

This update summarizes:

- ETHIOPIA'S COVID-19 SITUATION UPDATE.
- GLOBAL AND REGIONAL BURDEN OF COVID-19.
- SARS-COV-2 VARIANTS AND ENDING THE COVID-19 PANDEMIC.
- REPURPOSED ANTIVIRAL DRUGS FOR COVID-19: INTERIM WHO SOLIDARITY TRIAL RESULTS.
- PRIORITY GROUPS FOR CORONAVIRUS VACCINATION: ADVICE FROM THE JOINT COMMITTEE ON VACCINATION AND IMMUNISATION.

ETHIOPIA'S COVID-19 SITUATION UPDATES

As of February 18, 2021, there were a total of 149,308 COVID-19 cases and 2,237 deaths across the country; indicating that there are additional 5059 new cases and 70 deaths respectively over the last one week. Compared to the cases and deaths reported a week ago, the cumulative case and deaths respectively showed increment by 2%. Among the total laboratory tested 43,263 clients over the last one week duration, 5059 of them tested positive yielding a positivity rate of 11.7%. So far 130,124 cases have recovered from COVID-19 which increased by 1% compared to the last week. Of the 17,271 active cases currently, 326 are critical which forms 1% of them (Fig 1).

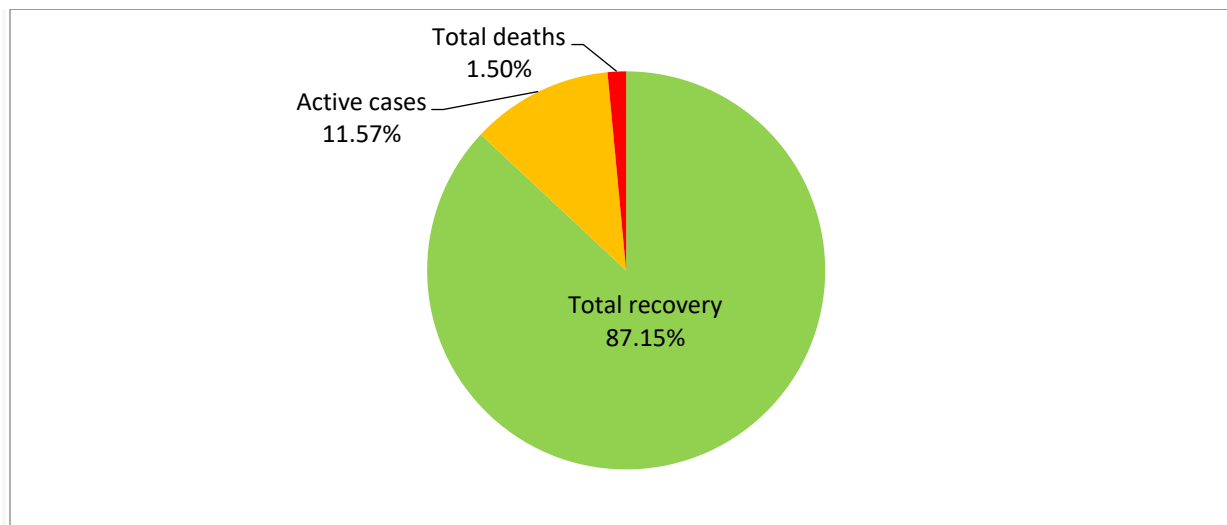


Fig. 1. Showing cumulative COVID-19 cases, recoveries and death as of February 18, 2021.

Case Management and Infection Prevention Control (Ipc):

- This week, Feb 12-18, 2021, there are **3198** newly recovered cases bringing the total number of COVID-19 recovered cases to **130,124**
- There are **326** patients in severe condition as of February 18, 2020 and all the other patients are on medical care in stable condition
- This week, Feb 12-18, 2021, **47** suspected cases are admitted
- This week, **15** 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 **92,366** COVID-19 confirmed cases are followed in the HBIC as of February 18, 2021
- **85,423** of them have recovered in the HBIC as of February 18, 2021 **7,643** cases are currently on HBIC
- **12** COVID-19 related deaths have occurred in the HBIC
- **1108** cases have been transferred from treatment centers to HBIC
- **404** cases have been transferred from HBIC to treatment centers

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

- Three days COVID-19 Home Based and Isolation Care training for 30 National Defence and Federal police health staffs on-going at Adama city.
- There is on-going distribution of PPE, Viral Transport Media (VTM), swabs, pharmaceuticals and other medical supplies to isolation and treatment centers.

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2. https://twitter.com/lia_tadesse
3. <http://www.covid19.et/covid-19/>

GLOBAL AND REGIONAL BURDEN OF COVID-19

- Globally the total number of cases is extended to 107,856,160 as of February 11, 2021. A total of 80,020,255 cases recovered and 2,364,980 people died since the beginning of the outbreak. Globally, in a week time, from February 11 to February 18, 2021, COVID-19 cases increased by 2.8% and deaths by 3.8%. North America was the leading in terms of cases followed by Europe and Asia. Europe continued to be became a lead in terms of the number of deaths followed by North and South America (Fig 2).

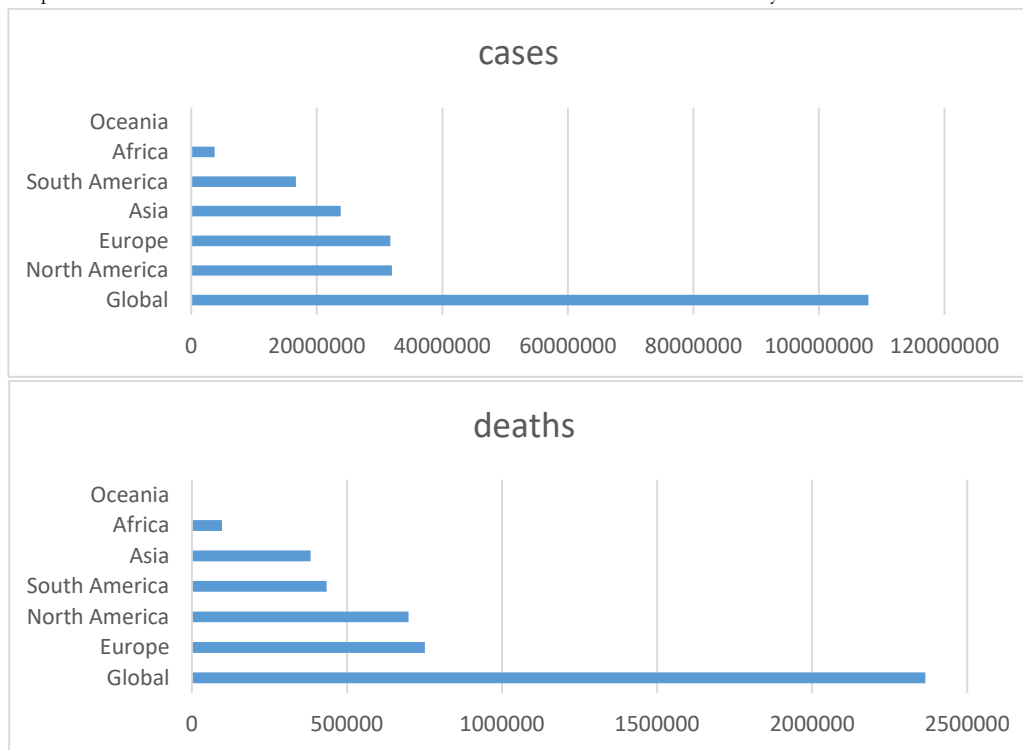


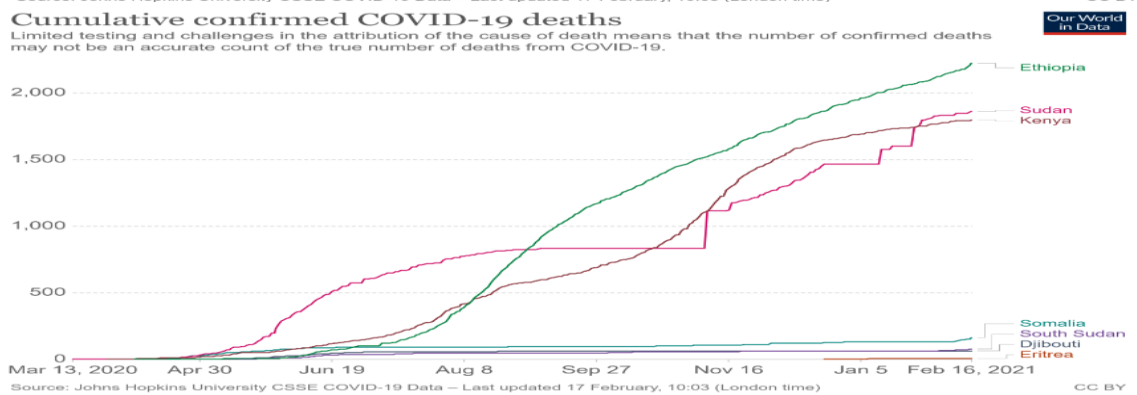
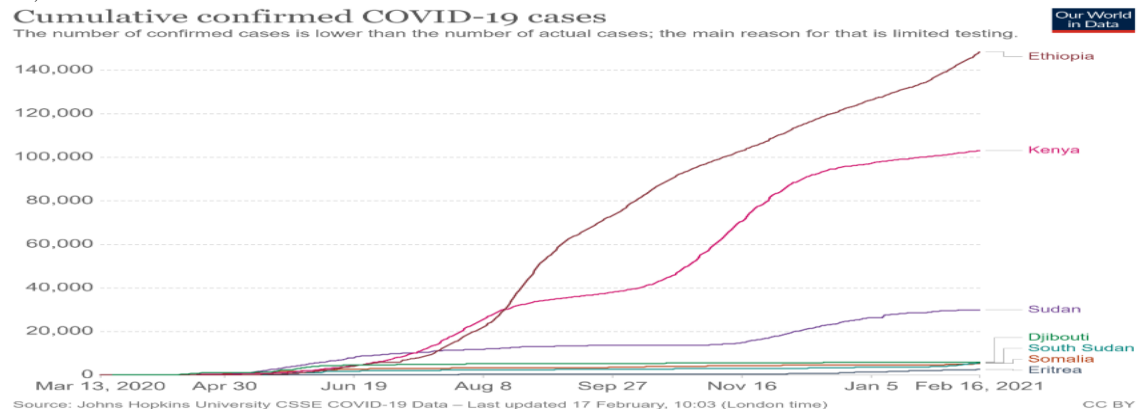
Fig 2. Global cases (top) and deaths (bottom) reported as of February, 2021.

- USA has recorded the highest number of cases (28,453,526 cases and 502,544 deaths) that accounts 25.8% of the total global cases and carried 20.6% of global deaths as of February 18, 2021.
- India is the 2nd highest in terms of cases in a week time by 0.7% (10,871,060 to 10,950,201) and deaths by 0.4% (155,399 to 156,038).

- Brazil has increased the number of cases in a week time by 3.3% (9,662,305 to 9,979,276) and deaths by 3.1% (234,945 to 242,178).
 - Russia ranked 4th globally with 4,112,151 cases and 81,446 deaths.
 - UK ranked 5th globally with 4,071,185 cases and 118,933 deaths.
- The line share of Africa to the global COVID-19 pandemic was 3.4% and 4.1% of the global cases and deaths as of February 18). The cases in the continent has increased by 2.2% in a week time (3,726,885 to 3,809,410 cases). Similarly, the total number of deaths in Africa has increased from 96,887 to 99,948 showing 3.2%. Total recoveries stand at 3,346,363.
- South Africa is the leading in the continent with 1,496,439 cases and 48,478 deaths. Morocco (479,579 cases, 8,517 deaths), Tunisia (225,116 cases, 7,651 deaths), Egypt (175,677 cases, 10,150 deaths) and Nigeria (149,369 cases, 1,787 deaths) are the most four leading countries next to South Africa in reporting COVID-19 cases in Africa. Nigeria becomes the fifth rank substituting Ethiopia. (See table below).

| Africa | February 11 | | February 18 | |
|--------------|-------------|--------|-------------|--------|
| | Cases | Death | Cases | Deaths |
| South Africa | 1,482,412 | 47,145 | 1,496,439 | 48,478 |
| Morocco | 476,689 | 8,436 | 479,579 | 8,517 |
| Tunisia | 219,650 | 7,378 | 225,116 | 7,651 |
| Egypt | 171,390 | 9,804 | 175,677 | 10,150 |
| Nigeria | | | 149,369 | 1,787 |

- In East African, COVID-19 cases and deaths have shown fast progress. As of February, Ethiopia and Kenya continued to be the major drivers of the COVID 19 burden in east African countries.



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SARS-COV-2 VARIANTS AND ENDING THE COVID-19 PANDEMIC.

- The COVID-19 pandemic has devastated health-care systems, shut down schools and communities, and plunged the world into an economic recession. While 2020 was a challenging year, 2021 looks to be difficult with the emergence of multiple variants of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The race to vaccinate the world will need to respond to the pathogen's constant evolution to evade immunity. What marks the path to the end of this pandemic?
 - The year 2020 saw the successful development and testing of COVID-19 vaccines within timeframes not considered possible before. Two mRNA COVID-19 vaccines produced the first results, with impressive efficacy (94–95%). A disadvantage of these two vaccines is their low temperature storage requirements. Although other COVID-19 vaccines developed to date that use viral vectors, subunit particles, or inactivated viruses have comparatively lower levels of efficacy, with estimates of 70% for ChAdOx1 nCoV-193 and 92% for Gam-COVID-Vac (Sputnik V) adenovirus vector vaccines, they do not have the ultra-cold storage temperature requirements of the mRNA vaccines and are therefore easier to deliver. Data available so far for COVID-19 vaccines have shown protection only against clinical forms of infection, with the exception of recent data showing reduction in the duration of viral shedding and viral load among recipients of the ChAdOx1 nCoV-19 vaccine compared with placebo recipients, suggesting potential impact on viral transmission as well.
 - In December, 2020, an unexpected rise in reported COVID-19 cases was attributed to the emergence of the new SARS-CoV-2 variants 501Y.V1 (B.1.1.7) in the UK and 501Y.V2 (B.1.351) in South Africa. In South Africa, high transmission in the context of high population immunity may have favoured the emergence and subsequent spread of the variant. Both variants had a mutation (N501Y) in the receptor-binding domain of the spike protein that is reported to contribute to increased transmission, with estimates ranging between 40% and 70% for increased transmission. In a concerning development, another set of mutations (N501Y, E484K, and K417T) in a new P.1 (501Y.V3) lineage has been identified in Manaus, Brazil.
 - A key issue is whether COVID-19 vaccines will be able to protect against infection or disease from these new SARS-CoV-2 variants. Preliminary research suggests sera from individuals immunised with the mRNA COVID-19 vaccines neutralise a 501 mutation pseudovirion, but neutralise a 501-484-417 mutant pseudovirion to a lesser extent. Moreover, preliminary clinical trial results of ChAdOx1 nCoV-19 showed 74% efficacy in the UK but only 22% in South Africa, whereas NVX-CoV2373, a protein-based COVID-19 vaccine, showed 89% efficacy in the UK but only 49% efficacy in South Africa, where the 501Y.V2 variant predominates. Similarly, differences in vaccine efficacy in the USA and South Africa (72% vs 57%) were reported for the Ad26COV2.S COVID-19 vaccine. More encouragingly, 85% protection against severe COVID-19 has been reported for the Ad26COV2.S vaccine in South Africa, although we do not know the precision around the estimate provided in the press release. If confirmed, a vaccine strategy targeting first those at risk of severe COVID-19 might therefore still be effective even in the presence of variants.
 - The recent emergence of SARS-CoV-2 variants, after a period of relative viral genetic stability, is a cause for concern since multiple new escape variants could emerge in future and lead to severe epidemic rebound, as seen in South Africa. Increased viral transmission creates greater opportunities for the emergence of SARS-CoV-2 variants. Hence, the end of the pandemic is only possible when vaccines that are effective against circulating variants are distributed equitably across the world. As high-income countries race to immunise their populations within months, they leave themselves vulnerable to SARS-CoV-2 evolving in other countries to a new lineage that vaccines might not protect well against. Repeatedly formulating new vaccines may be needed to control some new SARS-CoV-2 variants. With the increase in basic reproduction number of more transmissible SARS-CoV-2 variants, higher vaccine coverage will be required to achieve herd immunity, and vaccinating children might also be necessary to reach this coverage.

Priorities to address new SARS-CoV-2 variants

- Continue to suppress and push to eliminate SARS-CoV-2 while rolling out COVID-19 vaccines
- Improve surveillance of SARS-CoV-2 variants through global sequencing and sharing of variant-specific PCR primers
- Create a central repository of samples of sera and cells from individuals with past infection or past immunisation with available COVID-19 vaccines for seroneutralisation and cellular immunity functional testing against newly discovered variants
- Produce COVID-19 vaccines reactively and adapt them to newly emerging lineages
- Ensure global access, availability, and affordability of COVID-19 vaccines to ensure no countries are left behind

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REPURPOSED ANTIVIRAL DRUGS FOR COVID-19: INTERIM WHO SOLIDARITY TRIAL RESULTS.

- World Health Organization expert groups recommended mortality trials of four repurposed antiviral drugs: remdesivir, hydroxychloroquine, lopinavir, and interferon beta-1a in patients hospitalized with coronavirus disease 2019 (Covid-19).
 - A randomized controlled trial was conducted on patients hospitalized by COVID-19.
 - At 405 hospitals in 30 countries, 11,330 adults underwent randomization:
 - ✓ 2,750 were assigned to receive remdesivir,
 - ✓ 954 to hydroxychloroquine,
 - ✓ 1411 to lopinavir (without interferon),
 - ✓ 2,063 to interferon (including 651 to interferon plus lopinavir), and
 - ✓ 4,088 to no trial drug.
 - Adherence was 94 to 96% midway through treatment, with 2 to 6% crossover.
 - In total, 1253 deaths were reported (median day of death, day 8).
 - Death occurred in:
 - ✓ 301 of 2,743 patients receiving remdesivir and in 303 of 2,708 receiving its control,
 - ✓ 104 of 947 patients receiving hydroxychloroquine and in 84 of 906 receiving its control,
 - ✓ 148 of 1,399 patients receiving lopinavir and in 146 of 1,372 receiving its control, and
 - ✓ 243 of 2,050 patients receiving interferon and in 216 of 2,050 receiving its control.
 - No drug definitely reduced mortality, overall or in any subgroup, or reduced initiation of ventilation or hospitalization duration.
 - These remdesivir, hydroxychloroquine, lopinavir, and interferon regimens had little or no effect on hospitalized patients with Covid-19, as indicated by overall mortality, initiation of ventilation, and duration of hospital stay.

Reference

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PRIORITY GROUPS FOR CORONAVIRUS VACCINATION: ADVICE FROM THE JOINT COMMITTEE ON VACCINATION AND IMMUNISATION

- In order to facilitate the development of policies and guidelines on COVID-19 vaccination, JCVI advises that the first priorities for the current COVID-19 vaccination programme should be the prevention of COVID-19 mortality and the protection of health and social care staff and systems. Secondary priorities could include vaccination of those at increased risk of hospitalisation and at increased risk of exposure, and to maintain resilience in essential public services.
 - The advice will set out a framework for refining future advice on a national COVID-19 vaccination strategy.
 - The advice has been developed based on a review of epidemiological data on the impact of the COVID-19 pandemic, data on demographic and clinical risk factors for mortality and hospitalisation from COVID-19, data on occupational exposure, a review on inequalities associated with COVID-19 and mathematical modelling on the potential impact of different vaccination programmes.
 - The Committee has reviewed published and unpublished Phase I/II/III safety and efficacy data for Pfizer-BioNTech and AstraZeneca vaccines. The vaccine appears to be safe and well-tolerated, and there were no clinically concerning safety observations.
 - The data indicate high efficacy in all age groups (16 years and over), including protection against severe disease and encouraging results in older adults. The Committee advises that this vaccine be used in the first phase of the programme,

according to the priority order set out below. While there is some evidence to indicate high levels of short-term protection from a single dose of vaccine, a two-dose vaccine schedule is currently advised as this is likely to offer longer lasting protection.

- **Vaccine schedule:** For both Pfizer-BioNTech and AstraZeneca vaccines, a two-dose schedule is advised the JCVI places a high priority on promoting rapid, high levels of vaccine uptake amongst vulnerable persons.
- Advised the delivery of the first dose to as many eligible individuals as possible should be initially prioritised over delivery of a second vaccine dose.
- JCVI advises that the second vaccine dose should be with the same vaccine as for the first dose. Switching between vaccines or missing the second dose is not advised as this may affect the duration of protection.
- **Direct protection vs transmission reduction:** JCVI has considered several different vaccination strategies, including those targeting transmission and those targeted at providing direct protection to persons most at risk.
- To interrupt transmission, mathematical modelling indicates that we would need to vaccinate a large proportion of the population with a vaccine which is highly effective at preventing infection (transmission).
- Given the current epidemiological situation, the best option for preventing morbidity and mortality in the initial phase of the vaccination programme is to directly protect persons most at risk of morbidity and mortality.
- **Age:** The Committee's advice largely prioritises based on age. Data indicate that the absolute risk of mortality is higher in those over 65 years than that seen in many younger adults with an underlying health condition. An age-based programme is also likely to increase uptake in those with clinical risk factors as the prevalence of these increases with age.
- **Health and social care workers:** Frontline health and social care workers are at increased personal risk of exposure to infection with COVID-19 and of transmitting that infection to susceptible and vulnerable patients in health and social care settings. Protecting them protects the health and social care service and recognises the risks that they face in this service.
- **Persons with underlying health conditions:** There is good evidence that certain underlying health conditions increase the risk of morbidity and mortality from COVID-19.
- The Committee's advice is to offer vaccination to those aged 65 years and over followed by those in clinical risk groups aged 16 years and over. The main high risk clinical conditions include Chronic respiratory disease, Chronic heart disease, Chronic kidney disease, Chronic liver disease, Diabetes, Solid organ, bone marrow and stem cell transplant recipients, People with specific cancers etc.

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3. Corbett KS, Flynn B, Foulds KE *et al.* Evaluation of the mRNA-1273 Vaccine against SARS-CoV-2 in Nonhuman Primates. *N Engl J Med*. 2020 Oct 15;383(16):1544-1555.