CORONAVIRUS:

China facing international lockdown as the WHO look set to declare a ‘global public health emergency’

SUMMARY

- China continues to grapple with a rapidly accelerating outbreak of viral pneumonia that has claimed 170 lives and resulted in 7,848 confirmed cases to date.
- There have been 106 exported cases to 21 countries/regions in four continents, with the first suspected cases in Africa currently under investigation.
- China is fast becoming a ‘locked down’ country with foreign governments already evacuating diplomatic staff and private citizens out of Wuhan and other nations queuing up to get their people out.
- Normal life is on hold in China with an extended holiday period, schools closed, transport links suspended and many factories simply shut down.
- US, UK and other governments around the world have upgraded their travel advice, warning against “all but essential travel to mainland China”.
- Countries have started to close their borders to incoming Chinese citizens.
- Some major airlines have already cancelled flights in and out of all airports in China.
- Human-to-human community spread, rather than household or hospital transmission, has been reported in Germany, Taiwan and Japan.
- Scientists in Australia have been the first outside of China to map the virus leading to hopes of developing an antibody test that will detect the virus before symptoms develop.
- The UN health agency’s Director-General has reconvened a coronavirus expert committee to meet on Thursday 30th January - it will assess whether the outbreak should be declared a global emergency.

Over the last week there has been a dramatic increase in the number of confirmed cases and a steady increase in the number of deaths from complications of the virus. Wuhan, in the Hubei province, continues to be the epicentre of the fatalities but the virus has spread to all parts of China and beyond across the world. Even over the last 24 hours there have been an additional 1,700 confirmed cases.

To put it in perspective, a week ago the WHO were reporting 581 confirmed cases with only 10 of them outside China, distributed among seven countries. 17 deaths had been reported. The number of confirmed cases has increased by over 1,300 percent and the number of deaths by 1,000 percent, in just seven days.

At time of publication, the number of confirmed cases has risen to a total of 7,848 in just over a month, already far surpassing the 5,327 confirmed cases in mainland China during the Severe Acute Respiratory Syndrome (SARS) epidemic. The SARS outbreak killed more than 770 people globally, including 349 in mainland China.

There has not been a comprehensive breakdown of the ages of the fatalities but it seems that the majority are in people over the age of 60 and many with co-existing medical conditions that make them more susceptible to the complications of the infection.

There are tens of thousands of contacts under observation within China but it is not clear how these are being managed in the overstretched health infrastructure. The Chinese government has begun the construction of two temporary hospitals to serve as fever clinics - they will increase the bed capacity by 2,300 and are expected to open within the week.

Strict travel bans are in place in Hubei province but other transport restrictions are in place across China, and indeed in other countries with restrictions on returning Chinese citizens. Many attractions have been temporarily closed and many multinational corporations are either withdrawing their citizens from China or instigating strict measures with the closure of offices and manufacturing plants and many people confined to working from home.

British Airways and Air Canada, both of which operate daily flights to Shanghai and Beijing, announced the suspension of flights to and from mainland China "with immediate effect" while they assess the situation. Other airlines, including United Airlines, Delta and Cathay Pacific Airways, have already cancelled some flights to China. It is expected that other airlines will follow suit.

The World Health Organisation (WHO) panel of 16 experts met twice last week and decided by a narrow margin **not** to declare a Public Health Emergency of International Concern (PHEIC). Traditionally, the WHO is reluctant to antagonise or ostracise countries dealing with epidemics for fear of undermining future willingness to report cases of infectious disease outbreaks. There are also significant impacts on trade and the economy. This week there have been productive meetings between the WHO Director-General, Dr. Tedros Adhanom Ghebreyesus, and the Chinese president, Xi Jinping. As a result, international infectious disease experts are to be allowed into China to work alongside Chinese scientists and researchers.

It has just been announced that the UN health agency's Director-General has reconvened an emergency meeting of the 16-strong coronavirus expert committee today. It will assess whether the outbreak should be declared a global emergency. It seems certain that a Public Health Emergency of International Concern (PHEIC) will be declared. This will enable the WHO to put the world on 'red alert' and will enable them to better coordinate a united world response to this international emergency.

CORONAVIRUS OVERVIEW

Since the first notification on 31st December 2019 of 40+ cases of an unusual viral pneumonia of unknown origin in Wuhan, the infection has spread to all of mainland China and to 16 countries around the world. The "Wuhan coronavirus" epidemic is thought to have jumped from an as yet unknown animal source to humans in Wuhan's 'Huanan South China Seafood Market' in late 2019. Wuhan is the capital city of Hubei province in central China. The virus infects the lungs causing a viral pneumonia, and causes initial symptoms of fever with cough and sore throat. It can progress to shortness of breath and breathing difficulties leading to pneumonia. It is thought to cause serious illness in around 20% of sufferers and current information points to a 'fatality rate' of around 2-3% of all confirmed cases. It has now spread throughout mainland China and across international borders - the vast majority of the fatalities have been in Hubei province and most have been in the elderly population. There is currently no vaccine or specific treatment. It is advised to avoid gatherings of people, to avoid people who are obviously ill and/or coughing and to wash your hands regularly with soap and water. You should also avoid all contact with wild or farm animals and you should not eat uncooked or undercooked meat and eggs.

WHAT DO WE NOW KNOW ABOUT THE VIRUS?

There has been little further information released by the Chinese health authorities about the epidemiological characteristics of this 'novel coronavirus', that is still referred to as *2019-nCoV*.

This is only the seventh coronavirus that is known to have jumped from an animal reservoir to humans - there are many more in the coronavirus family that only infect animals. These seven coronaviruses cause a range of illnesses from mild to severe including:

- The 'common cold' that affects many millions every year and only causes mild symptoms.
- The SARS virus that caused an epidemic in 2002-03 spread from China to more than a dozen countries and killed almost 800 people. It eventually fizzled out with successful public health measures and a favourable mutation to a less virulent strain.
- The Middle Eastern Respiratory Syndrome (MERS) virus, which was transmitted to humans from camels, was first recognised in 2012 and has infected 2,500 people with over 800 deaths worldwide. There continues to be sporadic cases.

We know that there has been human-to-human transmission and it is likely that this is the major driver for the spread of the virus around China and the rest of the world. The original reservoir animal (or fish) has still not been determined, but is not thought to be a major factor in the ongoing transmission. Recent reports would now bring to a total of three confirmed cases, in Vietnam, Japan and Germany, who have not visited China but only been in contact with cases from China. Transmission of this respiratory illness is assumed to be by 'droplet spread' of the virus, coughing and sneezing, and by touching contaminated surfaces. However, specifics are yet to be confirmed.

There is mounting evidence of limited transmission before the onset of symptoms. The German man who was confirmed with the coronavirus had attended a work-based training event in Germany that was also attended by a woman who only became ill during her return to China, two days later. This case is most worrying because this man had not visited China and, if the Chinese woman was indeed asymptomatic at the time of the training session, it would confirm reports of spread before symptoms develop making standard control strategies less effective.

The United States' Centres for Disease Control and Prevention (CDC) estimates that the incubation period for 2019-nCoV to be between two and 14 days. This means that symptoms of the virus may appear in as few as two days or as long as 14, during which the patient is contagious but the patient does not display any symptoms.

ARE WE LOOKING AT THE NEXT PANDEMIC?

The WHO defines a pandemic in simple terms, ***"a pandemic is the worldwide spread of a new disease".***

The most renowned pandemic is the *1918 Spanish influenza*, which infected more than one-third of the world's population and killed approximately 50 million people. There have been several influenza pandemics since then - in 1957 and 1968, as well as H1N1 'swine flu' in 2009.

Many factors influence how far a condition spreads. Two of the most important are: how easily the condition is transmitted from one person to the next; and the movement of people, particularly via air because, as we have seen, infections can be transmitted all over the world within hours.

There are two critical pieces of information about 2019-nCoV that are yet to be determined:

1 How deadly is the virus?
Taking confirmed cases of symptomatic people at around 6,000, the 'case fatality rate' (ratio of people with the disease to the number who die) is just over two percent. For comparison, the case fatality rate with seasonal flu is less than 0.01% (one death per every 10,000 cases). The fatality rate for SARS was 10%, and MERS was 34%. At the moment we are not seeing true numbers of infected cases - we are only seeing case numbers from hospitalised patients. If we are to assume that there are 'asymptomatic' infections (infected people who display no symptoms) then the calculated mortality rate would be much less. Once the figures are more established it may turn out that this novel coronavirus is more or less virulent - at the moment it's too early to know.

2 How easy is it to spread the virus?
We are still waiting for epidemiologists to analyse the information regarding the transmissibility of the virus but experts seem to be in broad agreement that one infected person is likely to transmit the virus to between two and four others. If this is correct and we are not able to interrupt this transmission rate then a pandemic is inevitable.

HOW DO YOU KNOW IF YOU'VE GOT THE "WUHAN" CORONAVIRUS?

This comes down to associating the typical symptoms with an epidemiological link.

The symptoms of 2019-nCoV are fever, with a cough or sore throat - this may progress to more serious symptoms of difficulty breathing as pneumonia develops.

Someone presenting at an Emergency Department in their home country, in Paris for example, with a respiratory illness and no history of recent travel to China, will probably have the common cold, the 'flu' or some other respiratory virus and will be sent away with advice to stay home, rest and take simple medication to control the fever. Unless they have had close contact with a returned traveller with confirmed 2019-nCoV, they will not have to worry.

However, if they came from Wuhan, it's much more likely to be the new coronavirus. They would expect to have blood taken to test for the virus and, if they were not suffering any severe symptoms, to be sent home to self-isolate and monitor their health carefully. They would be asked to keep in contact with their primary care practitioner or the hospital by phone.

Since the symptoms are very common to a number of viruses, the association is based on epidemiology and is confirmed by what is known as a *rRT-PCR* blood test.

RECOMMENDATIONS FOR TRAVEL

Within China the rate of confirmed cases is accelerating; transport links are being suspended across the country; hospitals are becoming severely overstretched; diagnostic kits for the novel coronavirus are said to be in short supply; major commercial airlines have suspended or reduced flights in and out of China; governments are seeking authority to withdraw their staff.

The WHO look set to declare a Public Health Emergency of International Concern, perhaps later today, and other measures to prevent the spread of this virus may be introduced.
The events of the past week have demonstrated that the Chinese government will not shrink from enacting bold, far-reaching and draconian measures in its attempts to control the spread of the virus. Further restrictions on movement and association are to be anticipated and are likely to be imposed without prior warning. It looks like China may be entering a period of enforced lockdown.

For these reasons, and also taking account of the advice issued by the health authorities of the United Kingdom and the United States of America, our current recommendations on travel to China are as follows:

- **We advise against <u>all</u> travel to Hubei Province**
- **We advise against all but essential travel to elsewhere in China.**

Our advice to organisations with expatriate staff resident in China is to consider urgently withdrawing individuals in the following categories:

- **Non-essential staff**
- **Dependants**
- **Anyone in an "at risk group" (further details below).**

WHO IS IN AN "AT RISK GROUP"

Information is emerging that certain groups of patients are at greater risk of developing severe disease if they become infected with coronavirus. Taking account of this, and also of how other respiratory virus illnesses behave, we believe that individuals in the following categories may be at increased risk:

- Those with chronic respiratory, heart, kidney, liver or neurological disease
- Individuals with diabetes
- Anyone who is immunosuppressed or who has reduced function of the spleen
- Pregnant women
- Significant obesity (body mass index ≥40)
- Persons under the age of 12 or over 65.

WHAT ARE THE SYMPTOMS OF NOVEL CORONAVIRUS?

The symptoms are very similar to those you would experience with the common cold or perhaps the 'flu' virus, including fever, cough, sore throat and/or lethargy.

Some patients will go on to develop more severe symptoms and may require hospitalisation. The first sign of severe illness is usually difficulty in breathing but any patient who feels very unwell should seek medical help.

> **There is no vaccine against this novel coronavirus.**

Severe cases of coronavirus can develop pneumonia, respiratory failure, sepsis and kidney failure. The mortality rate of coronavirus infection is unclear at this time but current estimates put it at around 2-3%.

PRECAUTIONS FOR TRAVELLERS

General precautions against coronavirus:

- Wash your hands regularly with soap and water (for at least 20 seconds) or with an alcohol-based hand rub, especially after coughing and sneezing and before handling and consuming food.
- When coughing and sneezing, use disposable tissues and dispose of them carefully and promptly - if you have no tissues immediately to hand use the inner elbow of your clothing - avoid your hands to cover your mouth.
- Consider carrying an alcohol-based hand sanitizer with you.
- Avoid touching your face, in particular mouth, eyes, nose.

Additional precautions within China:

- Avoid close contact with people who appear unwell or who are coughing or sneezing, and avoid sharing personal items.
- Avoid public spaces, public gatherings, crowded public transport.
- Stay home wherever possible.
- Thoroughly cook all meat and eggs before consuming.
- Avoid unprotected contact with wild or domestic farm animals (alive or dead).

WHAT TO DO IF YOU BECOME UNWELL

If you become unwell in China:

- If you become unwell in China with symptoms of coronavirus (fever, cough, sore throat) you must immediately take precautions to isolate yourself from colleagues and family members.
- All patients with these symptoms who seek medical care in China will be directed to their local government-designated "fever centre" for assessment. Attendance at a private hospital is not an available alternative - you will be sent away.
- Healix has concerns that some patients being sent to the fever hospitals will only have an ordinary cold or flu illness but will be at high risk of picking up the coronavirus from other patients at the fever hospital. Healix therefore advises that individuals with mild symptoms manage their illness at home, ensuring that they take steps to isolate themselves from family members (see below).
- All patients with severe symptoms (including shortness of breath) must seek medical care immediately at a fever centre.

If you become unwell within 14 days of returning from China:

- Seek prompt medical advice if you develop symptoms - always call ahead to alert the medical facility, warning them about your recent travel and that you may have been exposed.
- Try to limit contact with others if you become unwell after travel until you have been assessed by a health professional.
- Wash your hands regularly with soap and water (for at least 20 seconds) or with an alcohol-based hand rub, especially after coughing and sneezing and before handling and consuming food.
- When coughing and sneezing, use disposable tissues and dispose of them carefully and promptly - if you have no tissues use the inner elbow of your clothing - do not use your hands to cover your mouth.
- Wearing a surgical face mask consistently may help to prevent spread to others- it should be removed and carefully disposed of when it becomes wet or dirty and immediately replaced - caution should be taken not to touch your mouth or face under the mask, as this will potentially transmit virus.

Please note: If you have mild symptoms of fever/cough/cold etc, you are much more likely to have a common cold or virus than to have coronavirus. This is neatly illustrated by looking at the number of 2019-nCoV tests which have been ordered in the United Kingdom: a total of over 100 people so far. All patients were individuals who had recently been to Wuhan and who had flu-like symptoms. None were positive for novel coronavirus.

IF YOU HAVE BEEN ADVISED TO "SELF-ISOLATE" AT HOME WITH YOUR FAMILY…

- Remain in one room as much as possible
- No one else should enter this room unless absolutely necessary
- Just one person (the same person every time) should enter the room when required. This will usually be a spouse/partner.
- If more than one bathroom is available, assign one for the use of the isolated person. Otherwise ensure that the bathroom is well-ventilated and that surfaces are cleaned daily with regular household disinfectant.
- Those entering the room should wear a facemask. After leaving the room, dispose of the mask carefully and wash hands thoroughly.
- Family members should wash hands thoroughly after using any shared areas (e.g. the bathroom).
- Use paper towels to dry hands after washing and dispose of them carefully.
- There should be a ready supply of tissues for the isolated individual to use for coughs and sneezes. These must be disposed of in a sealed bag or by flushing down the lavatory.
- Used bedclothes, pyjamas etc. should be washed at 60ºC or more. They should stay in the isolation room until ready to go straight into the washing machine. Hands must be washed after handling soiled clothes.

WHAT PRECAUTIONS CAN COMPANIES TAKE TO REDUCE THE RISK TO THEIR EMPLOYEES?

Provide clear information
Make sure that all individuals have clear, consistent and regularly updated guidance on: how to recognise symptoms in themselves and others; what precautions to take to prevent exposure; and who to contact if you think you may have symptoms. All employees should be informed that if they develop symptoms of fever/cough/sore throat, they should inform a manager and their healthcare provider immediately, but they should not come into the office.

Restrict travel to China
Consider cancelling all non-essential travel to mainland China. Review all travel plans to the affected region on a regular basis, making use of electronic remote conferencing facilities wherever possible.

Evacuate non-essential personnel from China
Consider the controlled evacuation out of China for all at-risk groups (see below), all dependants, and all non-essential staff back to their home countries, depending on individual circumstances.

Remote working
Make provision, as far as practicable, for essential travellers and employees within China, and neighbouring countries with confirmed cases, to work from home in order to reduce using public transport and coming into contact with crowds of people,

Review vaccination policy
Advise employees of the benefits of the 'seasonal flu vaccine' to help prevent infection with 'flu' that may be confused with the new coronavirus - as well as helping to protect them from the flu virus that kills half a million people annually.

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EXPERT COMMENT:

THE CORONAVIRUS OUTBREAK IS BECOMING INCREASINGLY WORRYING

We now have good evidence that there is potential for transmission of the virus in people who have not yet developed symptoms. These people will therefore not be picked up by temperature screening measures at exit and entry ports.

Human-to-human transmission has been reported in Germany, Japan and Vietnam and thus there is potential for sustained human-to-human transmission of the virus outside China. This is the only plausible explanation for the scale of the outbreak in Wuhan.

It has been estimated that each case has the potential to infect on average between 1.5 and 3.5 other people based on computer modelling and analysis of previous epidemic trajectories. These figures imply that control measures will need to block well over 60 percent of transmission to be effective in bringing this epidemic under control.

Experience of the SARS epidemic in 2002-03 revealed that many cases caused no secondary infection but a few ‘super spreaders’ caused infection in 30-40 other people. We do not yet have any knowledge of super spreaders in the current outbreak.

The rate of spread of this virus appears to be increasing rapidly - this may be down to increased knowledge of symptoms, increased fear and thus presentation at medical facilities, or maybe that this is a highly transmissible virus.

Whether transmission continues at the same rate currently depends on the effectiveness of current control measures implemented in China and the extent to which the populations of affected areas have adopted risk-reducing behaviours. Since there is no vaccine and there are no effective anti-viral drugs, control relies upon the prompt detection and isolation of symptomatic cases.

China has implemented drastic measures in an attempt to control the spread - these kind of measures would be inconceivable in European or North American countries, for example. Some argue, including the Mayor of Wuhan, that these measures came too late and vital weeks were lost when it is estimated that five million people left the Hubei province.

It is unclear at present whether this outbreak can be contained within China. The uncertainties that will determine this include:

- Identification of the spectrum of severity of the disease caused by this virus and the proportion of mild to severe cases
- Whether cases with relatively mild symptoms are able to transmit the virus efficiently.

Scientists in Australia have become the first to map the new coronavirus outside of China. The aim is now to develop an antibody test that will allow early detection before symptoms develop, and greater clarification of the transmissibility of the virus. The discovery will be shared with the WHO in the hope it may help efforts to diagnose and treat the virus.

According to the US Centres for Disease Control and Prevention (CDC), about 15 million Americans have been sickened by the seasonal flu so far in the 2019-2020 'flu' season, and they estimate that 8,200 have died from it. Influenza kills between 300,000 and 650,000 people around the world annually. A lot of people are wondering why this virus is attracting so much attention around the world. This is a previously unknown virus with unknown potential - the source is as yet not known, the transmissibility is not known and the fatality rate is not known. The virus has only recently entered the human transmission chain and it is there that it has the greatest potential to mutate, possibly becoming a much more deadly virus. We have no acquired immunity to the virus, no vaccine and no anti-viral treatment. As far as we are aware the virus has not yet entered impoverished and resource-starved populations where it could spread like wild-fire. Diseases behave differently in different environments, depending on factors like population density and susceptibility to a disease in a population. This is why we are so concerned by this outbreak.

What the WHO will attempt to ensure is that the less wealthy nations, with struggling and under-funded health services, are able to identify, to diagnose and to treat those cases that may land at their ports of entry. If they cannot contain the virus efficiently they may become secondary centres of infection without the resources to contain its spread. The WHO will continue to support the Chinese government's stringent efforts to contain this unprecedented outbreak. The rest of the world needs to be on high alert to receive the expected influx of cases and to identify and isolate them in order to prevent secondary spread within the community.

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