

# Novel coronavirus (2019-nCoV) – reminiscent of Spanish flu: A challenge to global public health systems

<sup>1</sup>\*Mirgissa Kaba, <sup>2</sup>Yayehyirad Kitaw

### Introduction

Unexpected occurrences of infections in the form of outbreaks are no longer exceptional. The world is encountering infection outbreaks of different types, with coverage, at times, having global ramifications. Going through the archives, one can see that there have been deadly outbreaks that have changed the course of human history. The plague that peaked from 1347 to 1351, for example, affected the landscape of Europe and the world, wiping out 17% of the then 450 million global population (1).

In 2018, the authors of this editorial wrote a brief communication entitled “A century after *Yehedar Besheta* (The Spanish flu in Ethiopia): Are we prepared for the next pandemic?”. In that communication, an attempt was made to reflect on the devastating Spanish flu pandemic that rocked the world 100 years ago. The pandemic did not spare Ethiopia, which suffered heavily with scores of deaths; Addis Ababa paid much of the toll then (2). As was noted, in the brief communication, drawing on the work of the US Department of Health and Human Services: “Pandemic influenza is not a theoretical threat; rather, it is a recurring threat” (3). However, it is difficult to predict when the next pandemic will occur, or how severe it will be (2).

The Spanish flu and subsequent outbreaks of different magnitudes have offered ominous warnings to public health authorities and health systems across the world. Evidently, advances in technology and science have improved global health systems, including, for example, artificial intelligence (AI), which can predict the location of the next outbreak, development effective drugs, the design of new molecules that could halt viral replication, and so on (5). Yet, threats of emerging and re-emerging infections have not shown much decline – rather, they have become more common. In the past few decades, the world has continued to witness and be threatened by infection outbreaks of varying severity in terms of consequence and geographical coverage (5). With the frequent occurrence of emerging and re-emerging infection outbreaks of different scales, predicting what would be the next one became rather elusive (3).

Since the world was hard hit by the Spanish flu, there have been a number of outbreaks, including Ebola, Zika, dengue, Middle East respiratory syndrome (MERS), severe acute respiratory syndrome (SARS), and influenza, as well as the looming spectre of rising antimicrobial resistance (AMR) in specific geographical settings. These infections have already threatened the health, social and economic mainstays of the countries affected by the outbreak (5). Now,

COVID-19 is rocking the globe with more threats, more uncertainties and mounting consequences.

### The current challenge

The emergence of coronavirus was reported on December 31, 2019 in Wuhan town, Hubei province, China. China has taken proactive measures, which is claimed to have contributed to a declining new infection rate, while the rest of the world is still in turmoil. New infections are spreading at an unprecedented rate and deaths have been recorded in many different countries by a minute. According to the WHO, as at March 10, there are close to 120,000 confirmed cases of COVID-19 in over 100 countries/territories and a little over 4000 consequent deaths (6). Corona virus continues to ravage not only health systems, but also countries’ economies and social and cultural establishments. The spread to new countries and healthy people is increasing rapidly. As underscored by the WHO, the virus poses the highest risk to the poorest and most vulnerable nations – particularly those in Africa (7-9). Recent Lancet commentary argues that the already ‘weak health-care systems, including inadequate surveillance and laboratory capacity, scarcity of public health human resources, and limited financial resources, uncontrolled population movement, still widespread epidemic’ would facilitate the easy spread of the virus (10).

The risk is compounded by the high volume of air traffic and trade between China and Africa. Marius Gilbert and colleagues used data on volume of Air travel from Guangdong, Fujian, and Beijing airports in China to African countries to model the risk of importation of COVID-19 from China to Africa. Despite limitations of its own, the analysis revealed that Egypt, Algeria, and South Africa had the highest risk with moderate to high capacity to respond to outbreaks while Nigeria, Ethiopia, Sudan, Angola, Tanzania, Ghana, and Kenya show moderate risk with variable capacity and high vulnerability (11). The authors did not conceal their concern that Ethiopia could be the gate way for the spread of COVID-19 to other African countries as nearly half of the flights from Africa to China operates by Ethiopian Airlines.

The pace at which corona virus spreads over the world is reminiscent of the Spanish flu of 1918. Since the Spanish flu, however, the world has gained extensive knowledge, skills and experience on how to prevent outbreaks with advanced technologies and knowledge bases. These, however, are not commensurate with the alarming pace at which the epidemic is spreading. Countries that were free from the virus are now reporting not only finding cases but also deaths with high mortality rates, potentially associated with

---

<sup>1</sup>\*School of Public Health, Addis Ababa University

<sup>2</sup>Private Consultant

healthcare resource availability(12). The most recent countries affected include Brunei Darussalam, Mongolia, Cyprus, Guernsey and Panama. In Africa, Algeria, South Africa, Senegal, Cameroon, Nigeria and Togo which have reported confirmed COVID-19 cases as of March 10, 2020 (6).The spread continues – the numbers of cases, deaths and countries reporting cases are increasing at a staggering rate. Coronavirus will undoubtedly affect the social and cultural fabric of countries, while economic challenges are already being felt. Previous infectious outbreaks, such as SARS and MERS, reported huge economic costs. It is likely that coronavirus, which is much broader in its scope, affecting nearly every country in the world, will have a greater economic cost compared to its recent predecessors. The economic cost of coronavirus on global manufacturing is already vivid. Although concrete economic evidence is yet to be compiled, preliminary analysis by the UN Conference on Trade and Development (UNCTAD) shows that virus containment measures caused a “substantial decline in output” (13,14). The impact of the virus on existing global structures is evident. The effectiveness and credibility of the International Health Regulations 2005 (IHR), which were created to ensure due diligence and cooperation between countries, are being tested by the pace at which coronavirus spreads and countries’ concerns related to sovereignty, economic interests and national security (15).

#### **Measures to contain the spread of coronavirus**

Public health has made a successful journey in preventing and controlling infectious as well as communicable diseases. Good examples are smallpox eradication, almost complete eradication of poliomyelitis, and the recent discovery of stomach ulcers being caused by the *Helicobacter pylori* organism. Evidently, substantial reductions of cholera, typhoid and other infections bear witness to successes, although there are variations from country to country(16).

Yet, evidence reveals that infections are still challenging public health across the world. Recent discussions attribute continued outbreaks of infections across the globe to non-commensurate infection prevention and control (IPC) programmes that could be further aggravated by precarious availability of clean water supplies, sanitation facilities and hygiene infrastructure at facility and community level, mostly in developing countries (17).The lack of multidisciplinary teams to coordinate sectoral contribution and generation of evidence to improve programming, among other factors, also affects quick and successful response(6).Lessons from the pace at which coronavirus spreads, and how countries have reacted to prevent and control it, shows limited global and country-level preparedness for and response to such outbreaks.

Evidence shows that there is a lack of uniformity in how countries are prepared for the epidemic and how to respond to it. While some take measures including travel bans, some declare a state of emergency, while others release prisoners on bail (18). This is an

indication of the lack of uniformity, providing possible options of what and what not to do. Such diverse interventions have also paved the way for conspiracy theories about the epidemic itself. There is strong indication of the animal origin of the virus; pangolins and bats are suspected, but there is no solid confirmation yet(19).

With the outbreak of the virus, and the challenges and widespread consequences it presents, it is perhaps to be expected that conspiracy theories have followed in its wake. However, the impact of such theories creating fear, rumours, and prejudice– may affect the country-level and global endeavours to fight coronavirus(20).Some unsubstantiated theories have gone viral on social media, including lists of what and what not to do, eat, drink, and so on, to prevent the virus. Of course, none of these have been tested or are based on rigorous research.

Concerned with the threat conspiracies may pose to preparedness and response in general, and data sharing on the outbreak, scientists from multiple countries have condemned the conspiracy theory that COVID-19 does not have a natural origin(20).

WHO advice to prevent coronavirus includes, but is not limited to, regular hand washing, avoidance of touching one’s own face, getting real-time evidence about coronavirus, consulting health professionals when you have a fever or cough, coughing or sneezing into your sleeve, or using a tissue and disposing of it immediately into a rubbish bin(6).

Further advisories from WHO specify that if one is not from an area where COVID-19 is spreading, or not travelled to or been in contact with someone from such areas, getting informed on coronavirus from reliable sources helps to take reasonable precautions (see [www.who.int/news-room/q-a-detail/q-a-coronaviruses](http://www.who.int/news-room/q-a-detail/q-a-coronaviruses)). Those who are from areas where COVID-19 is spreading, or have travelled to or are in contact with someone from such areas, are required to take serious precautions and seek immediate advice from health facilities (6).In addition, the response to the epidemic requires broader transparency, questioning existing cultural practices that facilitate transmission, multi-sectoral collaboration, and strong and committed leadership to avoid potential social, economic and human damage the virus could cause.

State actors are expected to make policy decisions on what to do if the virus is detected in a country, how to make available all necessary prevention resources for personal hygiene, improve surveillance and case detection, capacitate health facilities including human resources, and provide mass education and awareness building at all levels. Such structural-level interventions require huge investment, which calls on countries to make difficult decisions in relation to various competing priorities. Developing countries, such as Ethiopia, would suffer a great deal, as health facilities lack preparedness in terms of supplies and equipment, competent and motivated health professionals, a well-organized surveillance system

that is commensurate with the global nature of the epidemic, and a coordination mechanism that pays attention to the realities on the ground.

As it stands now, it is clear that the world did not learn from Spanish flu of 1918 and subsequent wake-up calls from limited-scale infection outbreaks such as SARS, Ebola, MERS and so on. As a result, the global population is stuck in a cycle of panic and neglect, which is further complicated by prevailing political and economic challenges, including conflict, instability and mobility, which facilitate further spread of coronavirus(21). On the positive side, there are indications that “highly effective contact tracing and case isolation is enough to control a new outbreak of COVID-19 within 3 months”(22). There is also growing recognition that Africa needs a unified continent-wide strategy for preparedness and response. To this end, the African Union Commission, Africa Centers for Disease Control and Prevention (Africa CDC), and WHO, in partnership with African countries, have established the Africa Taskforce for Coronavirus Preparedness and Response (AFTCOR). At an emergency meeting of 55 of the taskforce member states, convened on Feb 22, 2020, in Addis Ababa, the ministers of health of the various countries committed to act fast and collectively to develop and implement a coordinated continent-wide strategy (10). In Ethiopia, at the macro level strong leadership and guidance is established with a daily follow-up of progress, screening and surveillance are consistently being carried out at defined borders outlets. COVID-19 clearly poses major challenges not only to the health system, which will be tested at all levels, but to society as a whole. Even framing questions for pandemic prevention is complex (23); the time to seriously launch ‘the all-of-government and all-of-society approaches’ recommended by WHO (24) is now.

## References

1. Erdem H, Tetik A, Arun O, Besirbellioglu BA, Coskun O, Eyigun CP. War and infection in the pre-antibiotic era: The Third Ottoman Army in 1915. *Scand J Infect Dis.* 2011;43(9):690-5.
2. Kitaw Y, Kaba M. A century after *Yehedar Besheta* (The Spanish flu in Ethiopia): Are we prepared for the next pandemic?; Brief communication. *Ethiop J Health Dev.* 2018;32(1):68-71.
3. USDHHS. Pandemic influenza plan: 2017 Update. Washington D.C.: U.S. Department of Health and Human Services; 2017. [www.cdc.gov/flu/pandemic-resources/pdf/pan-flu-report-2017v2.pdf](http://www.cdc.gov/flu/pandemic-resources/pdf/pan-flu-report-2017v2.pdf)
4. McCall B. COVID-19 and artificial intelligence: Protecting health-care workers and curbing the spread 2020. *Lancet Digital Health.* News. February 20, 2020. [www.thelancet.com/pdfs/journals/landig/PIIS2589-7500\(20\)30054-6.pdf](http://www.thelancet.com/pdfs/journals/landig/PIIS2589-7500(20)30054-6.pdf)
5. Bloom DE, Cadarette D. Infectious disease threats in the twenty-first century: Strengthening the global response. *Front. Immunol.* 2019;10:549.
6. WHO. Coronavirus disease 2019 (COVID-19) Situation Report – 47. March 7, 2020. [www.who.int/docs/default-source/coronaviruse/situation-reports/20200307-sitrep-47-covid-19.pdf?sfvrsn=27c364a4\\_2](http://www.who.int/docs/default-source/coronaviruse/situation-reports/20200307-sitrep-47-covid-19.pdf?sfvrsn=27c364a4_2)
7. Editorial. As coronavirus spreads, the time to think about the next epidemic is now: World leaders and international donors must strengthen the most vulnerable nations’ health-care systems. *Nature* 2020;578:191. [www.nature.com/articles/d41586-020-00379-9](http://www.nature.com/articles/d41586-020-00379-9)
8. Editorial. COVID-19: Fighting panic with information. *Lancet.* 2020;395(10224):537. [www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30379-2/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30379-2/fulltext)
9. Editorial. Challenges of coronavirus disease 2019. *Lancet Infectious Diseases.* 2020;20(3):261. [www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30072-4/fulltext](http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30072-4/fulltext)
10. Nkengasong JN, Mankoula W. Looming threat of COVID-19 infection in Africa: Act collectively, and fast. *Lancet* 2020; February 27, 2020. [https://doi.org/10.1016/S0140-6736\(20\)30464-5](https://doi.org/10.1016/S0140-6736(20)30464-5)
11. Gilbert M, Pullano G, Pinotti F, Valdano E, Poletto C, Boëlle P-Y, *et al.* Preparedness and vulnerability of African countries against importations of COVID-19: A modelling study. *Lancet* 2020; February 20, 2020. [https://doi.org/10.1016/S0140-6736\(20\)30411-6](https://doi.org/10.1016/S0140-6736(20)30411-6)
12. Ji Y, Ma Z, Peppelenbosch MP, Pan Q. Potential association between COVID-19 mortality and healthcare resource availability. *Lancet Glob Health.* 2020. February 25, 2020. [https://doi.org/10.1016/S2214-109X\(20\)30068-1](https://doi.org/10.1016/S2214-109X(20)30068-1)
13. WHO. Coronavirus disease 2019 (COVID-19): Situation Report – 50. March 10, 2020. [www.who.int/docs/default-source/coronaviruse/situation-reports/20200304-sitrep-50-covid-19.pdf?sfvrsn=93937f92\\_6](http://www.who.int/docs/default-source/coronaviruse/situation-reports/20200304-sitrep-50-covid-19.pdf?sfvrsn=93937f92_6)
14. UNCTAD. Coronavirus outbreak has cost global value chains \$50 billion in exports. March 4, 2020. <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2297>
15. World Economic Forum. The economic, geopolitical and health consequences of COVID-19. March 6, 2020. [www.weforum.org/agenda/2020/03/the-economic-geopolitical-and-health-consequences-of-covid-19/](http://www.weforum.org/agenda/2020/03/the-economic-geopolitical-and-health-consequences-of-covid-19/)
16. Burci GL. The outbreak of COVID-19 coronavirus: Are the international health regulations fit for purpose?. *EJIL:Talk! Blog of the European Journal of International Law.* February 27, 2020. [www.ejiltalk.org/the-outbreak-of-covid-19-coronavirus-are-the-international-health-regulations-fit-for-purpose/](http://www.ejiltalk.org/the-outbreak-of-covid-19-coronavirus-are-the-international-health-regulations-fit-for-purpose/)
17. Schlipkötter U, Flahault A. Communicable diseases: Achievements and challenges for public health. *Public Health Reviews.* 2010;32(1):90-119.
18. Allegranzi B, Kilpatrick C, Storr J, Kelley E, Park BJ, Donaldson L, *et al.* Global infection prevention and control priorities 2018-22: A call for action. *Lancet Glob Health.* 2017;5(12):e1178-e1180.
19. Hollingsworth J, Renton A, George S, Reynolds E, Hayes M, Bowman R, *et al.* Coronavirus news. *CNNNews,* March 4, 2020.

20. Cyranoski D. Mystery deepens over animal source of coronavirus. *Nature*. 2020;579:18-19.
21. World Bank. Pandemic preparedness and health systems strengthening. 2017; <https://www.worldbank.org/en/topic/pandemics>
22. Calisher C, Carroll D, Colwell R, Corley RB, Daszak P, Drosten C, *etal*. Statement in support of the scientists, public health professionals and medical professionals of China combatting COVID-19. *Lancet*. 2020; 395(10226):PE42-43. [www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30418-9/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30418-9/fulltext)
23. Layne SP, JM Hyman, DM Morens, JK Taubenberger, New coronavirus outbreak: Framing questions for pandemic prevention. *Sci. Transl. Med.* 12, eabb1469 (2020). Editorial 2020d. COVID-19: too little, too late? *Lancet* 2020, 395: 754-755.