

**This update summarizes**

Ethiopia's COVID-19 situation update .

Global and regional burden of COVID 19.

What If the major infectious diseases in subsahran Africa had as much attention as COVID?

What do we know about the late stage vaccine candidates for Covid-19?

An economic evaluation of Influenza and COVID-19 pandemic prevention and control interventions: a systematic review.

**Ethiopia's COVID-19 situation updates**

➤ As of December 03, 2020, there were a total of 110,984 COVID-19 cases and 1,715 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 76,067 cases have recovered from COVID-19 which increased by 11% compared to the last week (Fig 1). Of the 33,531 active cases, 331 are critical. The total number of tests stands at 1, 64,599 showing a 1% increase compared to last week.

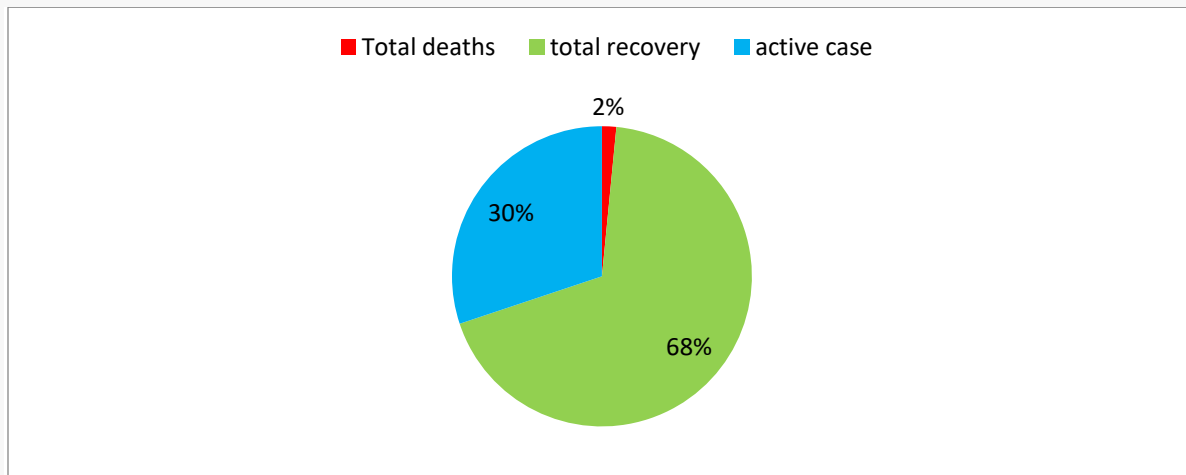


Fig. 1. Showing cumulative COVID-19 cases, recoveries and death as of Dec 03, 2020.

**Case management and infection prevention control (IPC):**

➤ This week, **189** suspected cases were admitted, **8,899** newly recovered cases and **96** initially suspected cases were discharged after laboratory test became negative.

### **Home Based Isolation and Care (HBIC):**

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

- A total **44, 274** COVID-19 confirmed cases had been followed in the HBIC as of December 2, 2020
  - **38,540** of them have recovered in the as of December 2, 2020 **5,922** cases are currently on HBIC
  - **5** COVID-19 related deaths have occurred in the HBIC
  - **484** cases have been transferred from treatment centers to HBIC
  - **291**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 Infection prevention and control training for 35 industrial park and mega project staff started Nov, 26, 2020 at Bishoftu Town.
- Two days Mental health and psychosocial support training for 20 health professionals from different regional hospital given on Nov 26 – 27, 2020 at Dire Dawa.
- One day new directive and NPI training for 50 House of Peoples’ Representatives staffs completed on Nov 27, 2020 at Bishoftu Town.
- Three days COVID-19 Infection prevention and control training for 30 industrial park and mega project staffs started on Nov 30, 2020 at Hawassa Town.
- Four days Regional NPI Revitalization Workshop for 50 regional health professionals started Nov 30, 2020 at Hawassa Town.

### **References**

1. *Public Health Emergency Operations Centers (PHEOC), Ethiopia* [https://twitter.com/lia\\_tadesse](https://twitter.com/lia_tadesse)

### **Global and regional burden of COVID-19.**

- Globally the total number of cases has been extended to 64,844,711 as of December 3, 2020. A total of 44,941,481 cases recovered and 1,499,346 people died since the beginning of the outbreak. Globally, in a week time, from November 26 to December 3, 2020, COVID-19 cases has increased by 6.8% and deaths by 5.1%. Europe continued to become the leading in terms of cases followed by Asia and North America. North America leads in the number of deaths followed by Europe and South America (Fig 2).

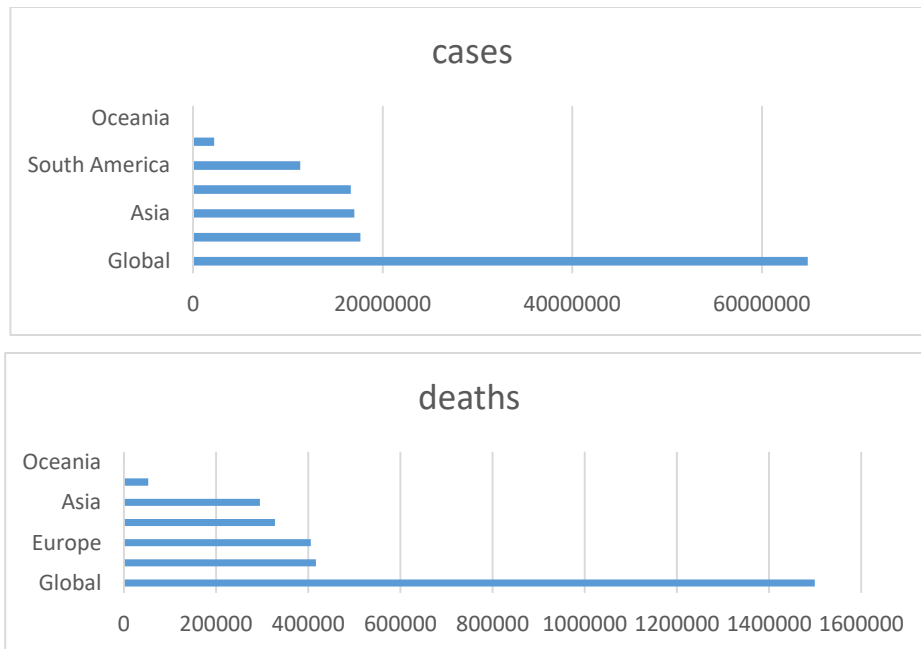


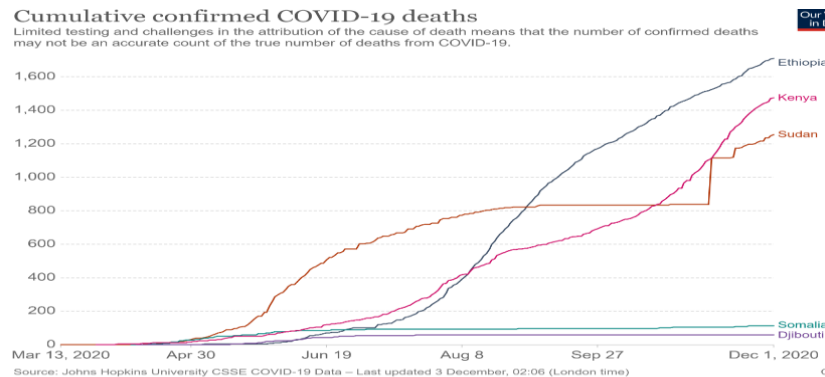
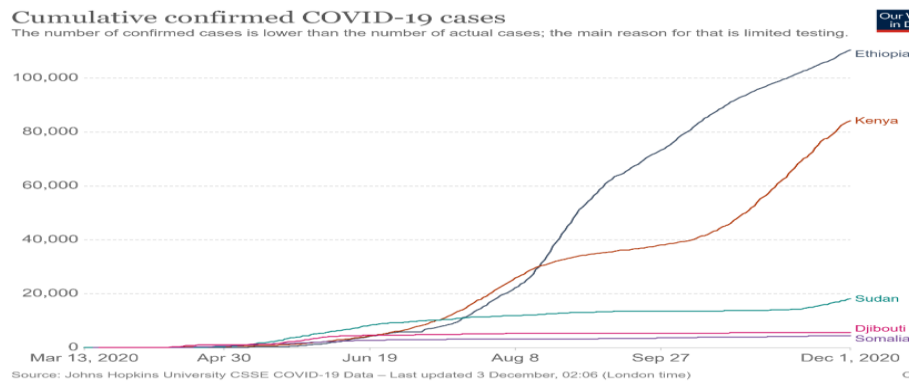
Fig 2. Global cases (top) and deaths (bottom) reported as of December, 2020.

- USA has recorded the highest number of cases (14,313,941 cases, 279,865 deaths) that accounts 22.1% of the total global cases and carried 18.7% of global deaths as of December 3, 2020.
- India is the 2<sup>nd</sup> highest in terms of cases reporting an increase by 2.9% in a week time (9,266,697 to 9,534,964) and deaths by 2.5% (135,261 to 138,657).
- Brazil has increased the number of cases in a week time by 4.4% (6,166,898 to 6,436,650) and deaths by 2.2% (170,799 to 174,531).
- Russia ranked 4<sup>th</sup> globally with 2,347,401 cases and 41,053 deaths.
- France ranked 5<sup>th</sup> globally with 2,244,635 cases and 53,816 deaths.
- The line share of Africa to the global COVID-19 pandemic was 3.4% and 3.5% of the global cases and deaths as of December 3. The number of cases in the continent has increased by 4.4% in a week time (2,120,356 to 2,214,586 cases). Similarly, the total number of deaths in Africa has increased from 50,736 to 52,670 showing a 3.8%. Total recoveries stand at 1,876,437.
- South Africa is the leading in the continent with 796,472 cases and 21,709 deaths. Morocco (364,190 cases, 5,985 deaths), Egypt (116,724 cases, 6,694 deaths), Ethiopia (110,984 cases, 1,715 deaths), and Tunisia (99,280 cases, 3,359 deaths) are the four leading countries next to South Africa in reporting COVID-19 cases in Africa. (See table below).

Table:1 Burden of COVID – 19 in top five countries.

Africa	November 26		December 3	
	Cases	Death	Cases	Deaths
South Africa	775,502	21,201	796,472	21,709
Morocco	336,506	5,539	364,190	5,985
Egypt	114,107	6,585	116,724	6,694
Ethiopia	107,109	1,664	110,984	1,715
Tunisia	91,307	2,983	99,280	3,359

- In East African, COVID-19 cases and deaths have shown fast progress. In a week time, COVID-19 cases and deaths had increased by 3.6% and 3.1% in Ethiopia and 7.3% and 4.7% in Kenya. As of December, Ethiopia and Kenya continued to be the major drivers of the COVID 19 burden in east African. The epidemic appears increasing in Sudan with 9.6% cases and 4.5% deaths. Similarly, 1.8% cases and 7.1% deaths reported in Somalia in a week time. However, in Djibouti 0.2% cases and zero deaths were reported which is low compared to others.



## 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>
4. *Our World*: <https://ourworldindata.org/covid-cases>

## What If the major infectious diseases in sub Saharan Africa had as much attention as COVID?

- All year, COVID-19 has commandeered the world's attention. It is almost as if no other disease has ever been more important, more contagious, or more deadly. Pathogens such as those that cause diarrheal diseases, malaria, HIV, and tuberculosis (TB) which together infect more than 250 million people each year globally and kill more than 2.5 million.
- Since the outbreak began, the majority health workforce time has been spent on COVID-19 related activities neglecting their work on other diseases — which are not controlled yet. The World Health Organization (WHO) reported that progress against TB might stall: in the countries with the highest rates of the disease, the number of people diagnosed and directed to care dropped by one-quarter compared with last year's figure. Because many countries have implemented lockdowns, hospitals and health centres have seen a significant drop in the number of people coming for treatment.
- In some African countries, maternal mortality rose by 80% from January to March, and because of COVID-19, rates of HIV diagnoses and of people starting antiretroviral treatment (and treatment to prevent TB) will fall by 75%. These treatments must have been kept on track through active community outreach efforts as usual.
- Researchers at the WHO and elsewhere modelled what could happen if distribution of antimalarial medicine and insecticidal bed nets to prevent malaria falls by up to 75%. Such efforts against COVID-19 are essential, but those efforts have not been sustained against other infectious diseases.
- More than 90% of the global burden of communicable disease such as malaria, HIV and TB deaths are in Africa. This keeps people from going work and school, trapping them in poverty and conditions that allow illness to thrive. The people most directly affected do not have the

resources to mount a huge effort against them. A child dies from malaria every 2 minutes. For survivors, such infectious diseases lock in a vicious cycle.

- What if the developing countries had tackled infectious diseases such as malaria, TB, HIV, and diarrheal pathogens with the energy now dedicated to the coronavirus? Might these diseases have been defeated?
- One of the good lessons from the COVID pandemic is that most African leaders, have figured out their own indigenous plan to fight the pandemic. The private sector, small scale industries, companies, and local financial sectors, has chipped in. If this alliance can continue after the pandemic subsides, research capacity will increase across developing countries. This might be a case in which they ‘build back better’ after the pandemic. These countries might have to establish solid collaboration locally and regionally, train the next generation of scientists locally and COVID-19 will help doing this exercise.

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1. Ossen, Issideen Ayinla. "COVID-19 pandemic in sub-Saharan Africa: preparedness, response, and hidden potentials." *Tropical medicine and health* 48.1 (2020): 1-3.
2. Mennechet, Franck JD, and Guy R. Takoudjou Dzomo. "Coping with COVID-19 in sub-Saharan Africa: what might the future hold?." *Virologica Sinica* (2020): 1-10.
3. Ekumah, Bernard, et al. "Disparate on-site access to water, sanitation, and food storage heighten the risk of COVID-19 spread in Sub-Saharan Africa." *Environmental research* 189 (2020): 109936.
4. Nepomnyashchiy, Lyudmila, et al. "COVID-19: Africa needs unprecedented attention to strengthen community health systems." *The Lancet* 396.10245 (2020): 150-152.

### What do we know about the late stage vaccine candidates for Covid-19?

#### ***University of Oxford and AstraZeneca vaccine***

- The ChAdOx1 nCoV-19 has been tested across the world, with trials starting in the UK and branching out to Brazil, South Africa, and the US. Phase II results, published in the Lancet, found that the vaccine produced a similar immune response in old and young participants. Phase III interim results, based on 131 cases, have been made available through a press release (23 November) and suggest the vaccine could be up to 90% effective when a half dose is given, followed by a full dose one month later. When two full doses are given one month apart, however, the effectiveness drops to 62%. But, the half dose regime may be more effective because it “better mimics” a real infection. They are still, however, investigating this effect.

- The UK government has agreed a deal for 100 million doses of the vaccine, which could be used to vaccinate 66 million people if the half dose plus full dose regime is followed. The Oxford team has stressed that they want their vaccine to be accessible around the world and not just high income countries. As such, large scale manufacturing has been set up in over 10 countries and the team expects the vaccine to be available at a low price—around £3 (€3.4; \$4) per dose. The vaccine can be stored at fridge temperature (2-8°C).

#### ***Pfizer and BioNTech vaccine***

- Pfizer and BioNTech's BNT162b2 is the first vaccine candidate to be submitted to the US Food and Drug Administration (FDA) for emergency use authorisation. The submission was filed on 20 November, after the conclusion of a phase III trial. The results, released by press release, evaluated 170 confirmed cases of covid-19 and reported that the vaccine was 95% effective 28 days after the first dose. Nine out of 10 severe covid-19 cases in the trial were in the placebo group. Globally, 50 million doses are expected in 2020 and up to 1.3 billion doses by the end of 2021. The vaccine is estimated to cost around £15 per dose—much higher than the Oxford-AstraZeneca vaccine. Concerns have also been raised over logistics, as the vaccine must be stored at -70°C.

#### ***Moderna and US National Institutes of Health vaccine***

- The mRNA-1273 vaccine, developed by US biotech company Moderna in partnership with the US National Institutes of Health (NIH), is 94.5% effective according to the interim findings of US based phase III trial results. The analysis was based on 95 covid-19 cases, of which 90 (11 severe) were observed in the placebo group and five were reported in the vaccine group.
- The trial enrolled more than 30 000 US participants, including 7000 aged over 65 and 5000 under 65 with high risk chronic diseases. More than one third (37%, 11 000) of the trial participants were from “communities of colour.” Of the 95 cases, 15 were adults over 65, and 20 identified as being from diverse communities (12 Hispanic, four black, three Asian American, and one multiracial). Moderna intends to submit the interim safety and efficacy data to the FDA for emergency use authorization soon, following a final analysis of 151 cases and a median follow-up of more than two months.
- Moderna's vaccine can be stored in a household fridge for 30 days, at room temperature for up to 12 hours, and at -20°C for up to six months. However, compared with the Oxford-

AstraZeneca and Pfizer vaccines, Moderna's candidate is much more expensive at approximately £25 per dose.

## Reference

1. Mahase, E. (2020) 'Covid-19: What do we know about the late stage vaccine candidates?', *BMJ*, 371. doi: 10.1136/bmj.m4576.

## An economic evaluation of Influenza and COVID-19 pandemic prevention and control interventions: a systematic review.

- COVID-19 causes 1.3 million deaths globally in just nine months. Influenza is a virus with respiratory symptoms, fever, and systemic symptoms very similar to COVID 19.
- Various public health measures have been taken by governments and health authorities to prevent and control the pandemics. A systematic review conducted to review the economic evaluation of public health measures against COVID-19 and influenza pandemics shows that
- Most of the economic evaluation studies were conducted in high-income countries, and only few of the studies were on non-pharmaceutical interventions.

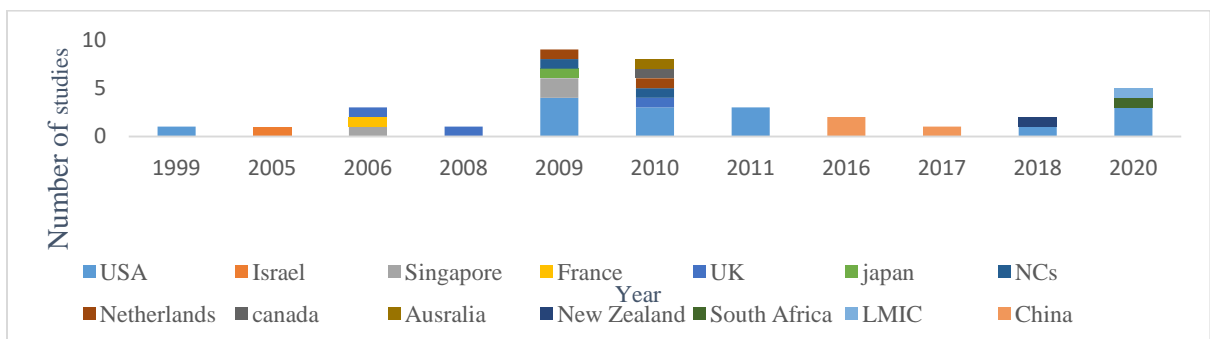


Fig 4: Number of studies and settings by year

- Stockpiling drugs for the treatment of sick patients was found cost-effective in most of the studies. Treatment with antiviral drugs and vaccination were found very cost-effective.
- The addition of school closure to other interventions was considered cost-effective only for a pandemic with a high case fatality ratio. Almost all interventions were sensitive to the infectivity and severity of the pandemic.
- Most of the studies were also cost-effective from the societal perspective indicating a higher net societal benefit from the pandemic prevention and control strategies.



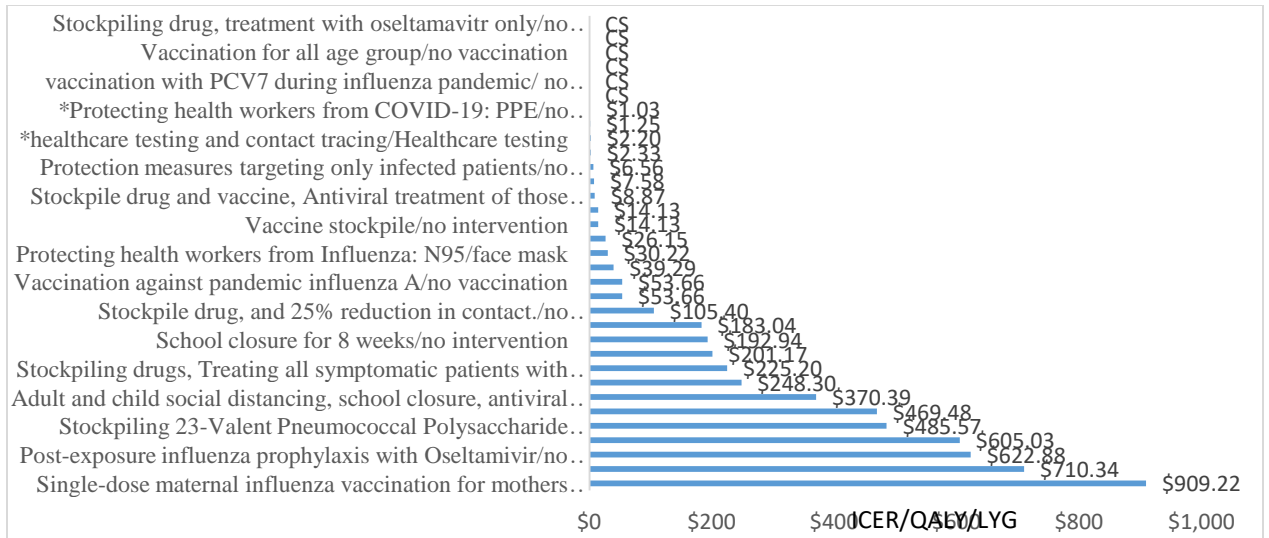


Figure 5. ICER of the interventions in (US\$ 100 per QALY/LYG) in 2019; \*studies conducted in 2020.

- In conclusion, most of the interventions were cost-effective under various scenarios while school closure was cost-effective under a 'high case-fatality 'ratio' scenario only. Furthermore, the level of the pandemic's infectivity and severity were the key drivers of the cost-effectiveness of both pharmaceutical and non-pharmaceutical interventions.
- It was recommended that more studies in LMIC and on non-pharmaceutical interventions need to be done.

Reference:

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