

Coronavirus from Wuhan (China). 2019-nCoV.

What you need to know to avoid a panic epidemic

Juan Gervas, MD, PhD, retired general practitioner, Equipo CESCA, Madrid, Spain. Visiting professor International Health (National School of Public Health, Madrid, Spain)

jjgervas@gmail.com

[@JuanGrvas](https://twitter.com/JuanGrvas)

www.equipocesca.org

Wuhan coronavirus comes from animals

There is only one health, and the world is unique to the viruses, bacteria and fungi that infect us.

"A single health" groups the study and the response to human health problems taking into account the problems of flora and fauna (animals, domesticated and wild) and the environment. This global vision is essential to understand the complex interaction of humans with their natural environment and with that modified by human activity itself.

Although the virus could originate months before, the initial focus of the outbreak in the city of Wuhan (China) was located in the central seafood market, where wild animals were also sold (legal and illegal sale). There are coronaviruses in many mammals, from bats to dogs and humans. Some of the common cold virus are coronaviruses, for example.

Coronaviruses have the ability to mutate and jump from animal to human. Wuhan's new coronavirus is spread like cold virus, but it seems not so easily. It produces flu-like symptoms and in some cases severe pneumonia that leads to death, especially in patients with major underlying diseases (for example, cancer with metastasis). Their mortality rate is 3% (3 people out of 100 infected die).

There are other coronaviruses that produce similar cases to Wuhan's

Coronaviruses have existed for thousands of years, but in the 21st century some new ones have appeared, not only Wuhan's. They could cause pneumonia and other complications that lead to death in some cases. In 2002-3, we had the outbreak of severe acute respiratory syndrome known by its acronym SARS (severe acute respiratory syndrome). Its mortality rate was 11% In 2012, the outbreak of the Middle East respiratory syndrome, known by its acronym in English MERS (Middle East respiratory syndrome). Its mortality rate was 36%.

How have previous coronavirus outbreaks been controlled?

The best case-study is that of SARS in which about 8,000 cases were diagnosed in a total of 30 countries and did more than 700. The key thing was the prompt diagnosis and isolation of patients in hospitals, and of the contacts in their homes (voluntary quarantine). In the hospital, the spread of the virus was avoided with the usual hygienic measures. As in the MERS, was high the mortality

that occurred in inpatient outbreaks. The treatment was supportive (fluids, oxygen, etc), with antibiotics for bacterial complications.

Is a good idea placing millions of people in more than a dozen Chinese cities under intense travel restrictions?

In China, an attempt have being made to control the outbreak in Wuhan with the mandatory quarantine of millions of people, through the "closure" of several cities, cutting the connections by air and land. This mandatory quarantine is an expression, at the same time, of a dictatorial state and a weak health system, especially as regards to the control of infectious diseases. In general, mandatory quarantines are no evidence based.

Health screening strategies for international air travelers

Experience shows that temperature controls are not useful. They have no sense the "screenings" at arrival airports. What works are screenings (questionnaires PLUS temperature control) in exit airports, before departure from the affected country.

Take into account that you can be infected with coranovirus and have no symptoms, but transmit it and hence the value of the questionnaires at the airport of departure.

How to protect yourself and others?

There are currently no vaccines available to protect you against human coronavirus infection. There are no specific treatments for illnesses caused by human coronaviruses. In case of mild disease just follow the usual behaviour in a common cold.

According to the CDC advises, you may be able to reduce your risk of infection by doing the following:

1. wash your hands often with soap and water for at least 20 seconds
2. avoid touching your eyes, nose, or mouth with unwashed hands
3. avoid close contact with people who are sick

If you have cold-like symptoms, you can help protect others by doing the following;
stay home while you are sick

1. avoid close contact with others
2. cover your mouth and nose with a tissue when you cough or sneeze, then throw the tissue in the trash and wash your hands
3. clean and disinfect objects and surfaces

You don't have to take special precautions with animals, or with food.

At this time it is more important to control panic than to control deaths.

Continuous mistakes are being made, as I have already noted:

1. forced quarantine of millions of people
2. controls at arrival airports
3. border closures
4. suspension of communications, and
5. ignorance of panic dynamics
6. wearing surgical masks

The key questions in the outbreak of the Wuhan coronavirus (as in general for infections) is to have a well developed disease control system and a good health system with universal coverage. There is neither vaccine nor specific treatment for Wuhan's coronavirus but the situation is much better than in the SARS outbreak, due to the lower mortality rate (3 vs. 11%).

Is there a Cochrane Review about physical interventions to interrupt or reduce the spread of respiratory viruses?

Yes. This is the summary:

"Respiratory virus spread can be reduced by hygienic measures (such as handwashing), especially around younger children. Frequent handwashing can also reduce transmission from children to other household members. Implementing barriers to transmission, such as isolation, and hygienic measures (wearing masks, gloves and gowns) can be effective in containing respiratory virus epidemics or in hospital wards. We found no evidence that the more expensive, irritating and uncomfortable N95 respirators were superior to simple surgical masks. It is unclear if adding virucidals or antiseptics to normal handwashing with soap is more effective. There is insufficient evidence to support screening at entry ports and social distancing (spatial separation of at least one metre between those infected and those non-infected) as a method to reduce spread during epidemics".

So you may see that Cochrane recommends the use of facemask and the CDC no. What to do? An interesting and very well done study ends supporting the CDC position: "Facemask use does not prevent clinical or laboratory-confirmed viral respiratory infections among Hajj pilgrims" (pilgrims gathering in Mecca for Hajj pilgr).

Suspect case

If the patient satisfies general AND clinical criteria, they are classified as a suspect case.

General criteria

1. travel from Hubei Province, China in the 14 days before the onset of illness or travel to agreed areas of human-to-human transmission, or a declared outbreak, within 14 days before

onset of illness, or

2. close contact with a confirmed case of 2019-nCoV within the last 14 days.

Clinical criteria

1. fever or history of fever and acute respiratory infection (sudden onset of respiratory infection with at least one of: shortness of breath, cough or sore throat), or
2. severe acute respiratory infection requiring admission to hospital with clinical or radiological evidence of pneumonia or acute respiratory distress syndrome (i.e. even if no evidence of fever)

A close contact is defined as requiring greater than 15 minutes face-to-face contact with a confirmed case in any setting, or the sharing of a closed space with a confirmed case for a prolonged period (e.g. more than 2 hours).

In summary

Coronaviruses have been with us for thousands of years, and we are prepared to overcome their infections.

If you have traveled to Wuhan (China) or have had close contact with those who have traveled there and have severe catarrhal symptoms with respiratory distress, consult your doctor especially if you have any underlying disease.

In all other cases avoid a panic epidemic, be prudent.

NOVEL CORONAVIRUS | 2019-nCoV | Pneumonia

- Human to human transmission has been confirmed. - Transmisión persona a persona ha sido confirmada.

BETA-CORONAVIRUS

Different from SARS + MERS CoV	Distinto al coronavirus del SARS y MERS
Similar to coronavirus from bats.	Similar al CoV del murciélago.

Inubation period within 14 days after exposure.

- Fever ($\geq 100.5^{\circ}\text{F}$)
- Cough
- Dyspnea
- Chest X-Ray \rightarrow Infiltrates.

Inubación: 14 días post exposición

- Fiebre ($\leq 38^{\circ}\text{C}$)
- Tos
- Disnea
- Rx de tórax \rightarrow Infiltrados

DEC 2019, WUHAN, HUBEI - CHINA:
2019-nCoV \rightarrow A cluster of pneumonia cases.

DICEMBER, 2019, WUHAN, HUBEI - CHINA:
2019-nCoV \rightarrow Grupo de casos de neumonía.



- Many infections NOT SEVERE. Muchos de los casos NO son GRAVES.

Study describing 41 initial patients.

- 73% males
- Med. age 49
- 55% \rightarrow dyspnea after 8 d. of illness.

Estudio descriptivo de 41 pacientes iniciales.

- 73% hombres
- Mediana de edad 49
- 55% \rightarrow disnea luego de 8 días de enfermedad.

- Viral infection \rightarrow Fiebre. - Linfopenia

- Infección viral. \rightarrow Fiebre - Linfopenia

ALL PATIENTS had lung abnormalities.

Computed tomography

- Bilateral infiltrates:
- Ground glass opacities.
- Subsegmental consolidation.
- Multilobar consolidation.

TOCOS LOS PACIENTES mostraron anomalías.

Tomografía computada

- Infiltrados bilaterales:
- Opacidades en vidrio esmerilado.
- Consolidaciones subsegmentarias.
- Consolidaciones multilobares.

REQUIRED ICU ADM.

20% - Critical illness

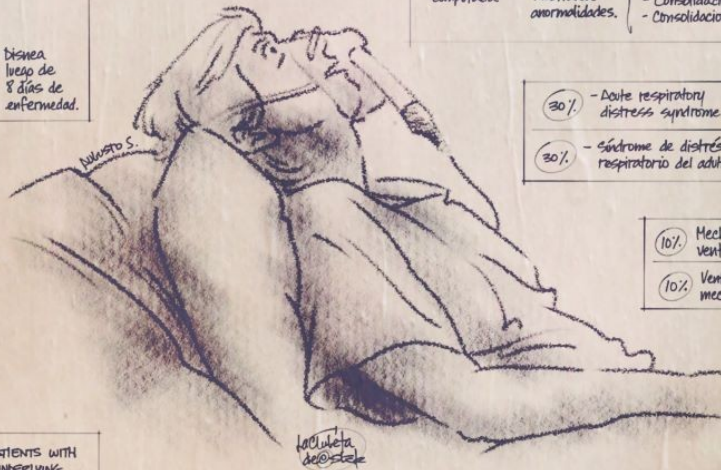
Including:

- Respiratory failure
- Septic shock
- Organ failure

20% - Estado crítico

Incluido:

- Fallo respiratorio
- Shock séptico
- Fallo orgánico.



30% - Acute respiratory distress syndrome.

30% - Síndrome de distrés respiratorio del adulto.

10% Mechanical ventilation.

10% Ventilación mecánica.

MOST OF THE FATAL CASES \rightarrow PATIENTS WITH UNDERLYING COMORBIDITIES.

LA MAYORÍA DE CASOS FATALES \rightarrow PACIENTES CON ENFERMEDADES CRÓNICAS.

Note

Visual summary by Augusto Saldaña, @chuletadeosler rural general practitioner and emergency physician. sketchbookmd.com

Bibliography

New China virus: Five questions scientists are asking

<https://www.nature.com/articles/d41586-020-00166-6>

#coronavirus 2019-nCoV Similar symptoms to severe acute respiratory syndrome (SARS)

<https://www.thelancet.com/coronavirus>

Clinical management and infection control of #SARS (2002-3): Lessons learned

<https://www.sciencedirect.com/science/article/pii/S0166354213002246>

Doubts rise about China's ability to contain new coronavirus

<http://www.cidrap.umn.edu/news-perspective/2020/01/doubts-rise-about-chinas-ability-contain-new-coronavirus>

The Politics of the Coronavirus Outbreak. Perfect Storms Continue Coalescing.

No es casual que varias pandemias se hayan originado en Asia. Sepa porqué.

<https://www.thinkglobalhealth.org/article/politics-coronavirus-outbreak>

Severe acute respiratory syndrome coronavirus (SARS-CoV) in 2002. Middle East respiratory syndrome coronavirus (MERS-CoV) outbreak in 2012. 2019-nCoV is the third coronavirus to emerge in the human population in the past two decades.

https://www.nejm.org/doi/full/10.1056/NEJMp2000929?query=featured_home

Evidence and Effectiveness in Decisionmaking for Quarantine

<https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2005.077305>

The benefits of quarantine and isolation justify some level of coercion or compulsion by the state, but that the state should be able to provide the strongest justification possible for implementing such measures.

<https://onlinelibrary.wiley.com/doi/full/10.1111/dewb.12165>

The factors include the broad role of quarantine in a globalized world, ... the ineffectiveness of quarantines as they currently exist, and the ethical dilemmas which have been, and are currently, associated with quarantine implementation.

<https://dsc.duq.edu/etd/1756/>

China's unprecedented quarantines could have wider consequences, experts say.

<https://edition.cnn.com/2020/01/26/health/quarantine-china-coronavirus/index.html>

2019-nCoV Travel restrictions from and to Wuhan city. With a 99% effective reduction in travel, the size of the epidemic outside of Wuhan may only be reduced by 24.9% on 4 February.

<https://www.medrxiv.org/content/10.1101/2020.01.23.20018549v1>

Coronavirus: do airport screenings and face masks work?

<https://www.telegraph.co.uk/global-health/science-and-disease/coronavirus-do-control-disease-outbreak-do-face-masks-work/>

Analysis of Infectious Diseases Screening Systems for Transatlantic Air Passengers

<https://pdfs.semanticscholar.org/8772/3792087a26a3ac804fa586925184db2ade57.pdf>

Health screening strategies for international air travelers during an epidemic or pandemic

<https://www.sciencedirect.com/science/article/abs/pii/S0969699718300632>

CDC What to do? <https://www.cdc.gov/coronavirus/about/prevention.html>

Cochrane. Physical interventions to-interrupt or reduce the spread of respiratory viruses

https://www.cochrane.org/CD006207/ARI_physical-interventions-to-interrupt-or-reduce-the-spread-of-respiratory-viruses

Facemask use does not prevent clinical or laboratory-confirmed viral respiratory infections among Hajj pilgrims.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3349234

Do surgical masks stop the coronavirus?

https://slate.com/news-and-politics/2020/01/coronavirus-surgical-masks-china.amp?__twitter_impression=true

Novel coronavirus 2019 (2019 n-CoV)

<https://www.health.nsw.gov.au/Infectious/controlguideline/Pages/novel-coronavirus.aspx#h2-Case-definitions>

Professional, take an accurate travel history from all patients with acute respiratory infections

<https://www.bmj.com/content/368/bmj.m308>