

COVID-19

Pandemic through the eyes of an infectologist

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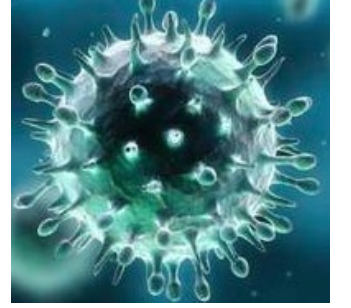
Faculty of Medicine, Masaryk University

Cystic Fibrosis Centre, University Hospital Brno

Brno Expat Centre Webinar

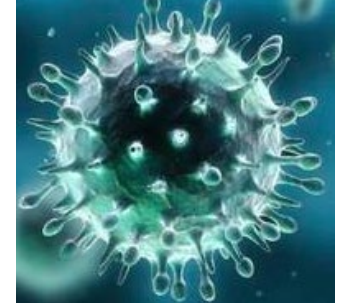
14 May 2020

Background

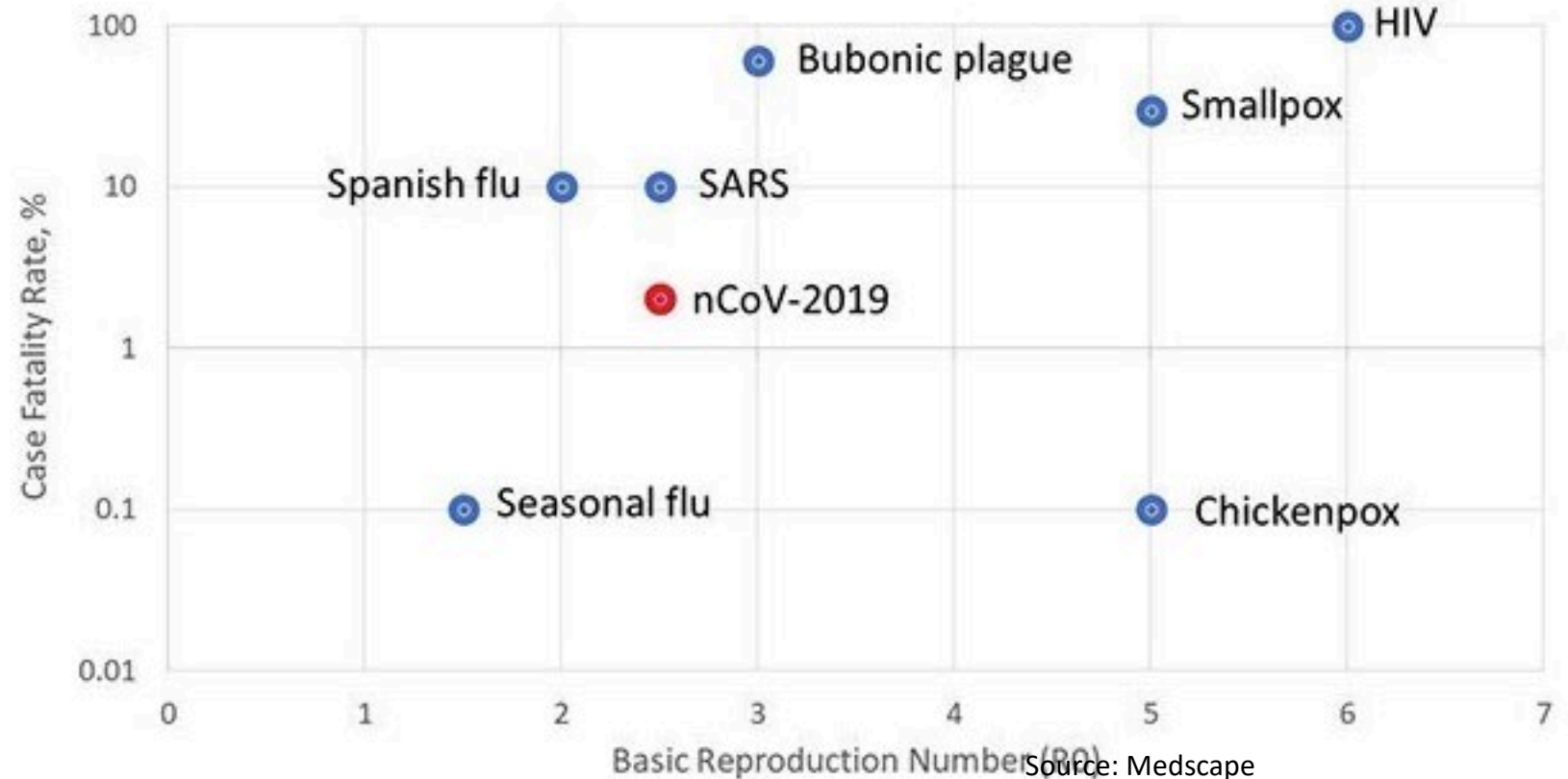


- Viruses (DNA \neq RNA virus) and how they behave
- Cluster of infection – epidemic – pandemic
- Opinions are often presented as facts
- Context of the data presented
 - Statistical inputs distort statistical outputs, eg. how many tests and in which population are performed at certain stage of the epidemic
- Limited knowledge, bias

COVID-19 is not a flu

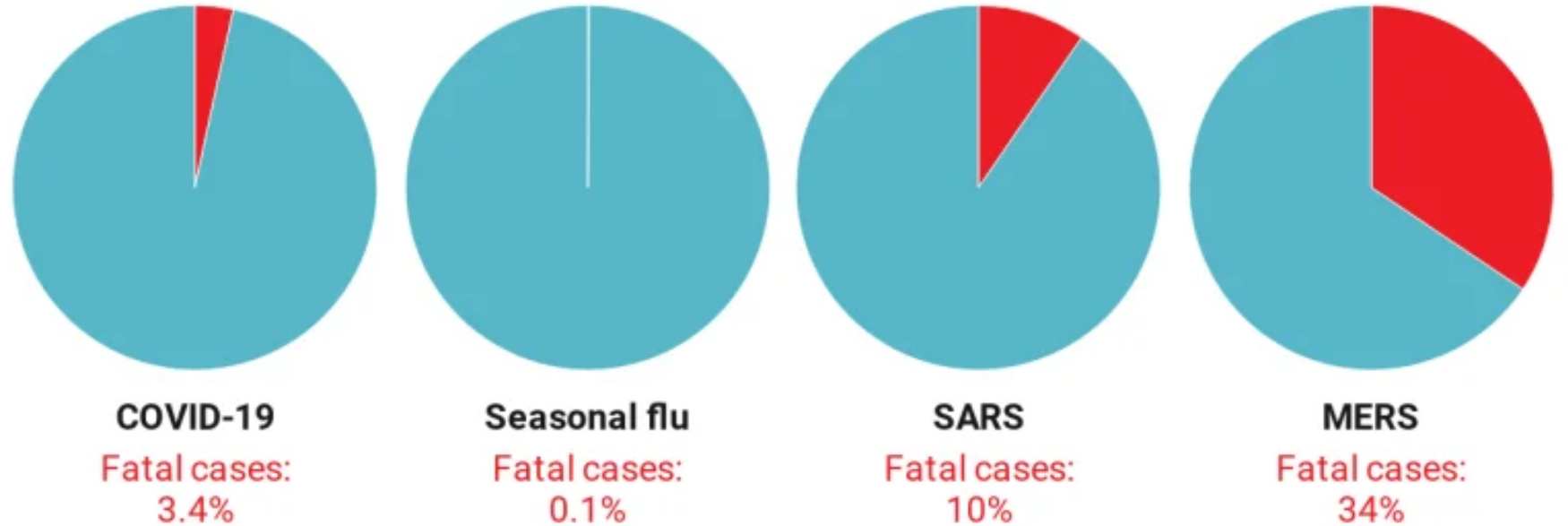


- Incubation period, clinical presentation, severity and other characteristics



COVID-19 looks a lot closer to the season flu than to previous coronavirus outbreaks

■ Fatal cases ■ Non-fatal cases

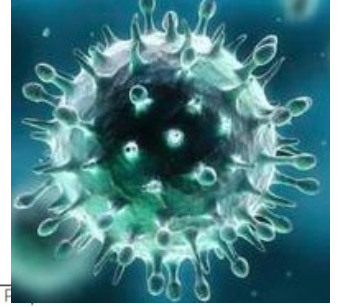


COVID-19, SARS, and MERS data are global and total to date. Seasonal flu data are U.S., for the 2018-2019 season.

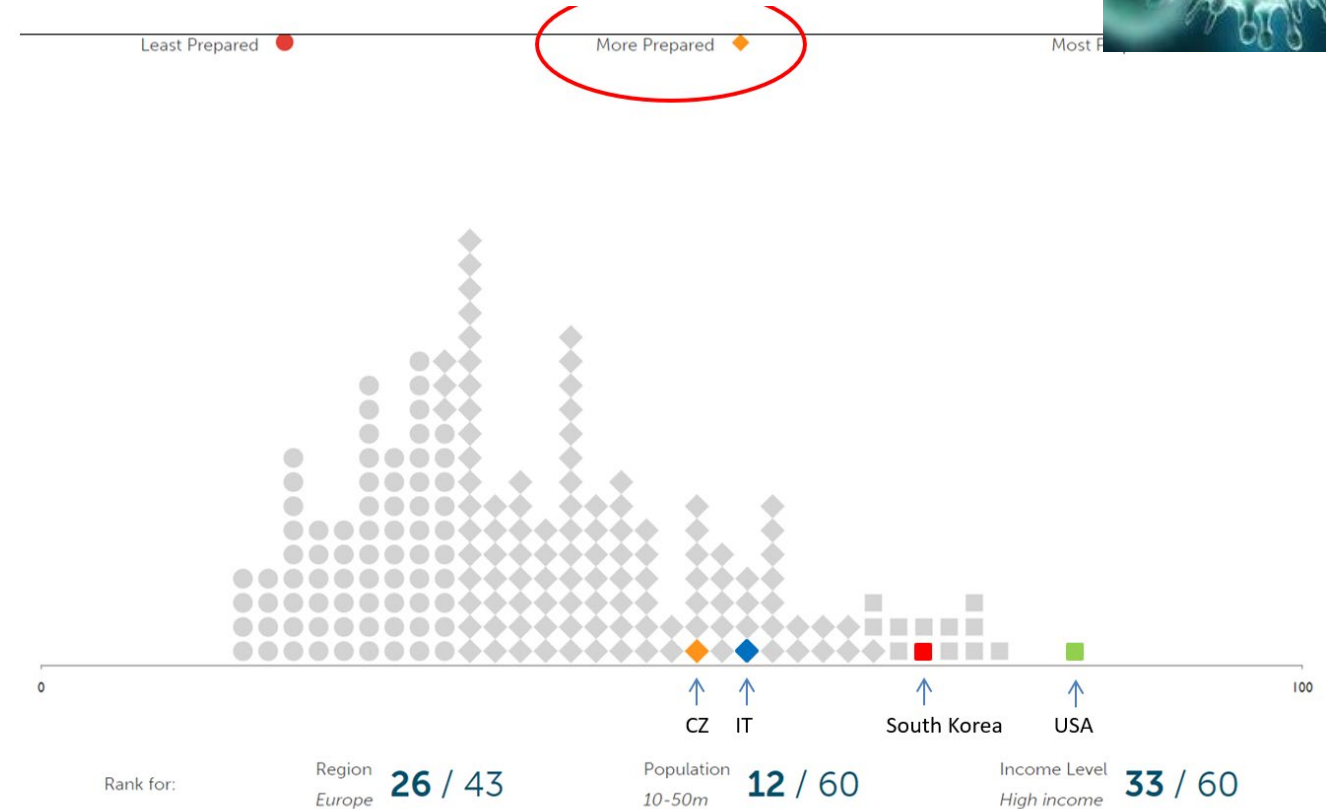
Chart: Elijah Wolfson for TIME • Source: CDC and WHO • Created with Datawrapper

Real case fatality ratio is believed to be much lower, but still higher than in case of seasonal flu

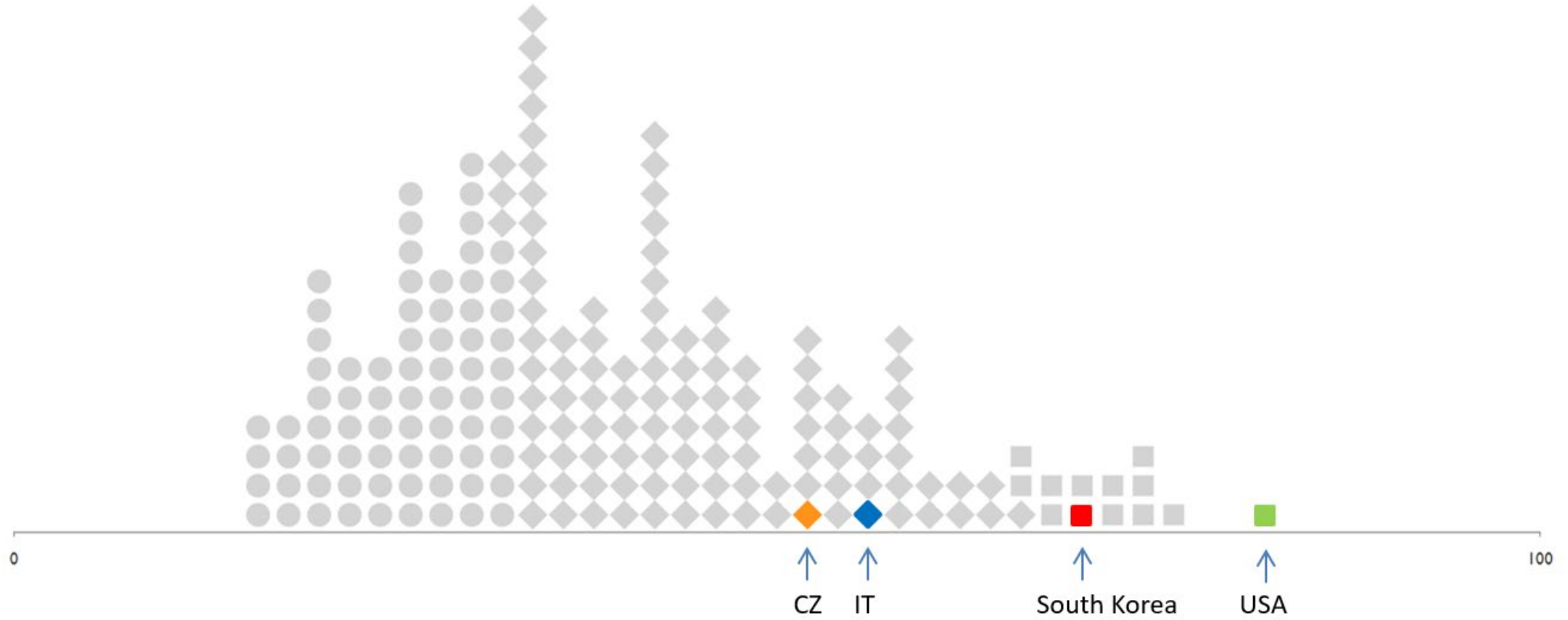
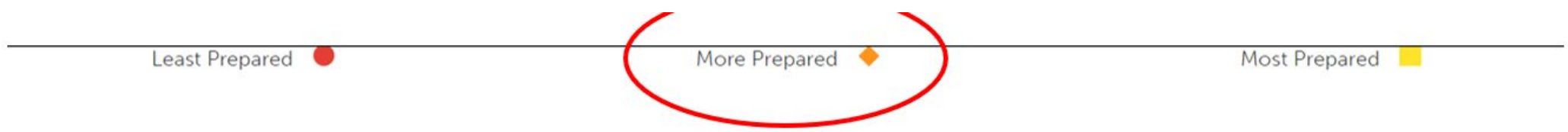
Global Health Security Index



- Prevent
- Detect
- Respond
- Health
- Norms
- Risks

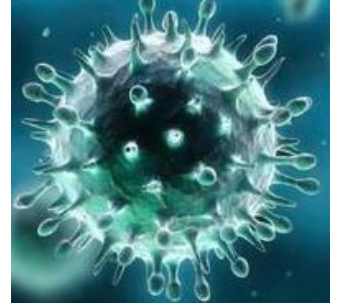


- CZ: index score **52.0**, 42th place/195
– average overall GHS index = 40.2



Rank for: Region **26 / 43** Population 10-50m **12 / 60** Income Level High income **33 / 60**

How to stop the epidemic?



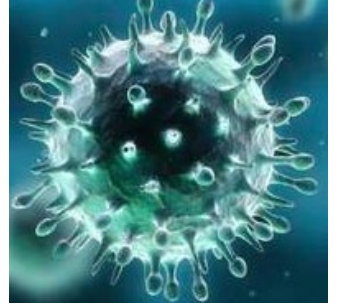
- Preventive precautions
 - Understanding the mechanisms of transmission, PPE, physical distancing?, lockdowns, „intelligent quarantine tools“
- Robust diagnostics tools
 - Availability and willingness to test
- Effective treatment and profylaxis
 - Availability, cost...

Preventive precautions



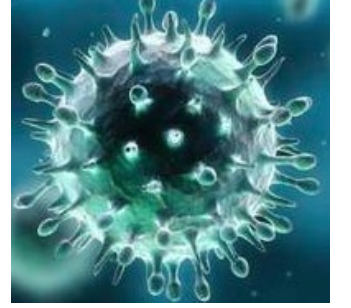
- According the mechanism of transmission in case of any infectious disease
- Hand-washing
- Alcohol-based disinfection
- PPE – masks \neq respirators
 - When and how to use them?
- Physical (social) distancing
- Maintanining physical/mental health
 - Excercising, nutrition, safe drinking water, sleeping habits, reducing anxiety, stress relief

Diagnosis



- Testing
 - Direct – searching for the agents
 - PCR tests...
 - Useful at the acute phase of the disease, even at the end of the incubation period
 - Indirect – searching for the immune response
 - Antibody tests...
 - Antibodies are produced and detectable with latency

Treatment, profylaxis



- No specific treatment
- No specific vaccination
- Clinical trials in development of new drugs/vaccines have their standard length/cost/safety = farmacovigilance
 - Costly and long process

What happened in CZ?



- Informational chaos, anxiety, unpreparedness of anything, lack of PPE and supply chain...
 - lockdown and state of emergency
- Changes in the health care capacities
- One main goal: get some time and avoid filling up hospitals and their intensive care units (x other countries)
 - Difficult situation in the hospitals
 - It worked, but... Did we learn a lesson? Are we prepared now?
 - Online up-to-date counting systems of bed capacities in hospitals, provided laboratory test, readiness to re-change the system again

Current situation with COVID



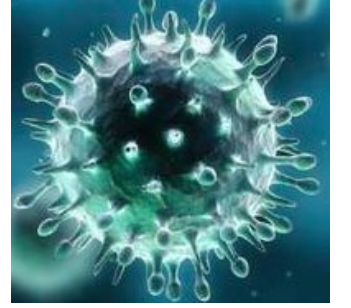
- varies around the world due to
 - Demography: age, comorbidities, general health...
 - Health care systems, insurance, availability
 - Cultural and social differences
 - Cases identification speed and protective measures taken in which phase of virus spreading, ...
- Up-to-date information and statistics in Czech Republic
 - [Institute of Health Information and Statistics](#)

How to get tested in the CR



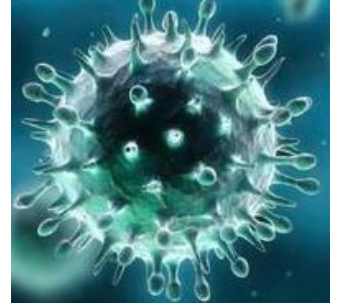
- If you are sick, search for medical help – contact your health care provider, they could send you for testing free of charge (insurance coverage)
- Self-payers for PCR tests
 - Ministry of Interior
 - [crossing the borders and getting tested](#)
 - [more information](#)
 - Ministry of Health – [list of laboratories and test centres](#)
 - University Hospital **Brno**:
 - **2 different places** (test tent in Brno Bohunice and at the Department of Infectious Diseases in Children's Hospital, both have reservation systems)
 - » fnbrno.cz/testy-na-covid-19-ve-fn-brno/t6838
 - » fnbrno.cz/novy-rezervacni-system-pro-samoplatce-testu-na-koronavirus/

How to get tested in the neighbouring countries



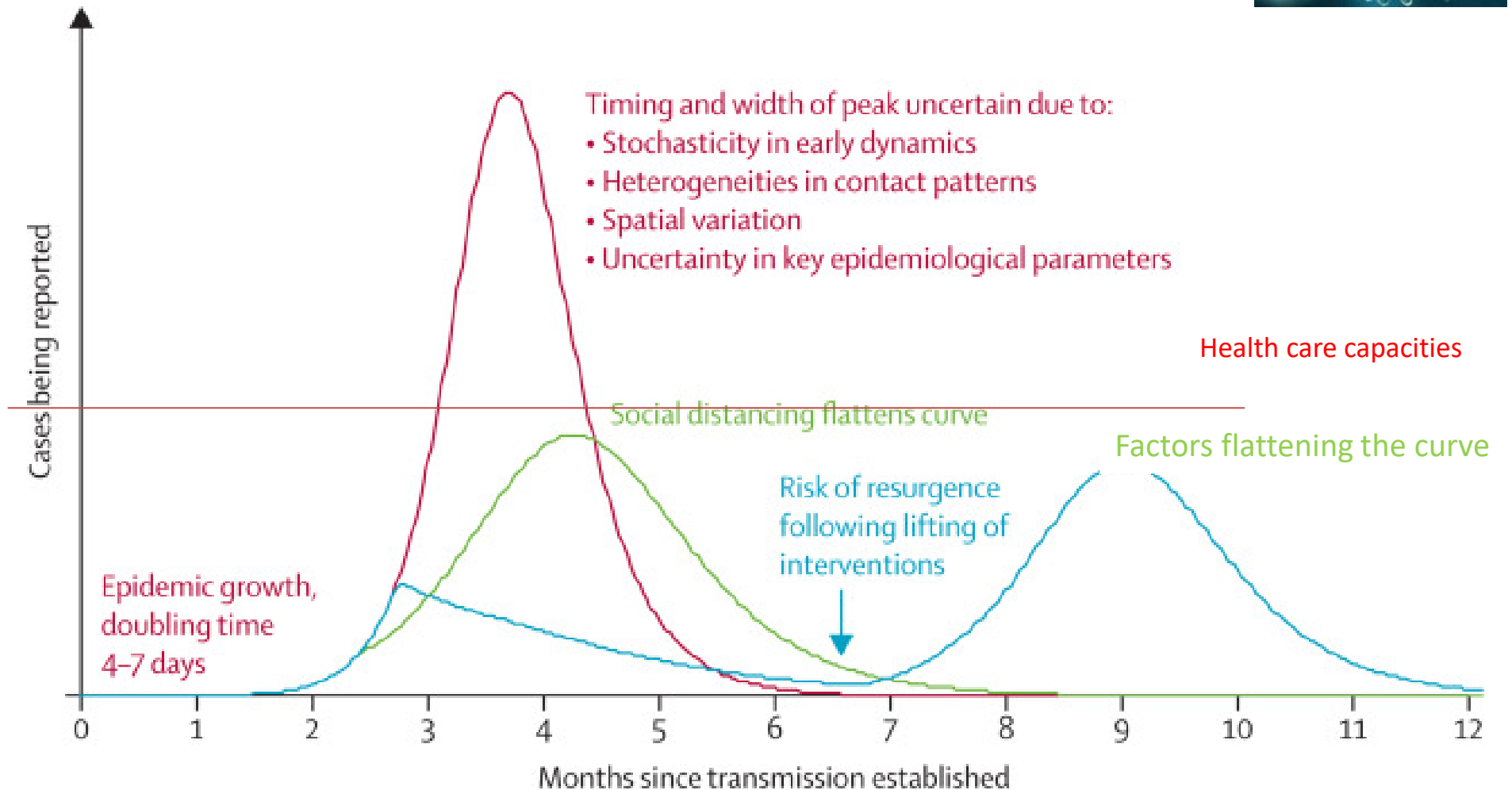
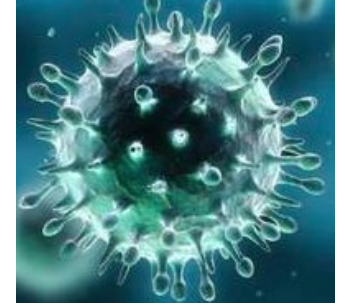
- Austria
 - integrationsfonds.at/coronainfo/en/
- Poland
 - gov.pl/web/koronawirus
- Slovakia
 - mzv.sk/web/en/covid-19
- Germany
 - zusammengegencorona.de/en/

Possible future scenarios

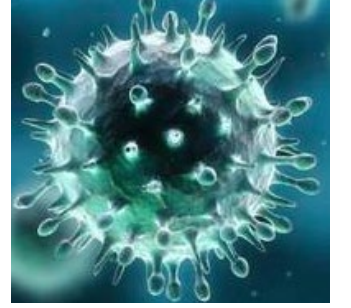


- Achieving herd immunity → nonsense
- Elimination of the virus spreading
→ the least likely option
- Recurrent waves of the epidemics
- Continuous low spread of the infection

Everyone has their responsibility in the future.

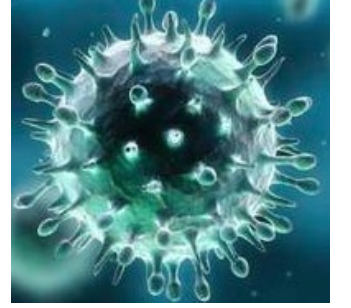


Good sources of information



- WHO
[who.int/emergencies/diseases/novel-coronavirus-2019](https://www.who.int/emergencies/diseases/novel-coronavirus-2019)
- CDC
[cdc.gov/coronavirus/2019-nCoV/index.html](https://www.cdc.gov/coronavirus/2019-nCoV/index.html)
- ECDC
ecdc.europa.eu/en/covid-19-pandemic
- Regional health office – Department of epidemiology
khsbrno.cz
- Ministry of Health
koronavirus.mzcr.cz/en
- The New York Times, The Washington Post

Take-home message



- Be smart
 - Use relevant sources of information
- Look after yourself and others
- Stay as healthy as possible
 - Including vaccination for preventable diseases
 - eg. flu
- Keep relevant preventive precautions
- Support your local environmental chains



Thank you very much for your
attention.

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