WHO declare the coronavirus is now a pandemic

Date: Friday 13th March 2020
Sources: Several: see below.

WHO declare the coronavirus is now a pandemic (1)
The message is that the virus cannot be contained to a few countries and is expected to spread over all continents. This signals a phase where containment with border controls and travel restrictions are replaced by attempts within countries to mitigate the disease so that the numbers of cases per day or week become manageable by the health care system.

ECCMID changed to online event
Follow updates on www.eccmid.org and subscribe to the ESCMID Newsletter for more information.

France, Ireland, Austria, Belgium, Turkey, Norway and Denmark
France, Ireland, Austria, Belgium, Turkey, Norway and Denmark this week closed schools and universities, restricted work for public employees and cancelled large public gatherings for two weeks in an attempt to mitigate the pandemic and ensure that the health care services can manage the expected flow of inpatients, especially the number of patients needing intensive care.

Italy
The outbreak continues to expand in Italy with a total of 15,113 infected persons reported as of the 12th March, with 812 deaths. As of the 11th March, 6845 were in hospital and 1,023 in intensive care. The average age of the fatal cases is 81 years and only 1.5% of cases are below 19 years of age.

ECDC
Considerations relating to social distancing measures in response to the COVID-19 epidemic (3)
Novel coronavirus (SARS-CoV-2) - Discharge criteria for confirmed COVID-19 cases (4)

EiTaF and the German Society for Infectious Diseases to Join Forces for a Clinical Inpatient Registry for SARS-CoV-2 Infected Patients
With the SARS-CoV-2 pandemic gaining momentum in Europe, calls have been made for a fast and simple registry that allows anonymous documentation of patients unable to provide consent that does not impose a high work-burden on those caring for the severely ill. We are currently working with high momentum on LEOSS – the Lean European Open Survey on SARS-CoV-2 Infected Patients. LEOSS is set up as a community project where everyone can contribute. The registry will divide the infection into four simple stages and ask a series of questions in broad categories for each stage. All survey results will be regularly published to the scientific community for crowd-based analysis. The survey will be
self-governed by a Board of Investigators consisting of the contributing centers, with Country Coordinators and ESCMID representatives giving additional input. Protocol and eCRF will be released March 16th. Please contact info@leoss.net if you are interested in protocol design, study coordination or just contributing data.

**Sources:**


**EiTaF Comment**

The situation is evolving rapidly in Europe with France, Spain and Germany reporting 1,774, 1,639 and 1,296 cases respectively, these three countries having the most cases after Italy. Travel restrictions and border controls become meaningless with widespread community transmission in each country.

Mitigation of the spread to limit the number of new cases per day and per week is now the key priority to ensure that the health care service can cope. The burden on the Italian health care system is mentioned above as an example.

Social distancing (avoiding crowded places, conferences, sport competitions and social activities in general) as well as frequent hand hygiene is the key to preventing infections.

As the SARS-CoV-2 virus is now causing a pandemic, travel advice become meaningless. The best advice is to stay home and wait it out. If you have to travel check for any entry restrictions at your destination.

Epidemics like this usually run a course over 8 to 12 weeks, so it is expected to peak at the end of March, after that the daily number of cases are expected to decline.
The infection is mild or absent in children, so the prime effect of school closures are not so much to protect children, who constitute very few cases, as to limit transmission to elderly people. However, we do not know if asymptomatic children transmit the infection.

U.S.A.
The situation in the United States is of particular concern. In the WHO situation report of the 12 March, the U.S. report 987 cases but local cases from community transmission is not reported in many states, and testing has not been performed widely, so a large number of undetected cases are expected which will lead to a rapid surge in cases in the coming weeks. Yesterday, New York City declared a state of emergency, bringing the financial and cultural capital of the U.S. to a standstill.

Eskild Petersen, Nicola Petrosillo
ESCMID Emerging Infections Task Force

In the literature


Detection of SARS-CoV-2 in Different Types of Clinical Specimens
https://jamanetwork.com/journals/jama/fullarticle/2762997
“Bronchoalveolar lavage fluid specimens showed the highest positive rates (14 of 15; 93%), followed by sputum (72 of 104; 72%), nasal swabs (5 of 8; 63%), fibrobronchoscope brush biopsy (6 of 13; 46%), pharyngeal swabs (126 of 398; 32%), feces (44 of 153; 29%), and blood (3 of 307; 1%). None of the 72 urine specimens tested positive”.

https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30566-3/fulltext
“The potential risk factors of older age, high SOFA score, and d-dimer greater than 1 μg/mL could help clinicians to identify patients with poor prognosis at an early stage”.

Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1
https://doi.org/10.1101/2020.03.09.20033217
https://www.medrxiv.org/content/10.1101/2020.03.09.20033217v1
"Viable virus could be detected in aerosols up to 3 hours post aerosolization, up to 4 hours on copper, up to 24 hours on cardboard and up to 2-3 days on plastic and stainless steel. HCoV-19 and SARS-CoV-1 exhibited similar half-lives in aerosols, with median estimates around 2.7 hours".

Effect of non-pharmaceutical interventions (NPI) for containing the COVID-19 outbreak: an observational and modelling study
Lai S et al. doi: https://doi.org/10.1101/2020.03.03.20029843
Without NPIs, the number of COVID-19 cases would likely have shown a 67-fold increase (IQR: 44 - 94), If NPIs could have been conducted one week, two weeks, or three weeks earlier in China, cases could have been reduced by 66%, 86%, and 95%, respectively, together with significantly reducing the number of affected areas. However, if NPIs were conducted one week, two weeks, or three weeks later, the number of cases could have shown a 3-fold, 7-fold, and 18-fold increase across China, respectively.

Care for Critically Ill Patients With COVID-19.
Murthy S, Gomersall CD, Fowler RA. JAMA 11 Mar 2020
https://jamanetwork.com/ on 03/11/2020

New coronavirus outbreak: Framing questions for pandemic prevention
Layne SP, Hyman JM, Morens DM, Taubenberger JK.
https://stm.sciencemag.org/content/12/534/eabb1469?utm_campaign=toc_stm_2020-03-11&et_rid=17050355&et_cid=3241144
We must understand and quantify the dominant variables that govern the current outbreak. current estimates of $R_0$ for the SARS–CoV-2 outbreak in China range from 2.5 to 2.9, with an associated all-age case fatality ratio estimated to be 2.3% (1,2). In comparison, the 1918–1919 Spanish influenza pandemic that killed about 50 million people worldwide is estimated to have had an $R_0$ ~1.8 and a case fatality ratio of 1 to 2%.

https://www.medrxiv.org/content/10.1101/2020.02.24.20027052v1
The peak value of TnI in critical patients is 40-fold more than normal value. Our results indicated that cardiac injury of COVID-2019 was rare in light and mild patients, while common in severe and critical patients.

Clinical presentation and virological assessment of hospitalized cases of coronavirus disease 2019 in a travel-associated transmission cluster
Woelfel R et al. doi: https://doi.org/10.1101/2020.03.05.20030502
https://www.medrxiv.org/content/10.1101/2020.03.05.20030502v1
Clinical sensitivity of RT-PCR on swabs taken on days 1-5 of symptoms was 100%, with no differences comparing swab and sputum samples taken simultaneously. Average viral load was 6.76x10E5 copies per swab during the first 5 days.

The median incubation period was estimated to be 5.1 days (95% CI, 4.5 to 5.8 days), and 97.5% of those who develop symptoms will do so within 11.5 days (CI, 8.2 to 15.6 days) of infection.

https://doi.org/10.1016/S0140-6736(20)30566-3
Based on an analysis of 191 patients the risk factors predicting a severe outcome were older age, high SOFA score, and d-dimer greater than 1 μg/mL

https://doi.org/10.1038/d41573-020-00016-0
Discuss Remdesivir, Galidesivir, favipiravir, ribavirin, baloxavir marboxil and Pegylated interferon alfa-2a and -2b.

https://doi.org/10.1101/2020.03.04.20031104.
https://www.medrxiv.org/content/10.1101/2020.03.04.20031104v1.full.pdf
The probability of death among infected individuals in China with symptoms is estimated at 3.3% (2.9-3.8), with a steep increase over 60 years old to reach 36% over 80 years old.

https://cmmid.github.io/topics/covid19/severity/diamond_cruise_cfr_estimates.html
CFR was 2.3%. The estimated IFR and CFR in China were 0.5% (95% CI: 0.2–1.2%) and 1.1% (95% CI: 0.3–2.4%) respectively.

Although COVID-19 is spread by the airborne route, air disinfection of cities and communities is not known to be effective for disease control and needs to be stopped.

https://jamanetwork.com/journals/jama/fullarticle/2762692
There was extensive environmental contamination by 1 SARS-CoV-2 patient with mild upper respiratory tract involvement. Toilet bowl and sink samples were positive, suggesting that viral shedding in stool5 could be a potential route of transmission. Postcleaning samples were negative, suggesting that current decontamination measures are sufficient. This study has several limitations. First, viral culture was not done to demonstrate viability. Patient A’s room was sampled on days 4 and 10 of illness while the patient was still symptomatic, after routine cleaning. All samples were negative. Patient B was symptomatic
on day 8 and asymptomatic on day 11 of illness; samples taken on these 2 days after routine cleaning were negative (Table 1).

Patient C, whose samples were collected before routine cleaning, had positive results, with 13 (87%) of 15 room sites (including air outlet fans) and 3 (60%) of 5 toilet sites (toilet bowl, sink, and door handle) returning positive results (Table 2). Anteroom and corridor samples were negative. Patient C had upper respiratory tract involvement with no pneumonia and had 2 positive stool samples for SARS-CoV-2 on RT-PCR despite not having diarrhea. Patient C had greater viral shedding, with a cycle threshold value of 25.69 in nasopharyngeal samples compared with 31.31 and 35.33 in patients A and B (Table 1).

Only 1 PPE swab, from the surface of a shoe front, was positive. All other PPE swabs were negative. All air samples were negative.

Escalating infection control response to the rapidly evolving epidemiology of the Coronavirus disease 2019 (COVID-19) due to SARS-CoV-2 in Hong Kong
Eleven (2.7%) of 413 HCWs caring these confirmed cases were found to have unprotected exposure requiring quarantine for 14 days. None of them was infected and nosocomial transmission of SARS-CoV-2 was not observed.

DOI:https://doi.org/10.1016/j.ijid.2020.02.060
The serial interval of COVID-19 is close to or shorter than its median incubation period. This suggests that a substantial proportion of secondary transmission may occur prior to illness onset. The COVID-19 serial interval is also shorter than the serial interval of severe acute respiratory syndrome (SARS), indicating that calculations made using the SARS serial interval may introduce bias.

Coronavirus latest: children are as susceptible as adults, study suggests.
https://www.nature.com/articles/d41586-020-00154-w
Analysis of 391 cases and 1,286 of their close contacts. Heightened surveillance and isolation, particularly contact tracing, reduces the time cases are infectious in the community, thereby reducing R0. Its overall impact, however, is uncertain and highly dependent on the number of asymptomatic cases. We further show that children are at similar risk of infection as the general population, though less likely to have severe symptoms”.

Can we contain the COVID-19 outbreak with the same measures as for SARS?
Annelies Wilder-Smith, Calvin J Chiew, Vernon J Lee
Lancet Infect Dis 2020, March 5, 2020
https://doi.org/10.1016/S1473-3099(20)30129-8