



Update: May 16 -18, 2020

**UPDATE ON GLOBAL AND REGIONAL DEVELOPMENTS ON
COVID-19**

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Summary

- A meta-analysis has found fever (91%), cough (67%), fatigue (51%) and dyspnea (30%) to be the most prevalent symptoms.
- So far, the reported burden of COVID-19 is concentrated in high income countries. A new indicator, called relative severity is developed by the World Bank group that attempts to redistribute the burden. The basic assumption in this modelling is that the current reporting ignores essential factors such as demography and co-morbidities that are likely to even out the burden. More emphasis is given to data quality, inconsistency and validity from LICs. But this modelling does not take into account the difference in public health control measures, that are likely to explain the difference.
- While data quality, particularly completeness, would be an issue, more convincing, at least for Africa, is that the continent is likely to be at an early stage of the spread of the pandemic.
- Susceptibility to COVID-19 infection is increased among people older than 40, men, racially black, people living in urban area and people with chronic kidney disease. [Note that, to our knowledge, this is the first study reporting on susceptibility]
- As of May 18, 10:00 GMT the Novel coronavirus has caused 4,819,277 infections, 316,959 deaths and 1,864,194 recoveries. Number of new cases and number of new deaths have declined the past three days.
- Africa reported a total of 84,634 cases, 2,766 deaths and 32,494 recoveries as of May 18, 2:00 PM EAT.
- At least some of the currently available SARS-CoV-2 IgG assays are declared to have sufficient specificity and sensitivity to detect individuals with past SARS-CoV-2 infection.
- Two new studies have reported lack of efficacy of hydroxychloroquine and have instead indicated increased adverse effects.
- Concerns are raised about the use of herbal products without robust evaluation of safety and efficacy. These can also delay timely diagnosis.
- There is preliminary data from MIT and Harvard researchers of development of a face mask which lights up when it detects coronavirus.
- Of 160 branded face masks tested for filtration quality, nearly half were found to be of poor quality. There is a need to develop testing facilities and for educating the general public to distinguish between good quality and 'fake' face highlighted.

Recommendations

- While underestimation of the burden of COVID-19 in sub-Saharan Africa is possible, the most likely explanation for the lower burden is likely to be the fact that Africa is at early stage in the pandemic. There is a need for governments and citizens to stay focused and vigilant.
- Fever is the commonest symptom and the fever screening that is being implemented in many places is to be encouraged. However, as a common symptom of many infectious diseases, (1) there is a risk of misdiagnosis; (2) could be an opportunity to detect other febrile syndromes.
- Herbal products have a place in the treatment and prevention of diseases, including COVID-19. Nevertheless, the typical precautions applied to medicinal products cannot be abandoned. There is a worrying trend of that globally but more so in SSA. The risk may eventually outweigh the benefit as was eventually the case for HIV.
- Recognising that at least 50% of circulating face masks may be of poor quality, there is a need for having a testing facility and educating the public.

Update on pathogenesis

Symptomatology and co-morbidity

A meta-analysis of seven studies (Yang et al 2020), including 1 576 infected patients, has confirmed four most prevalent symptoms exhibited in patients with COVID-19:

- fever (91.3%, 95% CI: 86–97%)
- cough (67.7%, 95% CI: 59–76%)
- fatigue (51.0%, 95% CI: 34–68%)
- dyspnea (30.4%, 95% CI: 21–40%).

The most prevalent comorbidities were:

- hypertension (21.1%, 95% CI: 13.0–27.2%)
- diabetes (9.7%, 95% CI: 7.2– 12.2%)
- cardiovascular disease (8.4%, 95% CI: 3.8–13.8%)
- respiratory system disease (1.5%, 95% CI: 0.9–2.1%)

When compared between severe and non-severe patients, the pooled OR of hypertension, respiratory system disease, and cardiovascular disease were 2.36 (95% CI: 1.46–3.83), 2.46 (95% CI: 1.76–3.44) and 3.42 (95% CI: 1.88–6.22) respectively

Risk factors

Even though, previous studies identified some risk factors for COVID-19 including age, sex, and comorbidities, these studies were done among COVID-19 cases and examined risk factors for the disease prognosis. However, a recent report on the Lancet Infectious Disease described characteristics associated with susceptibility to SARS-CoV-2 infection. The report is mainly based on characteristics of 3,802 people who were tested for SARS-CoV-2 within the Royal College of General Practitioners (RCGP) sentinel primary care surveillance network which is believed to be representative of the general population of England.

- Prevalence of infection was less than 5% in patients younger than 18 but almost four times as high in people aged 40 years or older.
- Infection risk was higher among men than women, in black people than white people, and in people with obesity than normal-weight people.
- The risk was also higher in those living in urban area than rural locations. However, household size was not significantly associated with risk of infection.
- Among comorbidities, only those with chronic kidney disease were found to be at higher risk for infection than others [Rachel E., 2020].

Update on Epidemiology (Incidence, mortality, recovery & epidemiologic parameters)

Global

- Novel coronavirus affected 213 countries and territories around the world causing 4,819,277 cases, 316,959 deaths and 1,864,194 recoveries as of May 18, 10:00 GMT.
- The number of new cases is persistently declining in the last three consecutive days; from 99,401 new cases on May 15th to 82,257 on May 17th. Similarly, the number of new deaths significantly decreased from 5,079 to 3,618 deaths on May 17th.
- Consistently, United States of America (USA) is the leading country with both high number of cases and deaths in the world. As of May 18, 10:00 GMT, more than 1.5 million (1,527,951) people were infected with the virus and 90,980 deaths were reported in the country, which accounted for 31.7% and 28.7 % of total cases and deaths respectively.
- Russia became the second most affected country in the world with a total of 290,678 cases and 2,722 deaths followed by Spain (277,719), United Kingdom (243,695) and Brazil (241,080).

- Even though, the number of new cases reported in Brazil is reduced yesterday (7,938 new cases), this number was much higher on May 15th (15,305 new cases) and May 16th (14,919 new cases) which made the country to be one of the five top countries in the world.
- Other countries with high number of deaths from COVID-19 include; United Kingdom (34,636 deaths), Italy (31,908 deaths), France (28,108 deaths) and Spain (27,650 deaths).

Africa

- As of May 18, 2:00 PM EAT, a total of 84,634 cases, 2,766 deaths and 32,494 recoveries were reported in Africa.
- The number of corona cases in South Africa exceed 15,000 (15,515 cases) which accounted for 18.3% of total cases reported in the continent. Based on Wordometer report, the number of new cases in the country is persistently increasing and especially yesterday, a total of 1,160 new cases was reported which is the highest number of new cases reported so far.
- Next to South Africa, Egypt 12,229 (14.5%), Algeria 7,019 (8.3%), Morocco 6,870 (8.1 %), and Nigeria 5,959 (7.0%) are other African countries with high number of COVID-19 cases.
- Almost two third 1816 (65.7%) of total deaths in the continent were reported from these countries; Egypt (630), Algeria (548), South Africa (264), Morocco (192) and Nigeria (182).

Ethiopia

- According to the Ministry of Health report, a total of 10,044 laboratory tests were carried out in the past three days and 65 additional COVID-19 cases were identified in the country.
- All of the additional cases are Ethiopians, their age ranges from 15 to 80 years and more than half 37 (56.9%) of them are males.
- Out of the 65 additional cases, 28 of them have travel history and 29 have contact history with confirmed COVID-19 case while the rest eight have no travel or contact history.
- More than half 35(53.9%) of these cases were reported from Addis Ababa, 18 from Somali (Jigjiga), 3 from Tigray (Maykadra & Dendi), 3 from Ahmara region (Metema & Ataye) and 2 from Oromia (Ginchi & Dendi).
- The ministry also reported that additional four people (three from Addis Ababa and 1 from Oromia region) are fully recovered from the disease raising the total number of recoveries to 116.
- Therefore, a total of 59,029 laboratory tests were conducted and 352 confirmed cases, 5 deaths and 116 recoveries were reported as of May 18, 3:00 PM EAT.

- Currently, all of the active cases (229) are having mild form of the disease and receiving medical care in the designated treatment centre.

Question of interpretation

Although current data suggests that the developing world has been largely spared from the burden of mortality of COVID-19, arguments are forwarded by the World Bank group (The World Bank Group 2020; Brookings blog) that the observed discrepancy in the burden of mortality is likely significantly exaggerated. They construct a “relative severity” to generate global comparisons across countries and over time.

The assumption is that not accounting for demography, co-morbidity, population density and data quality including consistency, timeliness and validity would explain the discrepancy. In a new modelling with attempts to account for these factors has naturally increased the estimates substantially. The share in total COVID-19 deaths could be three times lower on account of demography alone. The share for upper middle-income countries is likely three times higher. Those for LMICs and LICs would be, respectively, 14 and 39 times higher.

Nevertheless, this estimation does not take into consideration the variation in the application of public control measures. Of greater relevance seems that many of the LICs may be at an earlier stage of the pandemic. Continued vigilance remains crucial.

Update on Diagnosis

- Studies continue to be conducted to ascertain the sensitivity and specificity of commercially available antibody tests for SARS-CoV-2. One study compared four commercially available serologic assays for SARS-CoV-2 IgG from patients tested by PCR for SARS-CoV-2. Three of the assays were from Germany (Euroimmun, Mikrogen and Viramed assay) and one from the USA called the EDI assay. Out of the four assays, the EDI assay showed 100% sensitivity whereas Euroimmun, Mikrogen and Viramed showed 86.4%, 86.4% and 77.3% sensitivity, respectively. With regards to specificity, Mikrogen and Viramed assays were found to be 100% specific and Euroimmun and EDI assays showed a specificity of 96.2% and 88.7%, respectively. It was indicated these available SARS-CoV-2 IgG assays have sufficient specificity and sensitivity to detect individuals with past SARS-CoV-2 infection (Kruttggen et al., 2020).
- A team of researchers from MIT and Harvard are reportedly developing face mask which lights up when it detects coronavirus. The mask is set to produce a fluorescent signal when

a person with the coronavirus breathes, coughs, or sneezes and if the technology proves successful, it is indicated it could address flaws associated with other screening methods like temperature checks. The project is at a very early stage but the results have been promising (Bendix, 2020).

Update on treatment

Studies conducted on the use of Hydroxychloroquine for COVID 19 patients

- Two studies on hydroxychloroquine were recently published on the BMJ journal. The first study is a comparative observational study using data collected from routine care. It was conducted in four French tertiary care centers that provide care to patients with covid-19 pneumonia. 181 patients aged between 18-80 years with documented severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pneumonia and that required oxygen but not intensive care were enrolled to the study. The aim was to assess the effectiveness of hydroxychloroquine. Hydroxychloroquine was given at a dose of 600 mg/day within 48 hours of admission to hospital (treatment group) versus standard care without hydroxychloroquine (control group). Results from the study indicated that hydroxychloroquine treatment was not associated with a reduction of admissions to the intensive care unit or death 21 days after hospital admission compared with standard care alone. Additionally, the rate of survival without acute respiratory distress syndrome did not increase (Mahévas, Tran et al. 2020).
- The second study is multicentre, open label, randomised controlled trial that was conducted in 16 government designated covid-19 treatment centres in China. 150 patients who were admitted to hospital with laboratory confirmed covid-19 were enrolled in to the trial. Patients were administered with loading dose of 1200 mg daily for three days followed by a maintenance dose of 800 mg daily (total treatment duration: two or three weeks for patients with mild to moderate or severe disease, respectively). Similar to the previously mentioned study, The results of the trial did not show additional benefits of virus elimination from adding hydroxychloroquine as compared to the current standard of care in patients with mainly persistent mild to moderate COVID-19. Moreover adverse events, particularly gastrointestinal events, were more frequently reported in patients receiving hydroxychloroquine(Tang, Cao et al. 2020).

The use of Herbal drugs to treat COVID 19 should be with caution

- Three patented herbal drugs used widely in China to treat COVID-19 were approved by the Chinese government to be expanded to include COVID-19 symptoms. These included Lianhuaqingwen capsules and Jinhuaqinggan granules for mild conditions, and Xuebijing (injectable) for severe conditions. The herbal drugs are used to relieve symptoms, such as fever, cough, and fatigue, and reduce the probability of patients developing severe conditions. However, so far, no high-quality, rigorously peer-reviewed clinical trials of herbal drugs have been reported in internationally recognized journals. The approvals are mainly based on in-vitro investigations and anecdotal clinical data. This is a worrying trend and evidence of desperation.
- Yang Y 2020 in a correspondence letter put forth four reasons that warrant caution over the use of herbal drugs before rigorous safety and efficacy studies. First, safety is the top priority. All drugs carry risks, although these patent herbal drugs have been used clinically for several years, when we apply them to a novel disease like COVID-19, especially in combination with other antivirals, antibiotics, and immune suppressants, the safety should be cautiously evaluated. Second, more evidence is required through controlled clinical trials to support the efficacy of these herbal drugs. Third, the basic molecular mechanism is obscure and the active ingredients and the underlying mechanism of action are unknown. Herbal drugs usually contain many active ingredients, and it is important to better understand which ingredients are functional, and how they work. Limited experimental cell cultures and animal studies cannot guarantee safety and efficacy.
- Finally, the public can easily purchase herbal drugs without a doctor's prescription. Driven by the claim that some patent herbal drugs can effectively treat COVID-19, some patients with flu symptoms who fear quarantine measures are likely to self-medicate with herbal remedies and avoid going to hospital, thus delaying the proper diagnosis and treatment of the disease, and hampering the government's testing, tracing, and quarantining efforts (Yang 2020).

Update on personal protective equipment

Face mask use

- In one study, particle filtration efficiency of 160 brand face masks from different sources and countries was tested. 48.8% of the masks were found to be of low quality and only 37.5% of the sampled face masks were potentially to achieve the claimed standard. The results also showed that even masks of the same brand were highly inconsistent in their filtration efficiency.

Of all the tested masks, approximately 3.1% were counterfeit with their filtration efficiency ranging from 38% to 99%. It was noted illegal fake mask and protective gears manufacturing disrupts the ongoing effort to prevent and control the COVID-19 outbreak in clinical and community settings. It was indicated local governments should educate the general public to distinguish between good quality masks with those fake face masks via social media(Lam et al., 2020).

- A rapid review showed that use of hydrogen peroxide vapor, ultraviolet radiation, moist heat, dry heat and ozone gas are the most promising methods of disinfecting face masks for reuse. Whereas, soapy water, alcohol, bleach immersion, ethylene oxide, ionizing radiation, microwave, high temperature, autoclave or steam are not fully recommended (Carlos Rubio-Romero et al., 2020).

Psychosocial wellbeing updates

- In countries where HIV counsellors and lay counsellors are available, they may be used as resources to support patients with COVID-19 (Chersich 2020).
- WhatsApp groups are recommended as resources for mutual support groups for health professionals.
- Maintaining healthwrok force morale through public acknowledgment is also recommended.

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