



# CoVid 19: summary of knowledge and reliable information sources, March 26th 2020

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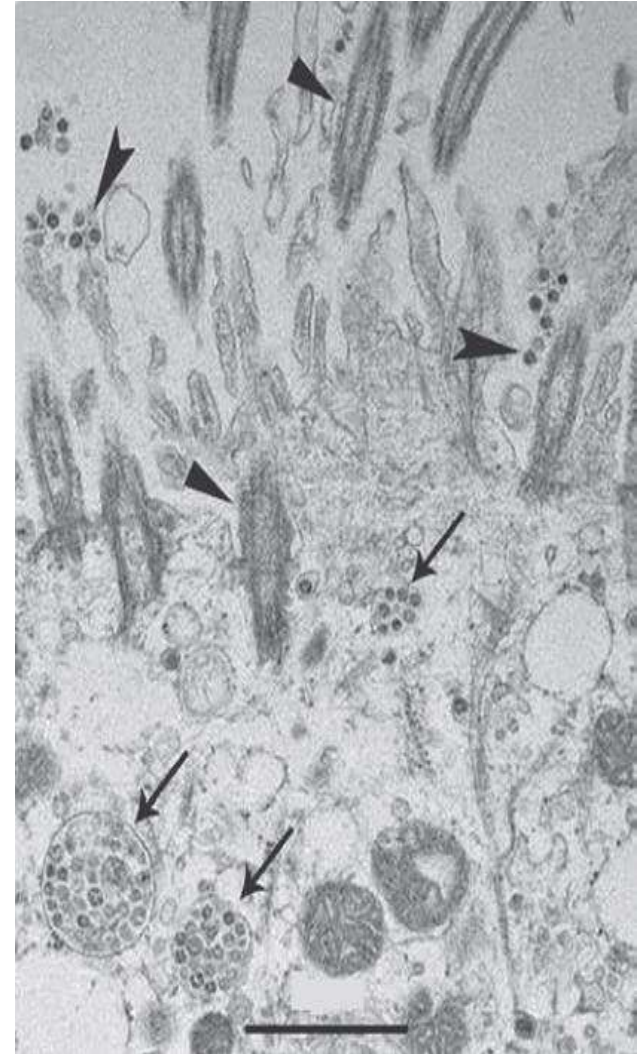
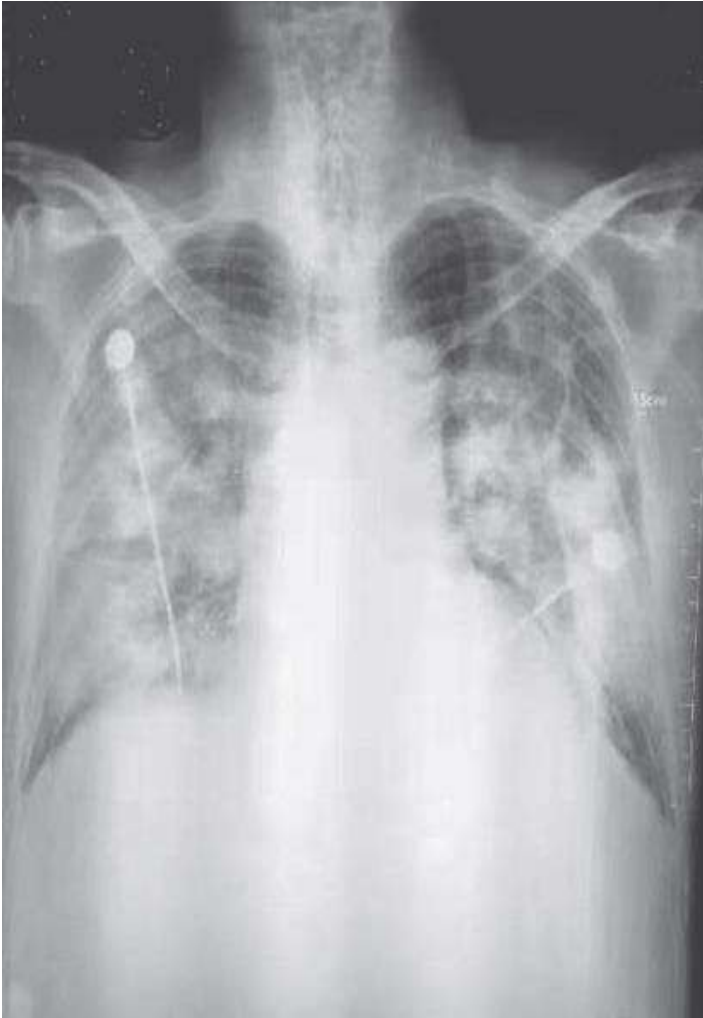
# The virus: SARS-CoV 2

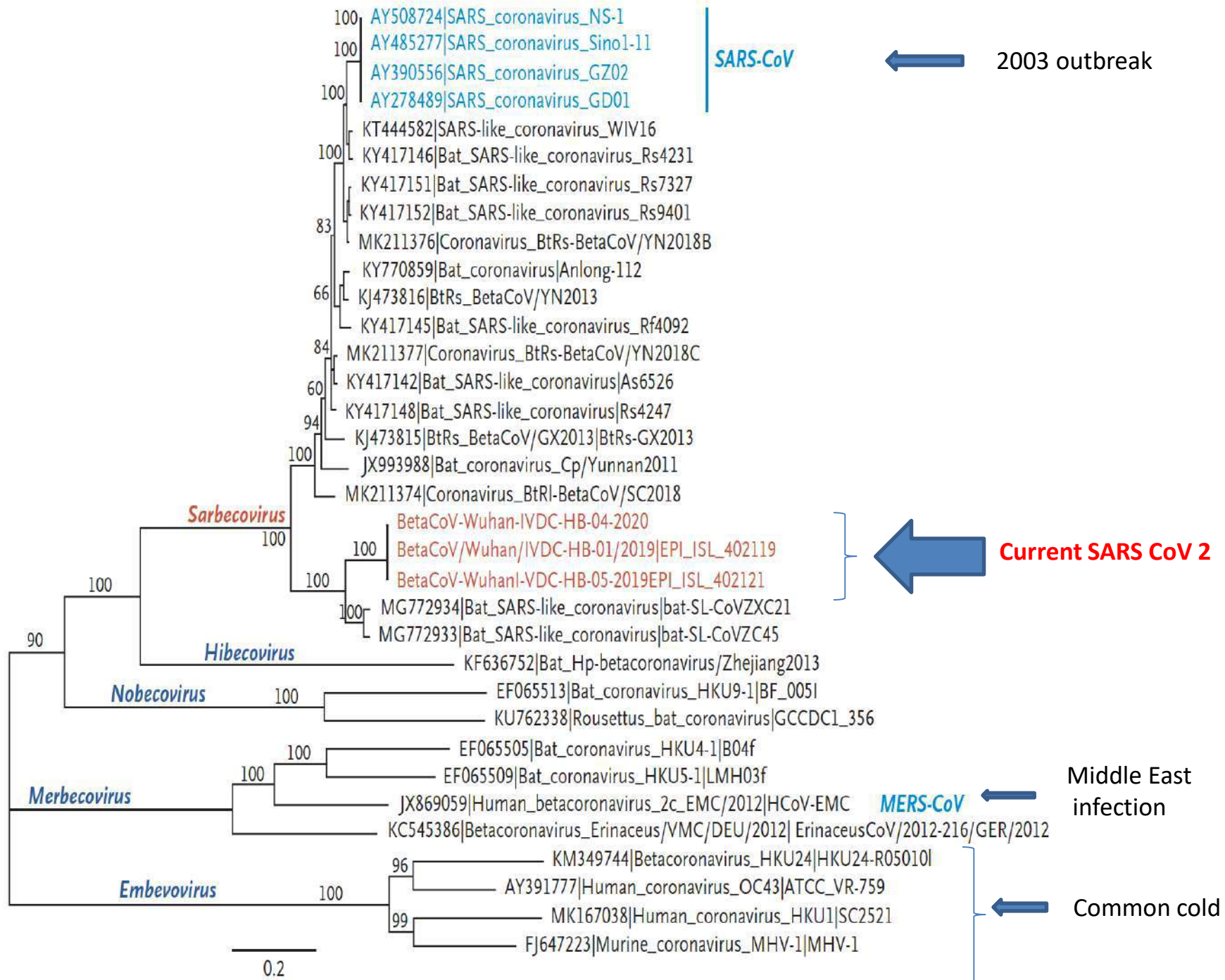
- December 2019, cluster of patients presenting with pneumonia in Wuhan (China)
- Betacoronavirus identified in samples obtained from respiratory secretions and isolated on cell cultures
- New coronavirus, named SARS-CoV2, subgenus Sarbecovirus, subfamily Orthocoronavirinae.
- Differs from MERS-CoV and SARS-CoV, and from viruses responsible for common cold (229E, OC43, NL63, et HKU1)
- SARS-CoV2 is the 7th member of coronavirus family able to infect humans

Na Zhu et al.

NEJM, 2020, Jan., DOI: 10.1056/NEJMoa2001017

# First described case





« Real time » distribution of cases

[https://gisanddata.maps.arcgis.com/  
apps/opsdashboard/index.html#/bda  
7594740fd40299423467b48e9ecf6](https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6)



# Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Total Confirmed  
**436 159**

- Confirmed Cases by Country/Region/Sovereignty
- 81 661 China
  - 69 176 Italy
  - 55 238 US
  - 47 610 Spain
  - 34 009 Germany
  - 27 017 Iran
  - 22 637 France
  - 10 456 Switzerland
  - 9 137 Korea, South
  - 8 167 United Kingdom
  - 5 585 Netherlands
  - 5 499 Austria
  - 4 937 Belgium
  - 2 995 Portugal
  - 2 902 Norway
  - 2 792 Canada
  - 2 364 Australia
  - 2 318 Sweden



172 countries/regions

Lancet Inf Dis Article: [Here](#), Mobile Version: [Here](#), Visualization: [JHU CSSE](#), Automation Support: [Esri Living Atlas team](#) and [JHU Data Sources: \[WHO\]\(#\), \[FAO\]\(#\), \[CDC\]\(#\), \[ECDC\]\(#\), \[NHC\]\(#\), \[DXY\]\(#\), \[Ipoint3acres\]\(#\), \[Worldometers.info\]\(#\), \[BNO\]\(#\), state and national government health Departments, \[journals, \\[and \\\[in \\\\[China\\\\]\\\\(#\\\\) \\\\[republic\\\\]\\\\(#\\\\), \\\\[Read \\\\\[more\\\\\]\\\\\(#\\\\\) \\\\\[in\\\\\]\\\\\(#\\\\\) \\\\\[this\\\\\]\\\\\(#\\\\\) \\\\\[blog\\\\\]\\\\\(#\\\\\).\\\\]\\\\(#\\\\)\\\]\\\(#\\\)\\]\\(#\\)\]\(#\)](#)

Confirmed cases include presumptive positive cases.  
Recovered cases outside China are estimates based on local media reports, and may be substantially lower than the true number.  
Active cases = total confirmed - total recovered - total deaths

Total Deaths

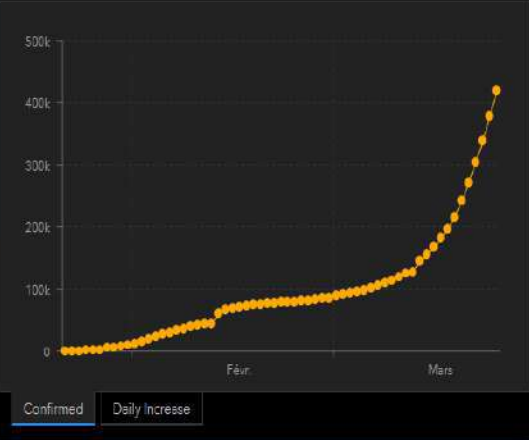
**19 648**

- 6 820 deaths Italy
- 3 434 deaths Spain
- 3 163 deaths Hubei China
- 2 077 deaths Iran
- 1 100 deaths France
- 422 deaths United Kingdom
- 276 deaths Netherlands
- 192 deaths New York City New York US
- 178 deaths Belgium
- 172 deaths

Total Recovered

**111 847**

- 60 811 recovered Hubei China
- 9 625 recovered Iran
- 8 326 recovered Italy
- 5 367 recovered Spain
- 3 730 recovered Korea, South
- 3 532 recovered Germany
- 3 281 recovered France
- 1 336 recovered Guangdong China
- 1 250 recovered Henan China
- 1 221 recovered



Last Updated at (M/D/YYYY)  
**3/25/2020 1:38:11 PM**

# Viral transmission

- Initially probably a zoonosis: bats, pangolin ? but zoonotic transmission is no longer significant
- Human to human transmission by droplets and smears
- Hand carriage
- Incubation: maximum 14 days, usually 3 to 7
- $R_0$  2 to 3, *in the absence of control measures*
- Intergenerational interval : about 5 days *in the absence of control measures*
- Transmission can occur 1 to 2 days before onset

**It has to be updated according increasing knowledge during the outbreak**

# Clinical presentation: summary

- Agueusia and/or anosmia are frequent at the early stage, before respiratory symptoms and are very evocative
- Infrequent diarrhea
- Upper respiratory tract « viral » symptoms : non specific
- Pneumonia +++
- Possible worsening of respiratory symptoms on day 7 to 10
- Severity:
  - direct link with respiratory failure (Acute Respiratory Distress Syndrom)
  - More frequent in male patients /elderlies / patients with underlying conditions
- Pediatric cases are infrequent



# Viral load and clinical presentation

- **Mild, moderate**

- ✓ Important viral inoculum since the onset, for 6 to 7 days and then it decreases. Nasal sampling is the standard
- ✓ Possible respiratory symptoms (LRT) for 2 to 3 days. Virus can be isolated in LRT samples in this case

- **Initial mild or moderate and complication**

- ✓ Same evolution of the viral load, but LRT symptoms are more severe and images on lung CT scan. At this stage, nasal sampling is possibly negative

- **Initial complicated presentation**

- ✓ High viral load in nasal and LRT samples

# Lung images

Sana Saleh et al. Coronavirus disease 2019 (CoVid 19): a systematic review of imaging findings in 919 patients. Am. J. Roentgenol. 1-7. 10.2214/AJR.20.23034

Initial typical images on CT scan:

- bilateral multilobar ground-glass opacification
- peripheral or posterior distribution, in the lower lobes
- less frequently within the right middle lobe.

Images at a later stage:

- increase in the number and size of ground-glass opacification
- progressive transformation of ground-glass opacification into multifocal consolidative opacities,

# Treatment

- Supportive care, but no steroid nor non-steroid anti-inflammatory drugs
- Antiviral drugs
  - ✓ Remdesivir: previously used in MERS Cov and Ebola infections. Trials ongoing
  - ✓ Lopinavir/Ritonavir in severe cases: recent publication reporting failure in this indication.
  - ✓ Interferons, monoclonal antibodies: ongoing trials

# Hydroxychloroquine

<https://doi.org/10.1016/j.medmal.2020.03.004>

- Known to have *in vitro* antiviral activity
- A trial for the treatment of Chikungunya was stopped:
  - severe cardiac events
  - no clinical efficacy in the chloroquine arm.
- Used in dengue: no benefit vs placebo.

**It is way too early to recommend it as a treatment**

- Preliminary results only, study with important limitations
- Ongoing trial

# Conclusion about drugs, on March 26th

So far, no specific drug is recommended as an antiviral treatment.

Trials are ongoing.

# Current recommendations for IPC and outbreak control

- General population
  - Mask for infected patients
  - Hand washing as frequently as possible
  - Lock-down in a significant number of countries
  - Social distancing for those essential to the functioning of countries or when lock-down is not possible
- Health care workers
  - Surgical masks in hospital
  - FFP2 masks during care giving
  - Cancel/postpone non-essential healthcare activities
  - Keep in mind other life-threatening infections/diseases can still occur

# Reliable sources

## ➤ Public Health Agencies:

- ECDC : <https://www.ecdc.europa.eu/en/coronavirus>
- WHO <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- CDC <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
- Reacting <https://reacting.inserm.fr/literature-review/>. Daily updated bibliography

## ➤ Journals with free access to CoViD 19 LITERATURE:

- JAMA: <https://jamanetwork.com/journals/jama/pages/coronavirus-alert>. Papers for a lot of specialists, not only Infectious Diseases
- New England Journal of Medicine: [https://www.nejm.org/coronavirus?query=CON&cid=DM88964\\_Catalyst\\_Non\\_Subscribe\\_r&bid=172184965](https://www.nejm.org/coronavirus?query=CON&cid=DM88964_Catalyst_Non_Subscribe_r&bid=172184965)
- Lancet : Covid Resource center <https://www.thelancet.com/coronavirus>

## ➤ Scientific societies:

- All national ID societies provide recommendations in local language
- French Infectious Diseases Society, for French speaking physicians, collects all official texts in french: <https://www.infectiologie.com/fr/>



## Take home points :

- Be prudent
- Take care of yourself, your patients and your loved ones