EPHI, National Data Management Center for health (NDMC)
Quick update on COVID 19, 018

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Ethiopia's COVID-19 situation update

As of August 13, 2020 there were a total of 25,118 COVID-19 cases and 463 deaths across the country. Compared to the cases and deaths reported a week ago, the cumulative cases have increased by 16% and cumulative deaths by 21%. So far 11,034 cases have recovered from COVID-19 (Fig 1). Of the 13,797 active cases, 178 are critical. The total number of tests stands at 535,431 showing a 12% increase compared to last week.
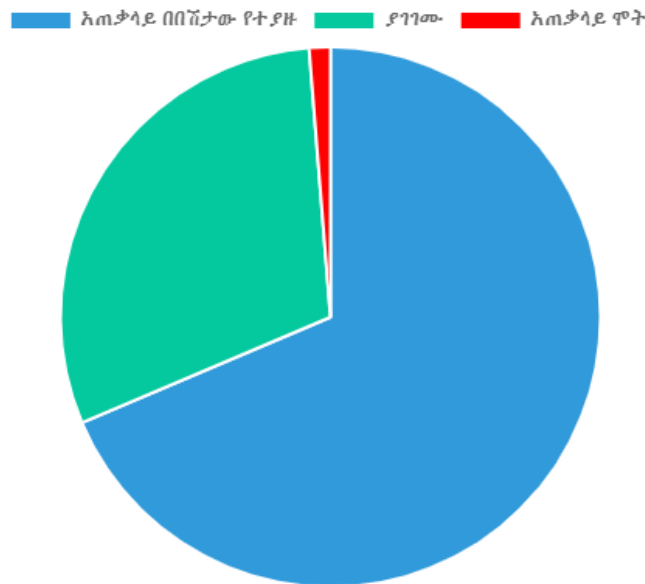

Fig. 1. Showing cumulative cases, recoveries and deaths (Source https://www.covid19.et/covid-19/)

**EPHI and FMOH COVID 19 response highlights of the week**

- Four days TOT on Home-Based Isolation and Care for group II Health Care Workers from Addis Ababa city and sub-city Health offices (22 in number) is completed on August 11,2020.
- Photo framing is done for Facebook for community engagement initiative for ComBAT campaign on August 10,2020.
- Five different video messages with different key messages (Careless youth, wise youth, old women, COVID-19 song for children and messages for people with disability) have been sent to five regional RCCE team for COVID-19 prevention interventions on August 7,2020.
- On August 7,2020, orientation on COMBAT were provided for regional PHEM focal persons and National RCCE team members.
- Five days TOT on Home-Based Isolation and Care for 21 HCWs from Addis Ababa city and sub-city Health offices completed on August 7,2020.
- On August 6,2020, key notice messages developed on COVID 19 sample collection and testing for responsible health offices and facilities.
- Seven SMS messages focusing on the current situation developed in Amharic and Afan Oromo on August 6,2020.

References
1. PUBLIC HEALTH EMERGENCY OPERATIONS CENTER (PHEOC), ETHIOPIA

Global and regional burden of COVID-19

- Globally the total number of cases is extended to 20,806,973 as of August 13, 2020. A total of 13,706,688 cases recovered and 747,258 people died since the beginning of the outbreak. Globally, in a week time, from 6 August to 13 August 2020, COVID-19 cases increased by 9.6% and deaths by 5.1%. North America is the leading in terms of cases followed Asia and South America. The number of deaths is North America is the highest in the world (Fig 2).
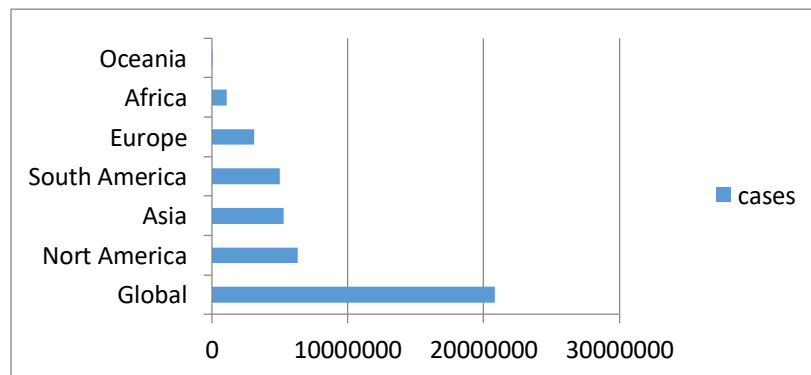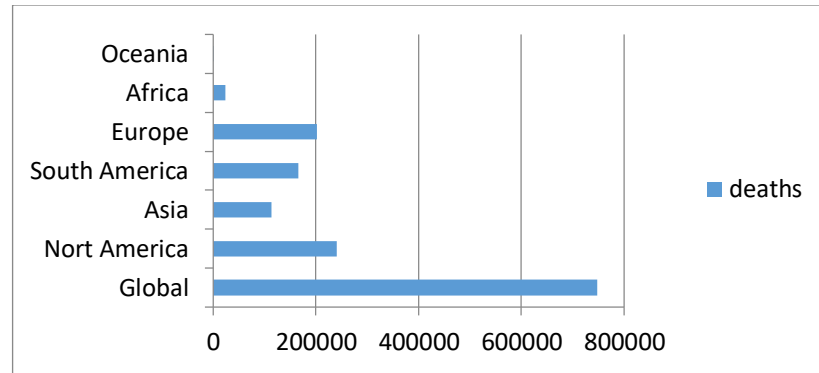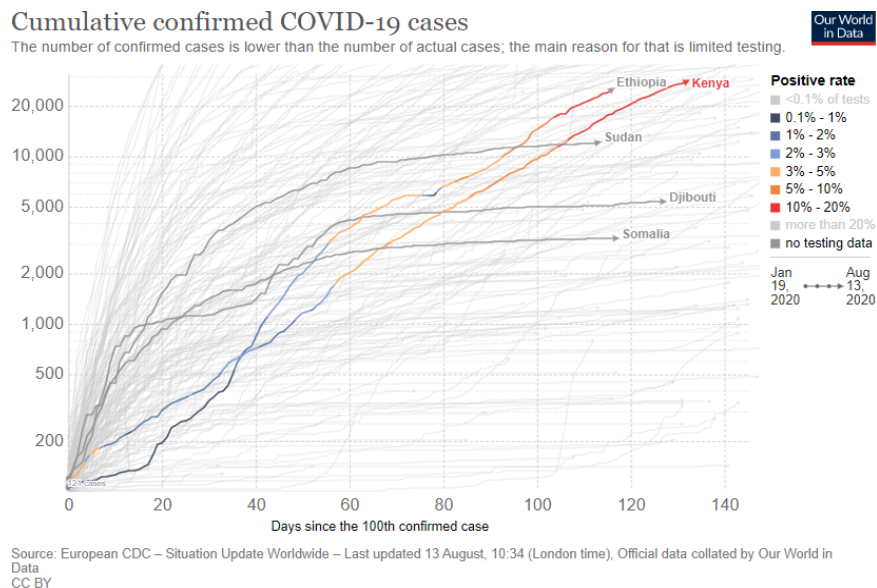
Fig 2. Global cases (top) and deaths (bottom) reported as of August 2020.

- In the USA, the increasing trend has continued. The country has recorded the highest number of cases (5,360,302 cases, 169,131deaths) that accounts 25.8% of the total global cases and carried 22.6% of global deaths as of August 13, 2020.

- Brazil has continued reporting the second COVID-19 case burden in the world following USA. The number of cases in Brazil has increased in a week time by 10.7% (2,862,761 to 3,170,474) and deaths by 7.0% (97,418 to 104,263).

- India has an increased number of cases in a week time by 21.9% (1,964,536 to 2,395,471) and deaths by 15.7% (40,739 to 47,138).

- Russia has continued reporting the highest number of cases in Europe, with 902,701 cases. The number of deaths in Russia increased by 4.2% of its case. The European countries have shown a decreasing pattern of COVID-19 new cases in general. However, Spain (352,847 to 376,864 cases), UK (307,184 to 313,798 cases), Italy (248,803 to 251,713 cases), Germany (214,104 to 220,850 cases) and France (194,029 to 206,696 cases) showed a gradual increase between 6 and 13 August, 2020.

- The share of Africa to the global COVID-19 pandemic has still been low (only 5.2% of the global cases and 3.3% of deaths as of August 13). However, within the continent the number of cases has increased by 8.1% in a week time (from 997,602 to 1,078,301cases). Similarly, the total number of deaths in Africa has increased from 21,683 to 24,322 showing a 12.2% increase in a week time. Total recoveries stand at 772,365.

- South Africa ranked 5th worldwide in terms of cases and leading in the continent with 568,919 cases and 11,010 deaths. Egypt (95,834 cases, 5,059 deaths), Nigeria (47,290 cases, 956 deaths), Ghana (41,572 cases, 223 deaths), Algeria (36,699 cases, 1,333 deaths) and Morocco (36,694 cases, 556 deaths) are the leading pack in reporting COVID-19 cases and deaths in Africa. (See table below).

Africa	August 6		August 13	
	Cases	Death	Cases	Deaths
South Africa	529,877	9,298	568,919	11,010
Egypt	94,875	4,930	95,834	5,059
Nigeria	44,890	927	47,290	956
Ghana	39,075	199	41,572	223
Algeria	33,055	1,261	36,699	1,333
Morocco	28,500	435	36,694	556

- In East African, COVID-19 cases and deaths have increased by 17.7% and 16.6% in Kenya and by 23.5% and 30.1% in Ethiopia respectively in a week time. As of August, Ethiopia and Kenya are the major drivers of the COVID 19 burden in east African. The epidemic appears plateauing in Sudan showing only 2.1% cases and 3% deaths and in Djibouti 0.3% cases and zero death. Similarly, zero cases and deaths reported in Somalia in a week time.

Cumulative confirmed COVID-19 cases
The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.

Source: European CDC – Situation Update Worldwide – Last updated 13 August, 10:34 (London time), Official data collated by Our World in Data
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References

1. John Hopkins, Corona Virus Resources **https://coronavirus.jhu.edu/map.html**
2. Worldometer, Corona Virus **https://www.worldometers.info/coronavirus/**
3. Africa CDC: COVID 19 Surveillance; https://au.int/covid19

COVID 19 in Africa: Dampening the storm?

- In Africa, despite a paucity of data, it appears that the virus is spreading differently and potentially with an attenuated outcome. But why the course of COVID-19 in Africa is

different? Many factors could account for the difference. These factors are described below (1):

- Experts predicted millions of COVID-19 deaths in Africa because many countries in the continent rank poorly on the United Nations Development Program's Human Development Index. However, more than 4 months after the first cases in Africa were detected; prevalence and mortality are still low compared to other continents.

COVID-19 cases
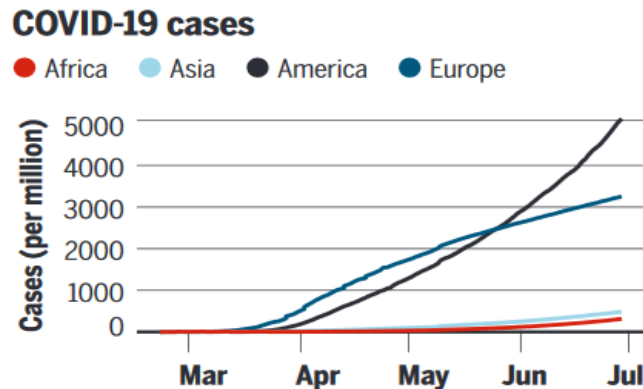
● Africa ● Asia ● America ● Europe

Figure 1. The distribution of coronavirus disease 2019 (COVID-19) cases per 1 million inhabitants.

- Many factors could explain the difference for the likely attenuated outcome. Among the factors are reliable reporting and death registration, lock-down stringency, demography, sociocultural aspects, environmental exposures, genetics, and the immune system. These could help to explain the difference in the experience of COVID-19 in Africa.

- Additionally, it is known that Africa faces major health and socioeconomic challenges that allows rapid transmission of COVID-19. These include a weak health system, population overcrowding, poverty, and unhygienic conditions. However, although community transmission was reported in many major African cities, the expert predicted number of cases and deaths has not yet been observed.

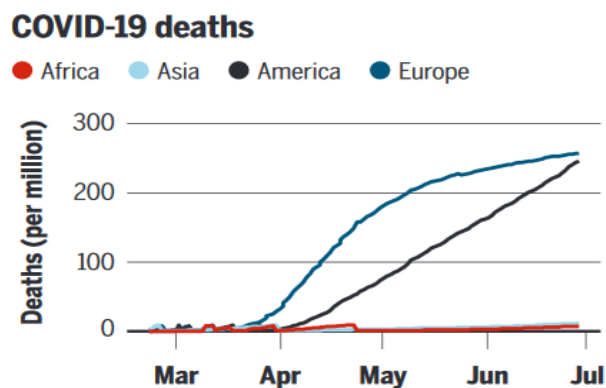**COVID-19 deaths**

● Africa ● Asia ● America ● Europe

Figure 2. The distribution of coronavirus disease 2019 (COVID-19) deaths per 1 million inhabitants.

- Furthermore, the majority of COVID-19 associated deaths occur in older people and Africa has a comparatively young population, with a median population age of 19.7 years for the continent versus 38.6 years for the United States. Based on global age specific case fatality rates for COVID-19 and the age demographics of Africa, COVID-19 deaths would be expected to be only four times, rather than the observed 40 times, lower than in Europe or the United States. However, it should be noted that no aggregated data on age specific case or death rates are available for the continent.

- In Africa, there is substantial intergenerational mixing and, with more cases of subclinical infections in the young, it could be a matter of time before expansive numbers of cases and deaths are recorded. Even though, to date, African countries have not indicated acute health emergencies; however, reliable age-stratified data are needed to fully grasp the COVID-19 situation in Africa to allow appropriate measures to be taken.

- Compared to other continents, measures such as travel restrictions, curfews, and school closures were implemented early in Africa, even before an African country had detected a case. These early responses might have resulted in fewer imported cases and reduced intra-country transmission, allowing sufficient time to prepare the constrained health systems for diagnosis and to prepare strategies for quarantine, contact tracing, and social distancing on the continent.

- Though it is likely that the early lockdown in Africa contributed to the slow spread, containment measures are not fully respected in many countries. Most people work in the informal business sector, such as in traditional markets, making strict lock-down measures impossible to implement.

- In the continent, low case numbers are often attributed to insufficient testing. However, many African countries implemented testing early on, and, based on the Our World in Data database (2), more tests per the number of cases were carried out than in other countries at similar phases of the epidemic,
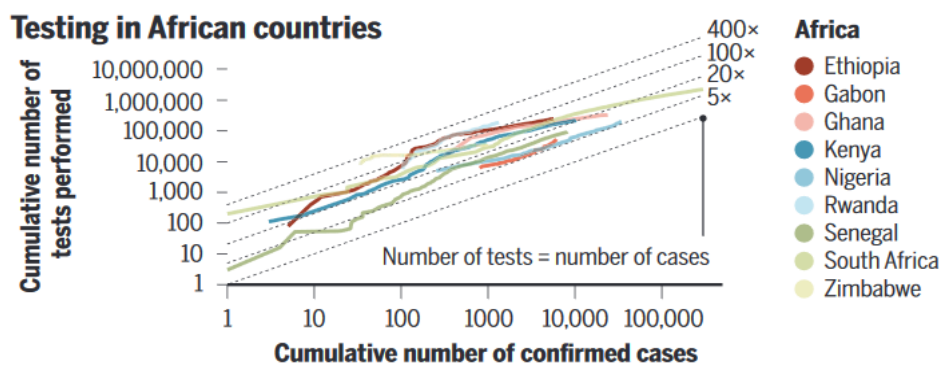

Figure 3. The distribution of coronavirus disease 2019 (COVID-19) tests in Africa

- The distribution of coronavirus disease 2019 (COVID-19) cases and deaths per 1 million inhabitants per continent reveals surprisingly low rates in Africa (Fig 1 &2). This is despite comparable levels of testing per confirmed cases across continents (Fig. 3). The dotted lines show the number of tests performed per number of detected cases.
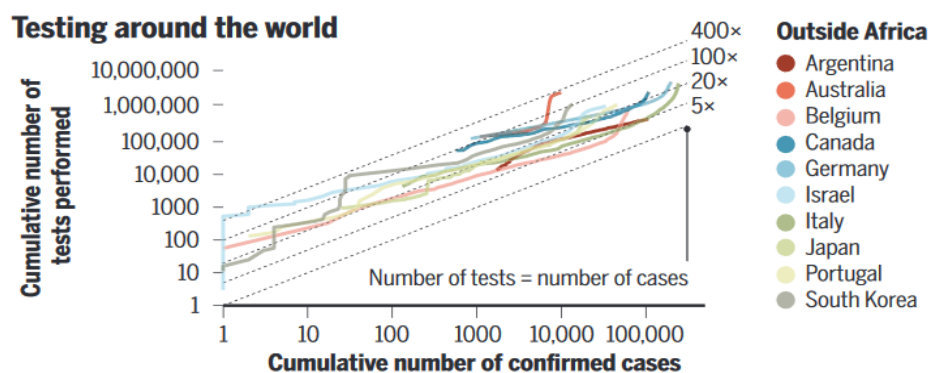

Fig. 4. The distribution of coronavirus disease 2019 (COVID-19) tests outside Africa

- In general, the dampened course of COVID-19 in Africa might reveal innovative solutions. Hence, Africa should be part of the roadmap for COVID-19 research. Although there are no available data on the immune responses in African COVID-19 patients, studies show clear differences in the activation, inflammatory, and memory profiles of the immune cells not only in Africans versus Europeans but also among Africans with high and low exposure to microorganisms and parasites.

References:
1. Moustapha Mbow, Bertrand Lell, Simon P. Jochems, Badara Cisse, Souleymane Mboup, Benjamin G. Dewals, Assan Jaye, Alioune Dieye and Maria Yazdanbakhsh, COVID-19 in Africa: Dampening the storm? Science Vol. 369 (6504): 624-626. 7 AUGUST 2020, DOI: 10.1126/science.abd3902
2. Our World in Data, Statistics and research: Coronavirus pandemic (COVID-19); https://ourworldindata.org/coronavirus

"Approved" Russia's COVID-19 Vaccine

Overview
- On August 1, 2020, the Russian Health Minister declared that "clinical trials of a coronavirus vaccine developed by the Gamaleya Center are over; paperwork is underway for the vaccine's registration."

- The vaccine has been developed by Moscow's Gamaleya Research Institute of Epidemiology and Microbiology, Health Ministry of the Russian Federation in collaboration with Acellena Contract Drug Research and Development under the name "Gam-COVID-Vac" (1).
- It is an adenovirus-based vaccine (non-replicating viral vectored vaccine) as is the ChAdOx1 vaccine being tested by the University of Oxford as phase I/II vaccine trial in South Africa (2).
- Gam-COVID-Vac trial was first registered on June 17, 2020 as an open, prospective, two-stage, non-randomized, first-phase study vaccine trial involving healthy volunteers (1).

Brief description of study
- The purpose of the study was to assess safety, tolerability and immunogenicity of the new vaccine candidate "Gam-COVID-Vac " in two stages.

- Stage I, aimed to test the safety and tolerability of the candidate "Gam-COVID-Vac " on 18 healthy volunteers through intramuscular administration of component 1 and component 2 vaccine as a single dose (1,3).

- Stage II, aimed to asses safety and tolerability of the candidate "Gam-COVID-Vac " on 20 healthy volunteers through intramuscular administration using prime-boost immunization according to the proposed scheme (administration of component 1 of the candidate vaccine on day 1, and component 2 of the candidate vaccine after 20 days of receiving component 1). Follow-up has been scheduled on day 7, 14, 28, 42 after administration of the drug (1,3).

- As per the trial registration record, post-vaccination immunity assessment was scheduled at different time points after vaccination (1).
  - Determination of virus neutralizing antibody titer before and at days 14, 28, and 42 after receiving the candidate vaccine;
  - Determination of antigen-specific cellular immunity (specific T-cell immunity) before the vaccine administration and at days 14 and 28 after receiving the candidate vaccine (3)

- Despite this fact, the Russia new vaccine trial was registered on global trial registration platform approximately 2 months ago as phase I, as of today, there is no any scientific data published regarding the efficacy of the claimed new vaccine candidate (Gam-COVID-Vac).

Procedures of developing a new vaccine/ drug
- Vaccine testing, manufacturing and approval is a lengthy and laborious process that follows routine steps and can take between 10-15 years on average to complete (4).

- Human Clinical trials are critical for a vaccine's approval as they must demonstrate its safety, efficacy, help scientists to calculate what dosage is required to achieve immunization against a pathogen and to assess the best route of administration, number of boosters required at vaccination intervals and the duration of immunity (4).

- These trials are separated into phases including preclinical phases and human trials (I up to III). Most global regulatory bodies required phase III data for vaccine approval and dissemination (4).

References

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2. Curated track of treatment and vaccine development for COVID 19, Stanford Medicine, available at https://racetoacure.stanford.edu/clinical-trials/1342
3. Curated track of treatment and vaccine development for COVID 19, Stanford Medicine, available at https://racetoacure.stanford.edu/clinical-trials/1210
4. Procedures of new drug development process, FDA https://www.fda.gov/patients/learn-about-drug-and-device-approvals/drug-development-process

The impact of COIVD 19 on Online learning

- The brief summarizes findings of a study conducted in Ghana to assess the impact of COVID -19 online learning.
    - The study employed a descriptive survey design in which 11 item Likert-scale type of questionnaires was administered to 214 respondents mainly students in the second cycle and tertiary institutions of Ghana.
    - The study revealed some challenges students encounter in the close down of schools due to the outbreak of the pandemic Covid-19.
    - Students are unable to study effectively from the house thus, making the online system of learning very ineffective.
    - Again, parents are incapable of assisting their wards on how to access online learning platform, neither can they entirely supervise the learning of their children at home without any complications.
    - It came to light that the pandemic really has had a negative impact on their learning as many of them are not used to effectively learn by themselves.
    - The e-learning platforms rolled out also poses challenge to majority of the students because of the limited access to internet and lack of the technical knowhow of these technological devices by most Ghanaian students.

- - The study therefore recommends that students should be introduced to innovative and offline e-learning platforms to supplement classroom teaching and learning and also be of benefit to students who may not have access to internet connectivity.

- Another study conducted in India assessed the impact of lockdown amidst COVID-19 on undergraduate and postgraduate learners.
  - During the lockdown period, around 70% of learners were involved in e-learning. Most of the learners were used android mobile for attending e-learning.
  - Students have been facing various problems related to depression anxiety, poor internet connectivity, and unfavourable study environment at home.
  - Students from remote areas and marginalized sections mainly face enormous challenges for the study during this pandemic.
  - This study suggests targeted interventions to create a positive space for study among students from the vulnerable section of society.

- Strategies are urgently needed to build a resilient education system in the state that will ensure to develop the skill for employability and the productivity of the young minds.

References

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2. Kapasia, N., et al. (2020). "Impact of lockdown on learning status of undergraduate and postgraduate students during COVID-19 pandemic in West Bengal, India." Children and Youth Services Review 116: 105194.