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(From April 17-20)

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

THE KNOWLEDGE SYNTHESIS TEAM
CDT-AFRICA, ADDIS ABABA UNIVERSITY
www.cdt-africa.org

Summary

- As of April 20, worldwide, the total number of confirmed cases has reached 2,414,098, with 165,153 deaths and 629,390 recoveries.
- Compared to the previous three consecutive days, the number of new cases (75,804 cases) reported within the past 24 hours has declined from 90,254 to 75,804.
- A total of 22,275 confirmed cases, 1,119 deaths and 5,489 recoveries were reported from Africa, as of April 20, 1:00 PM EAT.
- On 17 April, the US FDA, recommends that health care providers continue to use antibody tests but also notes that they should be aware of the limitations of these tests.
- A preliminary report has confirmed the expected association between hypogeusia (reduced ability to taste) or hyposmia (reduced ability to smell and detect odour) and COVID-19 diagnosed patients.
- Early initiation of treatment, longer treatment duration and loading dose may be necessary when considering Anti-viral Therapy/ Re-purposing Antiviral therapy for COVID-19.
- A recent study indicated that masks cannot completely prevent the pathogen exposure, but that they can reduce the amount of exposed pathogen to below the infectious dose.
- The likelihood of increase in burnout level of health professionals is very high during COVID-19 outbreak, and evidence-based burnout intervention is useful.

Recommendations

- Antivirals should be started early if used for COVID-19.
- Antivirals should also be used for longer, especially when there is co-morbidity, because of long viral shedding in COVID-19.
- Also consider providing loading dose.
- Interesting suggestion that ordinary masks used in public can be reused after a couple of hours in sunshine, but further evidence is needed before recommending this.

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

Global

- As of April 20, 8:00 GMT, the pandemic has affected 210 countries with a total of 2,414,098 confirmed cases, 165,153 deaths and 629,390 recoveries.
- The number of new cases (75,804 cases) reported in the last 24 hours has declined significantly as compared to the previous three consecutive days-- 90,254, 86,497 and 81,906 cases.
- Similarly, the number of new deaths (4,984 deaths) reported on April 19th was reduced by nearly 40% compared with that reported on April 17th (8,326 cases) and by 23% compared to that of April 18th (6,433 cases). Although this might partly be due to declining numbers, better medical care with improved knowledge of the illness may also be relevant.
- In USA, a total of 764,265 people are infected with the virus, which accounted for 31.7 % of the total cases in the globe.
- Comparing the last three consecutive days, both the number of new cases and new deaths in the USA is decreasing. A total of 25,844 new cases and 1,561 new deaths were reported on April 19th while this was 32,165 new cases and 2,528 deaths on April 17th.
- New York remained the most affected state in USA, which accounted for almost one third [32.3% (247,215) cases] and half 45.4% (18,298) of deaths reported in the country.
- Spain (198,674 cases), Italy (178,972 cases), France (152,894) and Germany (145,743) continue to be the other most affected countries in the world.
- China has now become the 8th country with a total number of 83,817 cases and 4,636 deaths.
- Almost three quarters of the total deaths in the world are reported from the USA and four European countries: Italy, Spain, France and United Kingdom.

Africa

- According to Africa CDC, a total of 22,275 confirmed cases, 1,119 deaths and 5,489 recoveries were reported in Africa as of April 20, 1:00 PM EAT.
- The percentage of recoveries is increased to 83% compared to previously reported percentage (67.8%) at the initial phase of the pandemic in the continent.
- The highest number of cases is reported from South Africa (3,158) followed by Egypt (3,144), Morocco (2,855), Algeria (2,629) and Ghana (1,042).
- Based on Worldometer daily update, the number of new cases in Ghana is increasing substantially, which makes the country to be included in the five most affected countries in Africa. Out of these number, 401 (38.4%) were reported within the last two days. In

contrast, the number of new cases in Algeria is persistently decreasing in the last three consecutive days.

- More than two third [n=757 (67.6%)] of the total deaths in the continent were reported from three countries namely; Algeria (375), Egypt (239) and Morocco (143).

Ethiopia

- So far, a total of 7,953 laboratory tests were performed and out of these, 111 of them confirmed to be positive for COVID-19. Therefore, there are 111 confirmed cases, 3 deaths and 16 recoveries as of April 20, 4:00 PM EAT.
- In the last four days, additional 2,564 laboratory tests were carried out and 19 COVID-19 cases were identified. Out of this, 12 of them were males and almost all (11) are Ethiopians except one person who has Equatorial Guinea citizenship.
- The additional cases were reported from Addis Ababa (10 cases), Dire Dawa (6 cases), Jimma (1 case), Bahir Dar (1 case) and Addis Kidame (1 case).
- More than half (11/19) of these cases have travel history and five out of the six cases identified in Dire Dawa came from Djibouti.
- Currently, there are 90 active cases in the treatment centers and out of this, only one person is in serious/ critical condition.

Update on Diagnosis

- According to FIND diagnostics, as of 20th April 2020 [11:00am, EAT], there are 228 molecular assay tests commercialized and 42 tests under development for COVID-19. Also, there are 220 immunoassay tests commercialized and 46 tests under development (FIND, 2020).
- The US FDA, in a letter to health care providers on 17 April, recommends that health care providers continue to use antibody tests but also notes that health care providers should be aware of the limitations of these tests. The FDA stated that the FDA is not aware of an antibody test that has been validated for diagnosis of SARS-CoV-2 infection and that this test should not be used as the sole basis to diagnose COVID-19(FDA, 2020).
- In an effort to restart the economy and reintegrate society, antibody tests are being rolled out in the United States despite their limitations. Experts still fear they are sacrificing quality for speed and are concerned about the safety of this undertaking. Even as government agencies, companies and academic researchers scramble to validate existing tests and create better ones, there are doubts they can deliver as

promised. Tests now available mistakenly flag at least some people as having antibodies when they do not (Eder et al., 2020).

- A study conducted in France to evaluate the association between COVID-19 diagnosis and loss of taste (hypogeusia) and loss of smell (hyposmia), contacted 452 tested patients with a 57% response rate. Of these, 68 (26%) reported a positive test for SARS-CoV-2. Loss of taste (hypogeusia) was reported by 63 patients, loss of smell (hyposmia) by 51 patients, both hypogeusia and hyposmia by 43 patients, and ear, nose and throat (ENT) disorders by 82 patients. It was noted that hypogeusia and hyposmia were strongly associated with COVID-19 diagnosis, separately and combined, in patients with and without a medical history of ENT disorders. The best performance was, reportedly, obtained with the combination of hypogeusia and hyposmia in patients with no medical history of ENT disorders. It is indicated that these symptoms are easy to collect and could be used for mass screening, by professionals with limited medical knowledge, and through telemedicine (Bénézit et al., 2020).

Update on Treatment

Trials underway by UK scientists for vaccine and repurposed drugs.

- According to article reported in Reuters and the Guardian, UK scientists are undertaking trials and working on treatment for COVID 19.
- The Oxford University team's experimental product, called "ChAdOx1 nCoV-19" (Kate Kelland, 2020, US National Library of Medicine, 2020), a recombinant viral vector vaccine, is being prepared for a phase I/II trial in adults aged between 18 and 55 within weeks. They then plan to expand the trial group to older age groups, and hope to run a trial with around 5,000 volunteers in the late summer.
- Another research on progress from UK is The Recovery trial. The study has recruited over 5,000 patients in 165 NHS hospitals around the UK in a month, ahead of similar trials in the US and Europe. The treatments. Being tried are: Lopinavir-Ritonavir, Low-dose Dexamethasone, Hydroxychloroquine, Azithromycin and Tocilizumab. Patients are randomly allocated to one of the drugs (or a placebo). There are already 500 to 900 patients on each of the drugs being tested and 2,000 in the control groups (Sara Boseley, 2020).

Things to consider while repurposing antivirals for COVID-19

- Antiviral treatment must be initiated in an infected patient as soon as possible-before peak viral load and cytokine storm has started.

- This limited window to initiate antiviral therapy against respiratory viruses is well known. For example, if treatment of influenza is not initiated within 48–72 h of symptom onset, drug efficacy is substantially reduced or eliminated entirely.
- If treatment of a patient is initiated after peak viral load or after the onset of the cytokine storm, any antiviral is unlikely to be effective.
- The viral kinetic profile of SARS-CoV-2 is not yet well understood, but initial data suggest that the time to peak appears to occur approximately 8–10 days after infection, or 5 days post onset of symptoms. This would indicate a 3- to 5-day treatment opportunity from the time of symptom onset (Smith et al., 2020).
- Duration of treatment should consider viral shedding
 - COVID-19 has long viral shedding.
 - Similarly, the length of treatment should cover the duration of viral shedding to maximize drug effect, reduce the risk of viral rebound and to minimize the spread to uninfected individuals.
 - SARS-CoV-2 appears to maintain a longer duration of viral shedding compared to influenza, and therefore a longer treatment duration may be warranted (e.g., 14 to 28 days).
 - Even longer treatment durations may be required in immunocompromised patients(Smith et al., 2020).
- Loading dose should be considered; Given the limited treatment window to successfully intervene, it is paramount that antiviral dose regimens be constructed to achieve high therapeutic concentrations at the effect site as rapidly as possible. This has prompted numerous antivirals for respiratory pathogens to consider loading doses. A loading dose may achieve therapeutic concentrations much more quickly, increasing the probability of successful treatment(Smith et al., 2020).

Update on personal protective equipment

Face mask use

- It may be difficult to conduct well designed prospective studies to evaluate the efficacy of wearing mask by the general population in preventing SARS-CoV-2 transmission. Masks

cannot completely prevent pathogen exposure, but can reduce the amount of exposed pathogen to below the infectious dose. Even if wearing mask fails in preventing an infection, it is postulated that it can still reduce the amount of exposed pathogen, which will cause a relatively mild disease. Wearing masks may be particularly important in limiting the spread from asymptomatic individuals (Han and Zhou, 2020).

- Although we have not been able to verify, there is suggestion that ordinary masks used in public can be reused after a couple of hours in sunshine and several masks may be used in turn, minimizing the influence on the mask use of healthcare providers (Han and Zhou, 2020).
- There is also an argument that the residues found on mask inner surfaces act as a barrier for small molecules to retain at least a fraction of these. SARS-CoV-2 virions are large enough that simple masks could trap the larger viruses. Cheap masks (and alternatives) may not protect the wearer from inhaling external environmental contaminants, but may reduce the viral load exhaled from an asymptomatic person and that wearing them is a positive step towards helping combat the COVID-19 pandemic (Pleil et al., 2020).
- Rwanda's health minister reported the latest guidelines require everyone to wear a mask in public, and at home during the lockdown and thereafter. Similarly, wearing of masks is now mandatory throughout Kinshasa, the capital of Democratic Republic of Congo, beginning from April 20 according to the governor of the capital of Kinshasa. He also said the army and police will enforce the measure, as well as compliance with social distancing and hygiene measures issued by authorities (Tasamba, 2020).

Psychosocial wellbeing of health professionals during COVID 19 outbreak

- There is an evidence that healthcare workers are highly affected by burnout (Imo UO, 2020, Woo T et al., 2020), which is likely to be increased during COVID-19 outbreak(Shah K et al., 2020).
- Evidence based burnout intervention (Sultana A et al., 2020) are proved to be useful to reduce the level of burnout. Some of the recommended interventions to promote healthcare wellbeing were: availing adequate PPE, providing the professional with regular and up-to-date knowledge about the treatment and management of COVID 19 (Shah K et al., 2020). Other study recommended the following potential interventions: awareness creation on work related stress and burnout, promoting mindfulness, encouraging self-care, provision of mental health services (using digital technologies) as well as psychological support.
- It is of note that a study from China has indicated that providing only psychological support didn't guarantee promotion of healthcare workers wellbeing (Chen Q et al., 2020).

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