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(From April 21 and 22)

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

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Summary

- As of April 22, globally, more than 2.5 million (2,585,195) people are infected with coronavirus causing 179,839 deaths and 705,691 recoveries.
- 25,129 confirmed cases with 1,205 deaths and 6,576 recoveries was reported in Africa as of April 22, 5:00 PM EAT.
- The US FDA authorized the first diagnostic test with a home collection option for COVID-19 through emergency use authorization.
- Serological testing can help epidemiological investigation and containment efforts by detecting previous infection in people with suspected infection who have recovered.
- More indications are confirming the obvious that antibody testing could be vital in tracing cases.
- A preprint of a retrospective comparison of Hydroxychloroquine vs Hydroxychloroquine + Azithromycin vs no Hydroxychloroquine found no evidence that use of hydroxychloroquine, either with or without azithromycin, reduced the risk of mechanical ventilation in patients hospitalized with Covid-19. An association of increased overall mortality was identified in patients treated with hydroxychloroquine alone. increased mortality in the hydroxychloroquine group without additional benefit on other severity parameters.
- Compassionate Use of Remdesivir for Patients with Severe COVID-19 may have clinical benefit.
- Public health interventions have proven to slow down the transmission and change the trajectory of the pandemic in many countries.
- A lancet publication (commentary), while discussing the advantages of using face masks in reducing respiratory droplet transmission, it also highlights the issue of false sense of security in people wearing it.
- The physical and mental impact of the pandemic may be such that after the pandemic the health system may face critical shortage of healthcare workers because of burnout and mental distress.

Recommendations

- Determining the transmission dynamics and ensuring effective control measures is likely to benefit from additional serological (antibody) tests. Developing these locally will ensure availability of adequate supplies.

- The uncertainty about the risk and benefit of hydroxychloroquine is in the spotlight with a new study of weak quality as was the case for studies that indicated benefit. It is important to either conduct local trials or await the results of ongoing prospective, randomized, controlled studies before widespread adoption of these drugs.
- The importance of public health control measures is again demonstrated. This underscores the need to continue these measures in the face of the increasing number of cases although no marked spike has been seen so far.
- Mental health and wellbeing of health workers has to be considered during and after the pandemic.

Disease transmission

- A study published in the Lancet Infectious Disease, attempting to elucidate the chain of disease transmission and identification of the source of infection, uses a combination of RT-PCR and serological tests. The study finds role for the use of serological tests in understanding disease transmission dynamics and control.
- The index case that had transmitted the infection in two church clusters had recovered at the time of testing. While the members in the two church clusters with active symptoms tested positive in the RT-PCR, the index case had recovered at the time of RT-PCR and tested negative. His previous infection was detected through serological testing.
- The study suggested that because RT-PCR can only detect SARS-CoV-2 infection during the period of viral shedding, which is the acute phase of infection, RT-PCR testing alone is limited by its poor ability to detect people who have recovered from the COVID-19 disease. Thus, serological testing can be useful in detecting previous infection in people with suspected infection who have recovered, assisting in epidemiological investigation and containment efforts [Young. S, 2020].

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

Global

- Globally, more than 2.5 million (2,585,195) people are infected with coronavirus causing 179,839 deaths and 705,691 recoveries as of April 22, 14:00 GMT.

- According to worldometer daily update, a total of 75,254 new cases were reported in the last 24 hours which is slightly higher than April 20th report (73,896 new cases). However, the number of new deaths (5,366 new deaths) is reduced by a quarter compared to the previous day's report (7,062 new deaths).
- Almost one third [819,175 (31.9%)] of the total cases in the world were reported from the United states of America (USA) with 45,343 deaths as of April 22, 6:00 GMT. The country reported 25,985 new cases and 2,804 deaths within 24 hours, which is the highest number of deaths reported in a single day from any country.
- New York is the most affected state with 256,555 cases and 19,693 deaths followed by New Jersey (92,387 cases, 4,753 deaths) and Massachusetts (41,199 cases, 1,961 deaths).
- Next to USA, Spain [204,178 (8.1%)], Italy [183,957 (7.2%)], France [158,050 (6.1%)] and Germany [148,453 (5.8%)] are the five most affected countries worldwide.
- The highest number of deaths also occurred in the USA (45,343) followed by Italy (24,648), Spain (21,282), France (20,796) and United Kingdom (17,337) as of April 22, 2020.

Africa

- Currently, there are a total of 25,129 confirmed cases, 1,205 deaths and 6,576 recoveries in Africa as of April 22, 5:00 PM EAT.
- Egypt became the leading country with a total of 3,490 cases and 264 deaths followed by South Africa (3,465), Morocco (3,209), Algeria (2,811) and Cameroon (1,163).
- The number of new cases in South Africa is slightly increased compared to the previous day report (142 to 165). Cameroon is reporting the number of new cases every other day and comparing April 18th and April 20th report, the number is massively increased from 21 to 146 new cases while the number of new deaths decreased from 20 to 1.
- In contrast, the number of new cases in Egypt (189 to 157) and Morocco (191 to 163) is marginally reduced in the last two days.
- Even though, the number of new cases and new deaths in Algeria is persistently declining, the country remained the first leading country with high number of deaths (392) which attributed for one third of total deaths in the continent.
- Egypt and Morocco are other African countries with high mortality rates which reported a total of 264 and 145 deaths respectively.

Ethiopia

- According to the Ministry of Health report, additional 1,818 laboratory tests were performed in the last 48 hours and five of them confirmed to be positive for COVID-19.
- Out of the additional five cases, three of them are Ethiopians and the rest two are Chinese and American.

- All of these cases are males and their age ranges from 22 to 54 years. Only two of them have travel history and they were staying in mandatory quarantine before confirming the test.
- Three of the additional cases were reported from Addis Ababa while the other two from Sebeta and Gewane woreda, Afar region.
- Additional five people (four from Addis Ababa and one from Dire Dawa) recovered raising the total number of recoveries to 21. Therefore, currently there are 116 confirmed cases, 3 deaths and 21 recoveries as of April 22, 5:00 PM EAT.
- The ministry also stated that all of the active cases (90) are having mild form of the disease and they are receiving medical care in the designated treatment centre.

Update on Diagnosis

- The US FDA authorized the first diagnostic test with a home collection option for COVID-19. The emergency use authorization was re-issued for the Laboratory Corporation of America (LabCorp) COVID-19 RT-PCR Test to permit testing of samples self-collected by patients at home using LabCorp's Pixel. This test permits testing of a sample collected from the patient's nose using a designated self-collection kit that contains nasal swabs and saline. After patient's self-swab and collect their nasal sample, they mail the sample in an insulated package to a LabCorp lab for testing (FDA, 2020).
- As in the report by Young et al., above, another study from Qingshan District, Wuhan, China, has identified nearly 10% of people with recovered asymptomatic disease who tested serologically positive. Again, this emphasises the potential benefit of serological tests for control purposes (Wu et al 2020).

Update on Treatment

Compassionate Use of Remdesivir for Patients with Severe COVID-19

- Remdesivir is a nucleotide analogue prodrug that inhibits viral RNA polymerases that has shown in vitro activity against SARS-CoV-2. According to an original article published in the New England Journal of Medicine, Remdesivir was given on a compassionate-use basis to patients hospitalized with Covid-19. Patients were those with confirmed SARS-CoV-2 infection who had an oxygen saturation of 94% or less while they were breathing ambient air or who were receiving oxygen support. It was reported that when patients received a 10-day course of remdesivir, consisting of 200 mg administered intravenously on day 1,

followed by 100 mg daily for the remaining 9 days of treatment, clinical improvement was observed in 36 of 53 patients (68%) (Grein et al., 2020).

- At baseline, 30 patients (57%) were receiving mechanical ventilation and 4 (8%) were receiving extracorporeal membrane oxygenation. During a median follow-up of 18 days, 36 patients (68%) had an improvement in oxygen-support class, including 17 of 30 patients (57%) receiving mechanical ventilation who were extubated. A total of 25 patients (47%) were discharged, and 7 patients (13%) died; mortality was 18% (6 of 34) among patients receiving invasive ventilation and 5% (1 of 19) among those not receiving invasive ventilation. Interpretation of the results of this study is limited by the small sample size, the relatively short duration of follow-up, potential missing data owing to the nature of the program, and the lack of a randomized control group. Although it is difficult to make definitive conclusion based on this data alone, it suggests that remdesivir may have clinical benefit in patients with severe Covid-19 (Grein et al., 2020).

Update on public health control measures

Public health interventions

- Public health interventions have proven to slow down the transmission and change the trajectory of the pandemic in many countries. This has resulted from multiple and multi-faceted interventions. Until recently we haven't had an evidence on the contribution of individual interventions to the reduction in the number of COVID-19 cases. A retrospective cohort study on 32, 000 people in Wuhan city of China showed the contribution of the individual interventions on the change in the number of new cases. The investigators categorised the overall time interval between December 8 and March 8, 2020 in to five. This categorisation was based on major control measures taken in the time period (Pan A, 2020).
- The increased movement of the people in and out of the city for the lunar new year celebration was the first main event which contributed to the disease transmission. This was also the time when health facilities were crowded with the earliest patients and high number of unprotected health care workers were infected with the virus. However, the outbreak reached record high (162 per million people), in the next time interval between January 23 and February 2. In this interval, city lockdown was declared in Wuhan, traffic was suspended, and presumptive cases were put to home

quarantine. These interventions triggered a descent in the number of new cases with the average proportion of the new cases being 77.9 in the next interval. Between February 2 and 17 nearly all new cases were isolated and treated, the quarantine was also centralized using hospitals and other public facilities. This has maintained the descent in the number of cases. While the preceding interventions are still in effect, community- based symptom survey was added to the end (from February 17 to March 8). In this period the proportion has dropped to 17.2 per million people (Pan, 2020).

Update on personal protective equipment

Face mask use

- A commentary in the Lancet, by referencing the recommendation of WHO and Public health England against mass masking, argues that the absence of clinical trials-based evidence on the effectiveness of mass masking should not be equated with evidence of ineffectiveness. It states that there are mechanistic reasons for covering the mouth to reduce respiratory droplet transmission. The second point raised is about the concern there is on the shortage of mask supply in the community. The authors noted that medical masks must be reserved for health-care workers and that cloth masks are likely to be adequate to control the infection source rather than to self-protect especially if everyone wears a mask. The last point was on the concerns that mask wearing could engender a false sense of security. The authors indicated they are unaware of any empirical evidence that wearing masks would mean other approaches to infection control would be overlooked. They noted mass masking for source control is a useful and low-cost adjunct to social distancing and hand hygiene during the COVID-19 pandemic and that this measure shifts the focus from self-protection to altruism, actively involves every citizen, and is a symbol of social solidarity in the global response to the pandemic(Cheng et al., 2020)

Psychosocial wellbeing of health professionals during COVID 19 outbreak

workers are one of the groups highly vulnerable to the COVID-19. The pandemic and the measures to control it such as quarantine, social distancing and self-isolation have a significant impact on mental wellbeing. These are known to be a risk factors for different mental disorders, especially depression and psychosis.

There is also concern that once the pandemic is over the health system may face critical shortage of healthcare workers because of burnout and mental distress. It is anticipated that the need for mental health services may increase after the pandemic. In order to minimise the impact, the the advice to the public is: to limit stress by limiting the time they spend on the news, socialize with friends and families via telephone or other mechanisms, focus on the aim of isolation and try to maintain your previous daily routines (Fiorillo and Gorwood, 2020).

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