Hindsight is 20/20: Lessons from the COVID–19 Pandemic and the Need for Stronger, Ethical Disease Surveillance

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INTRODUCTION

Amid the COVID–19 pandemic, it is disturbing to read that, in 2016, a United Nations report assessed the ability of the international community to respond to communicable diseases as "woefully insufficient."[1] The Global Health Crises Task force, assembled in 2016 by then Secretary-General Ban Ki-moon, published a report entitled "Protecting Humanity from Future Health Crises," containing warnings that were prescient in light of recent events. The report called the 2013-16 West African Ebola virus outbreak a "preventable tragedy" and criticized the international community for not addressing prior recommendations made to prevent such events in the wake of the 2009 H1N1 Pandemic.[2] The COVID–19 pandemic should serve as a wake-up call – without bold action, future disease outbreaks could be just as devastating as the COVID–19 pandemic or worse.

ANALYSIS

The UN report cites mathematical modeling performed by the Bill and Melinda Gates Foundation which predicts that "a virulent strain of an airborne influenza virus could spread to all major global capitals within 60 days and kill more than 33 million people within 250 days" -- a pandemic the likes of which the world hasn't seen since the 1918 Spanish Flu. We are currently less than 250 days from the start of the COVID–19 pandemic,[3] and we are not on track to have a disaster on the scale that the Gates Foundation predicted possible.[4] However, the numbers borne out by the Gates Foundation's modeling are serious, and since most current estimates seem to point toward COVID–19 being more fatal than the seasonal flu, they demand attention and action.

While the UN report contains twenty-seven different recommendations for action at national, regional, and global levels including more robust funding for the World Health Organization (WHO) and

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addressing poverty, the need for improved disease surveillance is especially noteworthy. In a 2015 op-ed for the *NEJM*, Bill Gates urges action on this exact front, writing, "Routine surveillance systems should be designed in such a way that they can detect early signs of an outbreak beyond their sentinel sites and be quickly scaled up during epidemics. They should be linked with national public health laboratories to enable robust monitoring and response. And the data derived from such testing need to be made public immediately."[5] To make existing disease surveillance more effective, Gates focuses in part on the need for improved data sharing among state actors. While WHO already has Epidemic and Pandemic Alert and Response (EPR), a branch that deals with alert and response operations based on a few severe diseases (such as anthrax and the bubonic plague), WHO relies on individual countries to report outbreaks, which they may or may not do. Reporting can be compromised by both the mixed quality of disease surveillance mechanisms within the country of origin, as was the case during the West African Ebola crisis, or a government's decision to treat information about new disease outbreaks to be a "state secret," as some have alleged was the case with China's initial handling of COVID–19 compromise reporting.[6]

To help overcome the deficiencies of current disease surveillance mechanisms, the UN panel recommended that countries set up a "One Health" surveillance system, meaning integrating veterinary health data into disease surveillance programs.[7] This makes sense given that the COVID–19 pandemic is generally believed to have originated from animal hosts.[8] Additionally, the UN panel called for *all* unusual health events to be reported to the WHO so that the international community could respond more promptly.[9] The report also recommended that countries in the developing world strengthen both their laboratory capacities for more rapid diagnoses as well as their emergency health workforces. However, even resource-limited provinces in China tend to have robust laboratory infrastructure.[10]

The UN's 2016 report teaches us that some share of the deaths associated with the COVID–19 pandemic were wholly preventable. By failing to implement the UN's recommendations made in the wake of the H1N1 and Ebola pandemics, individual governments effectively allowed some share of the deaths associated with the COVID–19 pandemic to occur. While the governments of the world are rightfully concerned with combatting the ongoing COVID–19 pandemic now, the UN's 2016 recommendations demand a second look in the immediate future in order to prevent some share of deaths associated with the next infectious disease outbreak. The UN report is correct in advocating for stronger disease surveillance mechanisms. International cooperation to the ends of implementing more robust disease surveillance appears to be a moral obligation such that some share of future deaths during the next major disease outbreak can be prevented.

The implementation of any disease surveillance mechanisms or the modification of existing initiatives will raise certain ethical challenges. For example, disease surveillance data is often collected without the informed consent of affected individuals.[11] While the waiving of an informed consent process paves the way for a more complete and robust dataset, it arguably constitutes a violation of an individual's privacy or autonomy. Additionally, while public dissemination of data obtained from disease surveillance is necessary to reap all the benefits associated with strong disease surveillance initiatives, certain published information could inadvertently lead to the stigmatization of a group and expose its members to discrimination.[12] The implementation of stronger disease surveillance initiatives as well as the continuation of current ones should be balanced against these considerations. Ideally, clear ethical guidelines agreed upon by experts and the international community should be developed.

Surveillance programs could potentially be seen as violating a nation's sovereignty. Currently, WHO requires that countries report outbreaks of many diseases including cholera, yellow fever, and typhus.

However, WHO depends upon individual nation states to report any outbreaks as well as to consent to the dissemination of that information.[13] Since governments have often been accused of covering up the severity of disease outbreaks, WHO may need to reexamine its enforcement of reporting requirements in order to implement stronger disease surveillance mechanisms for the prevention of future preventable deaths.[14] The 2016 UN panel broadened the reporting requirements by recommending that all unusual health events be reported to the WHO.[15] Nation states should be compelled to report such outbreaks. Potential violations of national sovereignty seem to be a lesser evil than the prospect of preventable deaths due to communicable disease occurring on a global scale in the wake of any future pandemics. Sovereignty should not extend to covering up disease outbreaks.

CONCLUSION

The UN's 2016 report was correct to call for more robust disease surveillance at the international level. The implementation of "One Health" surveillance mechanisms alongside calling for all unusual health events to be reported to WHO would be significant steps toward managing and preventing pandemics. However, disease surveillance mechanisms must be established and evaluated with ethical considerations in mind. Ideally, clear ethical guidelines should be agreed upon at the international level. Moreover, WHO's policy of depending upon individual nation states to report disease outbreaks to the international community may demand a second look. Some nation states are not proven to be responsible reporters of data. International cooperation to establish and strengthen disease surveillance mechanisms is necessary for the prevention of future pandemic events and to save lives.

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