Discovered by Chinese Scientists Investigating Pneumonia Outbreak

Latest tally of people sickened in Wuhan is 59, with 7 in a critical condition

Chinese scientists investigating a mystery illness that has sickened dozens in central China have discovered a new strain of coronavirus, a development that will test the country's upgraded capabilities for dealing with unfamiliar infectious diseases.

The novel coronavirus was genetically sequenced from a sample from 1 patient and subsequently found in some of the others affected in the city of Wuhan, according to people familiar with the findings. Chinese authorities haven't concluded that the strain is the underlying cause of sickness in all the patients who have been isolated in Wuhan since the infection 1st broke out in early December [2019], the people said.

There are many known coronaviruses -- some can cause ailments like common colds in humans, while others don't affect humans at all. Some - such as severe acute respiratory syndrome, or SARS, in 2003 - have led to deadly outbreaks, lending urgency to efforts to contain the current situation.

High Alert

Some past coronavirus outbreaks, such as SARS and MERS, have had high death rates. Yet, there is no suggestion this new illness would cause such issues so far.

SARS / MERS*

Cases: 8098 / 2468

Deaths: 774 / 851

Death rate: 9.6% / 34.5%

When: 2002-2003 / 2012-

Where first reported: China / Saudi Arabia

*As of September 2019

Sources: Centers for Disease Control and Prevention, World Health Organization

The number of reported cases of viral pneumonia in Wuhan, the capital of Hubei province, was 59 on Sunday, rising from 27 on [31 Dec 2019], according to Wuhan's Municipal Health Commission, with 7 people in a critical condition. No deaths have been reported.

The disease afflicting patients in Wuhan hasn't been transmitted from human to human, and health-care workers have remained uninfected, according to city health officials as of [5 Jan 2020], suggesting that what is sickening them is for now less virulent than SARS. Those ill in Wuhan are believed to have become sick through exposure to animals linked to a live seafood and animal market.

Health experts say one risk is that the disease could become a bigger threat as tens of millions of Chinese travel around the country during the Lunar New Year holidays that begin in just over 2 weeks.

Health authorities in Singapore and Hong Kong, cities that have direct flights from Wuhan, have issued alerts and quarantined patients travelling from the region who show signs of fever or breathing difficulties.

In Hong Kong on Tuesday [7 Jan 2020], the government said it was taking precautions against a "severe respiratory disease associated with a novel infectious agent" that it is seeking to make a statutory notifiable

infectious disease, meaning doctors would need to report any suspected cases, and patients evading quarantine could be fined or jailed.

The Chinese Center for Disease Control and Prevention is expected to make an announcement of its findings in the coming days, a person familiar with the matter said. The CDC couldn't be reached for comment late Tuesday [7 Jan 2020].

China was criticized for initially covering up SARS, which was 1st detected in late 2002 but was disclosed only after it began spreading widely, eventually killing 774 people globally, according to the World Health Organization. Beijing overhauled the nation's disease control after reviews found that initial failures to contain and isolate patients with SARS allowed it to proliferate across densely populated Southern China.

The Wuhan outbreak will test how much has changed.

"We learned a bitter lesson in 2003, and we do not want that to happen again," said Alex Lam, chairman of advocacy group Hong Kong Patients' Voices. "China should immediately release their findings so doctors across the world can better know how to tackle this illness."

Hong Kong's department of health, citing information from China's National Health Commission, said the cause of the cluster of pneumonia cases detected in Wuhan was still under investigation, but other known respiratory pathogens had been ruled out.

The main clinical symptoms of those affected by the Wuhan outbreak are fever - with a few patients having difficulty breathing - and invasive lesions of both lungs, which show up on chest radiographs, the WHO said Sunday [5 Jan 2020].

It is unclear what the underlying source of the disease is, though the reported link to a wholesale fish and live animal market could indicate an exposure link to animals, the WHO said. Bats, for example, are known "reservoirs" for coronaviruses, and have been found to transmit the disease to humans through a third vector such as a civet cat, as scientists found in the case of SARS.

The pattern of the unexplained pneumonia cases linked to the market selling seafood and also live game strongly suggests that this is a novel microbe jumping from animal to human, said K.Y. Yuen, Chair Professor of Infectious Diseases at the University of Hong Kong's Faculty of Medicine.

Researchers have determined that a large proportion of new infectious diseases in humans are transmitted via animals. Such illnesses are referred to as zoonoses. 2 newer human coronaviruses, MERS-CoV and SARS-CoV, have been known to cause severe illness and death, according to the U.S. Centers for Disease Control.

The Wuhan strain is similar to bat coronaviruses that were a precursor to SARS, according to a person familiar with the new findings.

Given the marked advances in hospital isolation facilities, infection-control training and laboratory diagnostic capabilities in the past two decades, it is unlikely that this outbreak will lead to a major 2003-like epidemic, Mr. Yuen said.

In Wuhan, which has China's 1st Biosafety Level 4 laboratory - a specialized research laboratory that deals with potentially deadly infectious agents like Ebola - the market at the center of investigations has been shut down since [1 Jan 2020].

In Hong Kong, badly hit by the SARS virus, which claimed 299 lives locally in 2003, residents have donned surgical masks on the streets and public transport in recent days, despite no local cases of the Wuhan infection being confirmed.

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[This is not a surprising finding for all of the reasons stated in previous posts (and speculated there as well). The well known coronaviruses are those that are responsible for the SARS (severe acute respiratory syndrome) and MERS (Middle Eastern Respiratory Syndrome) outbreaks in 2002-2003 and 2012 to the present respectively (see insert table in media report above).

Coronaviruses belong to the subfamily *_Coronavirinae_* in the family *_Coronaviridae_*, in the order *_Nidovirales_*. Coronaviruses are enveloped viruses with a positive-sense single-stranded RNA genome and with a nucleocapsid of composed of helical symmetry. There are other human coronaviruses that have been associated with mild upper respiratory symptoms (commonly referred to as the "common cold").

More information on this novel coronavirus from knowledgeable sources would be greatly appreciated.

A map of China showing locations of major cities in China can be found at <https://www.chinadiscovery.com/china-maps/city-maps.html>.

HealthMap/ProMED-mail map of Hubei Province, China: <http://healthmap.org/promed/p/340>. - Mod.MPP]

See Also

Undiagnosed pneumonia - China (HU) (04): Hong Kong surveillance 20200106.6874277

Undiagnosed pneumonia - China (HU) (03): updates, SARS, MERS ruled out, WHO, RFI 20200105.6872267

Undiagnosed pneumonia - China (HU) (02): updates, other country responses, RFI 20200103.6869668

Undiagnosed pneumonia - China (HU) (01): wildlife sales, market closed, RFI 20200102.6866757

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Undiagnosed pneumonia - China (HU): RFI 20191230.6864153

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