EPHI, National Data Management Center for health (NDMC)

Quick update on COVID-19, 033

This update summarizes	
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Ethiopia's COVID-19 situation updates

- As of November 26, 2020, there were a total of 107,109 COVID-19 cases and 1,664 deaths across the country. Compared to the cases and deaths reported a week ago, while the cumulative cases increased by 2%, the death on the aswell increased by 3%. So far 66,574 cases have recovered from COVID-19 (Fig 1). Of the 39,188 active cases, 319 are critical. The total number of tests stands at 1, 60,998 showing a 1% increase compared to last week.

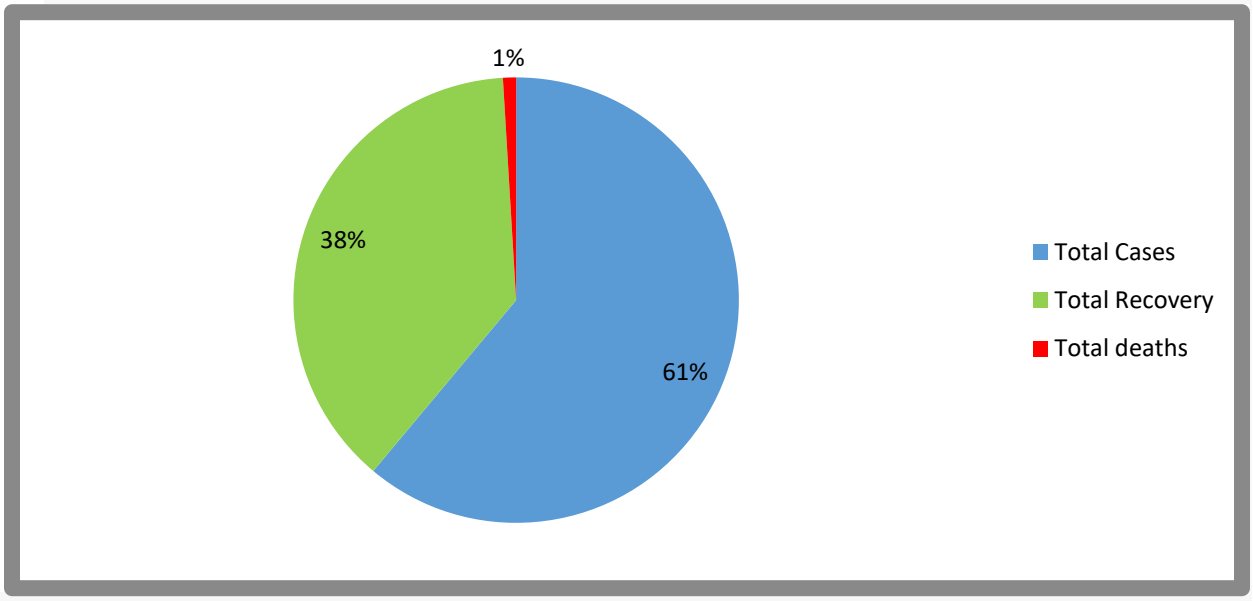

Fig. 1. Showing cumulative COVID-19 cases, recoveries and death as of November 26, 2020.

EPHI and FMOH COVID 19 response highlight of the week

Case Management and Infection Prevention Control

- There are **319** patients in severe condition as of November 26, 2020 and all the other patients are on medical care in stable condition
- This week, Nov 19 – Nov 26, 2020, 110 suspected cases are admitted
- This week,**707** 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 **31, 536** COVID-19 confirmed cases are followed in the HBIC as of November 26, 2020
- **25,799** of them have recovered in the HBIC as of November 26, 2020 **5,710** cases are currently on HBIC.
- **5** COVID-19 related deaths have occurred in the HBIC
- **262** cases have been transferred from treatment centers to HBIC
- **284**cases have been transferred from HBIC to treatment centers

Training and Supply

- Two days COVID-19 risk perceptions and behavioural assessment tool development and finalization workshop of 15 participants started at Bishoftu Town. On Nov 19, 2020.
- Non pharmaceutical intervention (NPI) revitalization plan Orientation for House of Peoples Representatives provided today for 55 House of People Representatives at Bishoftu Town on Nov 21, 2020.

References

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Global and regional burden of COVID-19

- Globally the total number of cases is extended to 60,719,936 as of November 26, 2020. A total of 42,030,234 cases recovered and 1,426,823 people died since the beginning of the outbreak. Globally, in a week time, from November 19 to November 26, 2020, COVID-19 cases increased by 7.3% and deaths by 5.3%. Europe became the leading in terms of cases followed by Asia and

North America. North America leads the number of deaths followed by Europe and South America (Fig 2).

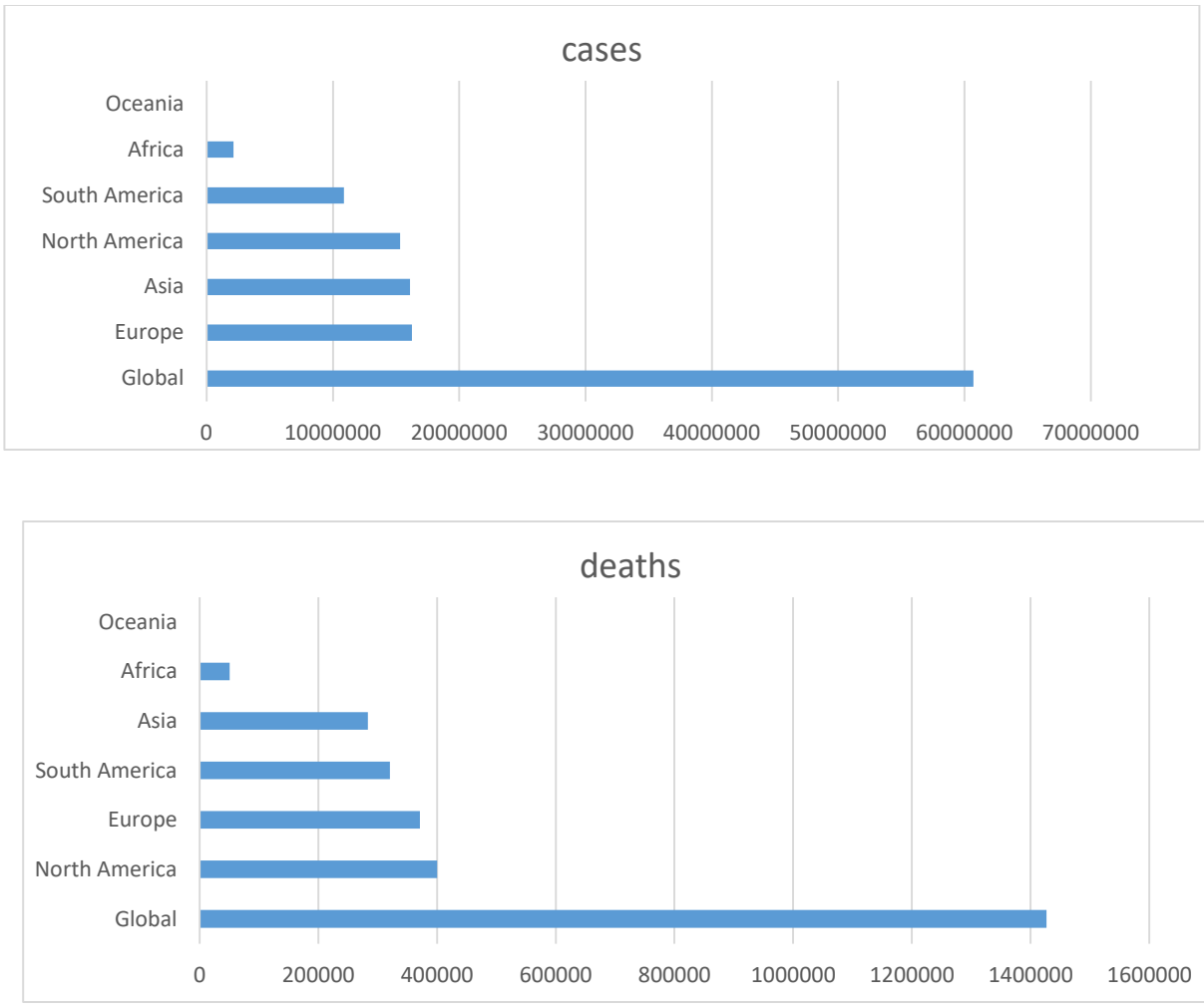


Fig 2. Global cases (top) and deaths (bottom) reported as of November, 2020.

- USA has recorded the highest number of cases (13,137,962 cases, 268,219 deaths) that accounts 21.6% of the total global cases and carried 18.8% of global deaths as of November 26, 2020.
- India is the 2nd highest in terms of cases in a week time by 3.4% (8,958,483 to 9,266,697) and deaths by 2.8% (131,618 to 135,261).
- Brazil has increased the number of cases in a week time by 3.7% (5,947,403 to 6,166,898) and deaths by 2% (167,497 to 170,799).
- France ranked 4th globally with 2,170,097 cases and 50,618 deaths.
- Russia ranked 5th globally with 2,162,503 cases and 37,538 deaths.
- The line share of Africa to the global COVID-19 pandemic was 3.5% and 3.6% of the global cases and deaths as of November 26). The number of cases in the continent has increased by

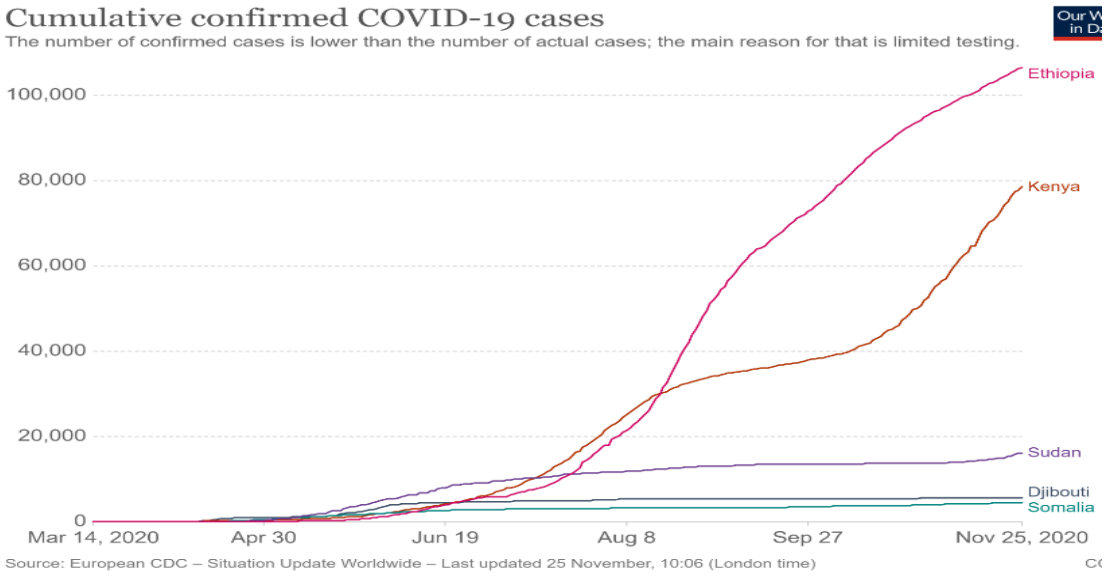
4.6% in a week time (2,026,587 to 2,120,356 cases). Similarly, the total number of deaths in Africa has increased from 48,509 to 50,736 showing a 4.6%. Total recoveries stand at 1,791,355.

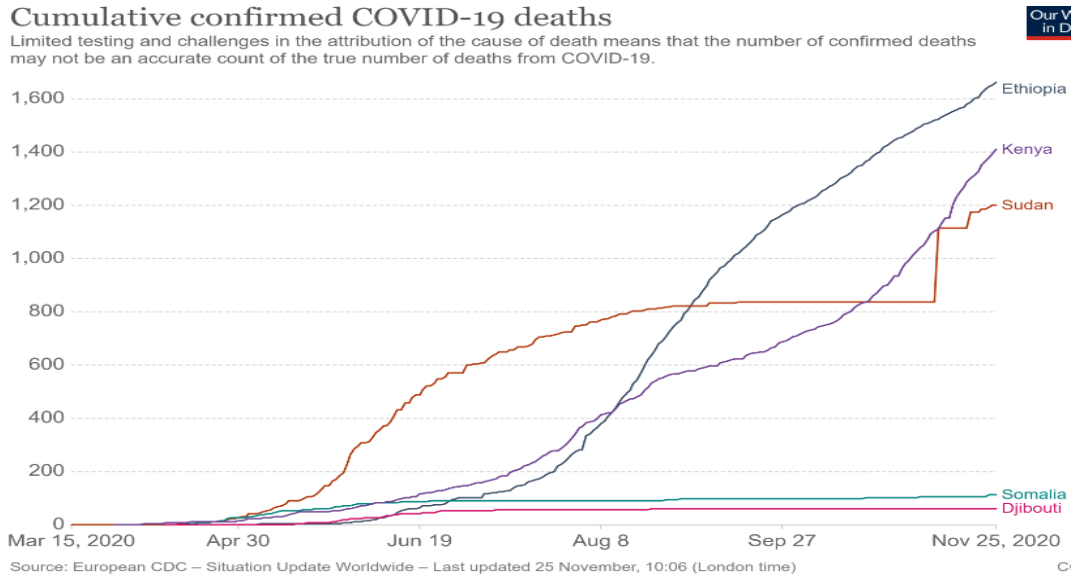
- South Africa is the leading in the continent with 775,502 cases and 21,201 deaths. Morocco (336,506 cases, 5,539 deaths), Egypt (114,107 cases, 6,585 deaths), Ethiopia (107,109 cases, 1,664 deaths), and Tunisia (91,307 cases, 2,983 deaths) are the most four leading countries next to South Africa in reporting COVID-19 cases in Africa. (Table:1).

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

Africa	November 19		November 26	
	Cases	Death	Cases	Deaths
South Africa	757,144	20,556	775,502	21,201
Morocco	306,995	5,013	336,506	5,539
Egypt	111,613	6,495	114,107	6,585
Ethiopia	103,928	1,601	107,109	1,664
Tunisia	83,772	2,541	91,307	2,983

- In East African, COVID-19 cases and deaths have shown fast progress. In a week time, COVID-19 cases and deaths were 3.1% and 3.9% in Ethiopia and 9.1% and 7.9% in Kenya. As of November, Ethiopia and Kenya continued to be the major drivers of the COVID 19 burden in east African countries. The epidemic appears increasing in Sudan with 10.6% cases and 3% deaths but low in Djibouti 0.2% cases and zero deaths. Similarly, 1.4% cases and 4.6% deaths reported in Somalia in a week time.





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COVID – 19: An Update on Vaccine Development

- Currently researchers worldwide are working around the clock to find a vaccine against SARS-CoV-2 the virus that cause covid-19 pandemic. To date 55 SARS- CoV-2 the virus vaccine registered and under trial of this just two corona virus vaccine has been approved by Russian government Sputink V vaccine& EpiVacCorona.
- **Sputink V vaccine** formerly known as Gam-COVID-Vac developed by Gamaley research institute in Moscow approved by MOH Russian federation 11 Aug. It lacks of data on safety and efficacy currently in phase 3 clinical trials underway with 20 participants cases shows that 92% effective in interim trial result
- **mRNA-1273 vaccine** developed by Kaiser Permanente Washington Health Research Institute & Moderna Inc. currently in phase 3 clinical trials underway with 95 cases participants shows that 94.5% efficacy in non-peer reviewed data interim analysis
- **AZD1222 vaccine** formerly known asChAdOx1 developed by AstraZeneca and university of Oxford. currently in phase 3 clinical trials underway with 131 cases participants shows that 70.4% efficacy in non-peer reviewed data interim analysis. One death in phase 3 trial in brazil.

- **BNT162 vaccine** developed by Pfizer and BioNtech currently in phase 3 clinical trials underway with 94 case participants /90.0% efficacy in non-peer reviewed data interim analysis nov 19
- **EpiVacCorona** developed by Russia Research center of virology and biotechnology granted regulatory approval without entering phase 3 clinical trials
- Currently focuses on COVID-19 vaccines development on the strength of safety and immunogenicity. In addition, effort of vaccine development that is able to provide protection in the elderly population since this segment typically responds less against vaccination because of immune senescence. In fact, vaccine effectively works in younger individuals and stops transmission in the community, it may provide an indirect benefit to elderly individuals. As result a candidate vaccine of SARS-CoV-2 act against infection, disease, or transmission, and a vaccine capable of reducing any of these elements could contribute to COVID-19 pandemic control.

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COVID vaccination logistics: five steps to take now

- **T**here are currently more than 40 candidate vaccines for COVID-19 in clinical evaluation, and more than 150 in preclinical development1. Creating a safe and effective vaccine is akin to striking base camp on Everest the gruelling climb to procurement and delivery lies ahead. Countries must develop a comprehensive and strategic plan for vaccine roll-out. In our view, there are five urgent steps nations must take now so they are poised to protect their own citizens and those elsewhere. As this pandemic has shown, in a globalized world, none of us is safe until all of us are.

Consider pilot projects

- All countries have a vaccination programme for children. But those for adults are scarce: by 2017, just 114 of the 194 member states of the World Health Organization (WHO) had adult vaccination programmes against seasonal influenza. And in India, for example, the only vaccine currently recommended for adults is against tetanus, for pregnant women. Some nations advise immunization for seasonal flu only for specific groups, such as elderly people. Rolling out childhood and adult vaccines differs in terms of the delivery logistics, social expectations, community engagement attitudes of providers and more. When COVID-19 vaccines become available, around 40% of countries will be encountering these differences for the first time. Such nations might consider running a pilot programme for adult vaccination using the seasonal flu vaccine, which in the Northern Hemisphere is usually provided in October and November, and in the Southern Hemisphere from April to May.

Use pre-qualification

- Several barriers delay the national registration process for vaccines and other health technologies in LMICs6. Manufacturers might focus on registering their products in high-income countries first, where they stand to make a larger profit. Companies can be hesitant to engage with divergent regulatory requirements and processes, especially if procedures are unfamiliar or onerous. Bodies that are equivalent to the US Food and Drug Administration in LMICs often lack the resources and expertise required to review industry submissions quickly. Together, these factors can result in long delays in registering vaccines. One 2016 study showed a typical lag of 4–7 years between a company's first regulatory submission and the vaccine's final approval in sub-Saharan Africa, for example. This timeline is untenable for a COVID-19 vaccine. It would be more efficient to make use of the WHO pre-qualification programme. This assesses the

safety, quality and efficacy of vaccines for distribution by organizations such as Gavi, the Vaccine Alliance in Geneva, Switzerland.

Establish national task forces

- Each country needs to design its own deliberative process for COVID-19 vaccination. Most nations already have National Immunization Technical Advisory Groups (NITAGs) or equivalent bodies to select vaccines, determine target populations, establish delivery platforms and so on. The WHO Strategic Advisory Group of Experts (SAGE) also has a working group tasked with advising member states on issues related to COVID-19 vaccines. These groups are conventionally made up only of health-sector experts. Yet because the implementation of COVID-19 vaccines will be as much about national economies and social values as health, we propose that nations consider establishing a 'NITAG Plus' COVID-19 task force.

Discourage bilateral negotiations

- To stop only the richest countries having access to a vaccine, the WHO and its partners Gavi and the Coalition for Epidemic Preparedness Innovations launched a global mechanism to allocate doses once available. Furthermore, many nations might be uncomfortable with the low target of 20% coverage, because estimates suggest that vaccination levels of more than 60–70% are needed to achieve herd immunity for SARSCoV- 2 (the threshold at which a virus can't spread through a population because most people are protected against infection).
- Given limited global production capacity and the predicted demand for a vaccine, wealthy countries and manufacturers imagine that they will be the winners from such bilateral deals. But these arrangements will exacerbate price wars, and will reduce vaccine coverage in many nations to the detriment of all. In our globalized world, vaccine nationalism could cost wealthy countries an estimated US$119 billion a year if the poorest countries do not have access.

Measure success

- Every vaccination programme should be judged not just by the number of people immunized, but by whether it enables people to live and work safely. This is likely to vary greatly between countries, because each will have different environmental and social factors, and different sub-populations might be selected for priority vaccination. Most nations, for example, are likely to treat health-care workers first. Who gets vaccinated next could depend on the vaccine, demographics (which varies hugely from one continent to another) and many other factors. Countries should not rely on success measures from other nations, as they have in the past, but should make their own measurements of infection, illness and death rates among vaccinated and

non-vaccinated populations. Country-level monitoring and evaluation systems will be crucial. This information will be needed to inform relaxation of mitigation or suppression policies, such as mandatory masking or travel quarantines.

Reference

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Will SARS-CoV-2 become endemic?

- Reinfection, in which an individual is subject to multiple, distinct infections from the same virus species throughout their lifetime, is a salient feature of many respiratory viruses. Indeed, the persistence and ubiquity in human society of common respiratory viruses—including influenza viruses, respiratory syncytial virus (RSV), rhinovirus, and the endemic coronaviruses—are largely due to their ability to produce repeat infection. Since the emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for the ongoing coronavirus disease 2019 (COVID-19) pandemic, a critical concern has been whether humans will experience reinfections with this pathogen, which might enable it to become endemic.
- Typically, following an initial infection, the human adaptive immune system develops a suite of defenses, including memory B lymphocytes capable of producing neutralizing antibodies targeted to bind to that particular pathogen, and memory T lymphocytes that help regulate immune responses and induce death of infected cells. These adaptive immune components, particularly B cells, can produce sterilizing immunity in which the pathogen, if reintroduced to the host, is prevented from replicating within the body.
- However, for many viruses, a number of processes, particularly insufficient adaptive immune response, waning immunity, and immune escape, can undermine or circumvent the sterilizing character of immunity and allow subsequent reinfection. In the first instance, an initial infection with a particular agent may not engender an adaptive immune response sufficient to confer sterilizing immunity. Furthermore, immune response to SARS-CoV-2 infection is heterogeneous, with individuals who experience asymptomatic infections manifesting a weaker immune response than those experiencing more severe disease. It is possible that some individuals never develop sterilizing immunity following infection with SARS-CoV-2, or that multiple exposures will be needed for affinity maturation and development of long-lasting protection.

- Waning immunity, in which the initial adaptive immune response is robust and protective but dissipates over time, leaving the host vulnerable to reinfection, may also undermine sterilizing immunity. Immune escape is a third process that can facilitate reinfection, in particular by viruses. Here, a virus, during its continued serial passage through a host population, accumulates point mutations. This accumulation, termed antigenic drift, may lead to conformational changes of viral surface proteins that disrupt the binding of antibodies previously generated against an earlier variant. Immune escape is a consequence of this antigenic drift that enables reinfection through the evasion of adaptive protection.
- Insight from other respiratory viruses points to the possibility of reinfection with SARS-CoV-2. By contrast, more pathogenic viruses that induce systemic effects on the host may elicit a longer-lasting adaptive immune response. For example, longitudinal immune profiles from SARS survivors showed a stronger immune response with neutralizing antibodies persisting for 2 to 5 years. However, it could not be confirmed if and for how long this response conferred immunity because the SARS outbreak lasted less than 1 year. In addition to duration of protective immunity, the long-term effects of SARS-CoV-2 on humans will depend on the severity of reinfection.
- Should reinfection prove commonplace, and barring a highly effective vaccine delivered to most of the world's population, SARS-CoV-2 will likely become endemic. The typical time scale at which individuals experience reinfection and seasonal differences in transmissibility will determine the pattern of endemicity. Consequently, numerous studies have sought to determine whether conditions such as temperature, sunlight, humidity, ozone, and pollution affect SARS-CoV-2 viability and transmissibility. The results are not currently conclusive, although it appears that environmental conditions, such as sunlight and humidity, may modulate SARS-CoV-2 transmissibility—not enough to preclude transmission during the first waves of the pandemic when immunity is generally low—but perhaps sufficient to favor seasonal, phase-locked transmission during winter in temperate regions, similar to influenza virus, once immunity increases.
- Co-circulating respiratory viruses may interfere with one another while competing for the same resources, and their interactions have been studied at population and individual levels, in reconstructed human tissues and in animal models. The outcomes in individuals of serial exposure to different viruses vary and in general appear to depend on the order and timing of exposures. The clinical and population-scale interactions of SARS-CoV-2 with other respiratory

viruses, particularly influenza viruses and other HCoVs, need to be monitored in the coming years. To date, some SARS-CoV-2 coinfections have been documented, including coinfections with influenza and RSV; however, testing for multiple pathogens has not been routinely carried out, and the scarce data that do exist, mostly for older adults with high rates of preexisting medical conditions, do not support a definitive evaluation of coinfection likelihood or severity. Studies prior to the pandemic indicate that simultaneous infections with multiple respiratory viruses are not uncommon but are not associated with increased disease severity.

- At the population scale, a possible overlap between influenza and SARS-CoV-2 outbreaks poses a serious threat to public health systems. Seasonal influenza produces millions of severe infections worldwide every year, and this additional burden could be catastrophic on systems already challenged by the COVID-19 pandemic. Conversely, given similar modes of transmission among different respiratory viruses, the nonpharmaceutical interventions adopted to mitigate SARS-CoV-2 transmission (personal protective equipment, social distancing, increased hygiene, and limited indoor gatherings) may reduce the magnitude of seasonal influenza outbreaks.

Reference

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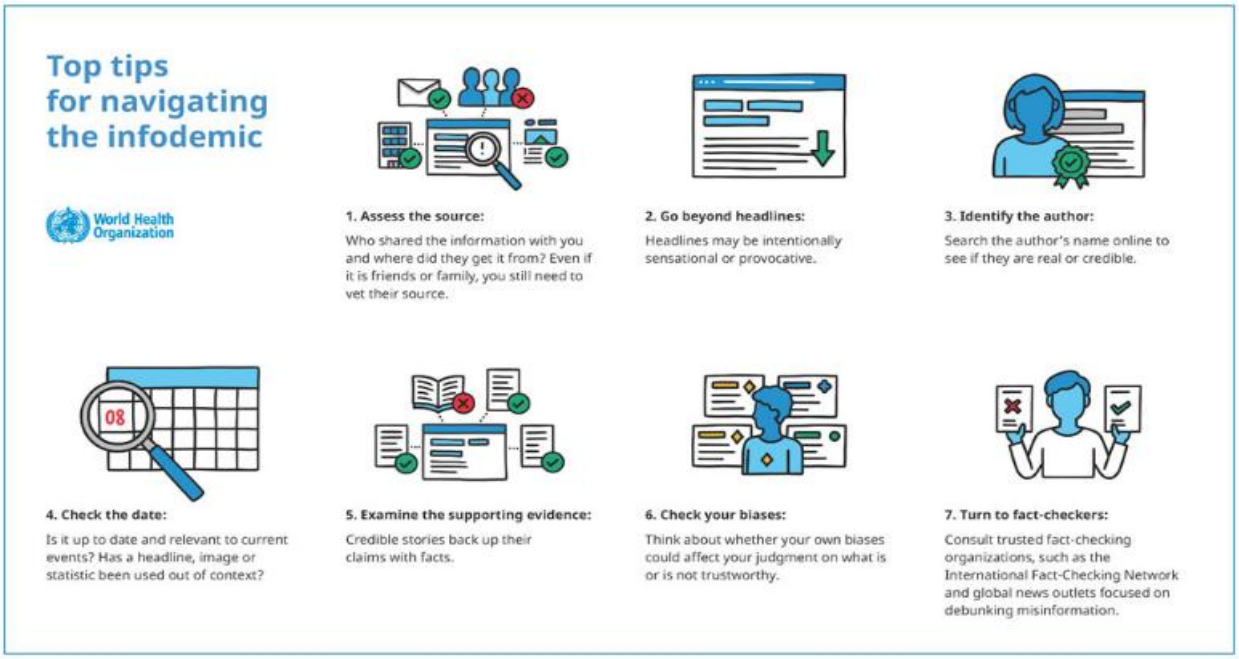
COVID- 19 Infodemic

- We are all being exposed to a huge amount of COVID-19 information on a daily basis, and not all of it is reliable. Due to COVID-19, most of us have a new word in our vocabulary. Now it is time to learn another new word: infodemiology.
- As humans, we are a curious and innovative species. We want to understand the world around us and stay up to date on the challenges we face and how to overcome them. One of the ways we do this is by seeking out and sharing information – lots of it. Even scientists around the world are working hard to keep up with the thousands of studies that have come out since COVID-19 appeared.
- But it is not only scientific studies. There are also official communications from governments and health agencies around the world. Then there are news articles and opinion pieces, and

messages from vloggers, bloggers, podcasters and social media influencers. You may also see information shared by friends and family on social media or messaging apps.

- All of this is called the **infodemic**: a flood of information on the COVID-19 pandemic and **Infodemiology** is the study of that information and how to manage it.
- Here are seven steps you can take to navigate this wave of information and decide who and what to trust: Assess the source, go beyond headlines, identify the author, check the date, examine the supporting evidence, check your biases and turn to fact-checkers



Source: GAVI the Vaccine Alliance https://www.gavi.org/vaccineswork/lets-flatten-infodemic-curve, accessed 11/25/20