



**Update: May 2-4, 2020**

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

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## Summary

- As of May 4, 9:00 GMT, globally, infections of COVID-19 has now reached more than 3.5 million people (3,579,478) causing 248,445 deaths and 1,158,935 recoveries.
- Both the number of new cases and new deaths in USA are decreasing in the past three days.
- In Africa, a total of 44,483 COVID-19 cases, 1,801 deaths, and 14,921 recoveries were reported as of May 4, 1:00 AM EAT.
- Younger people with obesity are at greater risk of complications from COVID-19 than previously reported.
- Immunosuppression does not seem to increase the risk of severe COVID-19 in children.
- More studies are indicating reduced sense of smell and taste being very common in COVID-19 patients indicating the significance of this history in the early diagnosis.
- FDA issued an Emergency Use Authorization (EUA) for the investigational antiviral drug remdesivir after NIH's study showing better time to recovery of COVID-19 patients. It is worth noting that an important study from China published in the Lancet did not find significant impact. The negative result appears to be due to the small number of participants in the study. The US study had nearly four-fold the sample size of the China study. While the US study did not demonstrate significant impact on mortality, a larger sample size is likely to demonstrate benefit. Please see recommendation below re: required cautions.
- The US has introduced a "data-driven" re-opening guideline. While the plan has received broad support, the re-opening process in many parts of the country does not seem to follow the guideline. This re-opening has created uncertainty and upwards revision of the projected cases and mortality in the US.

## Recommendations

- A clinical trial of remdesivir is still warranted: (1) the impact of remdesivir on mortality needs to be demonstrated; (2) local data will provide relevant safety data on remdesivir.
- Caution with interpretation of impact and potential safety issues: It seems prudent to be cautious with this new medication. While its impact is truly meaningful, the impact is not very big. Thus, it is not a game changing drug. The lack of good alternatives also means that the complexity of using it (as an IV infusion) seems to be overlooked. Similarly, important safety concerns could be overlooked. For example, the negative Lancet study on the remdesivir (Wang et al 2020) reported that **remdesivir was stopped early because of adverse events in 18 (12%) of patients versus four (5%) patients who stopped placebo early.**
- **Please also note that no full report of the study has been published** in a peer reviewed journal. The peer review process is crucial, particularly for a medication with high business potential. We have to maintain a posture of caution until the report is published in peer review paper with the primary data.
- Many African countries are considering re-opening. The US re-opening guidelines are helpful if implemented the right way. However, mixed messages, uncoordinated implementation and extreme political pressure can have major impact that could be difficult to reverse.

- In Africa, the lack of adequate testing capacity will be a considerable challenge to re-opening. Enhancing sentinel surveillance programmes will help although unlikely to be sufficient.
- *The public may be disengaging from implementing the public control measures prematurely.* The recommendation for the use of public control measures, such as the wearing of face masks and simple coverings has continued. Innovations in public messaging are required to ensure that the public continues to trust the public messages regarding the pandemic, and continue to follow the public health control measures.

### Update on Pathogenesis

- A recent study in the United States of America (USA) reported that obesity could shift the impact of severe COVID-19 disease to younger ages after they found significant inverse correlation between body-mass index (BMI) and age in patients with COVID-19 admitted to ICU [David, 2020].
- Hypothesised mechanisms were:
  - Obesity can restrict ventilation by impeding diaphragm excursion and impairs immune responses to viral infection.
  - It also induces diabetes and oxidant stress to adversely affect cardiovascular function.
- According to the United Kingdom (UK) National Institute for Health and Care Excellence (NICE) rapid guideline, immunosuppression does not seem to increase the risk of severe COVID-19 in children. Therefore, Doctors should reassure parents and care givers as COVID-19 usually causes a mild, self-limiting illness in children and young people, even in those who are immunocompromised. The guideline also advises that patients should not avoid their usual appointments and should continue with their usual treatment. However, face-to-face contact should be reduced and alternative approaches should be used instead [Wise 2020].

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

#### *Global*

- Novel coronavirus infected more than 3.5 million people (3,579,478) worldwide causing 248,445 deaths and 1,158,935 recoveries as of May 4, 9:00 GMT.
- The number of new cases is persistently declining in the last three consecutive days; from 94,550 new cases on May 1st to 82,260 on May 3rd. Similarly, the number of new deaths significantly decreased from 5,624 to 3,481 deaths on May 3rd.
- A third of the total cases in the world (1,188,421 (33.25%)) continues to be reported from USA with New York the most affected state (n=323,883 cases).
- Comparing the last three days' report, both the number of new cases and new deaths in USA are decreasing; with a total of 36,007 new cases and 1,897 deaths on May 1st and 27,348 new cases and 1,154 deaths on May 3rd.
- Similarly, both the number of new cases and new deaths in UK are relatively declining in the last three days; from 6,201 new cases to 4,339 and from 739 new deaths to 315 on May 3rd.
- As of May 3rd, 9:00 GMT, a total of 68,602 people have died with coronavirus in USA and more than two third 24,648 (35.9%) of these deaths occurred in New York state.
- As in previous days, after the USA, Spain, Italy, UK and France are the other most affected countries worldwide with a total of 247,122 cases, 210,717 cases, 186,599 cases and 168,693 cases respectively. The number in Russia is growing substantially in recent days. In

fact the number of new cases has increased so much that Russia has the second largest number of new cases after the USA.

- Other countries with high number of deaths include Italy (28,884), UK (28,446), Spain (25,264) and France (24,895), which in total accounted for almost one third (31.8%) of the total deaths worldwide.

### **Africa**

- In Africa, a total of 44,483 COVID-19 cases, 1,801 deaths, and 14,921 recoveries were reported as of May 4, 1:00 AM EAT.
- South Africa remained the leading country with a total of 6,783 cases and 131 deaths. The number of new cases reported in the last 24 hours (447 new cases) is much higher than in the last two days (385 and 304 new cases).
- Egypt is the second most affected country with a total of 6,465 cases followed by Morocco (4,903) and Algeria (4,474).
- Even though, the number of new cases in Nigeria is declining in the last three days (from 238 on May 1st to 178 on May 3rd), the country is included among the five most affected countries in the continent with a total of 2,558 cases.
- Two third of total deaths [n=1,197 (66.5%)] in the continent were reported from Algeria (463), Egypt (429), Morocco (174) and South Africa (131).

### **Ethiopia**

- In the last three days, additional 5,334 laboratory tests were performed and seven of them confirmed to be positive for COVID-19 raising the total number of cases to 140.
- Out of these additional cases, six of them are Ethiopians and one with Sweden citizenship.
- Majority (6/7) of the additional cases are males and their age ranges from 17 to 45 years.
- Four of the additional cases have travel history; of this, three of them came from Punt land and the other from Sweden. All of these cases were staying in Jigjiga and Addis Ababa mandatory quarantine center respectively.
- The other three cases were reported from Silte, Zeway and Bahir Dar city and only one of these cases have contact history with confirmed COVID-19 case while the other two were identified through house to house surveillance.
- According to the ministry of health report, additional nine people (six from Dire Dawa, three from Addis Ababa) recovered from the disease raising the total number of recoveries to 75.
- So far, a total of 24,088 laboratory tests were carried out and 140 confirmed cases, 3 deaths and 75 recoveries were reported as of May 04, 2:00 PM EAT.
- Currently, there are 60 active cases and all of these cases are receiving medical care in the designated treatment centre.

### **Update on Diagnosis**

- According to FIND diagnostics, as of 4th May 2020 [11:35am, EAT], there were 260 molecular assay tests commercialized and 44 tests under development for COVID-19. There are also 259 immunoassay tests commercialized and 45 tests under development (FIND,2020).

- Additional study found reduced sense of smell and reduced sense of taste is very common in COVID-19 patients indicating the significance of this history in the early diagnostics (Luers et al., 2020).

### Update on Treatment

- The FDA has issued an Emergency Use Authorization (EUA) for the investigational antiviral drug remdesivir. The EUA External Link Disclaimer allows for remdesivir to be distributed in the U.S. and administered by health care providers, as appropriate, to treat suspected or laboratory-confirmed COVID-19 in adults and children hospitalized with severe disease. Severe disease is defined as patients with low blood oxygen levels or needing oxygen therapy or more intensive breathing support such as a mechanical ventilator (US FDA, 2020). This news comes days after the US National Institutes of Health (NIH) stated that remdesivir helps patients hospitalized with COVID-19 recover faster and may also reduce mortality. The drug—developed by US pharmaceutical company Gilead—is being tested through a randomised, controlled trial involving 1063 patients from several countries including the US, UK, and Singapore. The study began in February. Currently, no official results have been published, however the NIH said that the independent data and safety monitoring board (DSMB) overseeing the trial met on 27 April 2020 to review the data and shared their interim analysis with the study team. They reported that the preliminary data suggests remdesivir was better than placebo in terms of time to recovery, the primary endpoint defined as being well enough for hospital discharge or returning to normal activity level (Mahase, 2020). The impact on mortality was not statistically significant but had a clear trend of impact (mortality of 8% in the remdesivir group vs 11.6% in the placebo group;  $p=0.059$ ).
- Scientists at Sanford Burnham Prebys Medical Discovery Institute (a partner institution of CDT-Africa), have identified 30 existing drugs that stop the replication of SARS-CoV-2, the virus that causes COVID-19. Almost all of the drugs are entirely different from those currently being tested in clinical trials, and weren't previously known to hold promise for COVID-19 treatment. The drugs were identified by screening more than 12,000 drugs from the ReFRAME drug repurposing collection—a library of existing drugs that have been approved by the FDA for other diseases or have been tested extensively for human safety. Every compound was tested against the live SARS-CoV-2 virus, isolated from patients in Washington State and China, and the final 30 drugs were selected based on their ability to stop the virus's growth. Each drug or experimental compound requires further evaluation in clinical trials to prove its effectiveness in treating people with COVID-19 before it can be used broadly. 27 drugs that are not currently under evaluation for COVID-19 were effective at halting viral replication. 17 of these drugs have an extensive record of human safety from clinical studies in non-COVID-19 diseases, including four—clofazimine, acitretin, tretinoin and astemizole—that were previously approved by the FDA for other indications. Thus far, six of the 17 were shown to be effective at concentrations, or doses, likely to be effective and tolerable in humans. Four of these six drugs—apilimod (PIKfyve kinase inhibitor), MLN-3897 (CCR1 antagonist), VBY-825 (a reversible cathepsin protease inhibitor) and ONO 5334 (a cathepsin K inhibitor)—have been tested clinically for diseases including rheumatoid arthritis, Crohn's disease, osteoporosis and cancer. In addition to the 27 drug candidates, three drugs currently in clinical trials for COVID-19, including remdesivir and chloroquine derivatives, were also shown to be effective at stopping the growth of SARS-CoV-2. These results reaffirm their promise as potential COVID-19 treatments and support the continuation of ongoing

clinical trials to prove their effectiveness in patients (Riva et al., 2020, Sanford Burnham Prebys Medical discovery Institute, 2020).

## Update on personal protective equipment

### *Facemask use*

- Recommendations of face mask use by the community is increasing and articles continue to surface on this controversial issue. A modelling study of the community-wide impact of mask use by the general public, a portion of which may be asymptotically infectious, has indicated that masks were useful with respect to both preventing illness in healthy persons and preventing asymptomatic transmission (Eikenberry et al., 2020).
- One new correspondence in a relatively high impact journal strongly supports the use of cloth masks as a simple, economic and sustainable alternative to surgical mask as a means of source control for general community use preserving the scarce supply of medical masks to the health care professionals (Esposito et al., 2020). But the article mainly rehearses the same lines of argument with no evidence to support it.

### *Reducing the risk of resurgence during reopening*

The White House (<https://www.whitehouse.gov/openingamerica/#criteria>) has introduced a “data-driven” set of conditions that are to be followed across the country. The guideline offers “gating criteria”, a set of standards that need to be met before states can begin opening up. The guideline also provides three phases of opening with specific guidance on what individuals and employers need to do.

The 3 gating criteria are:

- (1) **Symptoms:** There should be a downward trajectory of influenza-like illnesses reported within a 14-day period and that there should also be a downward trajectory of covid-like syndromic cases reported within a 14-day period.
- (2) **Cases:** There should be a downward trajectory of documented cases within a 14-day period OR in positive tests as a percent of total tests within a 14-day period (flat or increasing volume of tests)
- (3) **Hospitals:** Treat all patients without crisis care AND robust testing programme in place for at-risk healthcare workers, including emerging antibody testing.

In relation to preparedness of states: Ability to test and contact tracing; ability to provide sufficient PPE to handle dramatic surge in need and ability to surge ICU capacity; ability to protect health and safety of workers in critical industries, those living and working in high-risk facilities, employees and users of mass transit. With this the need to advise citizens regarding protocols for social distancing and face coverings; monitoring and taking steps to mitigate any rebounds or outbreaks

Responsibilities of citizens or individuals to practice the standard control measures is included in the guideline (hygiene, avoiding touching face, sneezing or coughing into a tissue or inside of elbow, using face coverings while in public, and particularly when using mass transit, don't go to work or school if symptomatic and contact medical provider)

Employers should implement appropriate policies: social distancing and protective equipment, temperature checks, sanitation, use and disinfect common and high-traffic areas, business travel + do not allow symptomatic people to physically return to work

until cleared by a medical provider and workforce contact tracing of employees who have COVID+ test.

Guidance for individuals and employers to follow during opening up for business			
Phase	Individual	Employer	Specific type of employer
One	<p>ALL VULNERABLE INDIVIDUALS should <b>continue to shelter in place</b>. Recognise risk to vulnerable members if returning to work and take precautions to isolate from vulnerable residents.</p> <p>WHEN IN PUBLIC should maximise physical distance</p> <p>AVOID SOCIALISING in groups of more than 10 people when appropriate physical distancing not possible</p> <p>MINIMISE NON-ESSENTIAL TRAVEL</p>	<p>ENCOURAGE TELEWORK</p> <p>RETURN TO WORK IN PHASES</p> <p>Close <b>COMMON AREAS</b> where personnel are likely to congregate and interact, or enforce strict social distancing protocols</p> <p>Minimize <b>NON-ESSENTIAL TRAVEL</b> and adhere to guidelines regarding isolation following travel.</p> <p>Strongly consider <b>SPECIAL ACCOMMODATIONS</b> for personnel who are members of a <b>VULNERABLE POPULATION</b>.</p>	<p><b>SCHOOLS AND ORGANIZED YOUTH ACTIVITIES</b> (e.g., daycare, camp) that are currently closed should remain closed.</p> <p><b>VISITS TO SENIOR LIVING FACILITIES AND HOSPITALS</b> should be prohibited. Those who do interact with residents and patients must adhere to strict protocols regarding hygiene.</p> <p><b>LARGE VENUES</b> (e.g., sit-down dining, movie theaters, sporting venues, places of worship) can operate under strict physical distancing protocols.</p> <p><b>ELECTIVE SURGERIES</b> can resume, as clinically appropriate, on an outpatient basis at facilities that adhere to CMS guidelines.</p> <p><b>GYMS</b> can open if they adhere to strict physical distancing and sanitation protocols.</p> <p><b>BARS</b> should remain closed.</p>
	<p><b>ALL VULNERABLE INDIVIDUALS</b> should continue to shelter in place. Members of households with vulnerable residents should be aware that by returning to work or other environments where distancing is not practical, they could carry the virus back home. Precautions should be taken to isolate from vulnerable residents.</p> <p>All individuals, <b>WHEN IN PUBLIC</b> (e.g., parks, outdoor recreation areas, shopping areas), should maximize physical distance from others. Social settings of more than 50 people, where appropriate distancing may not be practical, should be avoided unless precautionary measures are observed.</p> <p><b>NON-ESSENTIAL TRAVEL</b> can resume.</p>	<p>Continue to <b>ENCOURAGE TELEWORK</b>, whenever possible and feasible with business operations.</p> <p>Close <b>COMMON AREAS</b> where personnel are likely to congregate and interact, or enforce moderate social distancing protocols.</p> <p>Strongly consider <b>SPECIAL ACCOMMODATIONS</b> for personnel who are members of a <b>VULNERABLE POPULATION</b>.</p>	<p><b>SCHOOLS AND ORGANIZED YOUTH ACTIVITIES</b> (e.g., daycare, camp) can reopen.</p> <p><b>VISITS TO SENIOR CARE FACILITIES AND HOSPITALS</b> should be prohibited. Those who do interact with residents and patients must adhere to strict protocols regarding hygiene.</p> <p><b>LARGE VENUES</b> (e.g., sit-down dining, movie theaters, sporting venues, places of worship) can operate under moderate physical distancing protocols.</p> <p><b>ELECTIVE SURGERIES</b> can resume, as clinically appropriate, on an outpatient and in-patient basis at facilities that adhere to CMS guidelines.</p> <p><b>GYMS</b> can remain open if they adhere to strict physical distancing and sanitation protocols.</p> <p><b>BARS</b> may operate with diminished standing-room occupancy, where applicable and appropriate.</p>
Three	<p><b>VULNERABLE INDIVIDUALS</b> can resume public interactions, but should practice physical distancing, minimizing exposure to social settings where distancing may not be practical, unless precautionary measures are observed.</p> <p><b>LOW-RISK POPULATIONS</b> should consider minimizing time spent in crowded environments.</p>	<p>Resume <b>UNRESTRICTED STAFFING</b> of worksites.</p>	<p><b>VISITS TO SENIOR CARE FACILITIES AND HOSPITALS</b> can resume. Those who interact with residents and patients must be diligent regarding hygiene.</p> <p><b>LARGE VENUES</b> (e.g., sit-down dining, movie theatres, sporting venues, places of worship) can operate under limited physical distancing protocols.</p> <p><b>GYMS</b> can remain open if they adhere to standard sanitation protocols.</p> <p><b>BARS</b> may operate with increased standing room occupancy, where applicable.</p>

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