EPHI, National Data Management Center for health (NDMC)

Quick update on COVID-19, 037

This update summarizes	**ETHIOPIA'S COVID-19 SITUATION UPDATE.**
	GLOBAL AND REGIONAL BURDEN OF COVID-19.
	IMPLICATIONS OF THE EMERGING SARS-COV-2 VARIANT VUI 202012/01
	AN UPDATE ON COVID-19 MASS VACCINATION.

ETHIOPIA'S COVID-19 SITUATION UPDATES

- As of December 24, 2020, there were a total of 120,989 COVID-19 cases and 1,870 deaths across the country. Compared to the cases and deaths reported a week ago, both the cumulative case and deaths respectively showed increment by 2%. So far 105,824 cases have recovered from COVID-19 which increased by 5% compared to the last week. Of the 13,546 active cases currently, 253 are critical which forms 1% of them (Fig 1). The total number of tests stands at 1 75,734 showing a 1% increase compared to last week.

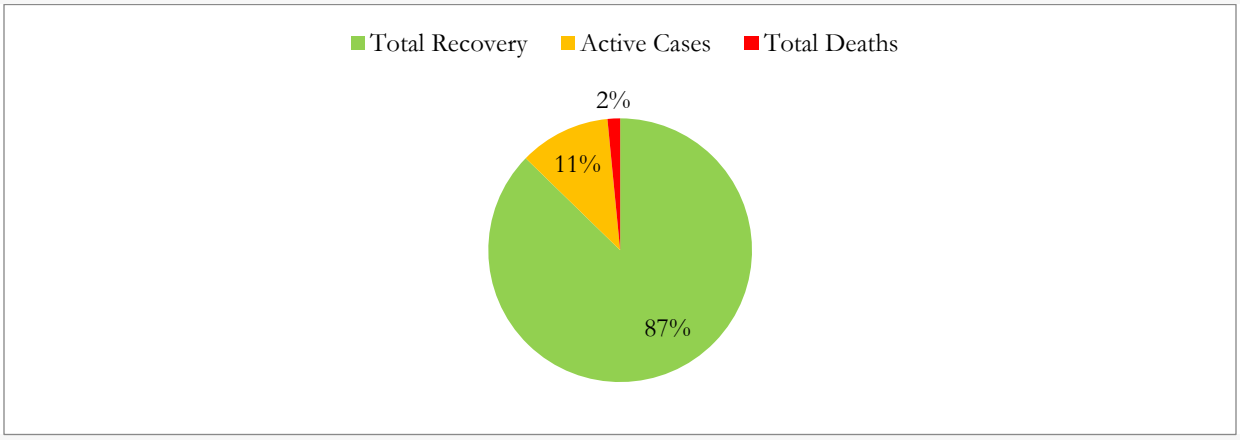


Fig. 1. Showing cumulative COVID-19 cases, recoveries and death as of Dec 24, 2020.

Case Management and Infection Prevention Control (Ipc):

- This week, Dec 18– Dec 24, 2020, there are **7, 855** newly recovered cases bringing the total number of COVID-19 recovered cases to **105, 824**
- This week, Dec18– Dec 24, 2020, **235** suspected cases are admitted
- This week, **31** initially suspected cases are discharged after laboratory test became negative

Home Based Isolation and Care (HBIC):

Since Home Based Isolation and Care (HBIC) is started in Ethiopia:

- A total **69, 564** COVID-19 confirmed cases are followed in the HBIC as of December 24, 2020
- **63,482** of them have recovered in the HBIC as of December 24, 2020 **6,262** cases are currently on HBIC
- **7** COVID-19 related deaths have occurred in the HBIC

- **508** cases have been transferred from treatment centers to HBIC
- **322** cases have been transferred from HBIC to treatment centers

EPHI and FMOH COVID 19 response highlights of the week /trainings and supply

- On Dec. 21 /2020, COVID-19 items distributed as per facilities (Aklilu Lemma Institute of Pathobiology (ALIPB), Armed Forces General Hospital
- On Dec, 22/2020, storage payment exemption letter for donated X-rays has been facilitated.
- There is on-going distribution of PPE, Viral Transport Media (VTM), swabs, pharmaceuticals and other medical supplies isolation and treatment centers.

References

1. Public Health Emergency Operations Centers (PHEOC), Ethiopia https://twitter.com/lia_tadesse
2. http://www.covid19.et/covid-19/

GLOBAL AND REGIONAL BURDEN OF COVID_19

- Globally the total number of cases is extended to 79,053,694 as of December 24, 2020. A total of 55,647,083 cases recovered and 1,737,629 people died since the beginning of the outbreak. Globally, in a week time, from December 17 to December 24, 2020, COVID-19 cases increased by 6.1% and deaths by 5%. Europe continued to become the leading in terms of cases followed by North America and Asia. Europe became a lead in terms of the number of deaths followed by North and South America (Fig 2).

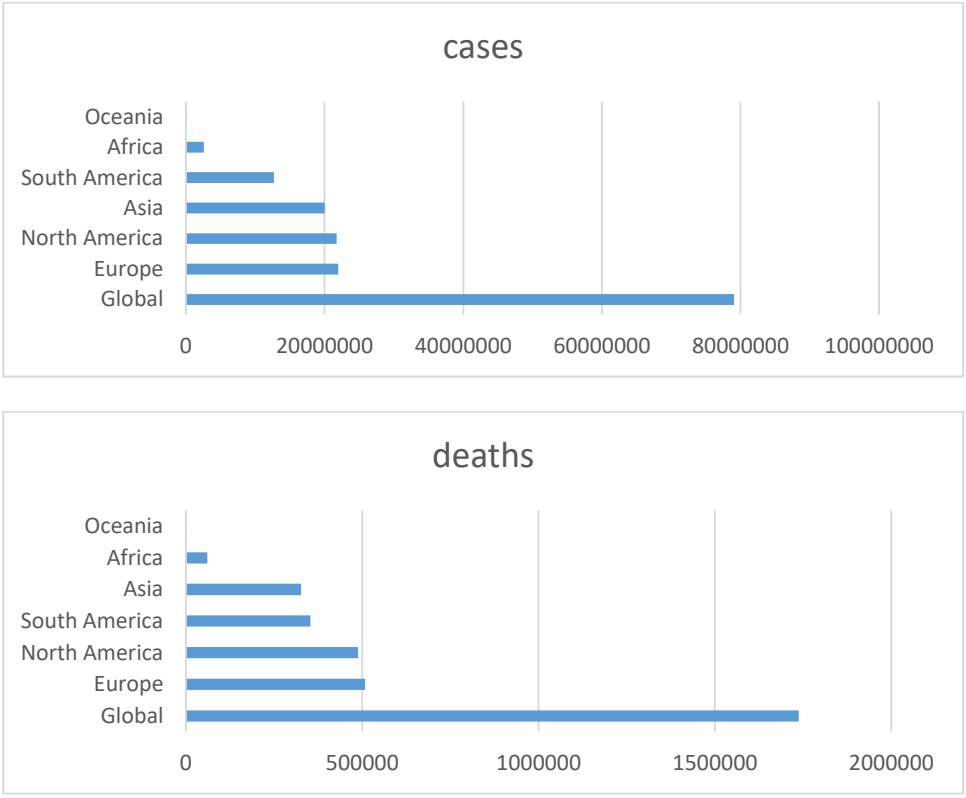


Fig 2. Global cases (top) and deaths (bottom) reported as of December 24, 2020.

- USA has recorded the highest number of cases (18,917,152 cases, 334,218 deaths) that accounts 23.9% of the total global cases and carried 19.2% of global deaths as of December 24, 2020.

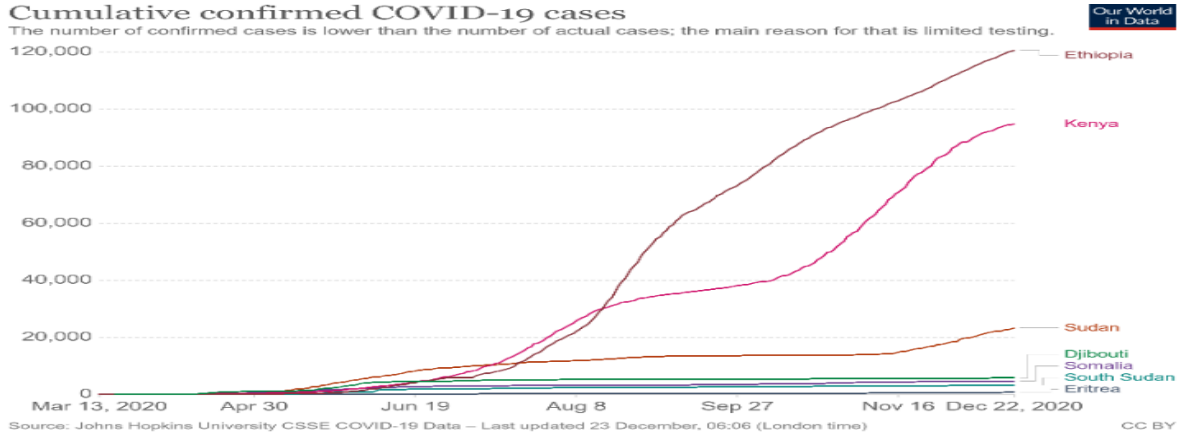
- India is the 2nd highest in terms of cases in a week time increased by 1.7% (9,951,072 to10,123,544) and deaths by 1.6% (144,487 to 146,778).
- Brazil has increased the number of cases in a week time by 4.6% (7,042,695 to 7,366,677) and deaths by 3% (183,822 to 189,264).
- Russia ranked 4th globally with 2,933,753 cases and 52,461deaths.
- France ranked 5th globally with 2,505,875 cases and 61,978 deaths.

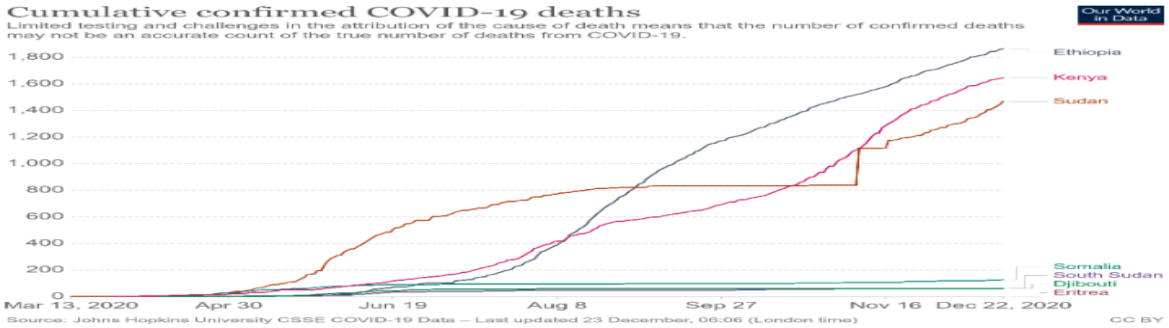
➢ The line share of Africa to the global COVID-19 pandemic was 3.3% and 3.5% of the global cases and deaths as of December 24. The cases in the continent has increased by 5.8% in a week time (2,443,850 to 2,585,922 cases). Similarly, the total number of deaths in Africa has increased from 57,514 to 60,974 showing a 6%. Total recoveries stand at 2,165,927.

- South Africa is the leading in the continent with 954,258 cases and 25,657 deaths. Morocco (423,214 cases, 7,086 deaths), Egypt (127,972 cases, 7,209 deaths), Tunisia (125,000cases, 4,275 deaths) and Ethiopia (120,989 cases, 1,870 deaths) are the most four leading countries next to South Africa in reporting COVID-19 cases in Africa. (See table below).

Africa	December 17		December 24	
	Cases	Death	Cases	Deaths
South Africa	883,687	23,827	954,258	25,657
Morocco	406,970	6,749	423,214	7,086
Egypt	123,153	6,990	127,972	7,209
Tunisia	114,547	3,997	125,000	4,275
Ethiopia	118,006	1,818	120,989	1,870

- In East African, COVID-19 cases and deaths have shown fast progress. In a week time, COVID-19 cases and deaths were 2.5% and 2.9% in Ethiopia and 2.5% and 2.1% in Kenya. As of December, Ethiopia and Kenya continued to be the major drivers of the COVID 19 burden in east African countries. The epidemic continued increasing in Sudan with 5.6% cases and 6.1% deaths. Eirtera and South Sudan showed a 23.3% and 7.2% increase in number of cases respectively. Similarly, in Somalia 2.4% cases and 5% deaths reported in a week time. However, in Djibouti 0.5% cases and zero deaths were reported which is low compared to others.





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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

4. Our World: https://ourworldindata.org/covid-cases

IMPLICATIONS OF THE EMERGING SARS-COV-2 VARIANT VUI 202012/01

- On 14 December 2020, authorities of the United Kingdom of Great Britain and Northern Ireland reported to WHO that a new SARS-CoV-2 variant was identified through viral genomic sequencing. This variant is referred to as SARS-CoV-2 VUI 202012/01 (Variant Under Investigation, year 2020, month 12, variant 01). Initial analysis indicates that the variant may spread more readily between people. Investigations are ongoing to determine if this variant is associated with any changes in the severity of symptoms, antibody response or vaccine efficacy.
- The variant is defined by the presence of a range of 14 mutations resulting in amino acid changes and three deletions. Analysis of viral genome sequence data identified a large proportion of cases belonged to a new single phylogenetic cluster. The new variant is defined by multiple spike protein mutations (deletion 69-70, deletion 144, N501Y, A570D, D614G, P681H, T716I, S982A, D1118H) present as well as mutations in other genomic regions. While it is known and expected that viruses constantly change through mutation leading to the emergence of new variants, preliminary analysis in the UK suggests that this variant is significantly more transmissible than previously circulating variants, with an estimated potential to increase the reproductive number (R) by 0.4 or greater with an estimated increased transmissibility of up to 70%. Laboratory studies are ongoing to determine whether these variant viruses have different biological properties or alter vaccine efficacy. There is not enough information at present to determine if this variant is associated with any change in severity of clinical disease, antibody response or vaccine efficacy.
- Among the potential consequences of these mutations are the following:
  - Ability to spread more quickly in humans. There is already evidence that one mutation, D614G, has this property to spread more quickly. In the lab, G614 variants propagate more quickly in human respiratory epithelial cells, out-competing D614 viruses. There also is evidence that the G614 variant spreads more quickly than viruses without the mutation.
  - Ability to cause either milder or more severe disease in humans. There is no evidence that VUI 202012/01 produces more severe illness than other SARS-CoV-2 variants.
  - Ability to evade detection by specific diagnostic tests. Most commercial polymerase chain reaction (PCR) tests have multiple targets to detect the virus, such that even if a mutation impacts one of the targets, the other PCR targets will still work.
  - Decreased susceptibility to therapeutic agents such as monoclonal antibodies.
  - Ability to evade vaccine-induced immunity. FDA-authorized vaccines are "polyclonal," producing antibodies that target several parts of the spike protein. The virus would likely need to accumulate multiple mutations in the spike protein to evade immunity induced by vaccines or by natural infection.
- Among these possibilities, the last—the ability to evade vaccine-induced immunity—would likely be the most concerning because once a large proportion of the population is vaccinated, there will be immune pressure that could favor and accelerate emergence of such variants by selecting for "escape mutants." There is no evidence that this is occurring, and most experts believe escape mutants are unlikely to emerge because of the nature of the virus.

Options for response and considerations to support public health action

- The preliminary findings by the United Kingdom signal the broader issue of SARS-CoV-2 virus mutations, and WHO underscores the importance of prompt sharing of epidemiological, virological and full genome sequence information with other countries and research teams, including through open-source platforms such as GISAID and others.
- WHO advises that further epidemiological and virological studies be conducted to understand the specific mutations described by the United Kingdom and other countries to further investigate any changes in the function of the virus in terms of infectivity and pathogenicity. WHO advises all countries to increase the routine sequencing of SARS-CoV-2 viruses where possible, and sharing of sequence data internationally, in particular, to report if the same mutations of concern are found.
- WHO would like to draw attention to the concern about the reported loss of performance of PCR assays that target the spike (S) gene of the virus. In order to limit the impact on the detection capacities in the countries, an approach using different assays in parallel or multiplex assays targeting different viral genes is also recommended to allow the detection of potential arising variants.
- All countries need to assess their level of local transmission and apply appropriate prevention and control activities including adapting public health and social measures as per WHO guidance.
- WHO recommends the health measures as listed above for all travelers, including to and from the United Kingdom. In case of symptoms suggestive of acute respiratory illness either during or after travel, travelers are encouraged to seek medical attention and share their travel history with their health care provider. Health authorities should work with travel, transport, and tourism sectors to provide travelers with information to reduce the general risk of acute respiratory infections, via travel health clinics, travel agencies, conveyance operators, and at points of entry.

- In line with the advice provided by the Emergency Committee on COVID-19 at its most recent meeting, WHO recommends that States Parties should regularly re-consider measures applied to international travel in compliance with Article 43 of the IHR (2005) and continue to provide information and rationale to WHO on measures that significantly interfere with international traffic.
- WHO has recently published an interim guidance – "Considerations for implementing a risk-based approach to international travel in the context of COVID-19", to provide countries with a risk based approach to decision-making process for calibrating travel related risk mitigation measures in the context of international travel, aiming at reducing travel-associated exportation, importation and onward transmission of SARS-CoV-2 while avoiding unnecessary interference with international traffic.
- WHO recommends that countries take a risk-based approach. National authorities are encouraged to publish their risk assessment methodology and the list of departure countries to which restrictions apply; and these should be updated regularly. In all circumstances, essential travel (e.g., emergency responders; providers of public health technical support; critical personnel in transport and security sector such as seafarers; repatriations; and cargo transport for essential supplies such as food, medicines, and fuel) identified by countries should always be prioritized and facilitated.

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3. 'WHO | SARS-CoV-2 Variant – United Kingdom of Great Britain and Northern Ireland' (2020) WHO. Available at: http://www.who.int/csr/don/21-december-2020-sars-cov2-variant-united-kingdom/en/ (Accessed: 24 December 2020).

AN UPDATE ON COVID-19 MASS VACCINATION

- Although universal and equitable access to safe and effective COVID-19 vaccine is critical to ending the pandemic, or no vaccine provides absolute immunity preventing sever illness and death while protecting livelihoods and allowing battered economies to recover from the consequence of pandemic; higher income countries like US, Canada, EU and UK are putting themselves in front line to get mass vaccination to their citizens with pre order enough COVID-19 vaccine, while nearly 70 poor countries will be unable to vaccinate 90% of their population according to Oxfam and amnesty international.
- On December 11, 2020, the Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA) for the Pfizer-BioNTech COVID-19 (BNT162b2) vaccine (Pfizer, Inc; Philadelphia, Pennsylvania), a lipid nanoparticle-formulated, nucleoside-modified mRNA vaccine encoding the prefusion spike glycoprotein of SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19). Vaccination with the Pfizer-BioNTech COVID-19 vaccine consists of 2 doses (30 µg, 0.3 mL each) administered intramuscularly, 3 weeks apart. On December 12, 2020, the Advisory Committee on Immunization Practices (ACIP) issued an interim recommendation* for use of the Pfizer-BioNTech COVID-19 vaccine in persons aged ≥16 years for the prevention of COVID-19.
- The drawback Pfizer-BioNTech COVID-19 (BNT162b2) vaccine is very expensive and unsuitable for developing countries because they need to be kept at extremely low temperature.
- In addition, among vaccine recipients, reactogenicity symptoms, defined as solicited local injection site or systemic reactions during the seven days after vaccination, were frequent and mostly mild to moderate. Systemic adverse reactions were more commonly reported after the second dose than after the first dose and were generally more frequent and severe in persons aged 18–55 years than in those aged >55 years. Systemic adverse reactions had a median onset of 1–2 days after vaccine receipt and resolved in a median of one day. Severe local and systemic adverse reactions (grade ≥3, defined as interfering with daily activity) occurred more commonly in vaccine recipients than in placebo recipients. Among vaccine recipients, 8.8% reported any grade ≥3 reaction; the most common symptoms were fatigue (4.2%), headache (2.4%), muscle pain (1.8%), chills (1.7%), and injection

site pain (1.4%). Generally, grade ≥3 reactions were more commonly reported after the second dose than after the first dose and were less prevalent in older than in younger participants. Serious adverse events were observed in a similar proportion of vaccine (0.6%) and placebo (0.5%) recipients and encompassed medical events occurring at a frequency like that within the general population.

Reference

1. The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Pfizer-BioNTech COVID-19 Vaccine — United States, December 2020
2. Food and Drug Administration. Pfizer-BioNTech COVID-19 Vaccine Emergency Use Authorization. Silver Spring, MD: US Department of Health and Human Services, Food and Drug Administration; 2020. https://www.fda.gov/emergency-preparedness-and-response/coronavirusdisease-2019-covid-19/pfizer-biontech-covid-19-vaccine
3. Vaccines and Related Biological Products Advisory Committee. Vaccines and Related Biological Products Advisory Committee December 10, 2020, meeting: FDA briefing document. Silver Spring, MD: US Department of Health and Human Services, Food and Drug Administration; 2020. https://www.fda.gov/media/144245/download.