Update: 9 and 10 June, 2020

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

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Summary

- A study on pregnant women relatively larger sample (427) showed:
  - Most women did not have severe illness but 10% of them needed respiratory support. Five (1%) of the women died during follow-up. Three women died as a direct result of complication of COVID-19 and two from other causes.
  - 75% gave birth with term. Twelve (5%) of 265 infants tested positive for SARS-CoV-2 RNA, six of them within the first 12 hours after birth.
- Novel coronavirus affected 213 countries and territories around the world causing 7,354,855 cases, 414,396 deaths and 3,629,105 recoveries as of June 10, 13:00 GMT.
- Africa reported a total of 197,313 cases, 5,357 deaths and 86,338 recoveries as of June 10th, 5:00 PM EAT.
- Preliminary results from the UK RECOVERY trial have shown Hydroxychloroquine does not reduce the risk of dying or improve other outcomes in hospitalised patients treated for COVID-19.
- A small case series (n=25) of convalescent plasma therapy (CPT) for severe COVID-19 demonstrated safety and efficacy of CPT.
- A commentary from Brazil has recommended a three level (governmental, institutional and individual) strategy to promote the mental and psychosocial wellbeing of health workers during the pandemic.

Recommendation

- More evidence on lack of efficacy of hydroxychloroquine means this treatment cannot be relied upon.
- Convalescent plasma therapy continues to demonstrate clinical utility for severe illness. Emergency use authorisation is needed urgently if this has not already been granted.
- The pandemic continues to fluctuate with an overall trend of increase in daily new cases and deaths. The public health control measures need to continue with consistency.

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

Global

- Novel coronavirus affected 213 countries and territories around the world causing 7,354,855 cases, 414,396 deaths and 3,629,105 recoveries as of June 10, 13:00 GMT.
- Comparing the last two days' report, the number of new cases has increased markedly, from 107,718 on June 8th to 121,071 on June 9th. Similarly, the number of new deaths is significantly increased between these two days (from 3,157 to 4,732).
- Consistently, United States of America (USA) continues to be the leading country with both high number of cases and deaths in the world. As of June 10th, 13:00 GMT, more than 2 million (2,046,514) people were infected with the virus and 114,185 deaths were reported in the country which accounted for equal proportion (27%) of total cases and deaths in the world.
- In the last two days, similar number of new cases (19,044 on June 8th and 19,056 on June 9th) were reported in USA, while the number of new deaths is substantially increased from 586 to 1,093.
- Next to the USA, Brazil (742,084 cases), Russia (493,657 cases), United Kingdom (289,140 cases) and Spain (289,046 cases) are other most affected countries with COVID-19.
- These countries also reported high number of deaths each accounting for large proportion of total deaths in the world; United Kingdom 40,883 (9.8 %), Brazil 38,497 (9.2%), Italy 34,043 (8.2%), France 29,296 (7.1%) and Spain 27,136 (6.5 %).

Africa

- According to Africa CDC, a total of 197,313 cases, 5,357 deaths and 86,338 recoveries were reported as of June 10th, 5:00 PM EAT.
- South Africa remained the first country with a total of 52,991 cases and 1, 162 deaths followed by Egypt (36,829 cases), Nigeria (13,464 cases), Algeria (10,382 cases), Ghana (10,201 cases) and Cameroon (8,681 cases).
- As compared to previous day's report, the number of new cases within the last 24 hours is increased in the majority of these countries; Nigeria (315 to 663), Cameroon (152 to 252), Morocco (78 to 135), Egypt (1,365 to 1,385), Algeria (111 to 117) and Ghana (272 to 291), while it's reduced in South Africa (2,594 to 2,112).
- The highest number of deaths is reported from Egypt (1,306 deaths), which accounted for almost a quarter (24.4%) of total deaths in the continent.
- Other African countries with high number COVID-19 deaths include; Algeria 724 (13.5%), Sudan 389 (7.3%), Nigeria 365 (6.8%), Cameroon 212 (4.0%) and Morocco 210 (3.9%)

Ethiopia

- According to the Ministry of Health report, a total of 10,786 laboratory tests were carried out within 48 hours and 360 additional COVID-19 cases were identified in the country.
- All of the additional cases are Ethiopians, their age ranges from 1 to 115 years and more than half 228 (63.3%) of them are males.
- Almost two third 234 (65%) of these cases were reported from Addis Ababa, 60 from Somali, 23 from Oromia, 23 from Amhara, 9 from Tigray, 6 from Hareri and 5 from SNNPR region.
- The ministry also reported that additional 40 people (33 from Addis Ababa, 5 from Amhara and 2 from Somali region) are fully recovered from the disease raising the total number of recoveries to 401.
- In addition, eight people (6 males and 2 females) have passed away on June 8th and June 9th raising the total number of deaths in the country to 35.
- Therefore, a total of 158,521 laboratory tests were conducted and 2,506 confirmed cases, 35 deaths and 401 recoveries were reported as of June 10th, 7:00 PM EAT.
- Out of the total 2,068 active cases, 33 of them are in critical condition and receiving treatment in the intensive care unit, while the others are having mild form of the disease.

Update on Diagnosis

- Additional review revealed that the detection methods targeting antibodies are not suitable for screening of early and asymptomatic cases since most patients had an antibody response at about 10 days after onset of symptoms but that antibody detection methods can be combined with quantitative RT-PCR to significantly improve the sensitivity and specificity of diagnosis, and boost vaccine research. It also indicated the need for fast, sensitive and accurate detection methods targeting antigens to be developed urgently (Cui and Zhou, 2020).
- Studies continue to be conducted on currently available antibody tests for COVID-19. One study analyzed the diagnostic performance of a lateral flow immunoassay, called AllTest COVID-19 IgG/IgM, which detects IgG and IgM antibodies. The serologic test was validated using serum samples from 100 negative patients (group 1) and 90 patients with COVID-19 confirmed by PCR (group 2). In group 3, the test was evaluated prospectively in 61 patients with clinical diagnosis of pneumonia of unknown etiology that were negative for SARS-CoV-2 by PCR. The results showed all 100 patients from group 1 were negative for the serologic test (specificity = 100 %). In group 2, the median time from their symptom onset until testing was 17 days. The test was positive for either IgM or IgG in 58(overall sensitivity = 64.4 %), and in patients tested 14 days or more after the onset of symptoms, the sensitivity

was 88.0 %. In group 3, the median time after symptom onset was also 17 days, and the test was positive in 54 (88.5 % positivity). The researchers indicated that their study shows that Alltest lateral flow immunoassay is reliable as a complement of PCR to diagnose SARS-CoV-2 infection after 14 days from the onset of symptoms and in patients with pneumonia and negative PCR for SARS-CoV-2(Perez-Garcia et al., 2020).

Update on treatment

- Preliminary results from the UK RECOVERY trial have shown Hydroxychloroquine does not reduce the risk of dying or improve other outcomes in hospitalised patients treated for covid-19. Announcing the results, the study's deputy chief investigator, stated that they concluded that there is no beneficial effect of hydroxychloroquine in patients hospitalised with covid-19. As a result they decided to stop enrolling participants to the hydroxychloroquine arm with immediate effect. The data show the death rate at 28 days in covid-19 patients taking hydroxychloroquine is 25.7% compared with 23.5% in patients provided with only usual hospital care (hazard ratio 1.11 (95% confidence interval 0.98-1.26); P=0.10). So far 1542 patients in the trial have been randomised to hydroxychloroquine and 3132 patients randomised to usual care alone. There was also no evidence that hydroxychloroquine impacted on length of hospital stay or had any beneficial effects on other outcomes, or that it had any beneficial effects only in certain patient groups. The RECOVERY trial began in March and is a dynamic trial assessing candidate treatments for covid-19 in patients in UK hospitals. Treatments selected for the trial are chosen because there is reason to believe that they might work, they have a known safety profile, and there is sufficient supply to enable its inclusion. More than 11 000 patients have been enrolled. Five other treatments continue to be assessed by the RECOVERY trial: lopinavir-ritonavir, low dose dexamethasone, azithromycin, tocilizumab, and convalescent plasma (collected from donors who have recovered from covid-19). Results on these are expected in early July (Torjesen 2020).
- Patients (n = 25) with severe and/or life-threatening COVID-19 disease were enrolled at the Houston Methodist hospitals from March 28 – April 14, 2020. Patients were transfused with convalescent plasma obtained from donors with confirmed SARS-CoV-2 infection and had recovered. The primary study outcome was safety, and the secondary outcome was clinical status at day 14 post-transfusion. Clinical improvement was assessed based on a modified World Health Organization 6-point ordinal scale and laboratory parameters. At day 7 post-transfusion with convalescent plasma, nine patients had at least a 1-point improvement in clinical scale, and seven of those were discharged. By day 14 post-transfusion, 19 (76%) patients had at least a 1-point improvement in clinical status and 11 were discharged. No adverse events as a result of plasma transfusion were observed. The data also indicated that administration of convalescent plasma is a safe treatment option for those with severe COVID-19 disease. Limitation of the study is that the study was a small case series and no control group was included. Thus, it is not clear if the 25 patients given convalescent plasma would have improved without this treatment. Moreover, all patients were treated with multiple other medications, including antiviral and anti-inflammatory agents. Thus, we cannot conclude that the patient outcomes were due solely to administration of convalescent plasma (Salazar, Perez et al. 2020).

Update on personal protective equipment

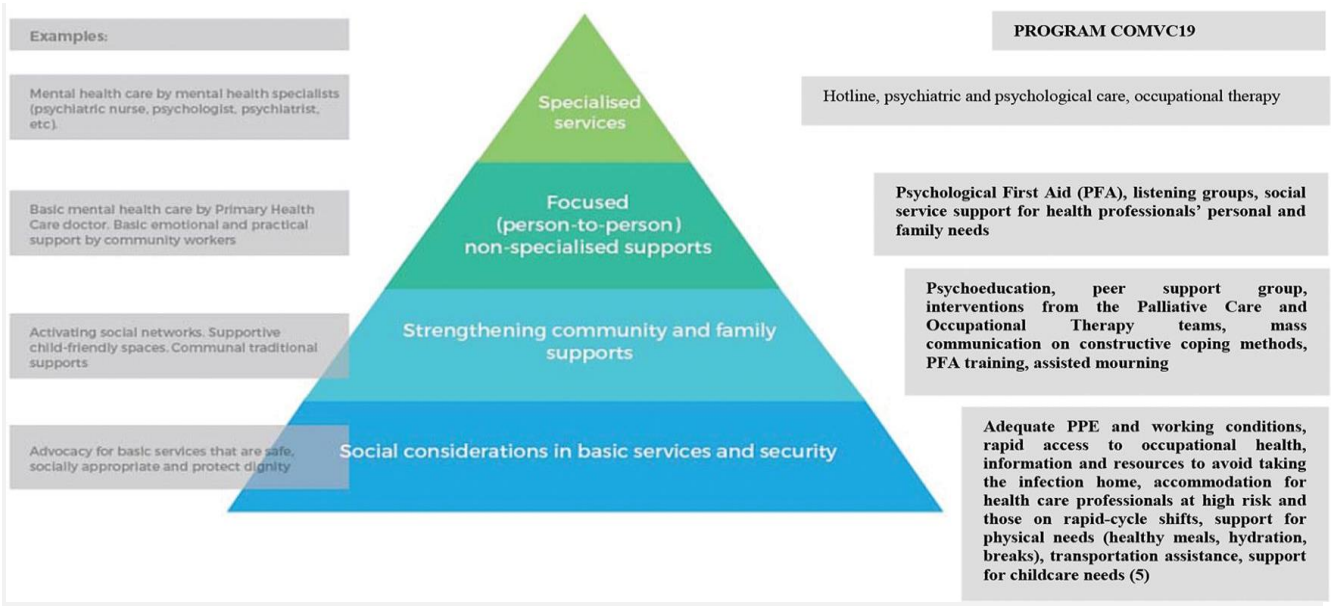
Face mask use

- One article proposed using centrifugation as a method to test the filtration efficiency of mask materials. This method was used to test the efficiency of surgical masks, gauze masks, gauze, cotton, silk, linen and tissue paper on blocking micro-droplet sized starch particles (average 8.2 µm) and latex

microspheres (0.75 µm) with a velocity of 44.4 m/s created by centrifugation and was qualitatively analyzed by using imaging-based analysis. It was revealed 4 layers of silk could block 93.8% of microspheres and 88.9% of starch particles, followed by the gauze mask (78.5% of microspheres and 90.4% of starch particles) and the 2 layers of cotton (74.6% of microspheres and 87.5-89.0% of particles). Other materials also blocked 53.2-66.5% of microspheres and 76.4%-87.9% of particles except the 8 layers of gauze which only blocked 36.7% of particles. It was also noted the filtration efficiency was improved by the increased layers of materials. The authors concluded centrifugation based filtration efficiency test not only compensates shortcomings of current tests for masks, but also offers a simple way to explore new mask materials during pandemics. It was also stated common mask materials can potentially provide protection against respiratory droplet transmission (Xiao et al., 2020).

Psychosocial wellbeing updates

- A commentary from Brazil has recommended a three level (governmental, institutional and individual) strategy to promote the mental and psychosocial wellbeing of health workers during the pandemic. Government and institutional level interventions can increase the motivation and effectiveness of health workers. Interventions such as regular and clear communication, availing PPE, guarantee medical assistance, family support and access to psychosocial support are critical. They developed a mental and psychosocial support plan for health professionals under three themes: mental health and psychosocial support, education, and research. The psychosocial intervention followed the following steps (Fukuti 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/

- CUI, F. & ZHOU, H. S. 2020. Diagnostic methods and potential portable biosensors for coronavirus disease 2019. Biosens Bioelectron, 165, 112349.
- Ethiopian Public Health Institute CoronaVirus Update; https://www.ephi.gov.et/index.php/public-health-emergency/novel-corona-virus-update
- FUKUTI, P., UCHÔA, C. L. M., MAZZOCO, M. F., CORCHS, F., KAMITSUJI, C. S., ROSSI, L. D., RIOS, I. C., LANCMAN, S., BONFA, E. & BARROS-FILHO, T. E. P. D. 2020. How Institutions Can Protect the Mental Health and Psychosocial Well-Being of Their Healthcare Workers in the Current COVID-19 Pandemic. Clinics, 75.
- John Hopkins, Corona Virus Resources https://coronavirus.jhu.edu/map.html
- Knight, M., Bunch, K., Vousden, N., Morris, E., Simpson, N., Gale, C., . . . Kurinczuk, J. J. (2020). Characteristics and outcomes of pregnant women admitted to hospital with confirmed SARS-CoV-2 infection in UK: national population based cohort study. Bmj, m2107. doi: 10.1136/bmj.m2107
- PEREZ-GARCIA, F., PEREZ-TANOIRA, R., ROMANYK, J., ARROYO, T., GOMEZ-HERRUZ, P. & CUADROS-GONZALEZ, J. 2020. Alltest rapid lateral flow immunoassays is reliable in diagnosing SARS-CoV-2 infection from 14 days after symptom onset: A prospective single-center study. J Clin Virol, 129, 104473.
- Salazar, E., K. K. Perez, M. Ashraf, J. Chen, B. Castillo, P. A. Christensen, T. Eubank, D. W. Bernard, T. N. Eagar, S. W. Long, S. Subedi, R. J. Olsen, C. Leveque, M. R. Schwartz, M. Dey, C. Chavez-East, J. Rogers, A. Shehabeldin, D. Joseph, G. Williams, K. Thomas, F. Masud, C. Talley, K. G. Dlouhy, B. V. Lopez, C. Hampton, J. Lavinder, J. D. Gollihar, A. C. Maranhao, G. C. Ippolito, M. O. Saavedra, C. C. Cantu, P. Yerramilli, L. Pruitt and J. M. Musser (2020). "Treatment of COVID-19 Patients with Convalescent Plasma." The American Journal of Pathology.
- World Health Organization: https://www.who.int/images/default-source/health-topics/coronavirus/pregnancy-breastfeeding/who---pregnancy---5.png
- Worldometer, Corona Virus https://www.worldometers.info/coronavirus/
- XIAO, L. I., SAKAGAMI, H. & MIWA, N. 2020. A New Method for Testing Filtration Efficiency of Mask Materials Under Sneeze-like Pressure. In Vivo, 34, 1637-1644.