SARS-CoV-2 update 3 April 2020

Date: Friday 3rd April 2020
Sources: Several, see below

WHO Situation report – 73, 2nd April 2020. (1)
World wide, 896,450 confirmed cases have been reported, an increase of 72,839 since yesterday. 45,525 deaths have been reported, an increase of 4,923. Reported cases and deaths are described from each country.

COVID-19: Operational guidance for maintaining essential health services during an outbreak. WHO. (2)
Facing an outbreak, health systems should have a prompt and solid response in order to maintain access to health services. Identifying essential services, establishing an effective patient flow, providing training for either health workers and non-health workers are important to avoid indirect mortality from the outbreak. A checklist of several key actions considered necessary by WHO is provided, in a stepwise approach considering the transmission context.

ECDC. Communicable disease threats report, 29 March-4 April 2020, week 14. (3)
In the EU/EEA and the UK, 216,595 cases, including 20,067 deaths, have been reported during the same period (all EU/EEA countries combined).

ECDC. An overview of the rapid test situation for COVID-19 diagnosis in the EU/EEA. (4)
Rapid antigen tests: The non-governmental organisation FIND (https://www.finddx.org/) lists ten CE-marked rapid SARS-CoV-2 antigen detection tests, meaning they conform with the relevant EU legislation (Directive 98/79/EC on IVDs). In addition, there are many (over 60) CE-marked rapid SARS-CoV-2 antibody tests, and more continue to be placed on the market.

Ten Weeks to Crush the Curve. (5)
Harvey V. Fineberg, M.D., Ph.D. NEJM 1 April 2020. DOI: 10.1056/NEJMe2007263
Highly recommended reading.

Estimating the number of infections and the impact of non-pharmaceutical interventions on COVID-19 in 11 European countries. (6)
Using a new mathematical model, based only on the number of deaths attributable to COVID-19, this group estimate that non-pharmaceutical interventions (lockdown, school closure, self-isolation, social distancing) have had a positive impact on transmission rates, with a decrease in the reproduction number in several countries. They also estimate that the number of deaths averted is substantial, even in their forecasts. However, it was not possible to determine which of these measures has more impact, considering that the timing of their implementation differed from country to country.
Iceland lab's testing suggests 50% of coronavirus cases have no symptoms. (7) Extensive random population-based testing in Iceland show that asymptomatic infections are common.

Virological assessment of hospitalised patients with COVID-2019. (8) The study suggest a more efficient transmission of SARS-CoV-2 than SARS-CoV through active pharyngeal viral shedding at a time when symptoms are still mild and typical of upper respiratory tract infection. Later in the disease, COVID-19 then resembles SARS in terms of replication in the lower respiratory tract.

A Genomic Survey of SARS-CoV-2 Reveals Multiple Introductions into Northern California without a Predominant Lineage. (9) These findings suggest that cryptic transmission of SARS-CoV-2 in Northern California to date is characterized by multiple transmission chains that originate via distinct introductions from international and interstate travel, rather than widespread community transmission of a single predominant lineage. Rapid testing and contact tracing, social distancing, and travel restrictions are measures that will help to slow SARS-CoV-2 spread in California and other regions of the USA.

ESCMID Emerging Infections Task Force comment
The pandemic continue to expand worldwide, with some countries past the peak struggling with containing low-level continued activity, others still batting at the peak while others are still seeing cases climb.

Each country is developing their own approach, but broadly, all are closing down society, enforcing social distancing, curbing travels and enforcing hospital and especially ICU capacity.

It is clear that health care workers (HCWs) are a key resource and protection of health care workers, ensuring adequate personal protection equipment (PPE), is essential. In the EU, more cooperation is needed, for instance providing ICU beds in countries with capacity available or shifting HCWs from counties with a surplus capacity (the peak less serious than anticipated). There will of course be some language barriers, but in the given situation, this seems a trivial problem.

We need to start looking forward and develop plans for how we get out of the lock down, starting industries, schools, shops etc. Here we can find ideas from Singapore, Taiwan, China and South Korea.

There is shortage of extraction and amplification kits for molecular tests in several labs in the EU.

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Sources

5. Ten Weeks to Crush the Curve. Harvey V. Fineberg, M.D., Ph.D. NEJM 1 April 2020. DOI: 10.1056/NEJMe2007263
9. A Genomic Survey of SARS-CoV-2 Reveals Multiple Introductions into Northern California without a Predominant Lineage. Xianding Deng et al. doi: https://doi.org/10.1101/2020.03.27.20044925 https://www.medrxiv.org/content/10.1101/2020.03.27.20044925v1

Also in the literature

“around 30 days will be a sufficient length under conditions of near-complete community quarantine adherence”. “We showed that transmission will continue to occur unless the most stringent community quarantine measures are being taken in a lockdown setting, which means near-complete reduction of all activities in the community.”

Impact of physical distance measures on transmission in the UK
Online: 31-03-2020. Christopher I Jarvis et al.

Estimates of the severity of coronavirus disease 2019: a model-based analysis
Robert Verity et al. Lancet Infectious Dis March 30, 2020. DOI:
https://doi.org/10.1016/S1473-3099(20)30243-7


Covid-19: four fifths of cases are asymptomatic, China figures indicate. Day M.
https://www.bmj.com/content/bmj/369/bmj.m1375.full.pdf.

COVID-19: Operational guidance for maintaining essential health services during an outbreak. WHO

Epidemiology of Covid-19 in a Long-Term Care Facility in King County, Washington.
Temet M. McMichael et al. for the Public Health–Seattle and King County, EvergreenHealth, and CDC COVID-19 Investigation Team. NEJM March 27, 2020. DOI: 10.1056/NEJMoa2005412.


Self-reported olfactory and taste disorders in SARS-CoV-2 patients: a cross-sectional study. Andrea Giacomelli et al. Clinical Infectious Diseases, ciaa330,
https://doi.org/10.1093/cid/ciaa330.

Essential care of critical illness must not be forgotten in the COVID-19 pandemic
Tim Baker et al.
https://doi.org/10.1016/S0140-6736(20)30793-5
https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(20)30793-5.pdf