

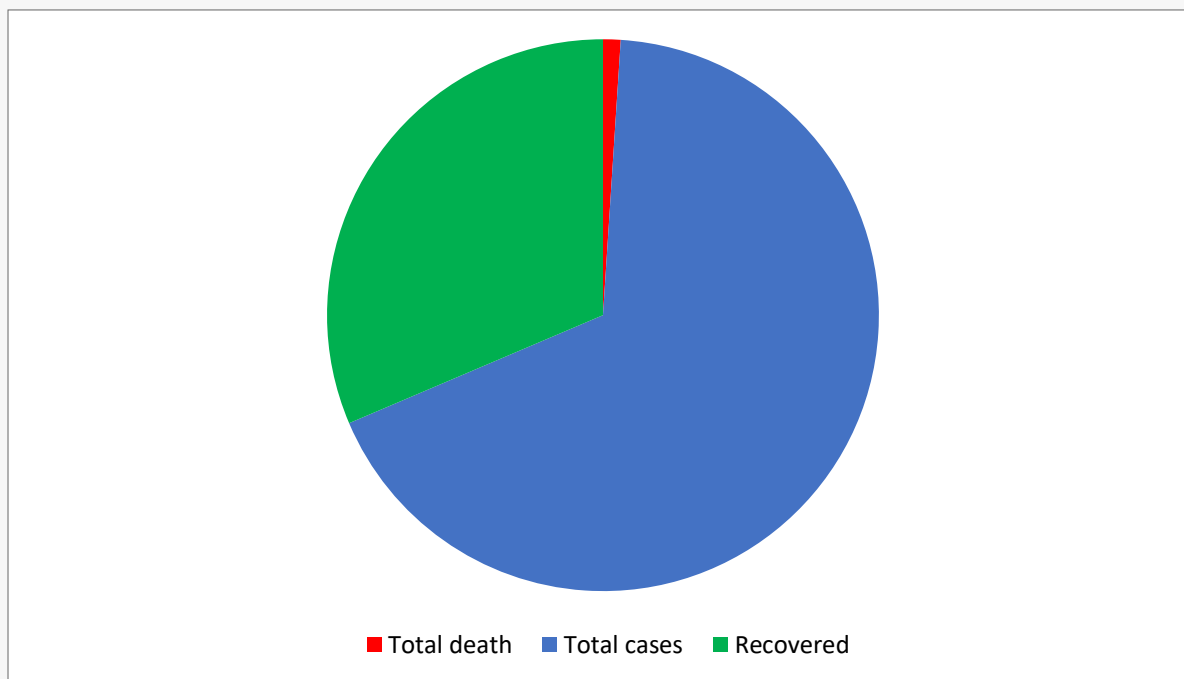
**EPHI, National Data Management Center for health (NDMC)  
Quick update on COVID-19, 027**

**This update summarizes**

- Ethiopia's COVID-19 situation update**
- Global and regional burden of COVID 19**
- Would herd immunity stop the spread of coronavirus?**
- Healthy vitamin D levels may lower risk of severe COVID-19**
- Lives Saved during Economic Downturns: Evidence from Australia**

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

As of October 15, 2020 there were a total of 86,430 COVID-19 cases and 1,312 deaths across the country. Compared to the cases and deaths reported a week ago, the cumulative cases have increased by 5% and deaths by 3%. So far 40,165 cases have recovered from COVID-19 (Fig 1). Of the 45,201 active cases, 250 are critical. The total number of tests stands at 1,370,090 showing a 3% increase compared to last week.



**Fig. 1. Showing cumulative COVID-19 cases, recoveries and death as of October 15, 2020.**

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

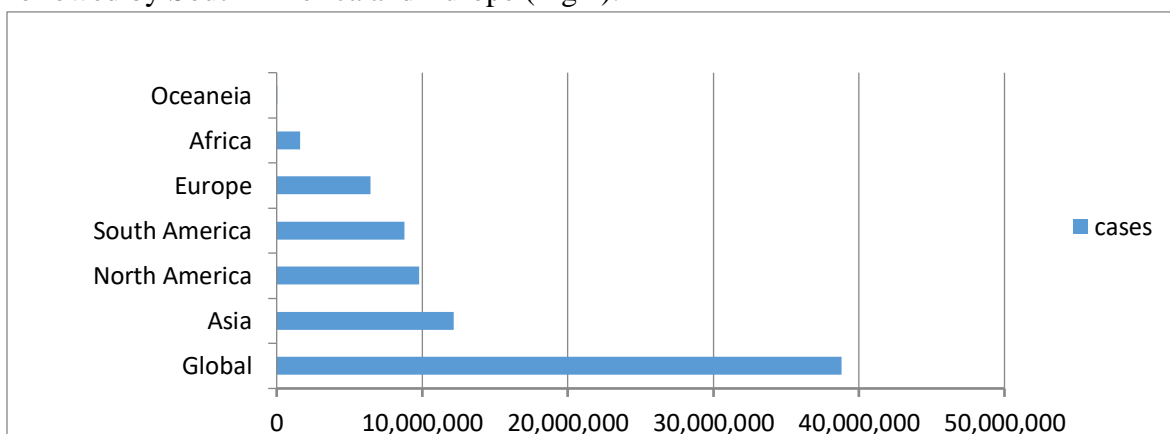
- Since Home Based Isolation and Care (HBIC) have started in Ethiopia, a total 22,203 COVID-19 confirmed cases have been followed as of October 14, 2020. Of which, 15,985 recovered and 6,204 cases are currently on follow up. Five COVID-19 related deaths have been reported 197 cases have been transferred to treatment centers while, 182 cases have been transferred from treatment centers to HBIC.
- Four days Home-Based Isolation and Care (HBIC) TOT for health professionals were conducted in this week in Hawasa city for health professionals from SNNP region.
- On October 10, 2020 two days orientation provided for 68 members of Ministry of Transport and different associations.
- Cases management quality improvement training is being conducted for the regional and central clinical case management focal on October 11, 2020.

## References

- [www.covid19.et/covid-19/](http://www.covid19.et/covid-19/)
- 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 extends to 38,814,475 36,439,737 as of October 15, 2020. A total of 29,162,927 cases recovered and 1,098,012 1,061,239 people have died since the beginning of the outbreak. Globally, in a week time, from October 08, 2020 to October 15 2020, COVID-19 cases increased by 6.52% and deaths by 3.46%. Asia is the leading in terms of cases followed by North and South America. North America leads the number of deaths followed by South America and Europe (Fig 2).



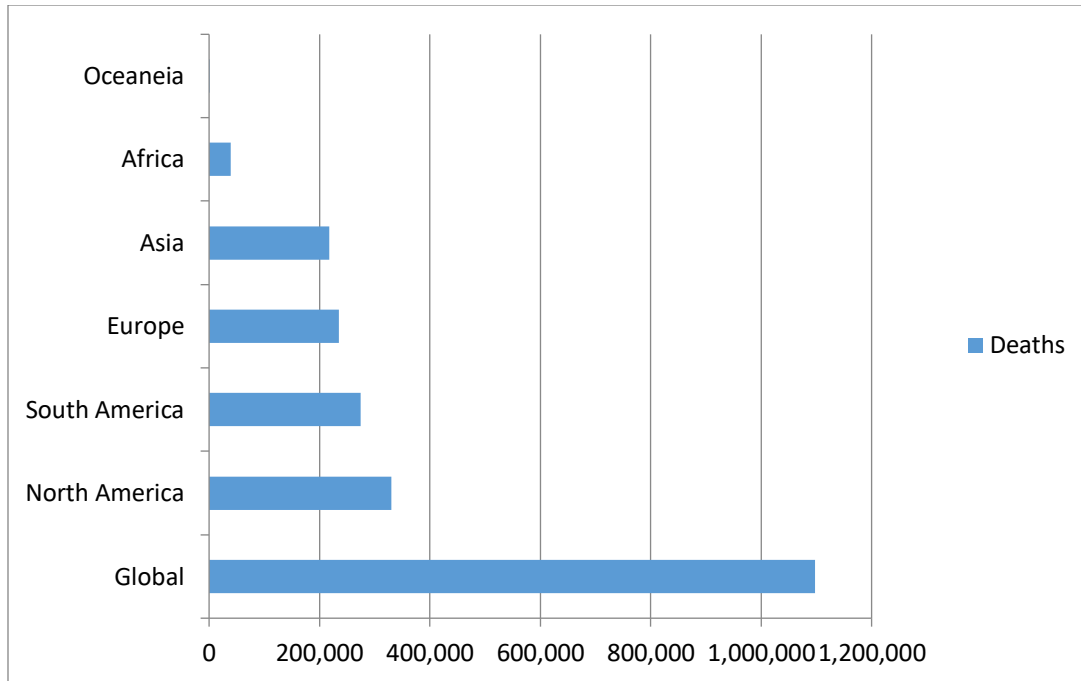


Fig 2. Global cases (top) and deaths (bottom) reported as of October 15, 2020.

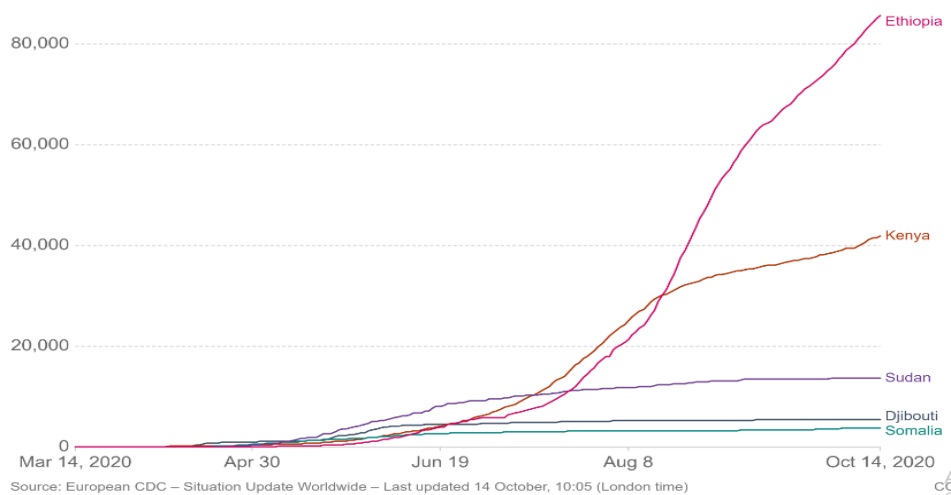
- USA has recorded the highest number of cases (8,153,740 cases, 221,872 deaths) that accounts 21% of the total global cases and carried 20.2% of global deaths as of October 15, 2020.
- India became the 2nd in terms of cases following USA. The number of cases in India has increased in a week time by 6.93% (6,835,655 to 7,309,164) and deaths by 5.48% (105,554 to 111,337).
- The number of cases in Brazil has increased by 2.78% (5,002,357 to 5,141,498) and deaths by 2.34% (148,304 to 151,779) in a week time.
- Russia has continued reporting the highest number of cases in Europe, with 1,354,163 cases.
- Spain ranked 5th in the world with 937,311 cases in a week time.
- The line share of Africa to the global COVID-19 pandemic has still been low (only 4.15% of the global cases and 3.54% of deaths as of October 15, 2020). However, within the continent the number of cases has increased by 4.37% in a week time (1,545,312 to 1,612,821 cases). Similarly, the total number of deaths in Africa has increased from 35,922 to 37,154 to 38,896 showing a 4.69% increase in a week time.
- South Africa ranked 11th worldwide in terms of cases and leading in the continent with 696,414 cases and 18,151 deaths. Morocco (160,333 cases, 2,726 deaths), Egypt (104,915 cases, 6077 deaths), Ethiopia (86,430 cases, 1,312 deaths), and (Nigeria (60,834 cases, 1,116 deaths) are the most four leading countries next to South Africa in reporting COVID-19 cases in the continent as of October 15, 2020. (See table below).

Africa	October 8		October 15	
	Cases	Death	Cases	Deaths
South Africa	685,155	17,248	696,414	18,151
Morocco	140,024	2,439	160,333	2,726
Egypt	104,035	6,010	104,915	6077
Ethiopia	80,895	1,255	86,430	1,312
Nigeria	59,738	1,113	60,834	1,116

- In East African, COVID-19 cases and deaths have shown fast progress. In a week time, COVID-19 cases and deaths were 5% and 3% in Ethiopia and 6.6% and 6.6% in Kenya. As of October, Ethiopia and Kenya continued to be the major drivers of the COVID 19 burden in east African countries. The epidemic appears plateauing in Sudan showing only 0.2% cases and zero deaths and in Djibouti 0.3% cases and zero deaths. Similarly, 3.2% cases and zero deaths reported in Somalia in a week time.

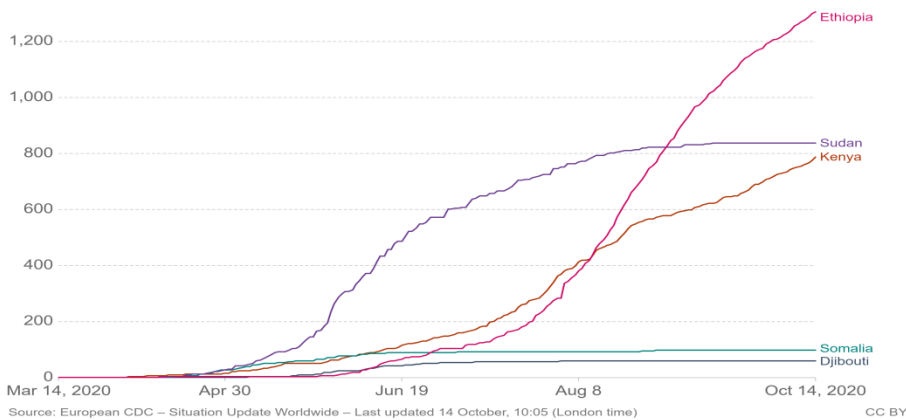
### Cumulative confirmed COVID-19 cases

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



### 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.



## 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>

## Would herd immunity stop the spread of coronavirus?

- Like the Covid-19 virus itself, the idea of herd immunity has surged back into public life having been suppressed since the occurrence of the pandemic. It was initially pushed to hold back the spread of the pandemic – by allowing sufficient numbers of infections to occur and so reduce numbers of non-immune potential hosts for the virus. Hoping the disease would then stop spreading.
- Herd immunity is the indirect protection from a contagious infectious disease that happens when a population is immune either through vaccination or immunity developed through previous infection.
- For many infections, the level of herd immunity in a population may influence the amount of transmission of the infection within the population and, in particular, may affect the risk of an uninfected becoming infected.
- It states that once herd immunity has been established for a while, and the ability of the disease to spread is hindered, the disease can eventually be eliminated.
- The proportion of the population which must be immunized in order to achieve herd immunity varies for each disease but the underlying idea is simple: once enough people are protected, they help to protect vulnerable members of their communities by reducing the spread of the disease.
- However, concept is mainly of used for vaccination and when immunization rates fall, herd immunity can break down leading to an increase sequela depending on the type of the infectious disease. For this reason, several scholars and organization argue against the use of herd immunity to control the epidemic.
- The World Health Organization has warned against deliberately allowing coronavirus to spread in the hope of achieving heard immunity saying unethical. Scientists stated that even if achievable, the strategy would kill too many people before herd immunity was achieved. Nevertheless, the idea has now bubbled back and is again making headlines.
- So, is herd immunity really be a remedy to control the pandemic? To get to herd immunity around 70% of the population in the community needed to be infected. Moreover, it is evident that immunity to Covid-19 decreases over time, and that people can be re-infected with the virus that fades on the notion of heard immunity. For this reason, scientists argue that it is very unlikely that herd immunity could be sustained without a vaccine or regular reinfection.

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2. Randolph, Haley E., and Luis B. Barreiro. "Herd Immunity: Understanding COVID-19." *Immunity* 52.5 (2020): 737-741.
3. Roser, Max, et al. "Coronavirus pandemic (COVID-19)." *Our World in Data* (2020).

## Healthy vitamin D levels may lower risk of severe COVID-19

- While the majorities of COVID-19 cases are asymptomatic or have mild symptoms, the number of patients with severe symptoms is increasing sharply worldwide. Severely sick patients require hospital admission and about 20 % of hospitalized patients will develop Acute Respiratory Distress Syndrome (ARDS) and require intensive care unit (ICU) treatment. ARDS, also in patients with COVID-19 is a life-threatening condition.
- Although frequencies vary according to series, more than 40 % of patients hospitalized because of COVID-19 developed ARDS of which more than 50 % ultimately died. ARDS onset is often rapidly progressive and appears approximately nine days after the onset of severe COVID-19. The epidemiologic, morbidity and mortality patterns of ARDS are similar regardless of the trigger. Moreover, ARDS is a pivotal component in the development of multiple organ dysfunction and mortality risk.
- In the absence of well documented effective treatments, there is a strong interest in identifying a strategy to taper down the severity of COVID-19, as it would reduce the morbidity and maybe mortality and lower the need for the limited ICU health care resources.
- Intensive research has already allowed Remdesivir and Dexamethasone to be licensed based on the results of randomized controlled trials while another randomized controlled trial of inhaled interferon-beta reports clinical benefit. Considering the differences in the severity and fatality of COVID-19 in the globe, it is important to understand the reasons behind it. Improvement of immunity through better nutrition might be a considerable factor.
- The nutrient such as vitamin D shows significant roles in immune function. The best-known effect of which is on the calcium and phosphorus metabolism.
- Vitamin D has been recognized as an important cofactor in several physiological processes and in diverse non-skeletal outcomes, including autoimmune diseases, cardiovascular diseases, diabetes type 2, obesity and cognitive decline and infections. In particular, the pronounced impact of vitamin D metabolites on the immune system response, and on the development of COVID-19 infection by the novel SARS-CoV-2 virus, has been described.

### ***Vitamin D deficiency and COVID-19 infection/severity***

- Multiple studies have found an independent association between vitamin D sufficiency [25(OH) D  $\geq$  30 ng/mL] and decreased risk of adverse clinical outcomes from COVID-19. The

severity of clinical outcomes from COVID-19 and mortality were reduced in patients who were vitamin D sufficient. Clinical features were also significantly different in patients who were vitamin D sufficient. They had a lower risk of becoming unconscious and becoming hypoxic.

- Patients who were vitamin D sufficient had significantly lower blood levels of the inflammatory marker CRP and had a higher total blood lymphocyte count suggesting that vitamin D sufficiency had improved the immune function in these patients and raising the inflammatory markers. This beneficial effect on the immune system may also reduce the risk of acquiring this insidious potentially life-threatening viral infection. Likewise, study conducted among hospitalized patients; found that hospitalized COVID-19 patients who had sufficient vitamin D had a significantly lower risk of adverse clinical outcomes.
- In contrast, finding from different studies revealed that vitamin D insufficiency/deficiency was quite prevalent among hospitalized COVID-19 patients. The level of 25(OH) vitamin D level was inversely related to the severity of the COVID-19. Therefore, suboptimal plasma vitamin D levels may be a potential risk factor for COVID-19 infection, particularly, for the high hospitalization risks, independent of demographic characteristics and medical conditions. Moreover, vitamin D level was an independent predictor of COVID-19 related mortality. And another small study found people with a vitamin D deficiency were twice as likely to be infected with coronavirus in the first place.

### ***Conclusions and possible recommendations***

- Micronutrients are essential in orchestrating a wide range of physiological functions to maintain overall health and support the fight against diseases. Therefore, optimal Vitamin D levels should be considered in all individuals. Vitamin D deficiency is a medically accepted condition that requires treatment. Vitamin D deficiency may be exacerbated by many conditions aside from a lack of exposure to sunlight. Older age, darker skin, and medication use such as steroids may also lead to lower levels of 25-hydroxyvitamin D concentrations below 30ng/ml.
- Since it is still rampant in many areas of the world and considering the lack of an effective vaccine and specific drugs, measures to strengthen the immune system might be strongly considered.
- Before recommending the routine application of high-dose vitamin D in vulnerable populations, randomized controlled trials and large-scale cohort studies are necessary to investigating the effects of vitamin D supplementation on the COVID-19 severity and mortality are warranted. The finding is important, since it could guide healthcare systems in identifying populations at risk, and contribute to interventions aimed to reduce the risk of the COVID-19 infection.

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## Lives Saved during Economic Downturns: Evidence from Australia

- Worldwide, countries have been restricting work and social activities to counter an emerging public health crisis due to the coronavirus pandemic.
- These measures have caused dramatic increases in unemployment in the short run, with an expected deepening of the recession in the long run.
- Some commentators argue that the "draconian measures" will do more harm than good due to the economic contraction, despite a large literature that finds mortality rates decline during recessions.
- The relationship between unemployment, a widely accepted proxy for economic climate, and mortality was estimated in Australia, a country with universal health care.
- Using administrative time-series data on mortality that varies by state, age, sex, and cause of death collected for the years 1979-2017, no relationship between unemployment and mortality was found.
- However, beneficial health effects in economic downturns for young men aged 25 to 34 associated with a reduction in vehicle transport accidents was observed.
- The study implies 425 fewer deaths if Reserve Bank of Australia expectations of a doubling of unemployment rates are realized by the end of 2020.
- For the early 1980s, the study found that a pro-cyclical pattern in the mortality rates of infants. However, this pattern disappears starting from the mid-1980s, coincident with the full implementation of universal health care in Australia in 1984.
- The results suggest that universal health care may insulate individuals from the health effects of macroeconomic fluctuations.
- The study conclude that the economic recession is an unlikely mediator for pandemic-related deaths in Australia.

## Reference

Kadir Atalay, Rebecca Edwards, Stefanie Schurer, David Ubilava. lives Saved during Economic Downturns: Evidence from Australia.2020