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DAILY UPDATE ON GLOBAL AND NATIONAL DEVELOPMENTS ON COVID-19

THE KNOWLEDGE SYNTHESIS TEAM
CDT-AFRICA, ADDIS ABABA UNIVERSITY

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Summary

- It was found that a 1°C increase in local temperature reduces the transmission of COVID-19 by 13%.
- No mother to child transmission of the virus through effective protection measures during delivery.
- The novel coronavirus has infected more than 1,117,918 people and killed 59,203 worldwide.
- From 50 African countries, a total of 7,123 cases, 289 deaths, and 592 recoveries were reported.
- Hydroxychloroquine is associated with significant viral load reduction/disappearance in COVID-19 patients and its effect is reinforced by azithromycin.
- A potential coronavirus vaccine named PittCoVacc developed by US scientists has been found to produce antibodies capable of fighting off Covid-19.
- A global community of mental health innovators has also compiled the mental health resources for COVID 19 outbreak.

Update on Pathogenesis

Disease transmission

- Previous studies highlighted that higher temperature reduce the persistence of the COVID-19 virus on different inanimate surfaces. However, there was no compelling evidence on the association between temperature and COVID-19 transmission.
 - A recent study conducted using a sample of 166,686 confirmed new COVID-19 cases from 134 Countries found that a 10C increase in local temperature reduces the transmission of COVID-19 by 13% [95%CI; 4 – 21].
 - The study also projected that changing temperatures between March 2020 and July 2020 will cause COVID-19 transmission to fall by 43% on average for Northern Hemisphere countries and to rise by 71% on average for Southern Hemisphere countries (Carleton T, 2020).
- Concerning vertical transmission of COVID-19, few studies in China suggested that there is no mother to child transmission of the virus through effective protection measures during delivery.
 - A single case report showed no SARS-CoV-2 transmission from a symptomatic, test-positive mother to her neonate delivered by caesarean section in a negative pressure operating room (Yang L, 2020).

- Another retrospective study done among nine pregnant women with SARS-CoV-2 infection also proven that there is no intrauterine transmission of the virus after testing the amniotic fluid, cord blood, neonatal throat swab, and breast milk samples for SARS-CoV-2 (Chen H, 2020).
- A descriptive study also revealed that 10 neonates who were born from nine pregnant women with SARS-CoV-2 infection (7 delivered through caesarean section and 2 delivered through vaginal delivery) tested negative for the virus (Zhu H, 2020).

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

Global

- The novel coronavirus has infected more than 1,117,918 people and killed 59,203 worldwide as of April 04, 6:00 GMT.
- According to worldometer, a total of 101,566 new cases and 59,162 new deaths were reported worldwide. This number is enormously increased as compared to yesterday's report: 21,702 new cases and 5,990 new deaths in actual number increment.
- The United States of America has reported 277,475 cases, with more than 7,400 deaths as of April 04, 2020, 06:00 GMT. The country also marks the record for most new coronavirus deaths (1,321) reported in a single day.
- Italy (119,827), Spain (119,199) Germany (91,159), France (82,165) and China (82,294) are the other most affected countries in the world.
- Almost half 25,879 (43.7%) of the total deaths were reported from Italy (14, 681) and Spain (11,198).
- As of April 03, 2020, only 1,275 people have died from coronavirus in Germany.

Africa

- So far, a total of 7,123 cases, 289 deaths, and 592 recoveries were reported from 50 African countries.
- South Africa has the largest number of cases in the continent (1,505) and Algeria is the second most affected country with a total of 1,171 cases.
- Egypt (985, 66 deaths), Morocco (791, 48 deaths), Cameroon (509, 8 deaths) and Tunisia (495, 18 deaths) are other African countries with high number of cases and deaths according to John Hopkins University report.

- More than three fourth (n=219; 75.8%) of the total deaths in the continent were reported from Egypt, Algeria and Morocco.

Update on Diagnosis

- According to FIND diagnostics, as of 4rd April 2020 [1:00pm, East Africa time], there are 179 molecular assay tests commercialized and 36 tests under development for COVID-19 (FIND, 2020).

Update on Treatment

- A preliminary result was published on an open label non-randomized clinical trial on the treatment of COVID 19 patients with Hydroxychloroquine and azithromycin. The study showed that Hydroxychloroquine is significantly associated with viral load reduction/disappearance in COVID-19 patients and its effect is reinforced by azithromycin. The study was conducted on 36 Hospitalized patients with confirmed COVID-19 in Southern France. At day 6 post-inclusion in to the trial, 100% of patients treated with hydroxychloroquine and azithromycin combination were virologically cured compared with 57.1% in patients treated with hydroxychloroquine only, and 12.5% in the control group (Gautret P, 2020).
- Among the drugs being tested for COVID-19 is chloroquine, which was indicated to have in vitro activity against SARS CoV-2. The pharmaco-kinetic properties of chloroquine indicate that in the human body, chloroquine has a large volume of distribution with an elimination half-life of 20–60 days and a tendency to accumulate in metabolically active tissues at higher levels compared with the plasma concentration. In view of these properties and the effects of chloroquine toxicity which cause retinopathy and immunosuppression, it is recommended that continued caution should be exercised in the use of the medication for clinical use in such a rapid manner. Moreover, Recommended doses should be established with close reference to pharmacological profiles and side-effects must be closely monitored (Wong YK, 2020).

Update on vaccine

- A potential coronavirus vaccine named PittCoVacc developed by US scientists has been found to produce antibodies capable of fighting off Covid-19. This study is the first peer-reviewed study of its kind. The vaccine, which was tested on mice by researchers at the University of Pittsburgh School of Medicine, generated the

antibodies in quantities thought to be enough to “neutralise” the virus within two weeks of injection. It was also reported that the researchers are set to apply to the US Food and Drug Administration for investigational new drug approval ahead of phase one human clinical trials planned to start in the next few months (Baynes C, 2020).

- Row has reportedly erupted of racism after a French doctor suggested in a TV debate of doing a clinical trial of a TB vaccine in Africa as a first trial (<https://www.bbc.com/news/world-europe-52151722>).
 - While the issue is complex, this is an unfortunate comment when there is a desperate need for finding cure and effective prevention.
 - At CDT-Africa, our policy is that no first in human trial of a product produced outside Ethiopia is to be conducted first in Ethiopia. The product has to be tested for safety in another country or the country of origin of the product unless it is a product produced in Ethiopia or the treatment is for a disease found only in Ethiopia.
 - All clinical trials are conducted only when GCP standards are met.

Update on personal protective equipment

Face mask use

- On 3rd April 2020, CDC has recommended wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain (e.g., grocery stores and pharmacies) especially in areas of significant community-based transmission.
- CDC noted there is evidence from recent studies significant portion of individuals with coronavirus lack symptoms (“asymptomatic”) and that even those who eventually develop symptoms (“pre-symptomatic”) can transmit the virus to others before showing symptoms.
- CDC emphasizes that maintaining 6-foot social distancing remains important to slowing the spread of the virus.
- This new recommendation is additionally advising the use of simple cloth face coverings to slow the spread of the virus and help people who may have the virus and do not know it from transmitting it to others. It is indicated that this recommendation is a voluntary public health measure and that cloth face coverings made from household items or made at home from common materials at low cost

can be used. In this current CDC guidance, it is stated that the recommended cloth face coverings recommended are not surgical masks or N-95 respirators, which are critical supplies that must continue to be reserved for healthcare workers and other medical first responders (CDC, 2020).

- No exact guidance on fabrics but there are clues that recommendations around fabrics will be released.

[A SEPARATE SUMMARY DOCUMENT IS BEING PREPARED FOR FACE MASK]

Psychosocial wellbeing of health professionals during COVID 19 outbreak

- A global community of mental health innovators has compiled mental health resources for COVID-19 outbreak.

1. IASC MHPSS Briefing Note (2020). Overarching principles for response and globally recommended activities <https://www.mhinnovation.net/resources/addressing-mental-health-and-psychosocial-needs-during-covid-19-outbreak>

2. World Happy Fest (2020). Addressing Mental Health in a Pandemic and Infodemic State of the world (Webinar) <https://www.youtube.com/watch?v=RXB3Ri9lgtg>

3. UN Women and Translators without Borders (2020). COVID-19: How to include marginalized and vulnerable people in risk communication and community engagement

4. CBM (2020). Key advocacy messages, questions and signposted resources for disability and inclusion during the COVID-19 outbreak
https://www.mhinnovation.net/sites/default/files/downloads/resource/COVID%2019%20Resource%20pdf%20format_CBM-Global.pdf

5. Care (2020). Gender Implications of COVID-19 outbreaks in development and humanitarian setting and recommendations for health service providers, actors in development and humanitarian organisations and national actors
<https://www.mhinnovation.net/sites/default/files/downloads/resource/Gendered%20Implications%20of%20COVID-19%20-%20Executive%20Summary.pdf>

6. WHO (2020). Mental Health Considerations during COVID-19 Outbreak

7. WHO (2020) Mental Coping with stress during the 2019-nCoV Outbreak

8. UNICEF (2020). COVID-19 response: Considerations for Children and Adults with Disabilities

https://www.mhinnovation.net/sites/default/files/downloads/resource/COVID19%20response%20considerations%20for%20people%20with%20disabilities_190320.pdf

9. IDDC IHTG, CORE group (2020). Disability inclusion and COVID-19: A repository of resources focusing on Covid-19 disability, mental health, chronic health conditions.

10. Save the Children (2020). A free e-learning pathway and course for supporting humanitarian work on COVID 19 including topics on Public Health, Child Protection and MHPSS strengthening skills

<https://www.mhinnovation.net/sites/default/files/downloads/resource/COVID19-LearningPathway-eFlyer.pdf>

Recommendations

- Although the report on the impact of higher temperature is reassuring, such ecological information are biased because they discount the individual level information. Such information does not need to be communicated to the public because of its potential for false reassurance.
- While it is encouraging that mother to child transmission of COVID-19 infection is unlikely, given the very small number of cases involved, the evidence is not conclusive. Strong protection measures of pregnant mothers and reports on mother to child transmission are needed.
- Hydroxychloroquine has now good preliminary evidence of efficacy. At this stage this is sufficient to guide recommendation for the use of hydroxychloroquine given the emergency context. However, the sample size and the study design are not satisfactory. Further reports will strengthen the recommendation.
- Chloroquine has a pharmacokinetic and safety profile that is more concerning. Evidence is needed on its safety and efficacy. We recommend study on chloroquine with careful selection of patients with mild to moderate illness and reasonable organ functioning.
- Recommendation should be made for the public to use simple cloth coverings around the mouth and nose when close proximity contact with others is unavoidable. Because of the difficulty of specifying social distance when one is in public space, a blanket recommendation on going out into public places seems reasonable. Scarfs,

shema, netella, mekenet, etc may be used. Further recommendations on fabric will be made available when additional information is obtained. At this stage, cotton fabric seems preferable. [There seems to be robust evidence for the potential benefit of such simple cloth coverings. This is being compiled and will be shared].

- Such recommendation on cloth coverings should be linked to a strong emphasis on the need for careful handling of the cover to avoid risk of contamination, and for maintaining hand washing and strong social distancing measures.
- Surgical masks and N95 and P2 masks should be reserved for healthcare professionals.
- Urgent reassurance of the public is needed to avoid misunderstandings of clinical trials. The public should know that clinical trials are important, but we do not do first in human clinical trials in Ethiopia and that when clinical trials are done, we follow stringent safety monitoring procedures.

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