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Letter to the Editor

Pandemic--The Role of the Electronic Sharing of Public Health Data, Public Health Data Science, and Public Health Action

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Dear Editor,

The ongoing coronavirus disease-2019 (COVID-19) pandemic reminds me of the importance of good, public health data and analysis for public health action to protect the health of the population, especially during a pandemic.

The journal offered early perspectives on the COVID-19 pandemic.[1,2] The pandemic continues. The weekly epidemiological update from the World Health Organization (WHO) (10 November 2020) summarized the COVID-19 pandemic for the previous week[3]:

"*Globally in the past week, cases of COVID-19 have increased by 8%, compared to the previous week, resulting in over 3.6 million new cases, while new deaths have increased by 21% to over 54,000. This brings the cumulative numbers to over 49.7 million reported cases and over 1.2 million deaths globally since the start of the pandemic.*"

Specifically, the COVID-19 Weekly Epidemiological Update (8 November 2020, 10 am CEST) reported that changes in new cases for the prior 7-day period were highest in the following WHO Regions: Western Pacific (19%), Eastern Mediterranean (18%), and Europe (11%). Similarly, during the same time period, the changes in new deaths were highest in Europe (44%), Africa (30%), and Eastern Mediterranean (23%).[4]

Mortality (death) and morbidity (incidence) statistics are useful public health data for public health planning and public health decision-making.[5] The data reported by the WHO remind me of the importance of good, quality public health data, especially the electronic collection, transfer, and analysis of data for public health action during a pandemic.

The electronic collection and transfer of public health data is common. Health Information Exchange is defined as the electronic transfer of clinical and/or administrative information across diverse and sometimes competing healthcare settings.[6] There are four types of Health Information Exchanges (HIE): Private HIEs; Government-facilitated HIEs; Community-based HIEs; and Vender-facilitated HIEs. Successful Health Information Exchanges have two, broad components: social and political component (including collaboration and addressing key ethical principles of privacy, confidentiality, and security); technical component (including master client/patient registry, shared records, interoperability, health information management system). Ineffective workings of the social-political component with technical component may contribute to a less than optimal exchange of health information (e.g., morbidity and mortality statistics) especially during an outbreak when these data are most important.

Technology is an essential aspect of analyzing public health data. The collection and use of health information by official governmental entities and credible, non-governmental partners could permit the application of public health data science methods to help address public health problems.[7] COVID-19 data could be to linked various sources of other data collected at the same level of aggregation in order to ascertain patterns in data that could lead to public health decision-makers finding population level solutions to an outbreak (or similar health outcome) impacting a geographic area. For example, incidence data and mortality data at a geographic unit within a country could be linked to other health resource and social data collected and reported at the same geographic unit. Analysis of these linked data could provide actionable

public health insights for political and public health decision-makers. The need for good quality, up-to-date data available for appropriate analysis is necessary for controlling a disease outbreak (or other health outcome) and for protecting the affected population.

Societies across the world wait for the successful end of the current pandemic. When the public health emergency is over, political and public health leaders may need to re-examine many issues of population health including universal healthcare coverage, public health resources, and public health surveillance—including topics related to health information exchange and the application of public health data science for quality and timely public health data analyses designed to inform global public health action, especially during a pandemic.

Thank-you for allowing me to share these thoughts with you.

Best,
Author

DISCLAIMER

The views presented in the paper are those of the author and do not represent any official position of the US Government.

FINANCIAL CONFLICTS OF INTEREST

None.

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