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Short Update 15b
COVID-19
Coronavirus Disease
17th of April 2020

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GLOBALLY

2 121 481
Confirmed cases

543 852 recovered
145 533 deaths

USA

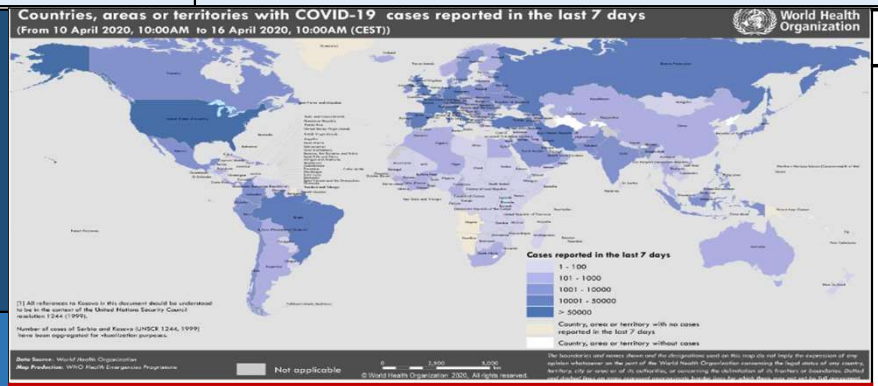
(x2 in 13.0 d ↘)
669 955
confirmed cases
56 236 recovered
33 222 deaths

IRAN

(x2 in 29.5 d →)
77 995
confirmed cases
52 229 recovered
4869 deaths

CANADA

(x2 in 11.0 d ↗)
30 960
confirmed cases
9 729 recovered
1 231 deaths



News:

- No new countries/territories/areas reported cases of COVID-19 since the last update.
- The temporarily halts of funding to the WHO is also criticized in the US itself. The CDC is very productive and works well with WHO, said director of the CDC, Robert Redfield. His organization will continue to do so.
- **WHO:** There is no evidence that oral poliovirus vaccine protects people against infection with COVID-19 virus. A clinical trial is planned in the USA, and WHO will evaluate the evidence when it is available. More information.
- **G20**: A debt moratorium on the world´s poorest countries because of the coronavirus pandemic has been approved. This means support for these countries through a temporary suspension of debt repayments.
- **Roche**: a blood test for diagnostic of COVID-19 will be released. A emergency approval has been requested with the US FDA.
- New WHO strategic preparedness and response plan for COVID-19 find here.
- Find Articles and other materials about COVID-19 at our website https://www.coemed.org/resources/COVID19
- Please use our online observation form to report your lessons learned observations as soon as possible. https://forms.office.com/Pages/ResponsePage.aspx?id=Ada59cF6jUaZ_fZxuxzAAVLXriN_74RJnkC57W6UsgRUQVhUVlk4TUUzM1lER0NDUzE1MzZSSDVOSi4u

Risk Assessment

EUROPE

* The risk of severe disease associated with COVID-19 is currently considered moderate for the general population and very high for populations with defined risk factors associated with elevated risk.
* The risk of increasing community transmission of COVID-19 in the coming weeks is moderate if mitigation measures are in place, and very high if insufficient mitigation measures are in place.
* The risk that the capacity of health and social care will be exceeded in the coming weeks, is considered high with mitigation measures in place and very high if insufficient mitigation measures are in place.

GLOBAL

* The risk for people travelling/resident in affected provinces with ongoing community transmission is currently very high.

EUROPE

1 033 973
confirmed cases
281 406 recovered
93 867 deaths

SPAIN

(x2 in 26.5 d ↘)
184 948
confirmed cases
74 797 recovered
19 315 deaths

ITALY

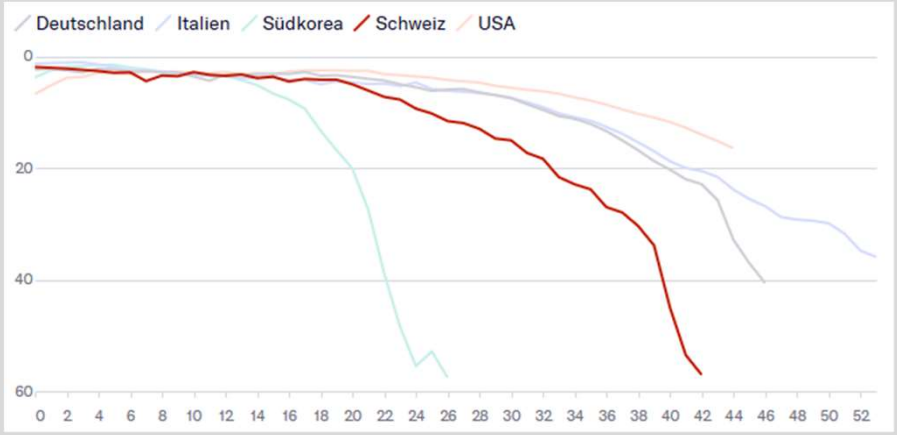
(x2 in 30 d ↘)
168 941
confirmed cases
40 164 recovered
22 170 deaths

GERMANY

(x2 in 29.0 d ↘)
137 698
confirmed cases
76 881 recovered
4 052 deaths

Situation in Europe

EU Commission chief Ursula von der Leyen will present her exit proposals from the corona requirements today. In a previously published joint recommendation with EU Council leader Charles Michel, she announced that the 27 EU member states should jointly define criteria for relaxing restrictions on citizens and the economy. Without a vote, there is a risk of negative effects on other EU countries and political conflicts.
"Respect and solidarity between member states remain essential," the paper said. It speaks of three essential prerequisites for the start of the opening: a noticeable slowdown in the spread of the virus, sufficient capacities in heath systems and the possibility of effectively monitoring the spread of the virus, for example with large-scale test series.



Under 4 days: increase fast and unchecked
4-8 days: moderate and unchecked
8-30 days: unchecked
More than 30 days: low or stopped

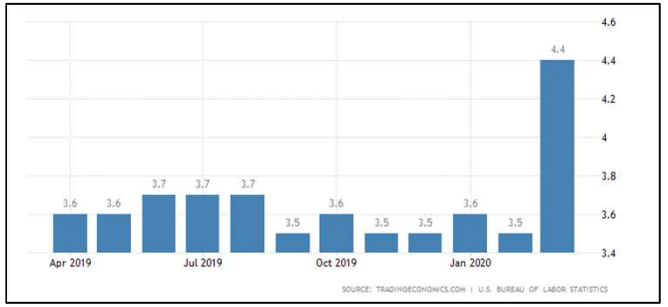
Days since 100 case

The graph shows the doubling of cases in a 7 days rolling beginning from day 1 after min 100 cases.
The number of cases in CHE now doubles approximately every 57 days, the numbers in Italy and Germany doubled in around 20 to 23 days. KOR showed the fasted decline. South Korea carried out a comparatively large number of tests early on in order to be able to understand the distribution precisely. In addition, infected people were strictly isolated.
Source: https://www.nzz.ch/panorama/die-wichtigsten-grafiken-zum-coronavirus-ld.1542774

Global Situation

Impressive: 99-year-old Briton Tom Moore wanted to collect £ 1,000 with the rollator for the much-criticized UK health service NHS: it has grown to 13 million.

- **IRA**: The IRN Parliamentary Research Centre published an assessment that the number of cases was about 10 times higher than currently reported. The true death toll is likely to be 80 percent higher than the official one. Based on this, the IRN would be the most affected country in the worldwide COVID-19 comparison. With the announced relaxation of the containment measures by the IRN government, a further wave of infections in IRN and its neighbouring countries can be expected.
- **CHN**: Approval of additional COVID-19 vaccines for clinical studies. CHN is trying very hard to be the first country to approve a vaccine. The city of Wuhan has surprisingly corrected the number of coronavirus deaths by around 50 percent. Instead of the 2579 dead so far, 3869 people are said to have died as a result of the virus.
- **IND**: Government publishes data on infected people. Compared to a population of 270 million people, the number of cases is remarkably low. Very high number of unreported cases (factor 10) likely.
- **UKR**: The number of cases continues to increase while the spreading rate slows down. The doubling rate is currently 5-6 days. Small capacities in the largely unorganized health care system meet an overall low test density. The situation in the so-called "People's Republics" and in the Crimea remains opaque. A high number of unreported cases is suspected.



Unemployment rate USA by March

USA: Over five million Americans newly registered unemployed within a week. This was announced by the Department of Labour in Washington. As a result, more than 20 million people in the United States lost their jobs within four weeks.

Source: https://tradingeconomics.com/united-states/unemployment-rate

Topic in focus: Low CFR in Germany (DEU)

Intro: As the number of cases and fatalities is still rising almost all countries put mitigation measures in place and restricted public life. The alarming trend in reported number of new cases and death starts to slow down but there are still massive differences between the countries' CFRs. Especially the very low CFR in DEU is widely discussed. Even though no clear evidence has been found/published yet, some theories appear reasonable.

Situation: As of 170700Bapr20 a total of 137,698 cases and 4,052 deaths have been reported in DEU (CFR = 2.94%). At the same time ITA (168,941 cases, 22,170 deaths, CFR = 13,12%), FRA (108,847 cases, 17,920 deaths, CFR = 16,46%) and ESP (184,948 cases, 19,315 deaths, CFR = 10,44%) reported remarkably higher CFRs.

Reasons: At the moment none of the theories presented below has proofed to be the underlying reason and it is unlikely that there is a single underlying reason for the difference in CFRs between DEU and the other European countries named above. But within the scientific community the following aspects are discussed to be drivers of Germany's striking performance in keeping CFR low.

Testing: DEU was applauded for its large **testing capacity** which originates from a widespread network of independent laboratories. Approx. two weeks ago it was estimated that DEU is capable of analysing about 300,000 to 500,000 tests per week (efforts on ramping up this capacity are undertaken, on 9th Apr RKI published a report estimating a capacity of 517,575 to 724,505 test per week for calendar week 13 within the laboratories voluntarily reporting their capacities). Other measures (total number of tests and tests per 1,000 people) show the following:

https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/Ausgaben/15_20.pdf?__blob=publicationFile

Country	Per 1,000	Total	Date of report
GER	20.94	1,728,357	12.04.2020
ITA	19.93	1,178,403	16.04.2020
FRA	7.05	463,662	14.04.2020
ESP	n/a	n/a	n/a

Source: https://ourworldindata.org/covid-testing

In addition to the overall capacity, the **testing regime** is an important factor. Other than e.g. ITA which focused on tests within specific subgroups of the population with a high likelihood of testing positive (e.g. hospitalized people showing symptoms) DEU used another approach and undertook efforts to test contacts of confirmed cases and maintained contact tracing (containment) for as long as possible in order to interrupt chains of transmissions. In addition, ITA conducted so called post-mortem tests to confirm COVID-19 after someone has died. DEU does not conduct such tests but relies on detection of COVID-19 while a patient is still under care/quarantined. If somebody is testing positive for COVID-19 and dies subsequently the death is considered to be a COVID-19 fatality (no distinction is made between "dying of COVID-19" and "dying with COIVD-19"). To what extent this difference in methodology biases the CFR has to be evaluated later on.

- **Number of beds in Intensive Cate Units (ICU) and ventilators.** DEU health-care system is said to be one of the best equipped worldwide. At the start of the pandemic approx. 28,000 ICU beds were available in DEU, in early April it was reported that the number of ICU beds was increased to 40,000 (of which 15,000 to 20,000 were empty). About 30,000 of those ICU beds are estimated to be equipped with ventilators. In DEU about 33.9 ICU beds were available per 100,000 inhabitants according to the DEU federal bureau of statistics. In comparison heavily affected countries in Europe like ESP (9.7 per 100,000) and ITA (8.6 per 100,000) are equipped rather poorly.
- **Age distribution**: The average age of an infected in DEU is lower compared to other countries. With old age being an important risk factor for a sever or terminal course of a COVID-19 infection this can be seen as a protective factor. The reason for the unequal age distribution is not entirely clear. Currently the impact of family structures (in DEU it is rather uncommon that many generations/large families are living together) and other social habits (e.g. kissing as a form of greeting) are discussed.
- **Course of the Epidemic**: It has often been pointed out that DEU is some weeks behind ITA's course of the epidemic and a rise in cases/deaths is yet to come. Currently it looks like DEU reaction to the pandemic (social/physical distancing, ramping up the number of ICU beds etc.) helped to mitigate the outbreak and prevent a devastating number of fatalities.

Conclusion: Summarizing the above it is likely that a combination of all factors helped DEU with fighting the disease. Especially the huge number of ICU beds and DEU's ability to increase this number in combination with a bespoke testing-capacity and strict social distancing measures are key. How social-demographic aspects (large families living together e.g. in ITA compared to rather small households in DEU, age distribution) and different social habits (e.g. kissing as a form of greeting) impact(ed) the different courses of the pandemic in DEU and the other countries is yet to be determined as well as the exact impact of all factors. https://www.tagesschau.de/inland/coronavirus-intensivbetten-deutschland-101.html

COVID-19 South Korea re-infection

Can you be re-infected after recovering from coronavirus?
Months into the battle against COVID-19, scientists and medical professionals are still struggling to understand the new virus that has sickened over 1 918 138 people worldwide as of the 15th April evening. Especially, when last week South Korea reports of recovered patients testing positive for the virus again have raised more questions about how this pathogen behaves, and whether re-infection is possible because many countries are hoping that infected populations will develop sufficient immunity to prevent a resurgence of the disease.

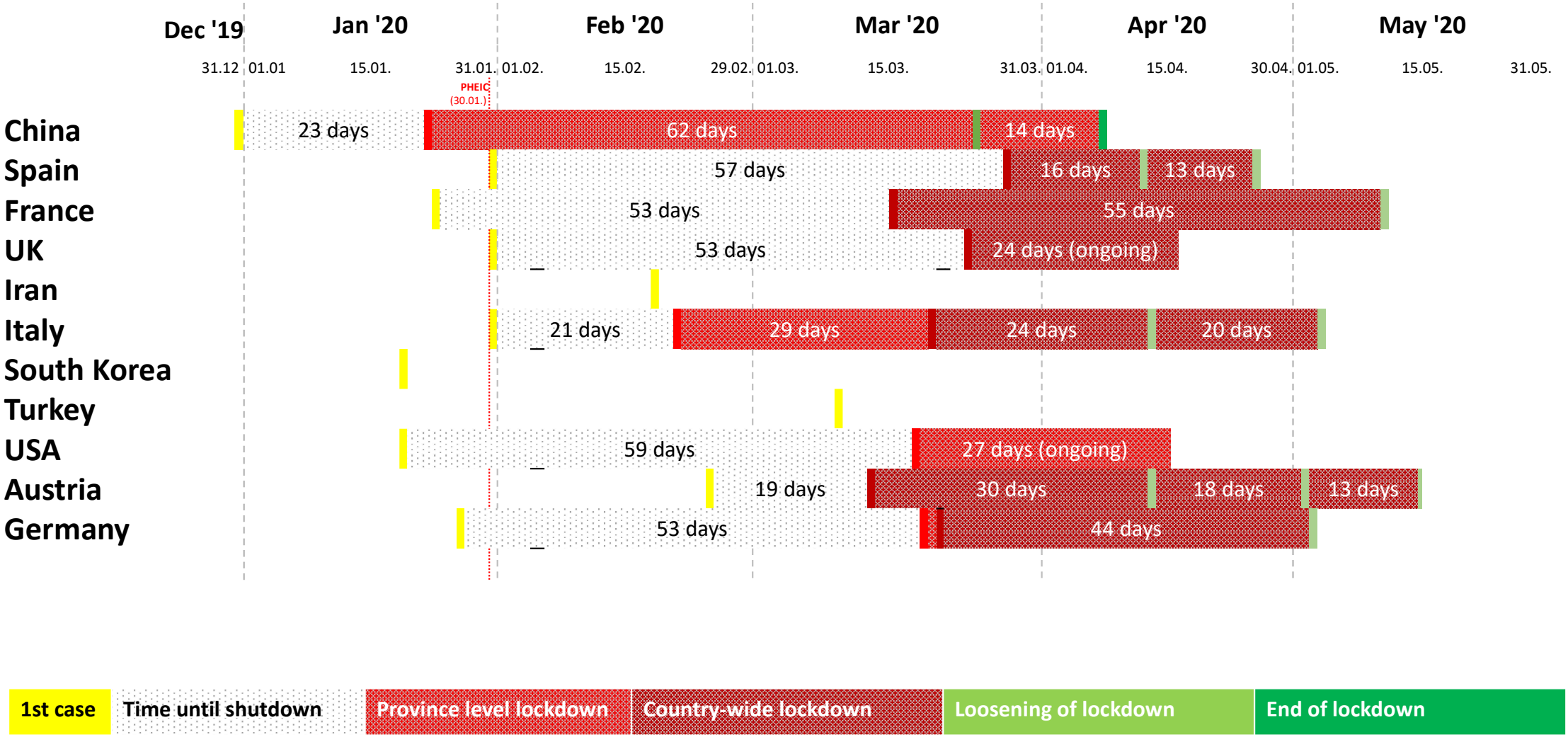
Korea is not the first country to report cases of apparent reinfection. In Guangdong, China, health officials found that 14% of patients retested positive for Covid-19 and at least one died five days after he was discharged and tested negative. In Wuhan, where the pandemic began, the proportion of patients who test positive after testing negative was between 5% and 10%. In Osaka, Japan, a one patient reportedly tested positive for Covid-19 after previously testing negative.
The Korea Centres for Disease Control and Prevention (KCDC) reported 124 "relapsed" cases of Covid-19 on Tuesday 14th April. Officials are still investigating the cause of the apparent relapses. But Jeong Eun-Kyeong, director of the Korea Centers for Disease Control and Prevention (KCDC), has said the virus may have been reactivated rather than the patients being re-infected. Other experts said faulty tests may be playing a role, or remnants of the virus may still be in patients' systems but not be infectious or of danger to the host or others.
The World Health Organization statement on 11th April. WHO is investigating the reports of patients testing positive after being released from treatment. The data could help better understand how long infected patients can shed live virus. But it also said that it is important to make sure health professionals are carrying out proper testing procedures based on the guidelines.
Paul Hunter, an infectious diseases professor at the University of East Anglia, told that he agrees that these cases will not be reinfections, but he does not think these will be reactivations. The most likely explanation is that the clearance samples were false negative. Professor highlighted that conventional coronavirus tests can give the wrong result 20 to 30 per cent of the time. He believes the test the South Korean patients were given before being released from quarantine wrongly showed they had recovered, when they were still infected.

The similar opinion expressed another specialist David Hui, a respiratory medicine expert at the Chinese University of Hong Kong. He said that testing positive after recovery could just mean the tests resulted in a false negative and that the patient is still infected. It maybe because of the quality of the specimen that have been taken and may be because the test was not so sensitive. A positive test after recovery could also be detecting the residual viral RNA that has remained in the body, but not in high enough amounts to cause disease, because viral RNA can last a long time even after the actual virus has been stopped.

What we know about COVID-19 immunity?
With other coronavirus strains the antibodies that patients produce during infection give them immunity to the specific virus for months or even years, but researchers are still figuring out if and how that works with COVID-19.
Experts explain the body's antibody response, triggered by the onset of a virus, means it is unlikely that patients who have recovered from COVID-19 can get re-infected so soon after contracting the virus. Antibodies are normally produced in a patient's body around seven to 10 days after the initial onset of a virus, says Vineet Menachery, a virologist at the University of Texas Medical Branch.
There hasn't been enough time to research COVID-19 in order to determine whether patients who recover from COVID-19 are immune to the disease—and if so, how long the immunity will last. However, according to Vineet Menachery estimation that COVID-19 antibodies can remain in a patient's system for two to three years, based on what's known about other coronaviruses, but it's too early to know for certain. The degree of immunity could also differ from person to person depending on the strength of the patient's antibody response. Younger, healthier people will likely generate a more robust antibody response, giving them more protection against the virus in future.
Therefore, it is expected that if patient has antibodies that neutralize the virus, he will have immunity, but how long the antibodies last is still not clear.

https://www.thejakartapost.com/news/2020/04/13/south-korea-reports-more-recovered-coronavirus-patients-testing-positive-again.html

Time between 1st case, implementation of a lockdown and loosening of lockdown



When to use a mask

To wear or not to wear? That has become the key question during the pandemic as the face mask has become a symbol of our changed lives under coronavirus.

Key to remember, say WHO officials, is that coronavirus is spread by droplets and not airborne transmission. “The most likely person to become a case is someone who has been in significant contact of another case”.

WHO still don´t recommend mask wearing by the general public. “We don’t generally recommend the wearing of masks in public by otherwise well individuals because it has not up to now been associated with any particular benefit,”.

The ECDC published a paper as of 6 April about „Using face masks in the community. Reducing COVID-19 transmission from potentially asymptomatic or pre-symptomatic people through the use of face masks”.

The scope of the document is to provide the ECDC opinion on the suitability of face masks and other face covers in the community by individuals who are not ill in order to reduce potential pre-symptomatic or asymptomatic transmission of COVID-19 from the mask wearer to others.

There are three important caveats related to the use of face masks in the community:

- It should be ensured that medical face masks (and respirators) are conserved and **prioritised for use by healthcare providers,** especially given the current shortages of respiratory personal protective equipment reported across EU/EEA countries.
- The use of face masks may provide a **false sense of security** leading to suboptimal physical distancing, poor respiratory etiquette and hand hygiene – and even not staying at home when ill.
- There is a risk that **improper removal** of the face mask, handling of a contaminated face mask or an increased tendency to touch the face while wearing a face mask by healthy persons **might actually increase the risk of transmission**.