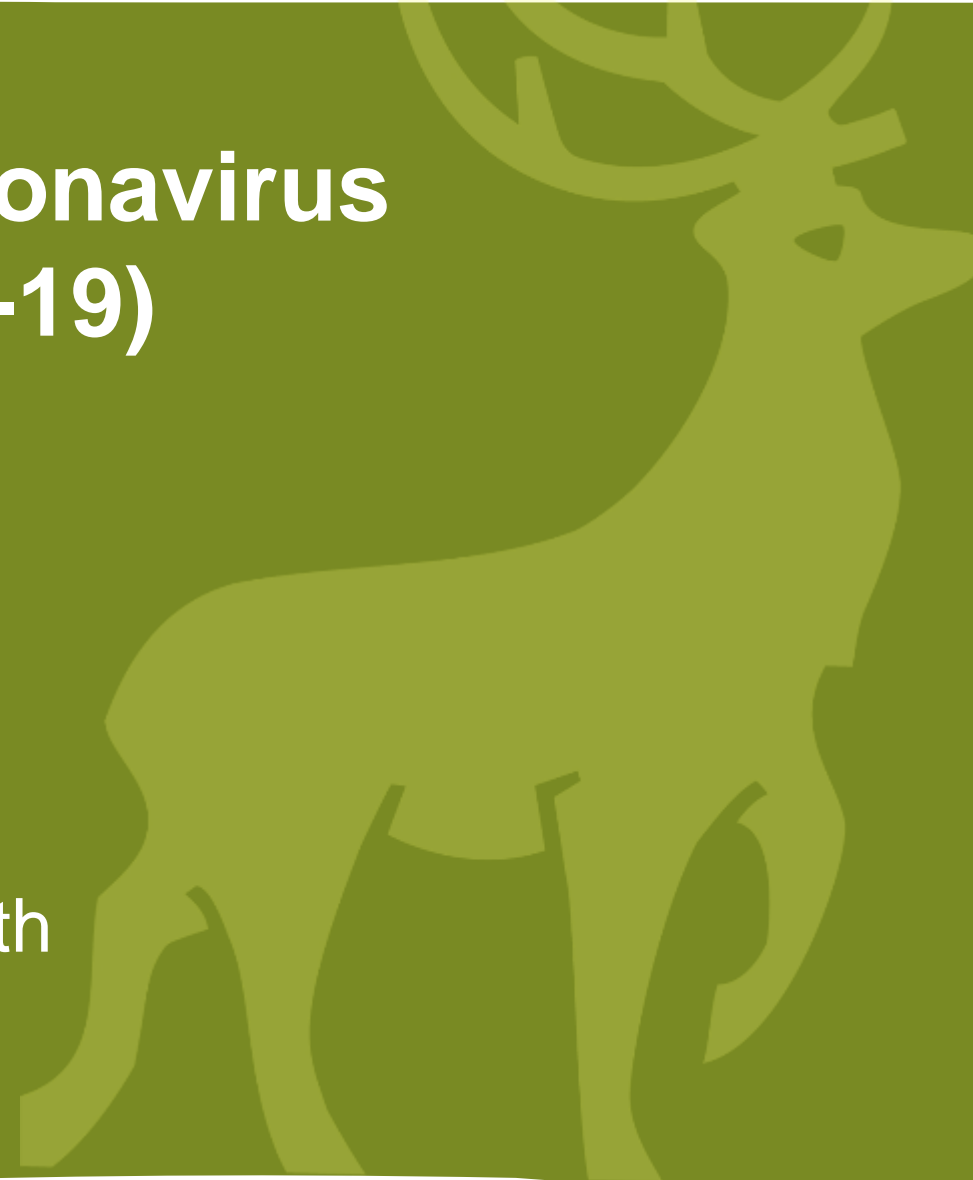


# Novel 2019 Coronavirus Update (COVID-19)

HCPA March 4<sup>th</sup> 2020

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Director of Public Health



# Note

- All this information is in the Public Domain
  - All has been taken from official sources or from Peer Reviews Journals
  - No restricted or classified information
  - No information which is not public
  - It is correct at the time of writing but knowledge may change rapidly with the situation

# At the time of writing

- The UK Population remains at low risk of coronavirus
- Efforts to contain the virus are uppermost
- World Health Organisation believes this is possible

# Important

- This is a rapidly moving situation. Information changes regularly. It is important to check the latest situation on the Public Health England pages
- <https://publichealthmatters.blog.gov.uk/2020/01/23/wuhan-novel-coronavirus-what-you-need-to-know/>
- <https://www.gov.uk/guidance/wuhan-novel-coronavirus-information-for-the-public>
- Collection of official advice and guidance  
<https://www.gov.uk/government/collections/wuhan-novel-coronavirus>

# Whats going on?

On 31 December 2019, the World Health Organisation (WHO) was informed by the People's Republic of China of cases of **pneumonia** caused by an unknown organism in Wuhan, central China.

On 9 January 2020, WHO announced that a **new coronavirus** had been detected in patient samples in Wuhan. This virus was referred to as Novel Coronavirus 2019-nCoV and is now named as COVID-19

<https://www.gov.uk/government/collections/wuhan-novel-coronavirus>



- We should be grateful to China for its work in reducing spread
- Facemasks are of limited use
- Good hygiene – sneeze into tissues and wash your hands

# Map of Spread

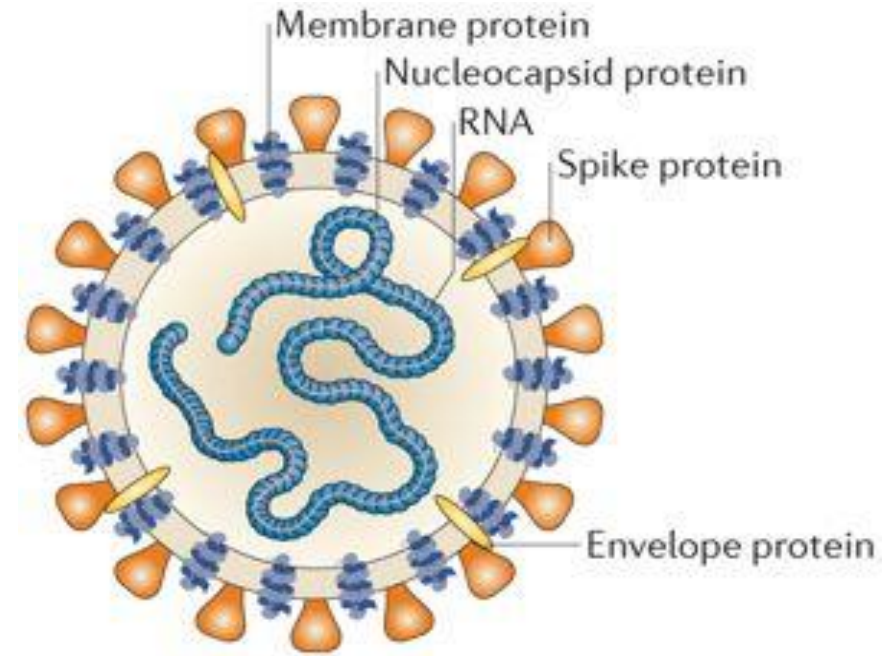
- Link to the Johns Hopkins University surveillance dashboard.  
Take this with caution
- <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

# Reports

- Case number reports are never accurate at the time
  - Lag between reporting and numbers
  - Many people infected who were not recorded or reported (and many recovered)
  - Changes in case definitions usually mean a jump in numbers because of that (eg going from needing a confirmed test to diagnose to diagnosing on symptoms inevitably increases numbers, making it look like a jump.)

# What is a coronavirus?

- Coronaviruses (CoV) are a large family of viruses
- cause illness ranging from the common cold to more severe diseases such as MERS and SARS
- Coronaviruses are zoonotic, meaning they are transmitted between animals and people.
- Detailed investigations found that SARS-CoV was transmitted from civet cats to humans and MERS-CoV from dromedary camels to humans.
- Several known coronaviruses are circulating in animals that have not yet infected humans.



Nature Reviews | Microbiology



# Human Coronaviruses

- Human coronaviruses are common throughout the world. Seven different coronaviruses, that scientists know of, can infect people
- Human coronaviruses commonly cause **moderate upper respiratory symptoms, in other words quite often a cold,**
- you've probably had one at some point in your life.
- They can be severe in some people
- We will know more as the epidemic goes on

# COVID-19

- COVID-19 is a new strain that has not been previously identified in humans. Mild to moderate disease in most people.
- Common signs of infection include
  - respiratory symptoms: cough, shortness of breath and breathing difficulties.
  - Fever
  - **Less commonly** in more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death. (This is **much less common**)

Death rates over-stated in early days  
because only severe cases are hospitalised

**Catch it.  
Bin it.  
Kill it.**

**NHS**



Stop the spread of flu germs.  
Use a tissue and wash your hands thoroughly.



Standard recommendations to prevent infection spread include

- regular hand washing,
- covering mouth and nose when coughing and sneezing,
- Avoid close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing.
- HCC Comms have been busy sharing this widely

**PLEASE SHARE THIS HYGIENE GUIDANCE**

# Key Points at time of writing

- No need to panic
- **Moderately** transmissible, needs close contact, droplet spread
- currently has a 2% mortality rate – most likely to be lower eg 1%
  - considerably lower than the outbreaks of Ebola (70%) ,MERS 35% and SARS (10%).
  - Doubling rate around 4 days
  - Incubation Period 3-7 days but can be 14
  - Infection can be spread whilst asymptomatic
- Planning underway in local areas
- Best bet to stop spread is **Hygiene and cleaning**
- Most people will have mild to moderate flu like illness

# Some key facts so far

## Mortality rate so far

**MERS 35 %**

**SARS 12%**

**NcoV 0.1- 2%?**

**'Flu\*' 0.13-2%**

\*(Seasonal -Pandemic) 1918 was much worse

## Key Point

- Deaths mostly in older people with pre-existing conditions
- Disease in people without pre-existing conditions

# BUT..death rate could be MUCH lower

- Some estimates suggest as low as 0.1% (Similar to 'Flu?')
- Why
  - Unreported cases (not everyone infected gets ill, not everyone seeks help)
  - Rapidly moving

# Not Certain.....

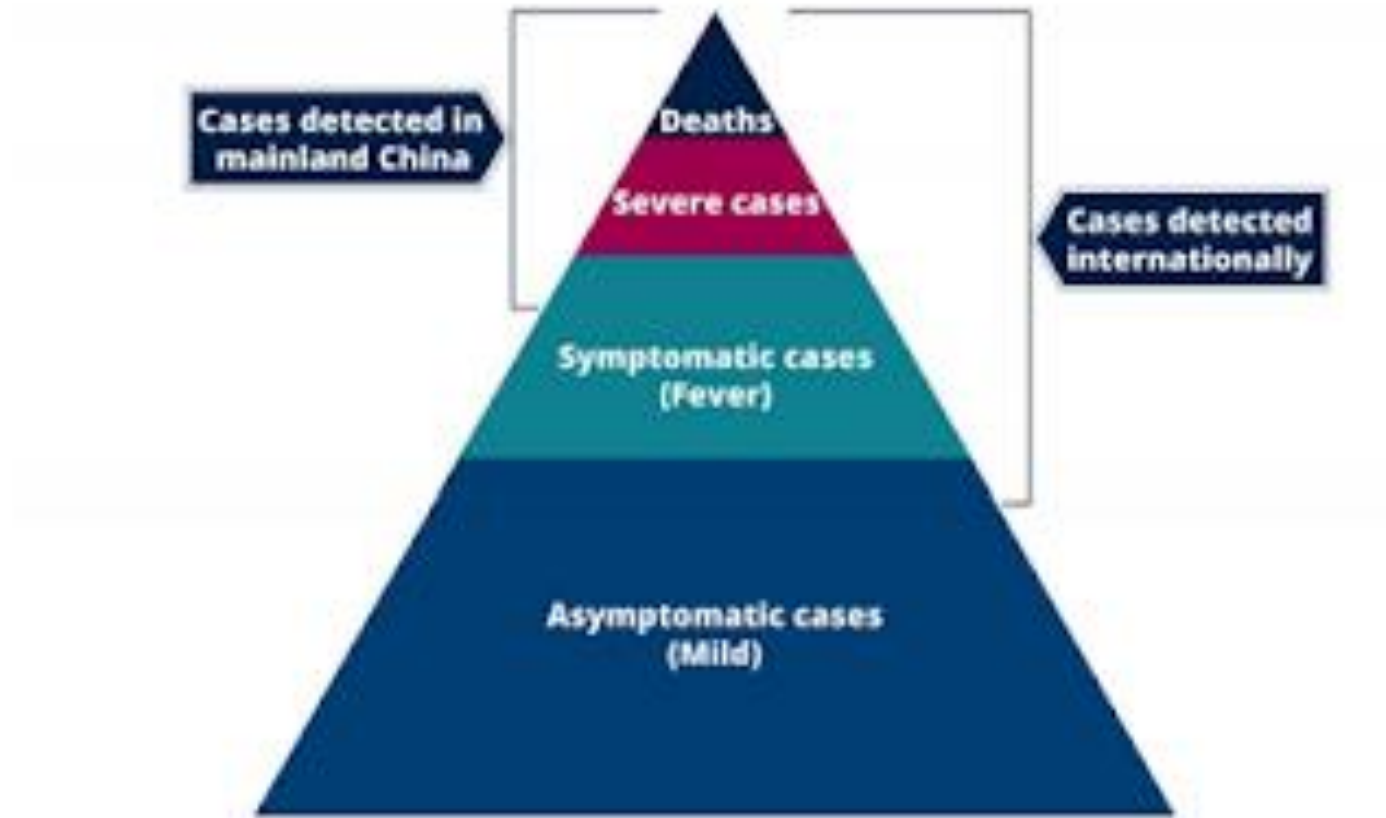


Figure 1: Spectrum of cases for 2019-nCoV, illustrating imputed sensitivity of surveillance in mainland China and in travellers arriving in other countries or territories from mainland China.



# SO WHY THE CONCERN?

# Reproductive Number

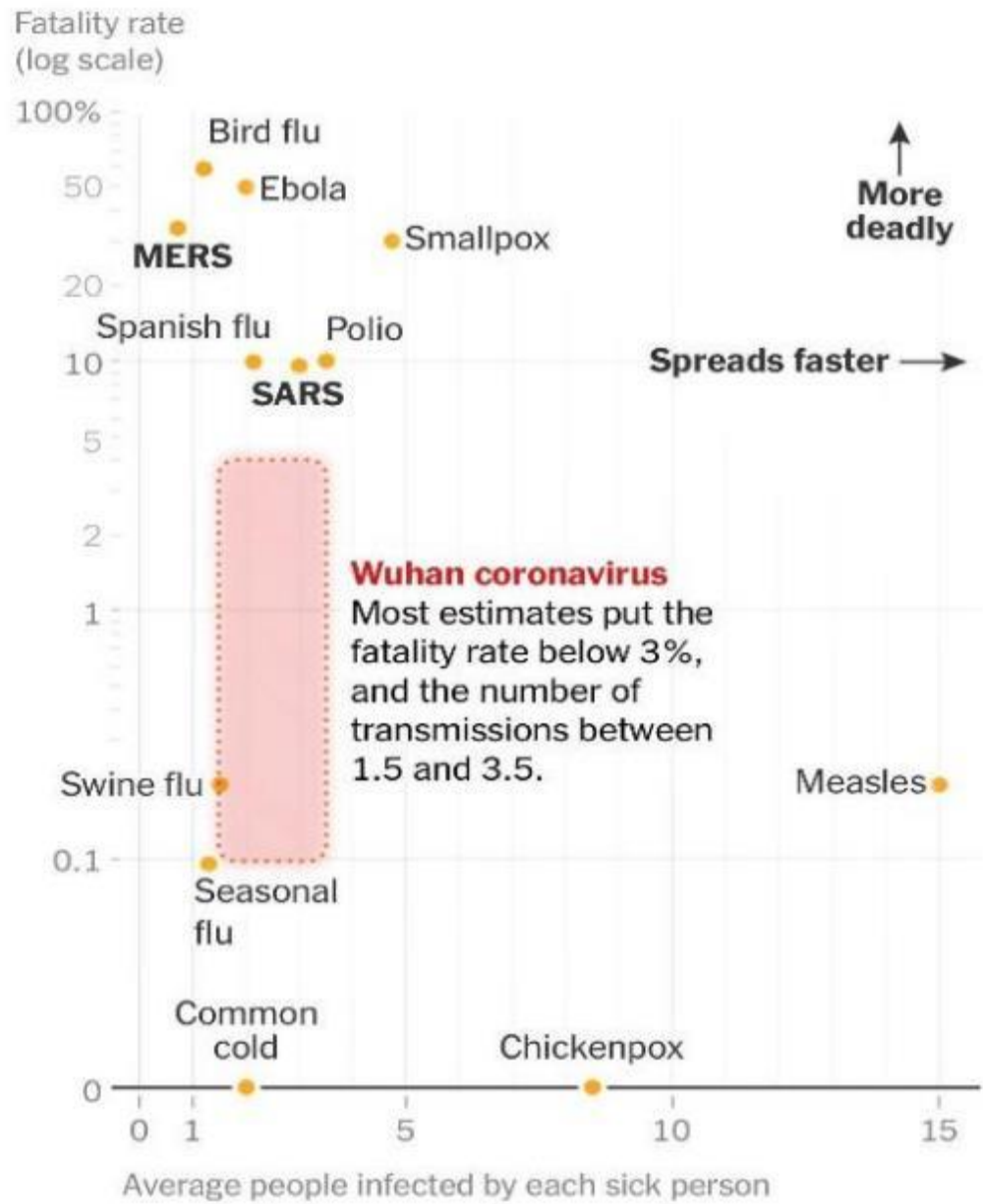
<b>Measles</b>	<b>12-18</b>
<b>Mumps</b>	<b>4-7</b>
<b>SARS</b>	<b>2-5</b>
<b>NcoV</b> (Provisional, some suggest up to 5)	<b>2.2-3.5</b>
<b>'Flu</b>	<b>2-3</b>

the number of cases one case generates on average over the course of its infectious period

nCoV source: Zhao et al, 2020, *International Journal of Infectious Diseases*

# Some Key facts so far

- Incubation period 3-7 days but could be up to 14 days
- Older people with pre existing conditions are those at risk of more severe disease
- Doesn't seem to be particularly infectious or causing severe disease in younger people unlike 2009 flu
- Also unusually is transmissible while people have no symptoms



Note: Average fatality rates and number of transmission are shown. Numbers for the Wuhan coronavirus are preliminary estimates.

# So what's special about 2019-nCoV?

- No need for alarm
- People assuming it's much worse than it is
- The Chinese used very strong social distancing which will slow the spread
- The ability to spread while asymptomatic
- Speed of growth of numbers
- Lots of people with a 'flu needs planning for

We should be grateful to countries for their work in slowing spread

# Viral Spread



- Coronaviruses are mainly transmitted by **large droplets spread through coughing, sneezing and kissing** and also **contact with infected secretions for example on door handles**.
  - Some assumptions now its coughing mostly and lower respiratory tract but this is NOT finally agreed although in public domain
- 2019-nCoV infections have been reported in health care workers in China and there have been a number of cases showing that **the virus can spread from person to person** (not just from an animal to a person).
- Unlike SARS, this coronavirus can spread **before a person shows any symptoms** (asymptomatic). This makes controlling exposure and spread much harder.

<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-background-information/wuhan-novel-coronavirus-epidemiology-virology-and-clinical-features>

# Current Treatment

No Vaccine anytime soon

There is currently no dedicated drug for the virus.

Antivirals do exist but effectiveness not conclusive.

Medical staff will provide support to maintain oxygenation of blood and relieve fever and pain.

WHO and PHE have clinical guidelines and protocols and UK ones also being rapidly improved

<https://www.cdc.gov/coronavirus/2019-ncov/about/prevention-treatment.html>

# Public Health Phases

- Containment
  - Stop spread
  - Identify and isolate/treat cases
- Mitigation
- PLAN FOR BOTH



# Preventing Spread – 4 strategies

- Containment
- Social Distancing
- Hygiene
- Cleaning frequent touchpoints
- *Finding a vaccine and treatment will take a while, these are our best bets*

## CATCH IT

Germs spread easily. Always carry tissues and use them to catch your cough or sneeze.



## BIN IT

Germs can live for several hours on tissues. Dispose of your tissue as soon as possible.



## KILL IT

Hands can transfer germs to every surface you touch. Clean your hands as soon as you can.



# Containment & Social Distancing

- Self-Isolation for people who have returned from China in last 14 days
- Temperature checks at border points from flights
- Assess, treat and find contacts of people suspected to have it

# Social Distancing

- Avoiding travel to areas with very high prevalence (China)
- Used successfully in 2009 flu pandemic in some areas
- Used in China recently (school and public transport closure)

# Hygiene

- Sneeze into a tissue
- Bin it
- Wash hands frequently
- Don't touch your face unless you've washed your hands
- Hand sanitiser second best
- Face masks **limited** use

## CATCH IT

Germs spread easily. Always carry tissues and use them to catch your cough or sneeze.



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The measures we should ALL do for 'flu but don't

# Cleaning

- Frequent cleaning with good ordinary detergent\* of frequent touchpoints
  - Door handles
  - Lift buttons
  - Counters
  - Worktops
  - Multiple user machines (copiers)

# Appendix 1

Further detail

# Looking Back - SARS

There have been 2 SARS outbreaks, which resulted in a highly contagious and potentially life-threatening form of pneumonia. Both happened between 2002 and 2004.

Since 2004, there have not been any known cases of SARS reported anywhere in the world.

SARS originated in China in 2002. It's thought that a strain of the coronavirus usually only found in small mammals mutated, enabling it to infect humans.

The SARS infection quickly spread from China to other Asian countries. There were also a small number of cases in several other countries, including 4 in the UK, plus a significant outbreak in Toronto, Canada.

# SARS continued

- During the period of infection, there were 8,098 reported cases of SARS and 774 deaths. This means the virus killed about 1 in 10 people who were infected. People over the age of 65 were particularly at risk, with over half of those who died from the infection being in this age group.



# Country containment measures

One of the reasons SARS spread so quickly between countries was because the Chinese government initially played down the severity of the outbreak and international travel quickly allowed the spread of the virus.

China has shut down much of its transport infrastructure in the larger cities and residents are being encouraged to stay at home.

International travel in and out of China is now restricted and some countries are arranging to bring back their citizens from Wuhan and then insisting on isolation on their return. Many international airports are now screening passengers on flights from Wuhan.

People in China are encouraged to wear face masks although they are of limited effectiveness

# Looking Back - MERS

MERS is a rare but severe respiratory illness. It can start with a fever and cough, which can develop into pneumonia and breathing difficulties.

MERS was first identified in 2012 in the Middle East and is most common in that region. The risk of infection with MERS to people in the UK is very low.

MERS is spread between animals and people. There's evidence that camels in the Middle East are the main source of the virus.

MERS can also be passed from person to person through cough droplets. But it doesn't seem to be very contagious between people unless they're in close contact.

There have been 5 cases of MERS in the UK since 2012. The most recent case was identified in August 2018, with previous cases diagnosed in 2012-13.

# A Vaccine?

There isn't currently a vaccine for any coronavirus as most cause only mild illness.

Scientists started work on a vaccine for the SARS virus but the outbreak ended before the work was completed. This vaccine may or may not be useful for preventing illness from the Wuhan coronavirus.

<https://time.com/5768956/wuhan-coronavirus-vaccine-treatment/>

thank you