UPDATE ON GLOBAL REGIONAL AND NATIONAL DEVELOPMENTS ON COVID-19

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

Summary

- Loss of smell and taste has been re-confirmed by the largest study (3000+) so far. But the frequency, about 15%, is lower than what has been reported previously. Given the large sample size, these figures seem reliable. Of interest is also that otherwise asymptomatic patients can experience anosmia or ageusia.
- Non communicable diseases (NCDs) are major risk factors for patients with COVID-19. Special prevention and control measures like using online access and telemedicine to provide knowledge and support for management should be applied these vulnerable groups.
- Globally, more than 4 million people are now infected with novel coronavirus causing 283,876 deaths and 1,493,490 recoveries (84%) as of May 11, 5:30 GMT
- Currently, a total of 63,325 cases, 2,290 deaths and 21,821 recoveries were reported in Africa as of May 11, 11:00 AM EAT. The number of new cases has slightly reduced in all highly affected countries in the continent in the past three days.
- South Korea has cut back on the pace of reopening because of resurgence of infections. Similarly concerns in Germany and China have also emerged because of some limited resurgence.
- Emergency use authorization for the first at-home COVID-19 molecular test that uses saliva samples was issued by FDA.
- A study done in Hong Kong in COVID-19 patients has indicated that triple therapy with three antivirals (lopinavir/ritonavir, ribavirin, and interferon beta-1b) has shown shorter median time of negative nasopharyngeal swab to 7 days than the control group which was 12 days.
- A large new study from Korea added up evidence on loss of smell and taste being important clues for the diagnosis of COVID-19.
- A pre-print article showed near perfect correlation between early universal masking and successful suppression of daily case growth rates and/or reduction from peak daily case growth rates.

Recommendations

- Patients with NCD should be prioritised for testing.
- Early planning of reopening and careful learning from the experience of countries attempting to reopen needed.

Update on Pathogenesis

Risk factors

- More epidemiological studies have now been published confirming what we know that Non communicable diseases (NCDs) like cardiovascular disease, cancer, chronic respiratory diseases, and diabetes are major risk factors for patients with COVID-19. Overweight or obesity, which is one of the major risk factors for NCDs, is also leading to hospitalization for COVID-19. A report in Italy revealed that the majority (96·2%) of patients who have died in hospital from COVID-19 had comorbidities, primarily NCDs.
- Some of the restrictive measures such as lockdowns, social distancing, and travel restrictions can lead to poor management of NCD behavioural risk factors, including unhealthy diet, physical

inactivity, tobacco use, harmful use of alcohol and limiting access to preventive or health promotion services. Therefore, prevention and control of NCDs has a crucial role in the COVID-19 response. It's suggested that the following responses are required to help people with NCDs [Kluge, H. 2020]. Nevertheless, further adaptation would be needed for a generalised implementation in Ethiopia.

Current Control measures	NCD-specific responses
Transport and other services restricted	Prioritize and ensure continued community level services for NCD patients' needs
Early detection and laboratory testing	Prioritize NCD patients for COVID-19 testing; triaging should take account of whether patients have NCDs or immunocompromised.
Contact tracing	Focus especially on those with increased risk factors for NCDs and NCD patients (i.e., patients living with obesity)
Health-care settings (infection control)	Provide health-care staff working in NCD services with special training and personal protective equipment.
Lengthened time spent indoors	Use technology to provide knowledge and support for management of NCDs - online information on exercise and mental health self-management classes - healthy recipes for home preparation online delivery of healthy foods
Inadequate access to medicines	Use telemedicine more, - allow local or community doctors and pharmacists to renew or extend drug prescriptions deliver essential NCD drugs to home

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

Global

- As of May 11, 5:30 GMT, more than 4 million people are infected with novel coronavirus worldwide causing 283,876 deaths and 1,493,490 recoveries.
- The percentage of recoveries is gradually increasing and reached 1,493,490 (84%) while it was continuously 83% last week and 82% at the beginning of the pandemic.
- In the last three days, both the number of new cases and new deaths has been declining and a total of 79,875 new cases and 3,510 new deaths were reported in the last 24 hours while 97,128 new cases and 5,550 new deaths were reported on May 08, 2020. Again, the trend has been fluctuating over the past 2 weeks.
- United States of America (USA) remained the leading country with both high number of cases and deaths in the world. As of May 11, 5:30 GMT, a total of 1,367,638 cases and 80,787 deaths were reported accounting for 32.7% of cases and 28.5 % of deaths in the world.
- New York (345,406 cases & 26,812 deaths), New Jersey (140,008 cases & 9,264 deaths) and Massachusetts (77,793 cases & 4,979 deaths) are the three most affected states in USA.

- The number of new cases in the USA has by almost decreased by a third in the past three days (from 29, 162 cases on May 8th to 20, 329 cases on May 10th). Likewise, the number of new deaths also significantly declined from 1,687 to 750 on May 10th.
- Spain (264,663 cases & 26,621 deaths), United Kingdom (219,183 cases & 31,855 deaths), Italy (219,070 cases & 30,560 deaths) and Russia (209,688 cases & 1,915 deaths) are other countries with high number of cases and deaths in the world.
- South Korea has cut back on the pace of reopening.
  Africa
- According to Africa CDC, a total of 63,325 cases, 2,290 deaths and 21,821 recoveries were reported as of May 11, 11:00 AM EAT.
- In South Africa, more than 10,000 people are infected with coronavirus and 194 people have died based on Worldometer data. With this number, the country ranked first with high number of cases in Africa followed by Egypt (9,400 cases), Morocco (6,063 cases), Algeria (5,723 cases) and Nigeria (4,399 cases).
- Comparing the last three days' report (May 8th and May 10th), the number of new cases is slightly reduced in all highly affected countries; South Africa (663 to 595), Egypt (495 to 436), Morocco (163 to 153), Algeria (187 to 165) and Nigeria (386 to 248).
- Egypt has become the leading country in the number of deaths. As of May 11, 11:00 AM EAT, a total of 525 deaths were reported in the country.
- Algeria (502), South Africa (194), Morocco (185) and Nigeria (143) are other countries with high number of deaths in the continent.
  Ethiopia
- In the last three days, additional 6,318 laboratory tests were performed and 56 of them confirmed to be positive for COVID-19 raising the total number of cases to 250.
- All of the additional cases are Ethiopians, their age ranges from 15 to 60 years and majority 46(82%) of them are males.
- On May 9th, a 65 years old male Ethiopian from Addis Ababa has passed away making the total number of deaths to 5.
- Thirty four (39) of these cases were reported from Addis Ababa, 7 from Somali region, 2 from SNNPR (Wolayta Sodo and Butajira), 3 from Afar region, 2 from Oromia region (Adama), 2 from Tigray region and 1 from Ahmara region (Woldiya).
- Out of the 56 additional cases, 15 of them have travel history, 40 of them have contact history with confirmed COVID-19 case and the rest one is still under investigation.
- The ministry of health also reported that additional eight people from Addis Ababa recovered from the disease raising the total number of recoveries to 105.
- Therefore, a total of 36,624 laboratory tests were conducted as of May 11, 2020 and 250 confirmed cases, 5 deaths and 105 recoveries were reported in the country.
- Currently, all of the 138 active cases are having mild form of the disease and receiving medical care in the designated treatment centre.

Update on Diagnosis

- According to FIND diagnostics, as of 11th May 2020 [12:45pm, EAT], there are 270 molecular assay tests commercialized and 44 tests under development for COVID-19. There are also 256 immunoassay tests commercialized and 47 tests under development (FIND, 2020).
- The US FDA, on 8th May, issued an emergency use authorization for the first at-home COVID-19 molecular test that uses saliva samples to Rutgers Clinical Genomics Laboratory. The test permits testing of a saliva sample collected from the patient using a designated self-collection kit and the sample will be returned to the lab in a sealed package for testing. It was noted that he Rutgers

Clinical Genomics Laboratory test is currently the only authorized COVID-19 diagnostic test that uses saliva samples to test for SARS-CoV-2 and that the test remains prescription only (FDA, 2020).

▪ Studies on loss of smell and taste are continuing to emerge as important clues for the diagnosis of COVID-19. In a study conducted in Daegu, Korea, data was collected prospectively from 3,191 patients newly diagnosed patient with COVID-19 who were awaiting hospitalization or facility isolation. The result showed 15.3% patients had acute anosmia or ageusia in the early stage of COVID-19 and in 15.7% patients with asymptomatic-to-mild disease severity. Their prevalence was significantly more common among females and younger individuals (P = 0.01 and P < 0.001, respectively). It was noted most patients with anosmia or ageusia recovered within 3 weeks, with median time to recovery was found to be 7 days for both symptoms (Lee et al., 2020).

▪ A viewpoint published on the JAMA indicated specificity of most of the RT-PCR tests is 100% because the primer design is specific to the genome sequence of SARS-CoV-2. It was noted false-negative results occur due to inappropriate timing of sample collection in relation to illness onset and deficiency in sampling technique, especially of nasopharyngeal swabs and also that occasional false positive results may occur due to technical errors and reagent contamination (Sethuraman et al., 2020).

Update on Treatment

▪ A multicentre, prospective, open-label, randomised, phase 2 trial was conducted in adults with COVID-19 who were admitted to six hospitals in Hong Kong. Patients were randomly assigned (2:1) to a 14-day combination of lopinavir 400 mg and ritonavir 100 mg every 12 h, ribavirin 400 mg every 12 h, and three doses of 8 million international units of interferon beta-1b injection on alternate days (combination group) or to 14 days of lopinavir 400 mg and ritonavir 100 mg every 12 h (control group). 86 were randomly assigned to the combination group and 41 were assigned to the control group. Patients in the study all had mild to moderate symptoms and were treated within seven days of testing positive. The combination group had a significantly shorter median time from start of study treatment to negative nasopharyngeal swab (7 days [IQR 5–11]) than the control group (12 days [8–15]). The study also concluded that Early triple antiviral therapy was safe and superior to lopinavir-ritonavir alone in alleviating symptoms and shortening the duration of viral shedding and hospital stay in patients with mild to moderate COVID-19(Hung et al., 2020).

Update on personal protective equipment
Facemask use
▪ One new article [pre-print], presented two models for the COVID-19 pandemic to predict the effect of universal face mask wearing upon the spread of the SARS-CoV-2 virus. The models used are a stochastic dynamic network based compartmental SEIR (susceptible-exposed-infectious-recovered) approach, and employing individual ABM (agent based modelling) Monte Carlo simulation indicating significant impact under (near) universal masking when at least 80% of a population is wearing masks, versus minimal impact when only 50% or less of the population is wearing masks, and significant impact when universal masking is adopted early, by Day 50 of a regional outbreak, versus minimal impact when universal masking is adopted late. As indicated, these effects hold even at the lower filtering rates of homemade masks. The results show a near perfect correlation between early universal masking and successful suppression of daily case growth rates and/or reduction from peak daily case growth rates. The theoretical models and

empirical results claim for urgent implementation of universal masking in regions that have not yet adopted it as policy or as a broad cultural norm(Kai et al., 2020).

Reference list

- African Union; COVID -19 updates. https://au.int/en/covid19
- Center of Disease Control and Prevention Africa https://africacdc.org/covid-19-update/
- Ethiopian Public Health Institute CoronaVirus Update; https://www.ephi.gov.et/index.php/public-health-emergency/novel-corona-virus-update
- FDA. 2020. Coronavirus (COVID-19) Update: FDA Authorizes First Diagnostic Test Using At-Home Collection of Saliva Specimens [Online]. Available: https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-first-diagnostic-test-using-home-collection-saliva [Accessed 11 May 2020.
- FIND. 2020. SARS-COV-2 DIAGNOSTIC PIPELINE [Online]. Available: https://www.finddx.org/covid-19/pipeline/ [Accessed 11 May 2020.
- HUNG, I. F.-N., LUNG, K.-C., TSO, E. Y.-K., LIU, R., CHUNG, T. W.-H., CHU, M.-Y., NG, Y.-Y., LO, J., CHAN, J., TAM, A. R., SHUM, H.-P., CHAN, V., WU, A. K.-L., SIN, K.-M., LEUNG, W.-S., LAW, W.-L., LUNG, D. C., SIN, S., YEUNG, P., YIP, C. C.-Y., ZHANG, R. R., FUNG, A. Y.-F., YAN, E. Y.-W., LEUNG, K.-H., IP, J. D., CHU, A. W.-H., CHAN, W.-M., NG, A. C.-K., LEE, R., FUNG, K., YEUNG, A., WU, T.-C., CHAN, J. W.-M., YAN, W.-W., CHAN, W.-M., CHAN, J. F.-W., LIE, A. K.-W., TSANG, O. T.-Y., CHENG, V. C.-C., QUE, T.-L., LAU, C.-S., CHAN, K.-H., TO, K. K.-W. & YUEN, K.-Y. 2020. Triple combination of interferon beta-1b, lopinavir–ritonavir, and ribavirin in the treatment of patients admitted to hospital with COVID-19: an open-label, randomised, phase 2 trial. *The Lancet*.
- John Hopkins, Corona Virus Resources https://coronavirus.jhu.edu/map.html
- KAI, D., GOLDSTEIN, G.-P., MORGUNOV, A., NANGALIA, V. & ROTKIRCH, A. 2020. Universal Masking is Urgent in the COVID-19 Pandemic: SEIR and Agent Based Models, Empirical Validation, Policy Recommendations. ArXiv, abs/2004.13553.
- Kluge, H. H. P., Wickramasinghe, K., Rippin, H. L., Mendes, R., Peters, D. H., Kontsevaya, A., & Breda, J. (2020). Prevention and control of non-communicable diseases in the COVID-19 response. The Lancet. doi: 10.1016/s0140-6736(20)31067-9
- LEE, Y., MIN, P., LEE, S. & KIM, S. W. 2020. Prevalence and Duration of Acute Loss of Smell or Taste in COVID-19 Patients. J Korean Med Sci, 35, e174.
- SETHURAMAN, N., JEREMIAH, S. S. & RYO, A. 2020. Interpreting Diagnostic Tests for SARS-CoV-2. JAMA.
- Worldometer, Corona Virus https://www.worldometers.info/coronavirus/