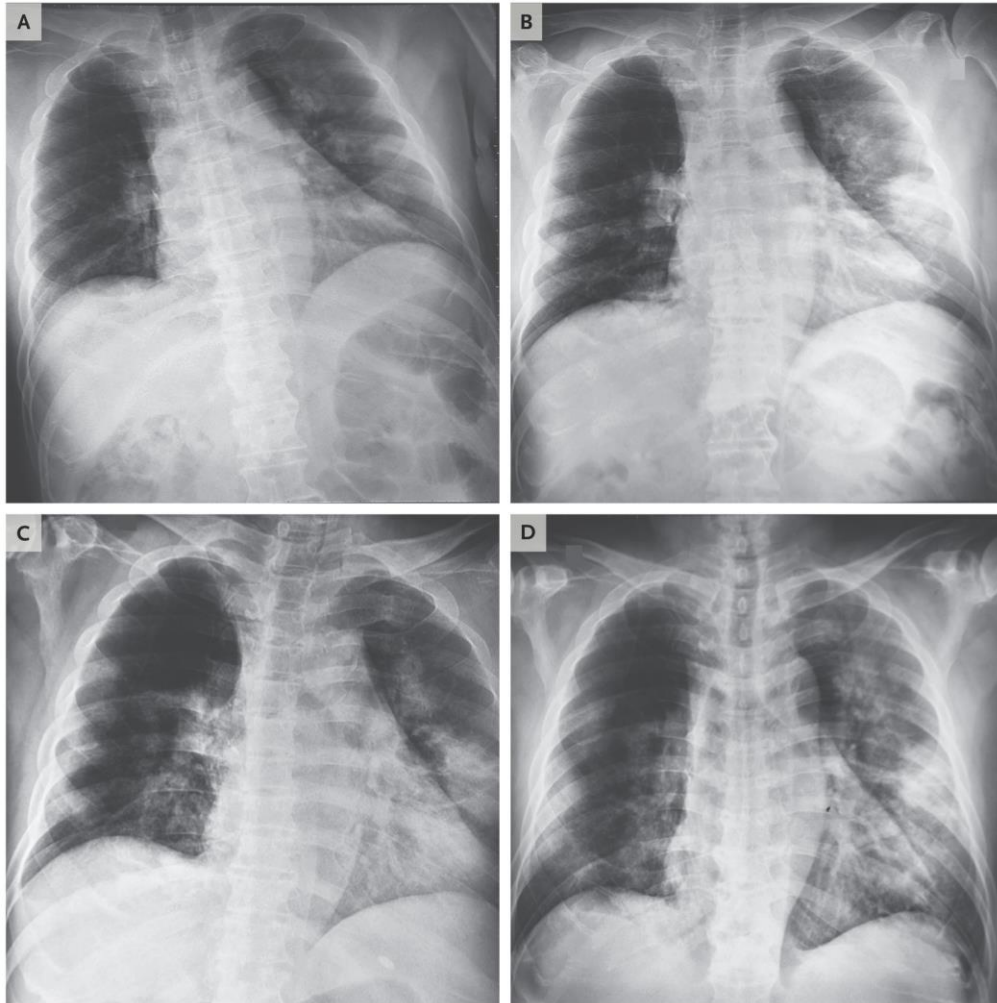
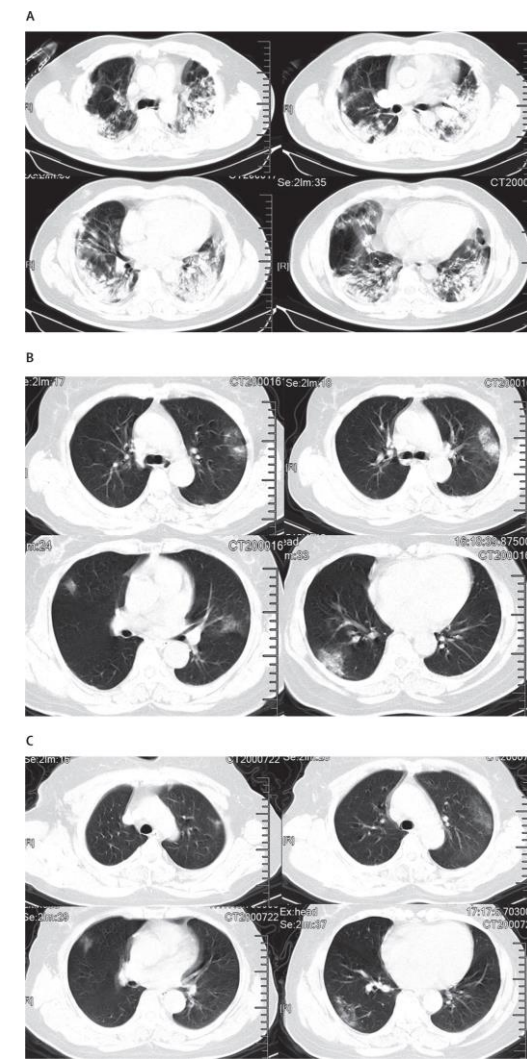
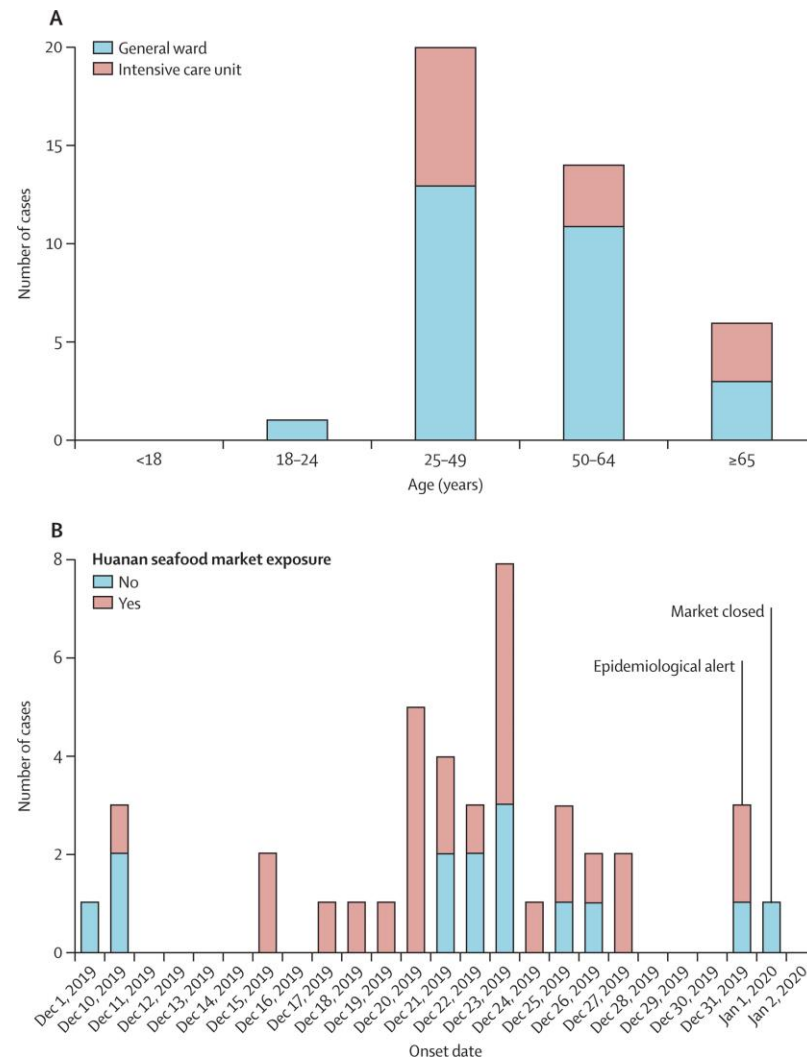


# Immunsvær til COVID-19

**Rebecca Cox**



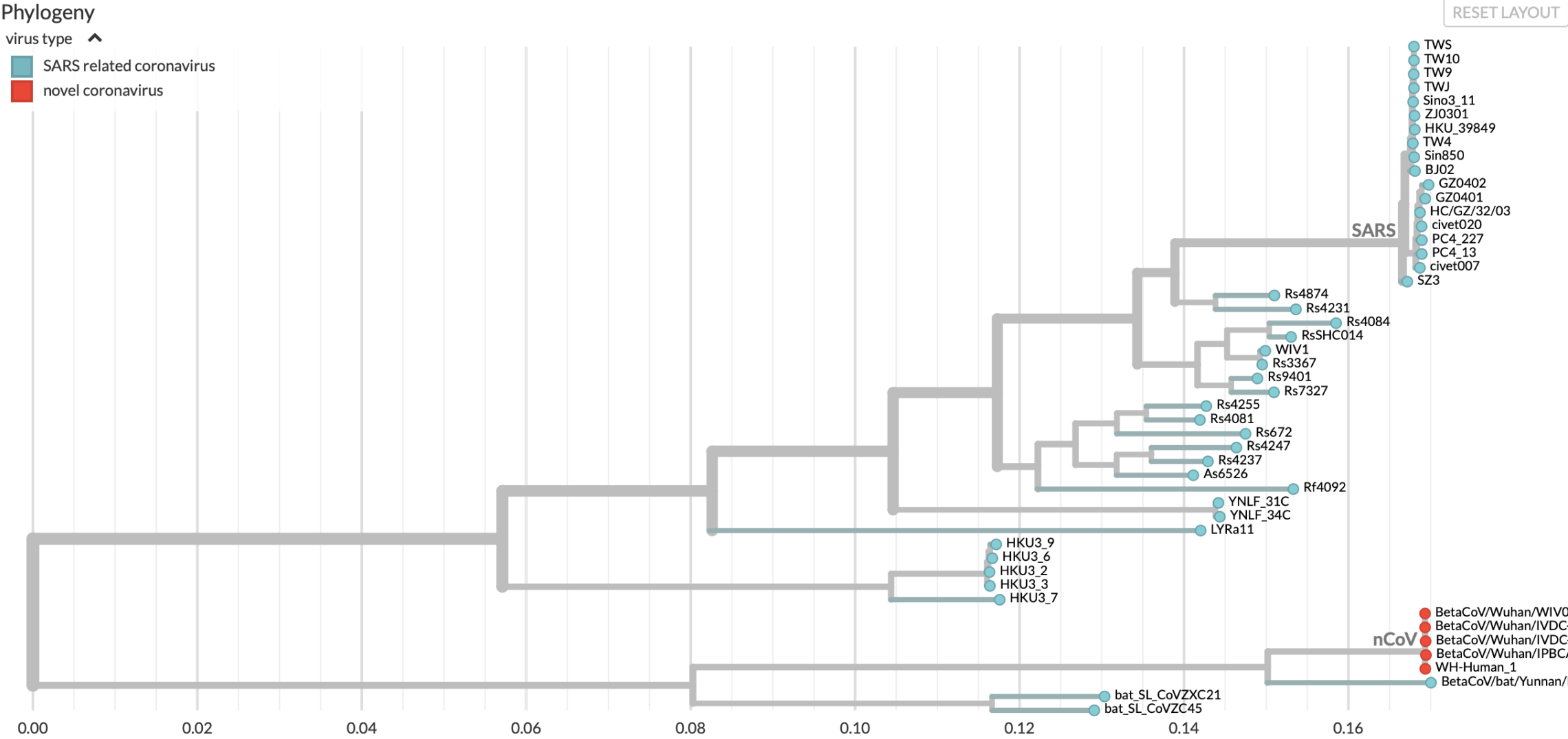




The Lancet



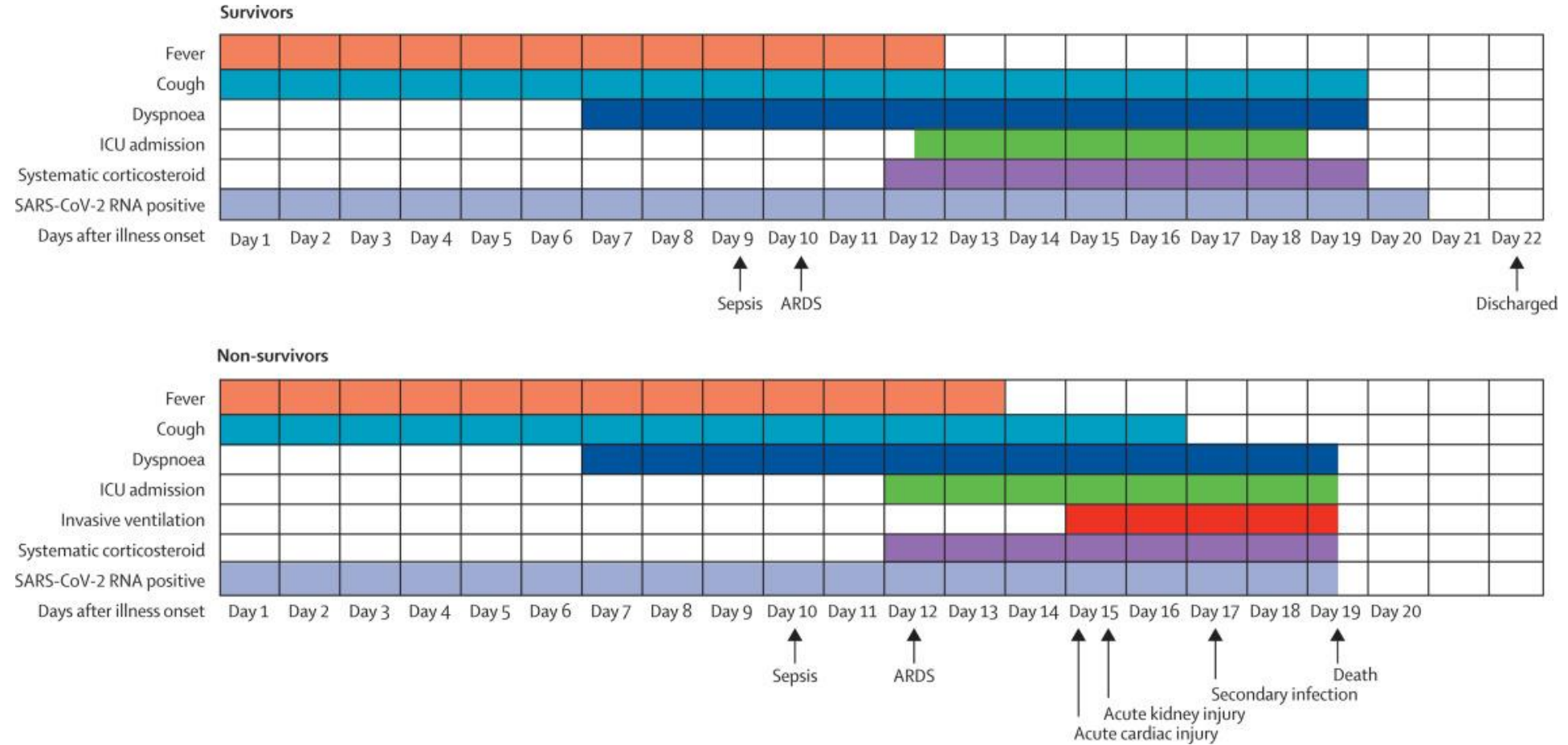
# SARS-COV-2 is related to SARS virus







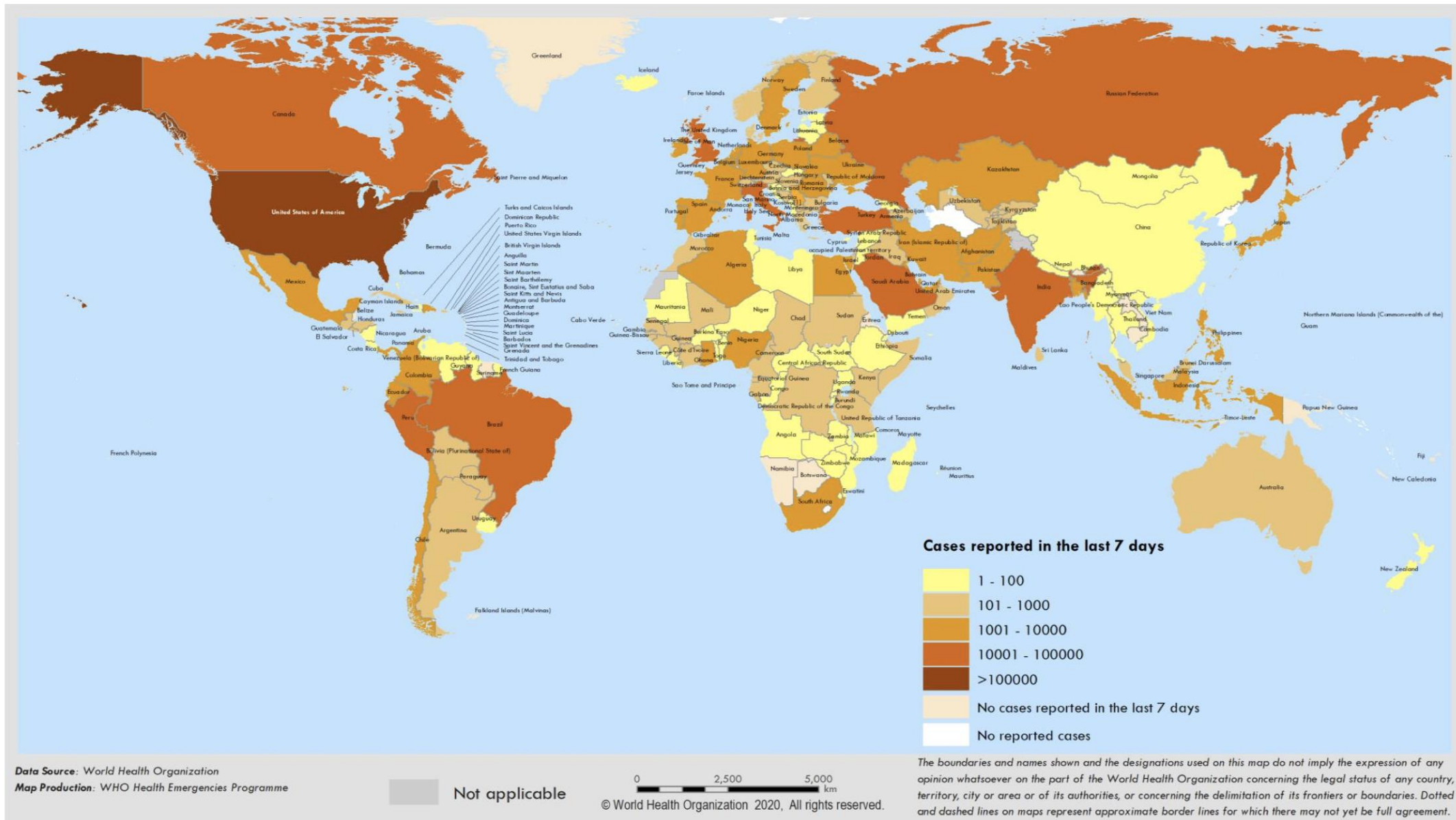
# Clinical picture





# Surveillance

Figure 1. Number of confirmed COVID-19 cases reported in the last seven days by country, territory or area, 30 April to 6 May\*\*



Daily  
cases

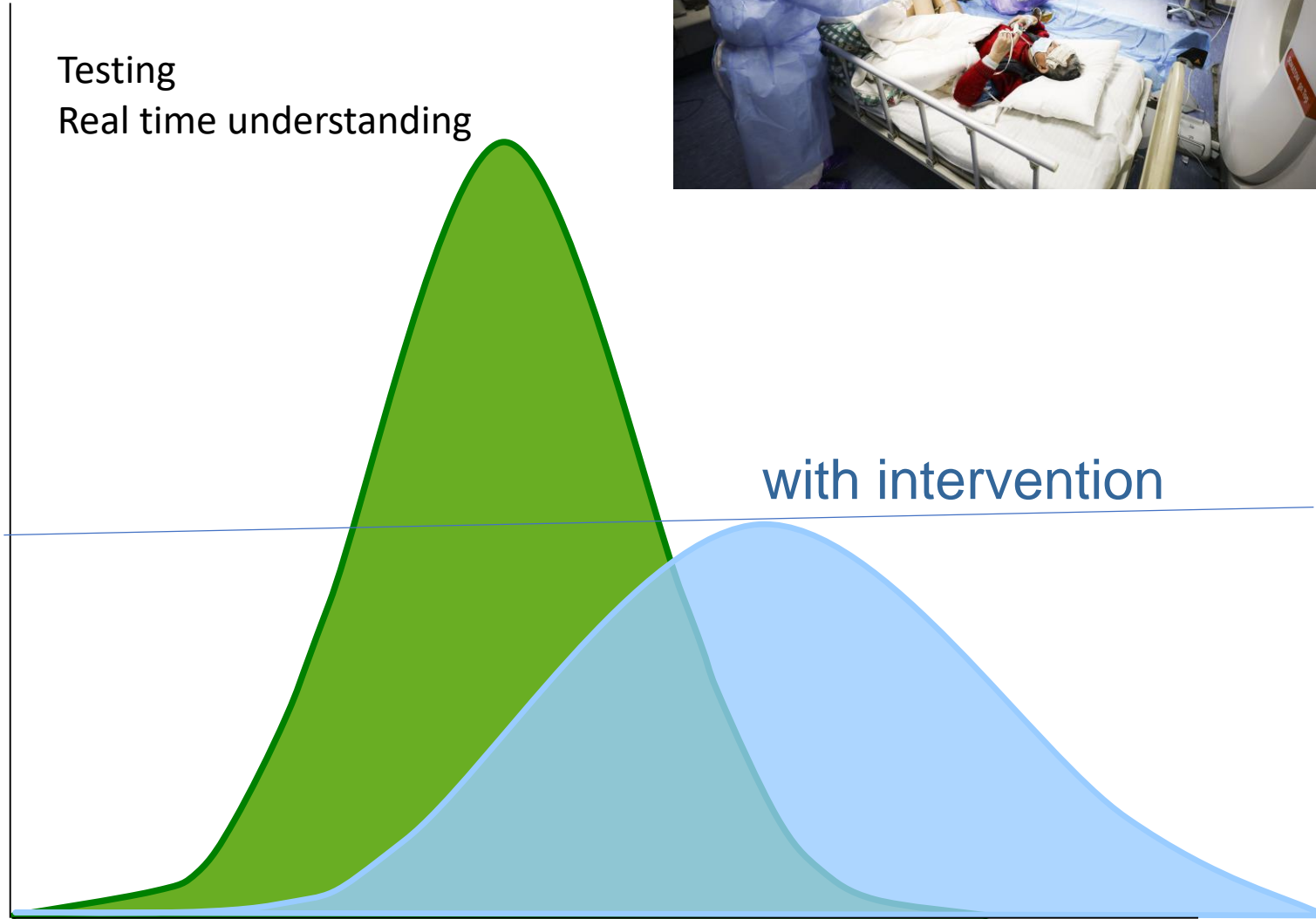
Testing  
Real time understanding



with intervention

Health capacity

Days since first case





# Chart 4: Coronavirus Cases per Country

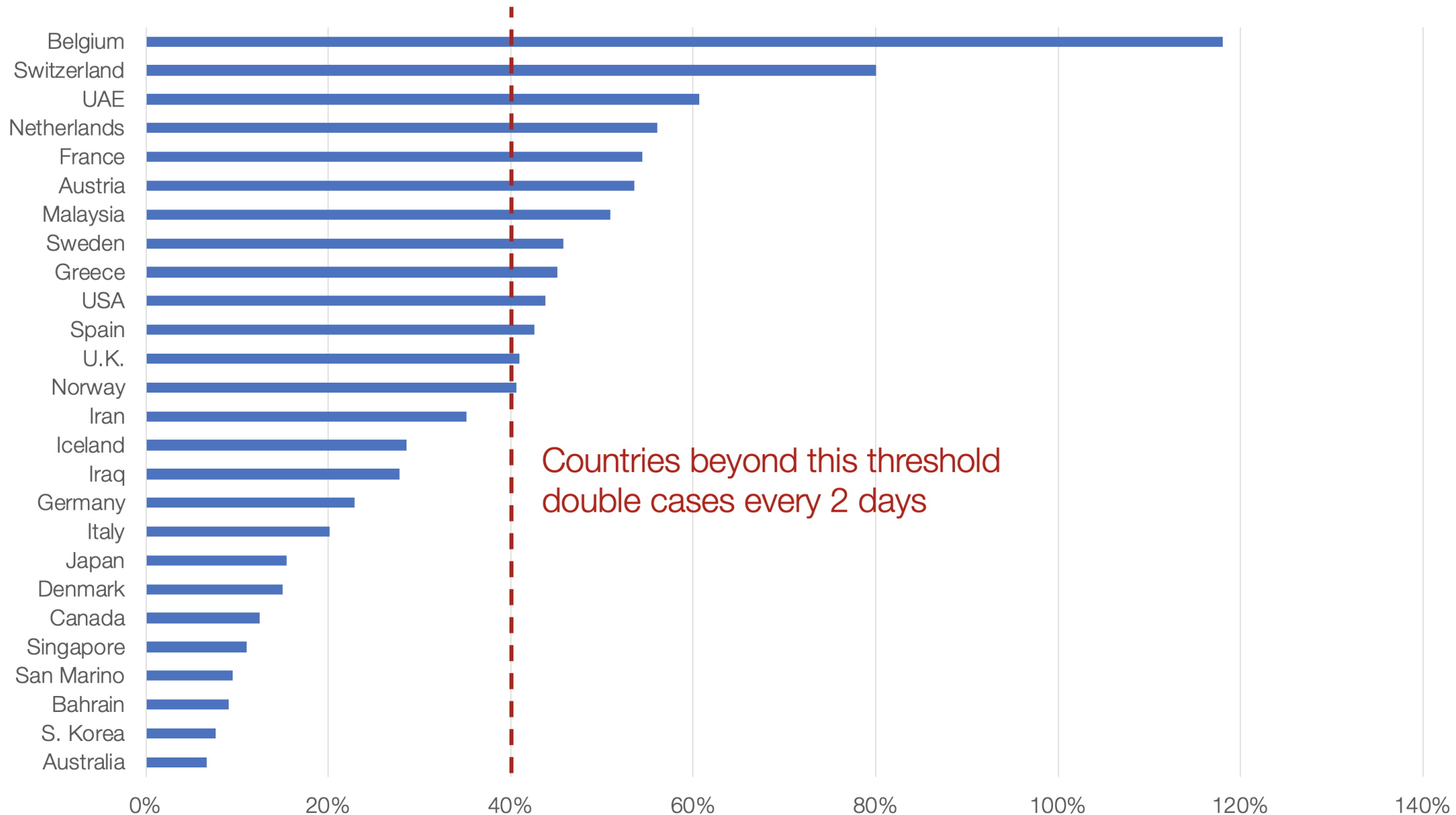
(Excluding China, South Korea, Italy, Iran)



Source: Tomas Pueyo analysis from primary data from Github:

[https://github.com/CSSEGISandData/COVID-19/blob/master/csse\\_covid\\_19\\_data/csse\\_covid\\_19\\_time\\_series/time\\_series\\_19-covid-Confirmed.csv](https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv)

Chart 5: Daily Growth Rate of Cases between 3/5 and 3/6

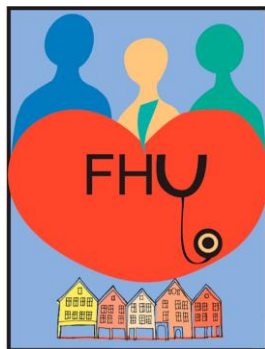


Source: Tomas Pueyo analysis from primary data from worldometer  
Only includes countries that have >20 cases and >5% growth rate

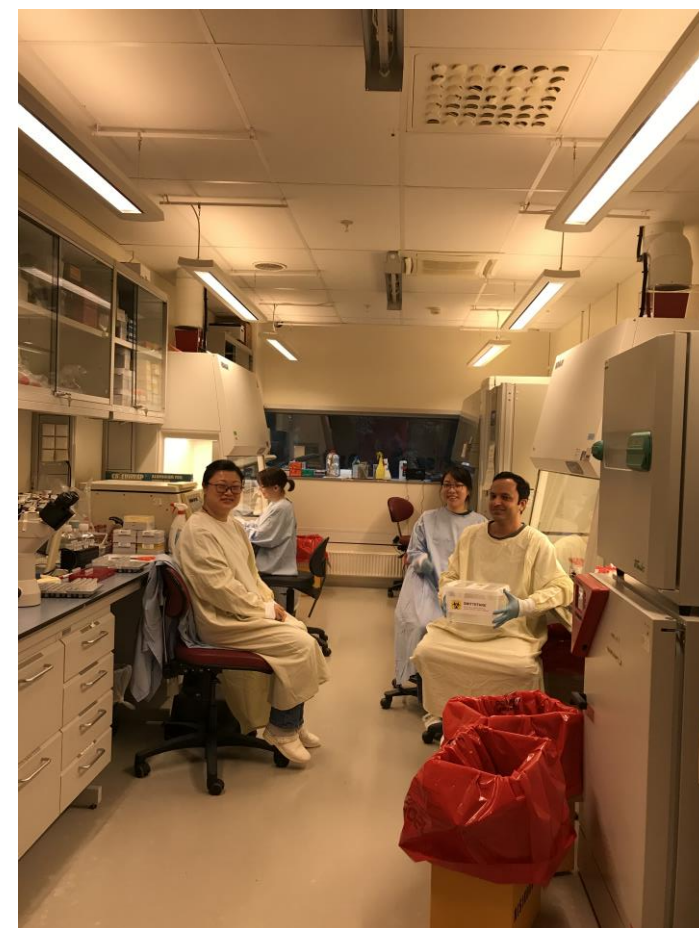
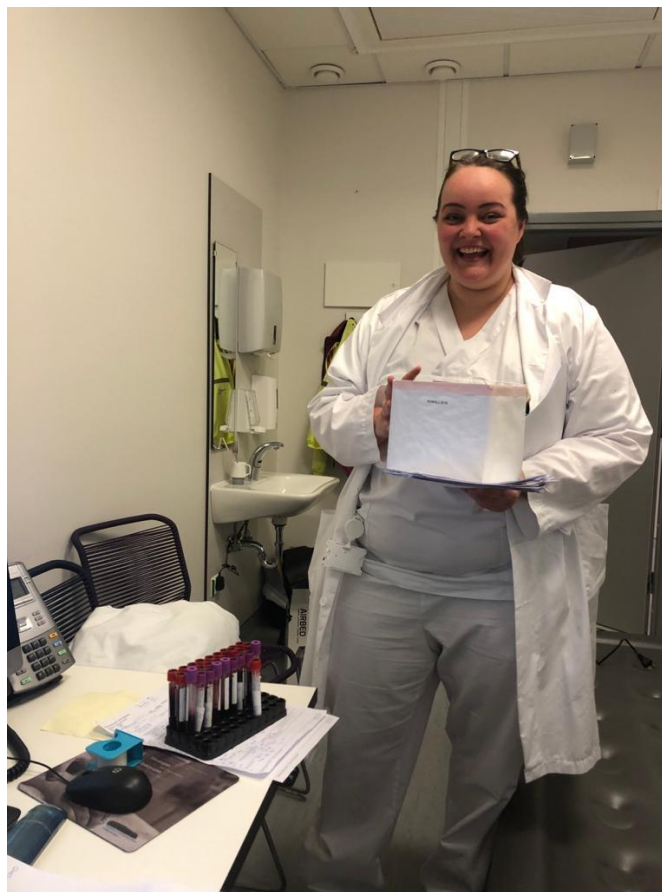




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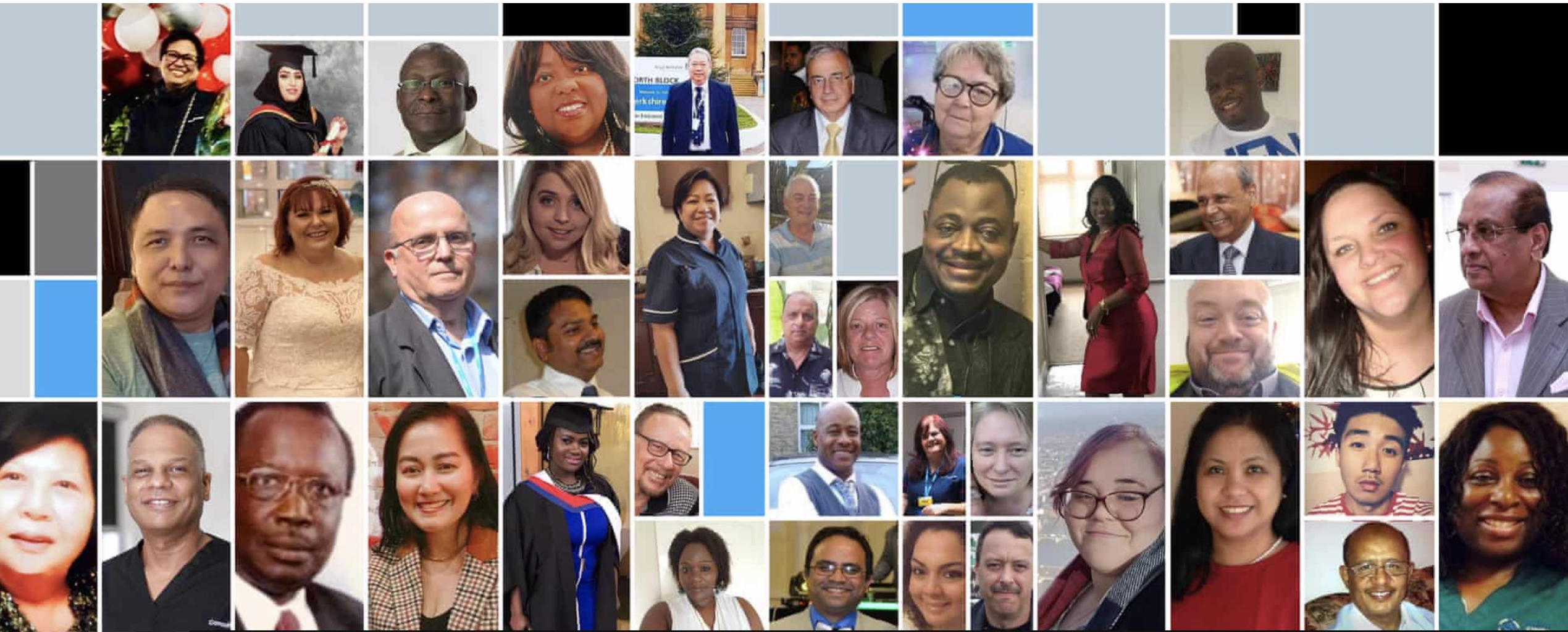




Li Wenliang died at 34 years old in Wuhan







**Doctors, nurses, porters, volunteers:  
the UK health workers who have died  
from Covid-19**

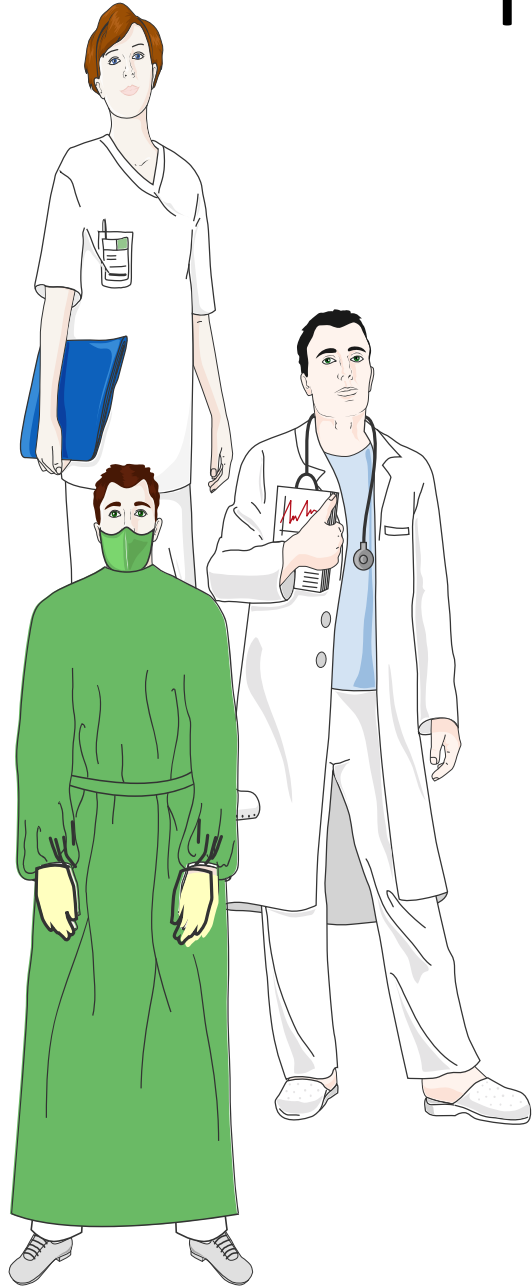


# Healthcare workers

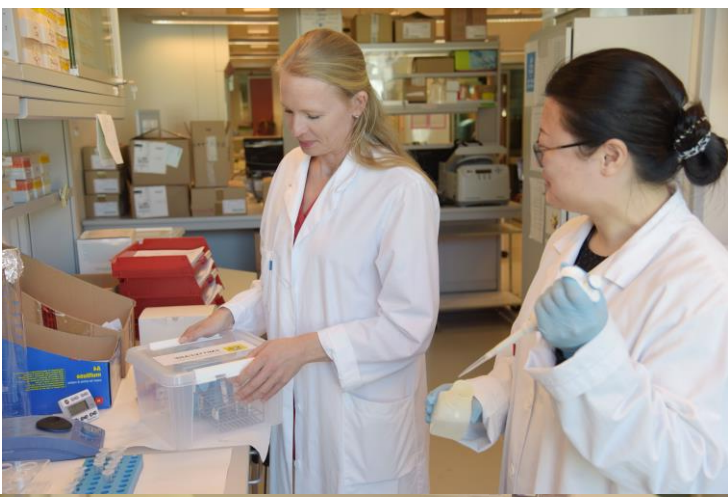


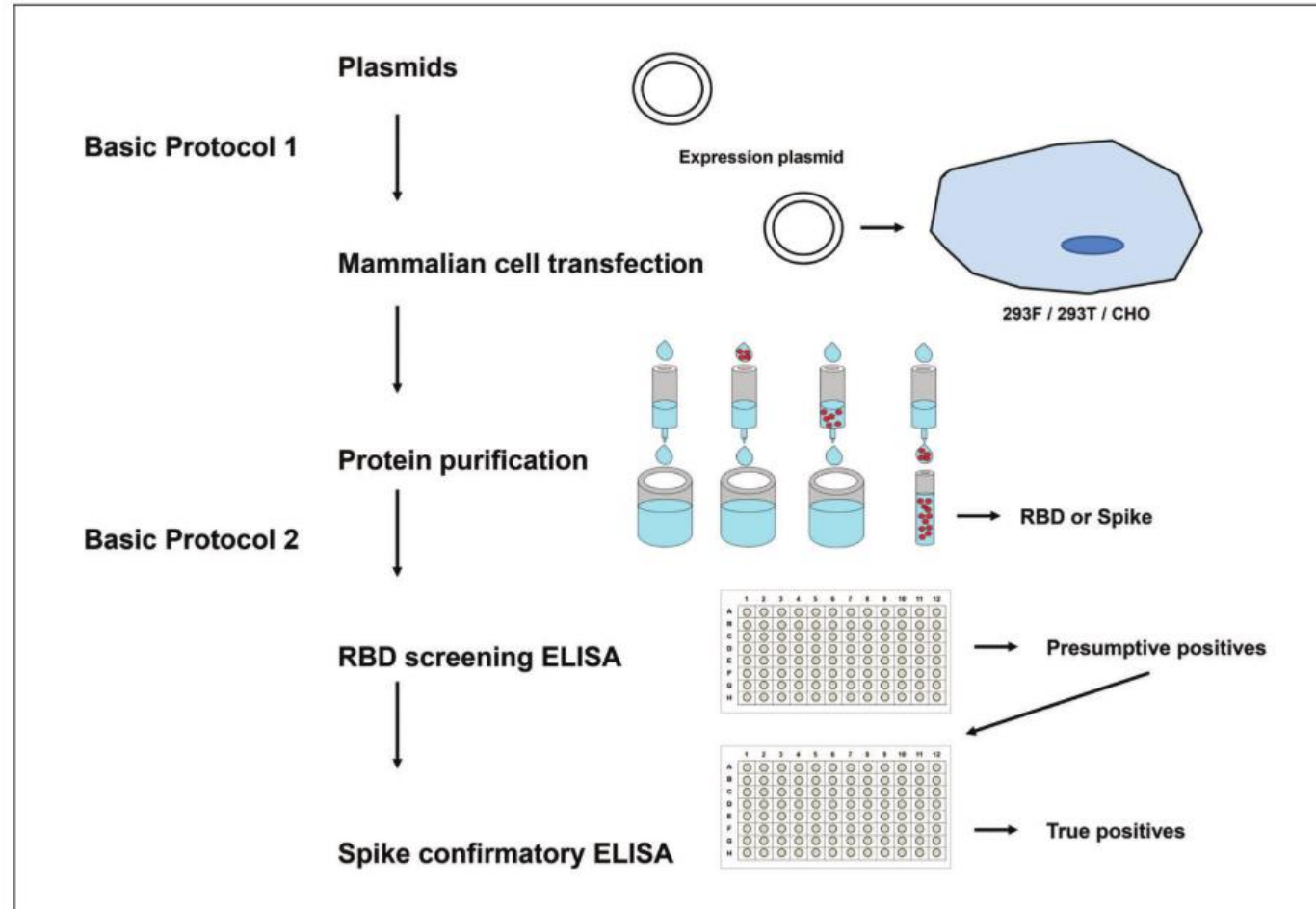
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Exposure history  
Blood samples for Seroconversion  
Contact if symptoms



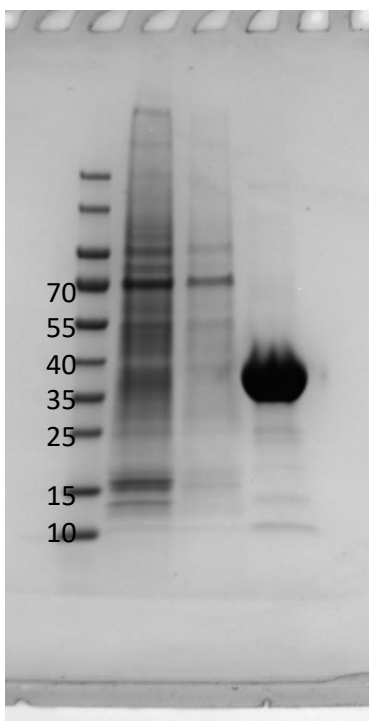




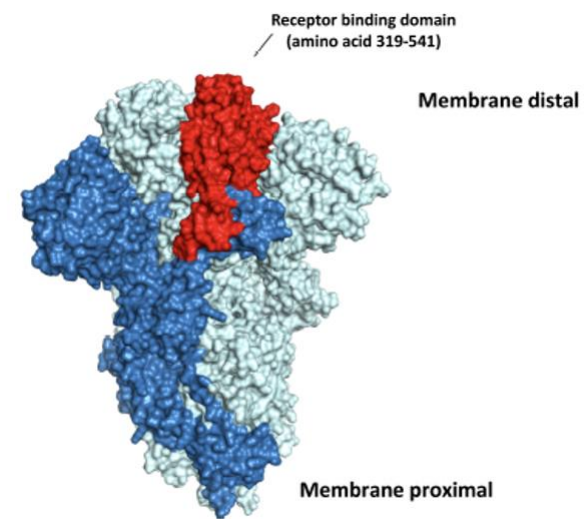
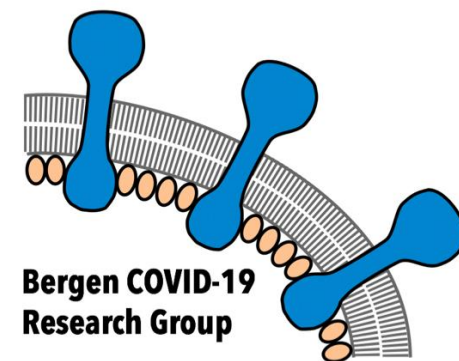
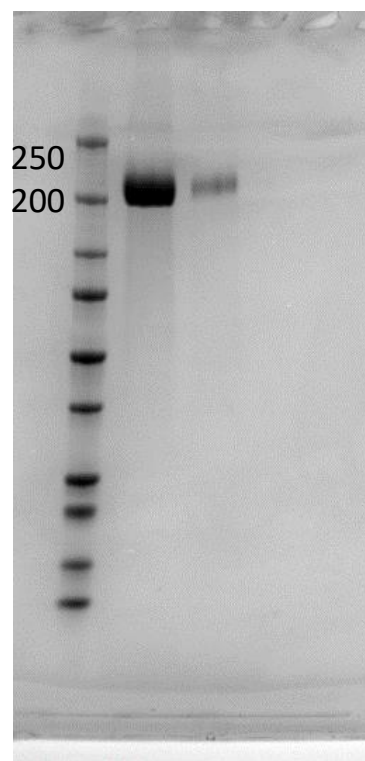


**Figure 1** Graphical protocol overview.

# RBD

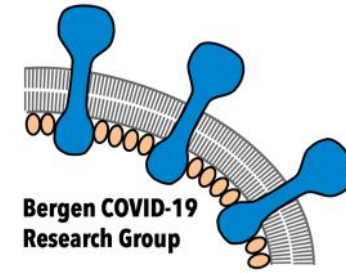


# S-proteini



Influensasenteret



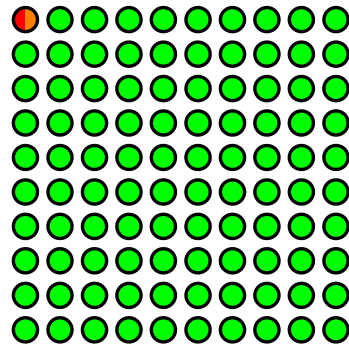


# HCW SCREENING

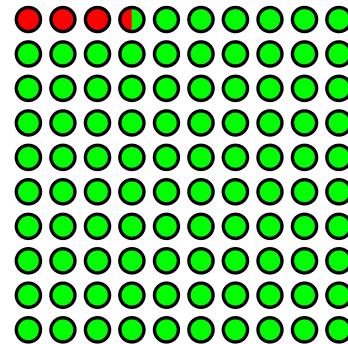
T1

T2

- Positive
- Borderline
- Negative



Total=613



Total=27

Karl A. Brokstad



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# COVID-19 in Bergen



Bergen Legevakt



**COVID +**



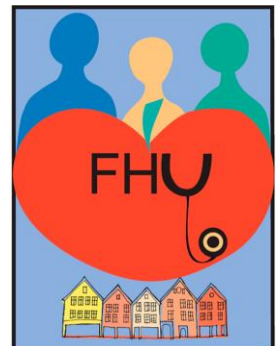
**COVID –**

Probable or possible cases  
(Family members of COVID+ cases)

Hospitalized Patients



**COVID-19 ØHD**  
Regular ward



|  | Influenza 1957       | Influenza 1968   | Influenza 2009 | Influenza 1977–8 | COVID-19,<br>Hubei 2020 |
|--|----------------------|------------------|----------------|------------------|-------------------------|
| Community<br>attack rate<br>confirmed<br>cases   | 18.5–26.8%           | 15%              | 17,5           | 2.2–31%          | < 2%                    |
| Secondary<br>household<br>contact attack<br>rate | 8.4–23% <sup>a</sup> | 20% <sup>a</sup> | 4–6%           | 16%              | 3–10%                   |

<sup>a</sup>Not laboratory confirmed

<sup>a</sup>Not laboratory confirmed

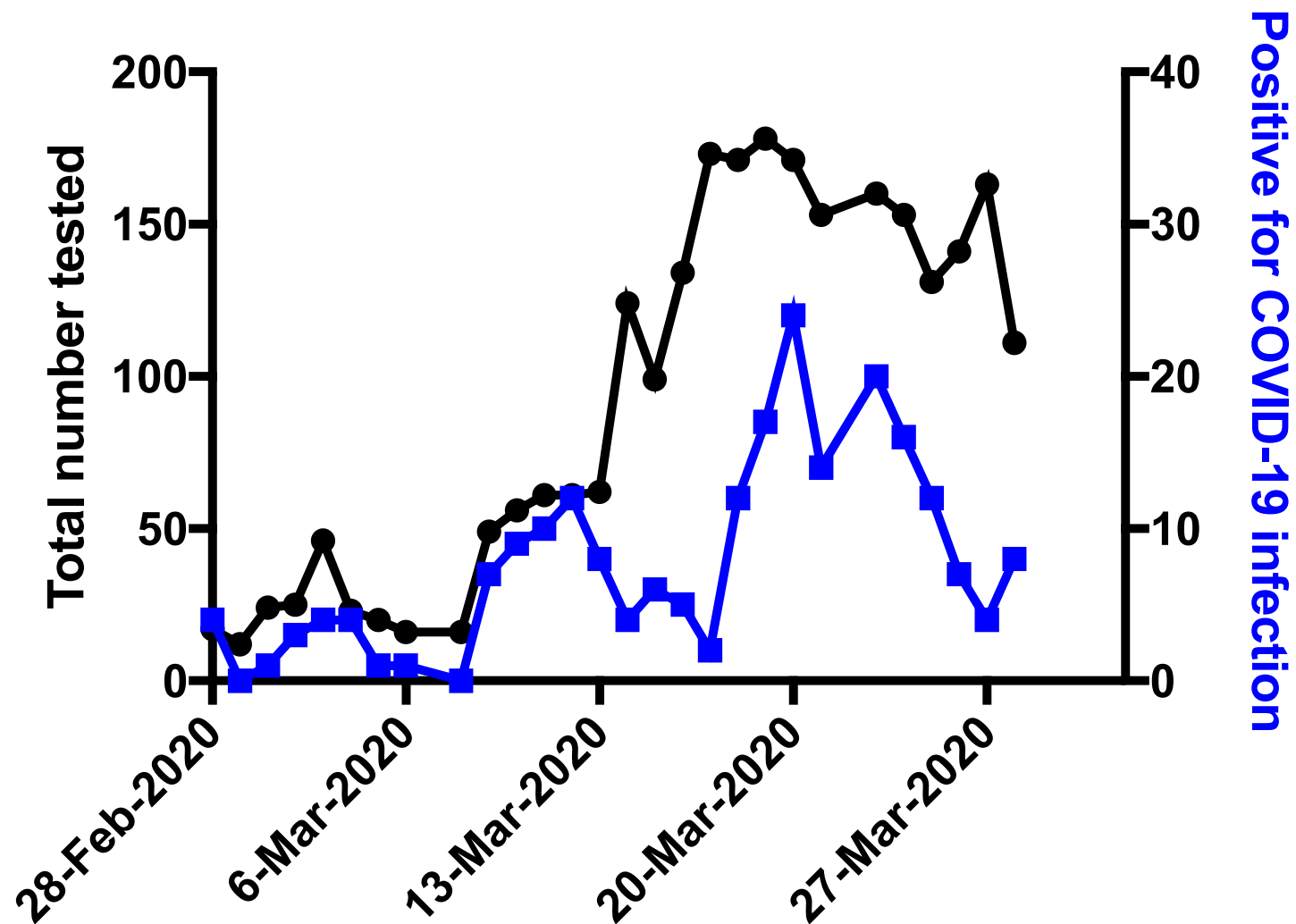
**Table 1** Attack rates of pandemic or seasonal influenza and COVID-19 in Hubei province [1, 2]

Infection (2020) 48:151–153

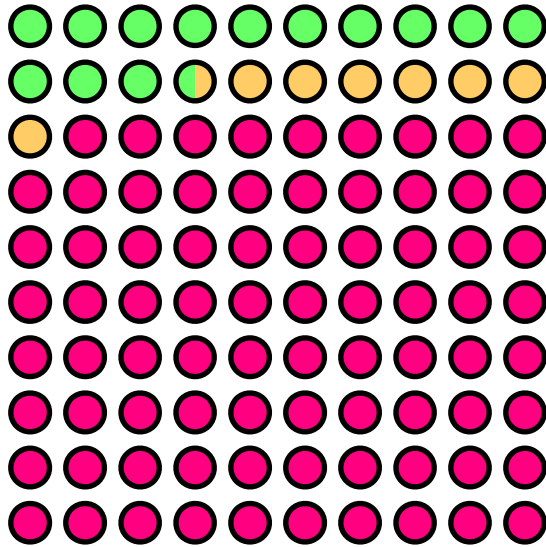
<https://doi.org/10.1007/s15010-020-01409-4>



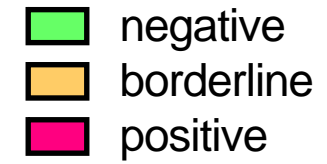
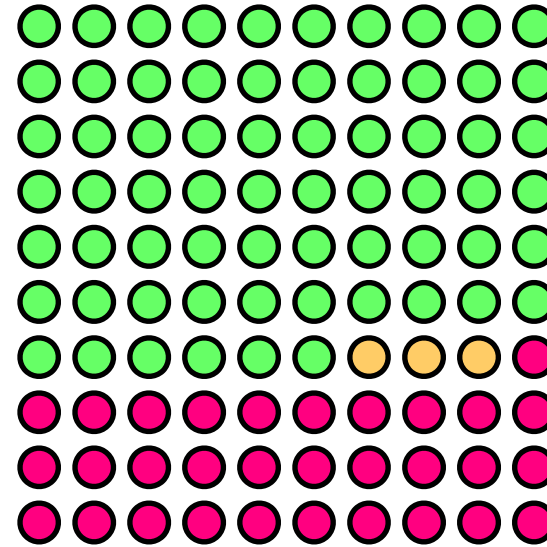
# COVID-19 testing in Bergen



# BLV vs HM

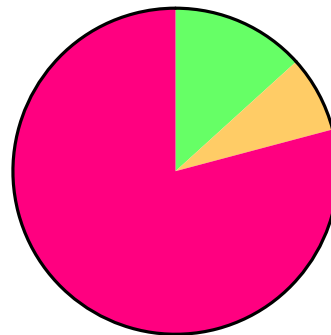


n=158

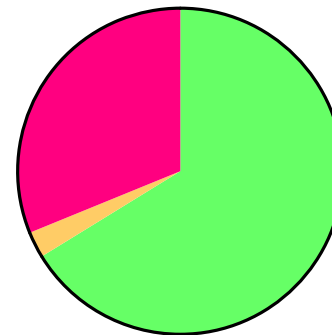


BLV vs HM

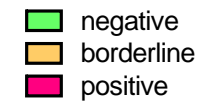
n=77



n=158



n=77





# Hospitalised patients with COVID-19

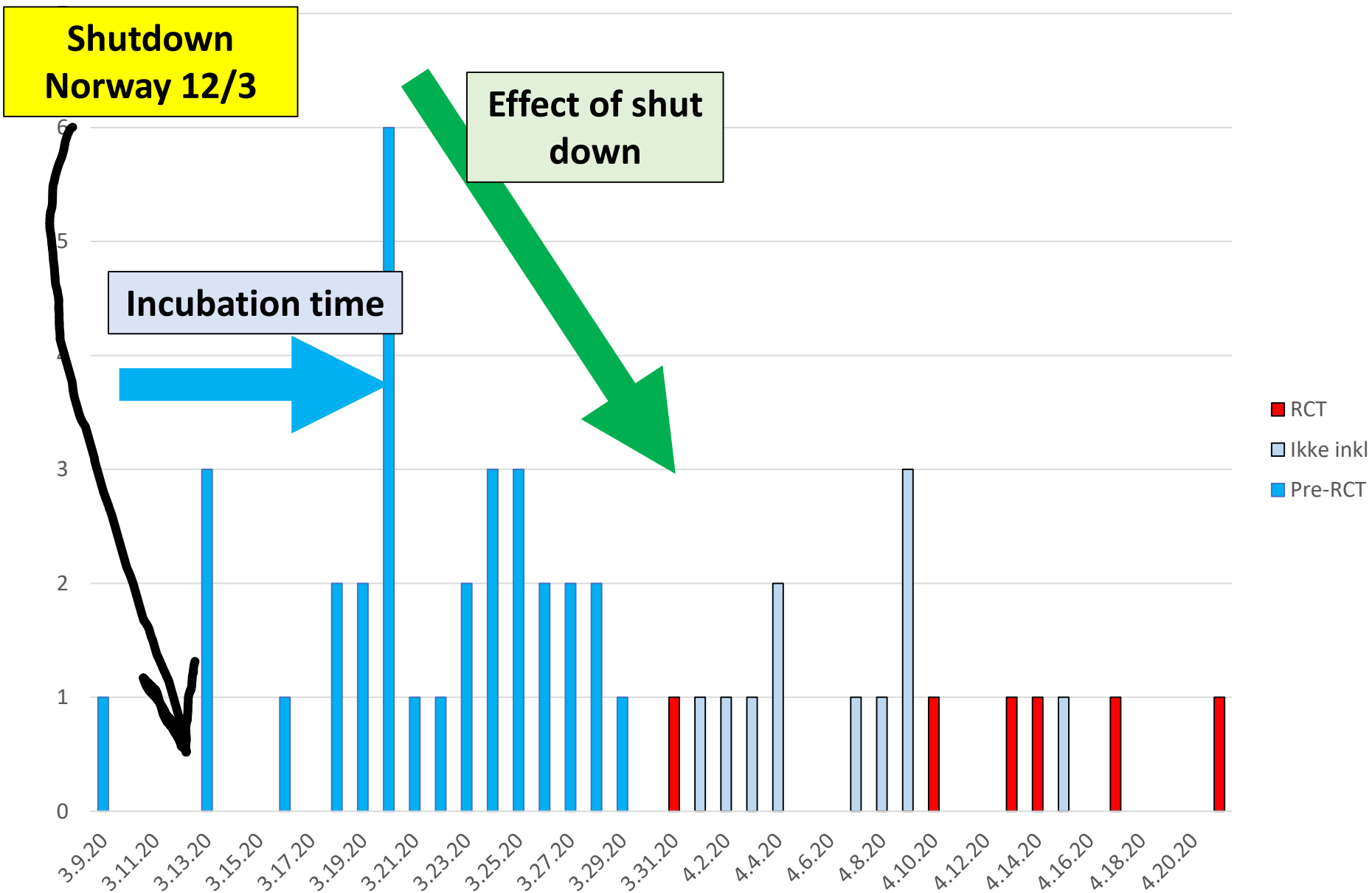


**COVID-19** hospitalized  
Regular ward

**COVID +Hospitalized**  
Intensiv Care



## Covid-pasienter på Haukeland

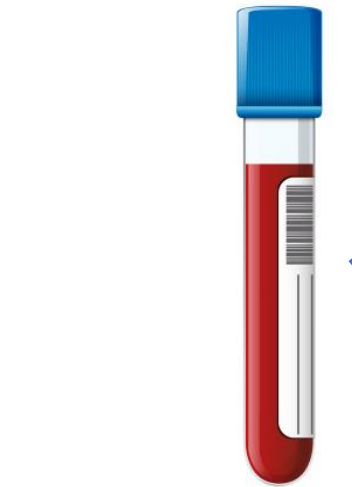




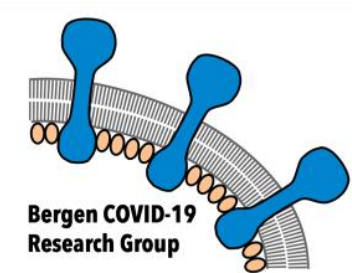
## Convalescent plasma at Haukeland B



TESTING OF BLOOD DONORS  
FLOWCHART (QUALITY TESTING)



Blood donor sample



Screening



Negative



No further testing

Positive and Bordeline

Retesting and characterization

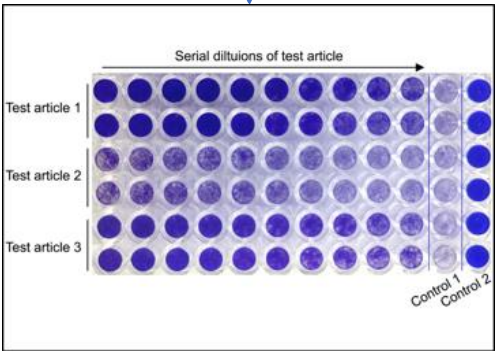


Negative



No further testing

Positive



Further characterization;  
Biological testing and  
virus neutralising assay

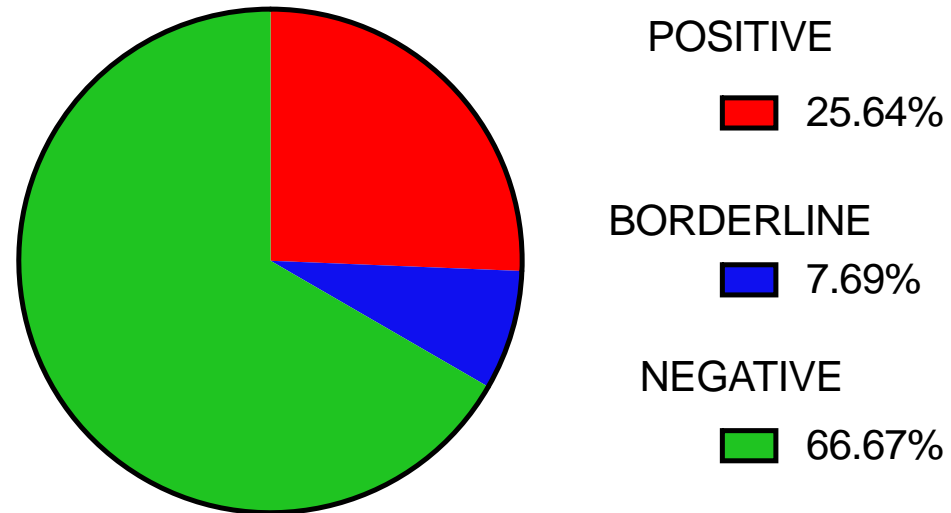
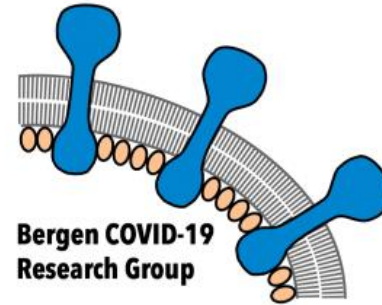


For consideration as  
Plasma donors



Blodgivere - Screening

SARS-CoV2 serologi



Total=39



# Ranking Global Pandemic Preparedness

This pre-COVID-19 report found that no country was truly prepared to manage a pandemic

The Global Health Security Index measures the state of health security around the world. The index is composed of 6 categories:



## PREVENTION

Prevention of the emergence or release of pathogens



## DETECTION AND REPORTING

Early detection and reporting for epidemics of potential international concern



## RAPID RESPONSE

Rapid response to and mitigation of the spread of an epidemic



## HEALTH SYSTEM

Robust health system to treat the sick and protect health workers



## COMPLIANCE WITH GLOBAL NORMS

Commitments to improving national capacity, financing plans, and adhering to global norms

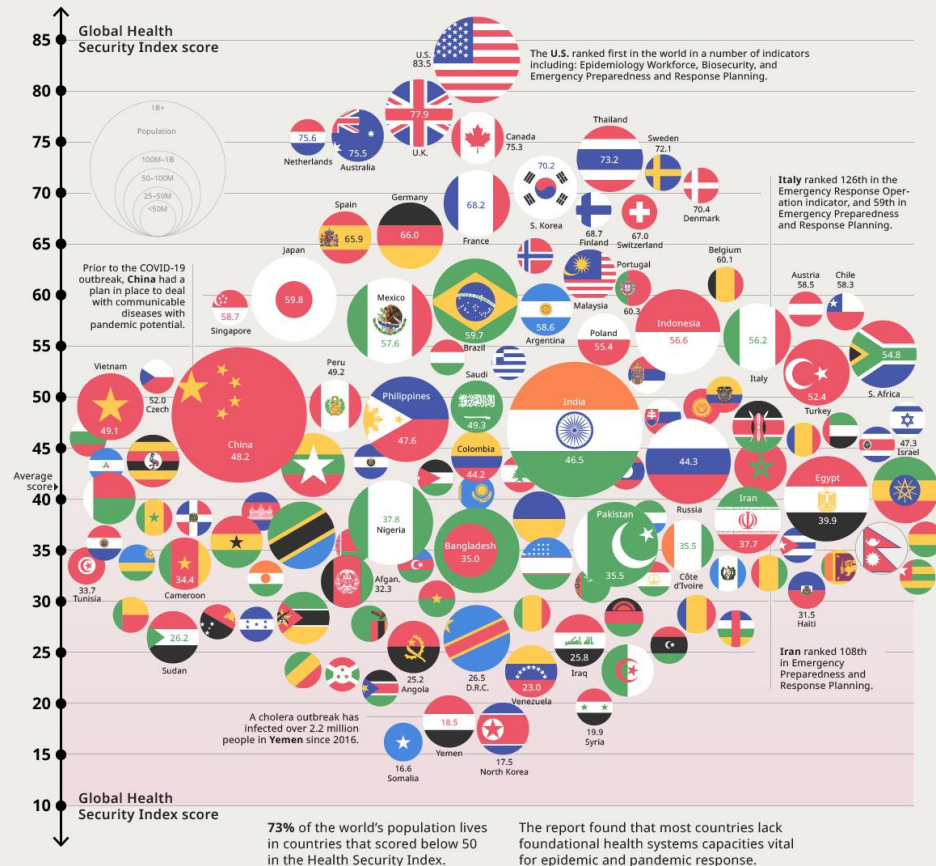


## RISK ENVIRONMENT

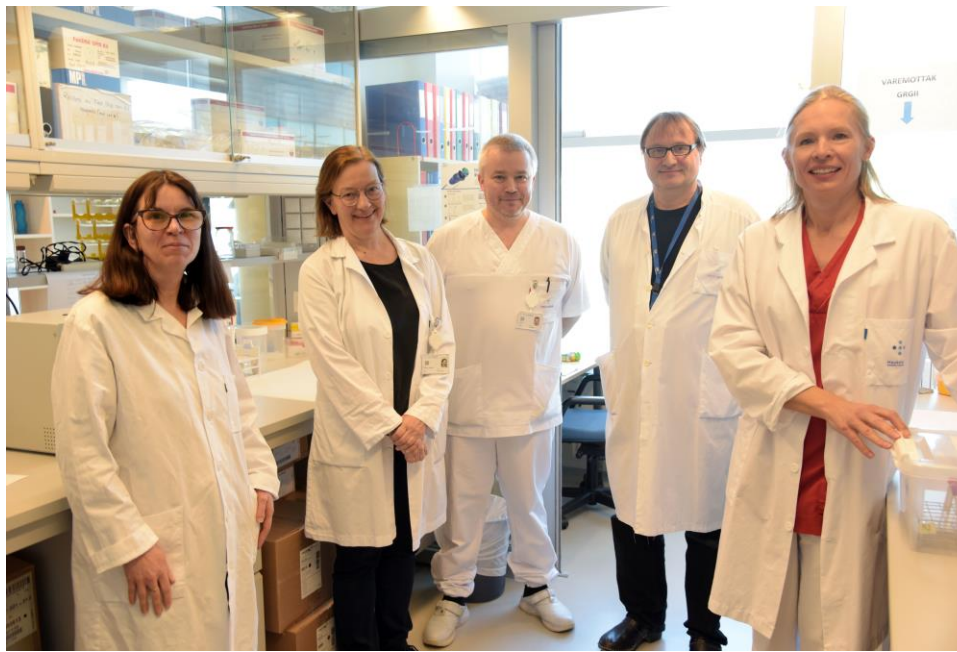
Overall risk environment and country vulnerability to biological threats

Here's how countries scored in terms of health security:

Countries with a population of over 5 million







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