EPHI, NATIONAL DATA MANAGEMENT CENTER FOR HEALTH (NDMC):- QUICK UPDATE ON COVID-19, 68th

This update summarizes:

- **Ethiopia's Covid-19 Situation Updates**

- **Global and Regional Burden Of Covid-19**

- **Vaccines Waning of COVD-19 vaccine antibody level**

- **Cardiovascular Adverse Events Reported from COVID-19 Vaccines**

Ethiopia's Covid-19 Situation Updates

➢ Since the last brief (July 22, 2021), there have been 1,276 new confirmed COVID-19 cases and 17 new deaths have been reported nationally. To date, a total of 279,153 COVID-19 cases and 4,376 related deaths (case fatality rate: 1.57, which is similar compared to the last week's rate) in Ethiopia. Compared to the cases and deaths reported a week ago, the national cumulative case and death reported this week shows a significant number of increment.

- Currently, there are 11,934 active cases, of which 225 (1.89%, shows an increment compared to last week's report) of them are critical. Besides, the number of active cases and critical case have shown an increment by 824 and 81 cases respectively compared to last week. By far, 263,066 individuals have recovered from COVID-19, out of which 516 recoveries were over the last one-week period which is a significant increment compared to the last week's report.

- The proportion of active cases among the total cases so far has continued to increase for the consecutive weeks as well (by 0.28%) while that of recoveries has decreased by similar rate compared to last week. However, the proportion of death remained the same over the last two -week period (Figure 1).
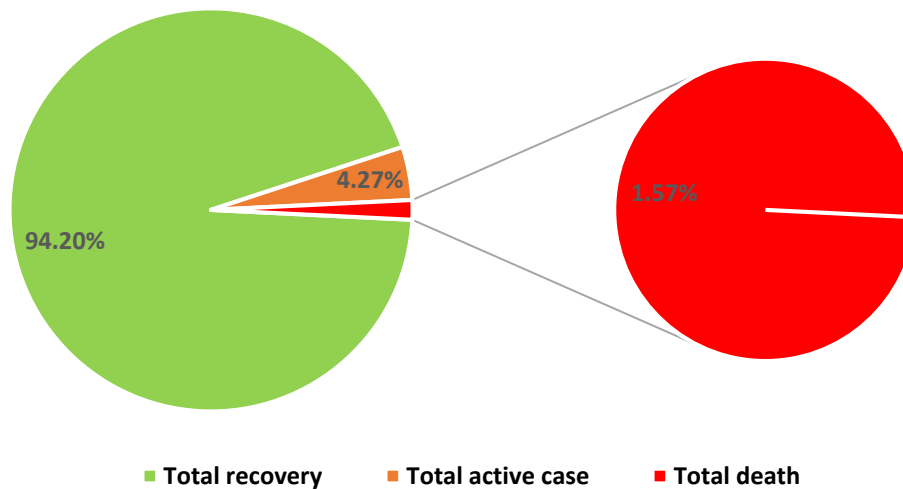
Figure 1: Proportions of active cases, recoveries and death up to July 29, 2021.

- The total number of tests done to date is 2,999,679. Among 40,692 laboratory samples tested over the last one-week duration, 1,276 of them were tested positive for COVID-19, yielding a positivity rate of 3.1%. And this shows that there is a 0.4% increase from the last week's positivity rate.

Case Management and Infection Prevention Control (Ipc)

➢ This week, July 23- July 29, 2021, there are a total of 11,934 active cases in Ethiopia.

➢ There are **516** newly recovered cases bringing the total number of COVID-19 recovered cases to **263, 066**

➢ There are **225** patients in severe condition as of July 29, 2021, and all the other patients are on medical care in stable condition.

Home Based Isolation and Care (HBIC)

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

➢ A total of **208, 154** COVID-19 confirmed cases are followed in the HBIC as of July 29, 2021

➢ **207, 578** of them have recovered in the HBIC as of July 29, 2021

➢ **1,252** cases are currently on HBIC

➢ **34** COVID-19 related deaths have occurred in the HBIC

➢ **2,185** cases have been transferred from treatment centers to HBIC

➢ **905** cases have been transferred from HBIC to treatment centers

➢ There is the ongoing distribution of PPE, Viral Transport Media (VTM), swabs, pharmaceuticals, and other medical supplies to isolation and treatment centers.

References

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

Global and Regional Burden of Covid-19

• Globally the total number of cases is extended to 196,710,185 as of July 29, 2021. A total of 178,122,866 cases have recovered and 4,203,695 people have died since the beginning of the outbreak. Globally, in a week time, from July 22 to July 29, 2021, total cases of COVID-19 have increased by 2% and the death has increased by 1.5%. During the past week, Asia was the leading continent in terms of cases followed by Europe and North America. Europe continues to be became a lead in terms of the number of deaths followed by South and North America (Table 1).

Table 1. Global cases and deaths reported up to July, 2021.

	COVID cases	**Weekly % change**	**deaths**	**Weekly % change**
Global	196,710,185	2.0	4,203,695	1.5
Europe	51,130,272	1.8	1,130,030	0.6
North America	42,221,205	1.3	937,709	0.7
Asia	61,287,908	2.7	883,429	3.2
South America	35,330,391	1.5	1,083,426	1.3
Africa	6,638,983	4.0	167,572	4.1
Oceania	100,705	8.2	1,514	5.8

• USA has recorded the highest number of cases 1% (35,146,476 to 35,487,490 cases) and 0.4% deaths (625,808 to 628,098 deaths) that accounts 18% of the total global cases and carried 14.9% of global deaths up to July 29, 2021.

• India is rated as the 2nd highest in terms of cases in a week time by 0.9% (31,257,720 to 31,528,114) and deaths by 0.9% (419,021 to 422,695).

- Brazil takes the 3rd rank worldwide with an increased number of cases in a week time by 1.7% (19,474,489 to 19,797,516) and it is ranked as the 2nd by deaths with 1.4% (545,690 to 553,272).

- Russia is ranked at the 4th place globally with 6,195,232 cases and 156,178 deaths.

- France is ranked at the 5th place globally with 6,054,049 cases and 111,735 deaths.

- The line share of Africa to the global COVID-19 pandemic was 3.4% and 4% of the global cases and deaths as of July 29). The cases in the continent have increased by 4% in a week time (6,383,635 to 6,638,983 cases). In that regard, the total number of deaths in Africa has increased from 161,038 to 167,572 showing 4.1%. A total recovery appears to be 5,805,673.

- South Africa is the leading country in the continent with 2,408,525 cases and 70,908 deaths. Morocco (597,876 cases, 9,665 deaths), Tunisia (578,962 cases, 19,027 deaths), Egypt (284,128 cases, 16,507 deaths) and Ethiopia continued to be on the 5th rank with (279,153 cases, 4,376 deaths). These are the most four leading countries next to South Africa in reporting COVID-19 cases in Africa. (See table below).

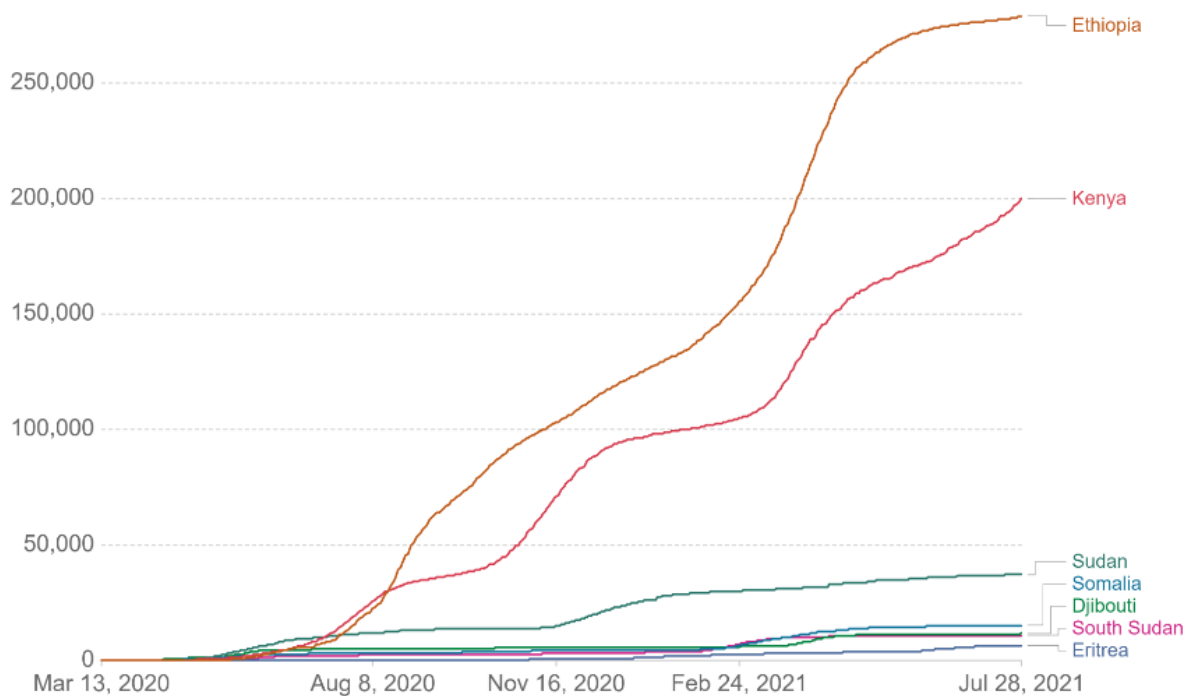Table 2. Case and death reported in selected African countries up to July 2021

Africa	July 22		July 29	
	Cases	Deaths	Cases	Deaths
South Africa	2,327,472	68,192	2,408,525	70,908
Morocco	566,356	9,498	597,876	9,665
Tunisia	555,997	17,913	578,962	19,027
Egypt	283,862	16,465	284,128	16,507
Ethiopia	277,959	4,360	279,153	4,376

- In East African, the case and death due to COVID-19 have shown a significant progress. As of March, Ethiopia and Kenya have continued to be the major drivers of the pandemic's burden in Eastern African.

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.

250,000

200,000

150,000

100,000

50,000

0

Ethiopia

Kenya

Sudan
Somalia
Djibouti
South Sudan
Eritrea

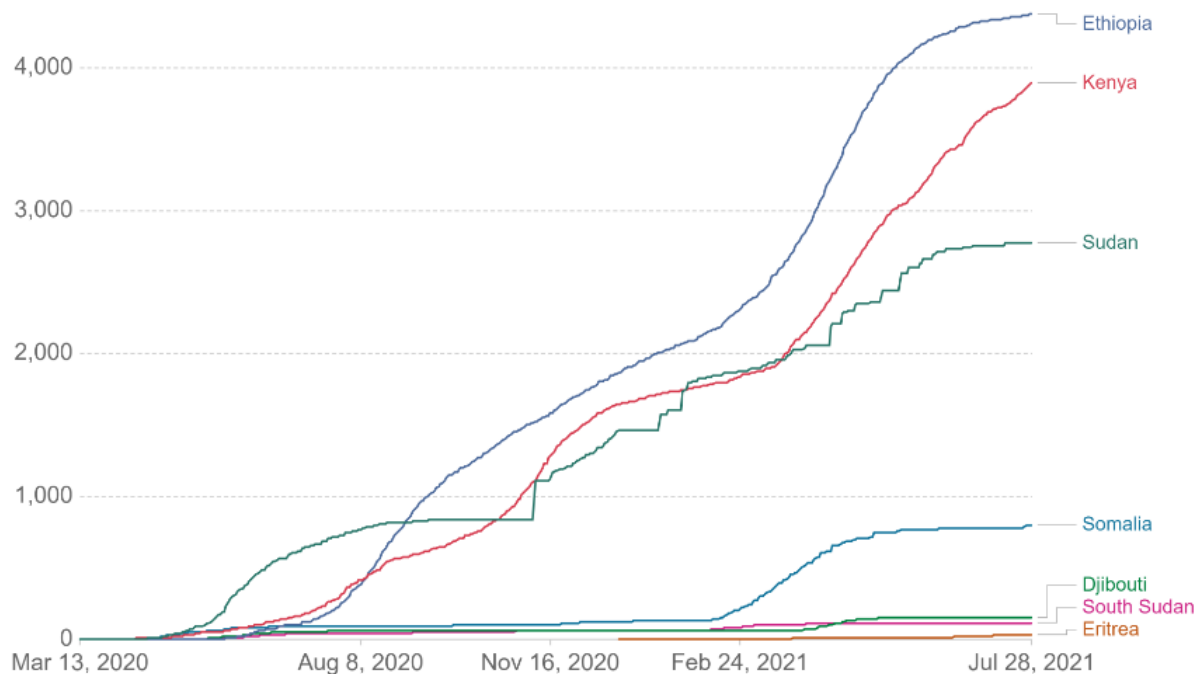Mar 13, 2020   Aug 8, 2020   Nov 16, 2020   Feb 24, 2021   Jul 28, 2021

Source: Johns Hopkins University CSSE COVID-19 Data

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Cumulative confirmed COVID-19 deaths

Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.

4,000

3,000

2,000

1,000

0

Ethiopia

Kenya

Sudan

Somalia

Djibouti
South Sudan
Eritrea

Mar 13, 2020   Aug 8, 2020   Nov 16, 2020   Feb 24, 2021   Jul 28, 2021

Source: Johns Hopkins University CSSE COVID-19 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
4. Our World: https://ourworldindata.org/covid-cases

Vaccines Waning of COVD-19 vaccine antibody level

➢ Recently Vaccines based on the spike glycoprotein of SARS-CoV-2 are being rolled out globally to control transmission and limit morbidity and mortality due to COVID-19.

➢ The study published by Lancet journal on the level of vaccine antibody; Pfizer-bioNTech (BNT162b2) , AstraZeneca (ChAdOx1) vaccines indicates the following

- The results from the studies showed that there was significant trend of declining S-antibody levels was seen with time for both ChAdOx1 and BNT162b2.

- This level of decrement was by about five-fold for ChAdOx1, and by about two-fold for BNT162b2, between 21–41 days and 70 days or more after the second dose.

- This trend remained consistent when results were stratified by sex, age, and clinical vulnerability.

- For Pfizer-bioNTech, S-antibody levels reduced from a median of 7506 U/mL at 21–41 days, to 3320 U/mL at 70 or more days.

- For AstraZeneca, S-antibody levels reduced from a median of 1201 U/mL (IQR 609–1865) at 0–20 days to 190 U/mL (67–644) at 70 or more days.

- Generally, total antibody levels begin to decline six weeks after complete immunization with Pfizer and AstraZeneca vaccines and can drop by more than 50% over ten weeks.

- The researchers concluded that if antibody levels continue to fall by this rate, the vaccines' protective effects, particularly against new variants, may begin to wear off.

- Therefore, the findings suggested that there is need of continuous health education for the population to use strictly protective action in addition to

immunization especially for vaccinated population group to prevent the spread of SAARS-2.

COVID 19 effect on Intelligence and Myocarditis

- Various researches showed that individuals with COVID-19 can have symptoms that persist beyond the initial illness, including through the sub-acute and into the early chronic phase.

- The current finding revealed that people who had recovered from COVID-19, including those no longer reporting symptoms, exhibited significant cognitive deficits versus controls when controlling for age, gender, education level, income, racial-ethnic group, pre-existing medical disorders, tiredness, depression and anxiety.

- The deficits were of extensive effect size for people who had been hospitalized, but also for non-hospitalized cases.

- This study concluded that COVID -19 result for "brain fog", trouble concentrating and difficulty finding the correct words are common," which is cognitive symptoms that persist into the early-chronic phase.

- These results accord with reports of 'Long Covid' cognitive symptoms that persist into the early-chronic phase.

- They should act as a clarion call for further research with longitudinal and neuroimaging cohorts to plot recovery trajectories and identify the biological basis of cognitive deficits in SARS-COV-2 survivors.

- Another study on the risk of myocarditis from COVID-19 infection in people under age 20 indicated that myocarditis (or pericarditis or myopericarditis) from primary COVID19 infection occurred at a rate as high as 450 per million in young males.

- Young males infected with the virus are up 6 times more likely to develop myocarditis as those who have received the vaccine.

- In general, studies indicated that to give emphasis on prevention modalities for instance vaccination for risk population group and the whole population as much as possible, using masks, physical / social distance and frequently cleaning hands.

- In addition, the clients already infected by SARS-CoV-2 are need to have follow up and screening for possible complication from the COVID -19.

Reference

1. https://www.reddit.com/r/COVID19/
2. https://www.reddit.com/r/Coronavirus/
3. https://doi.org/10.1016/ S0140-6736(21)01642-1
4. https://doi.org/10.1101/2021.07.23.21260998

Cardiovascular Adverse Events Reported from COVID-19 Vaccines

- There were 103,954 adverse events reported for 30,523 patients from 15th December 2020 to 24th January 2021. Most of the adverse events (AEs) were reported for three vaccines: BNT162b2 Pfizer, AstraZeneca, and Moderna COVID-19 vaccines since during the study period, these vaccines were used more commonly. Only one AE was reported from the AG0301-COVID19 vaccine and 32 from SARS-CoV-2 Vaccine (Vero Cell) Inactivated vaccine; none of these AEs were related to the cardiovascular system.

- A total of 4863 cardiovascular adverse events were reported from the COVID-19 vaccines. Among these 4201 from BNT162b2 Pfizer, 262 from AstraZeneca, and 400 from Moderna.

- Common adverse events observed with vaccines under study were tachycardia (16.41%), flushing (12.17%). Hypertension (5.82%), hypotension (3.60%) and peripheral coldness (2.41%). There were nine cardiovascular clinical endpoints and four electrocardiographic endpoints reported from the vaccines whose descriptions were not mentioned in the database.

- Amongst the clinical endpoints reported from unknown vaccines, there were events of four tachycardia (one serious), one decrease in blood pressure (serious), one increase in the blood pressure, one flushing (serious), and one hypertension. There were reports of four tachycardia from the electrocardiographic endpoints, one of which was serious in nature.

- According to the disproportionality analysis based on IC025 values, acute myocardial infarction, cardiac arrest, and circulatory collapse were associated with the vaccine used in the age group > 75 years. Hypertension and severe hypertension like hypertensive emergency and urgency were associated with vaccine use in almost all age groups and genders.

- Vaccines were also associated with rhythm disorders such as supraventricular tachycardia, sinus tachycardia, paroxysmal tachycardia, palpitations, etc. Peripheral circular failure was also found to be associated with vaccine use.

- It is essential to understand that initially, the vaccine was given to old age people and people with comorbidities, and it is expected to notice cardiovascular events like Acute Myocardial Infarction (AMI), hypertension, and rhythm disorder in such populations. Hence, the association shown through the disproportionality analysis may not be the true association but expected events in such population. However, the analysis mentioned above may prove to be pathfinding in this regard to prevent further casualties associated with COVID-19.

Reference

1. Jeet Kaur R, Dutta S, Charan J, Bhardwaj P, et.al. Cardiovascular Adverse Events Reported from COVID-19 Vaccines: A Study Based on WHO Database. Int J Gen Med. 2021;14:3909-3927

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