

# Increasing the Impact of Global Health Informatics by Improving the sharing of Public Health data across countries: A Call for Action

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## ABSTRACT

Public health data are collected globally in large quantities. But these data are rarely shared across countries and used beyond their primary purpose. These data have the potential to prove public health more if shared cross-border as infectious diseases do not stop at borders. The application of big data methods could be used to gain new insights from public health data through secondary use.

**Keywords:** Global health informatics; Secondary data use; Big data; Global public health; COVID-19

## Mini Review

The global health community has made tremendous progress in the past years and decades in reducing the global burden of disease, predominantly in the area of infectious diseases [1]. In recent years, we have also seen a significant increase in the use of informatics solutions in the field of global health [2]. For the longest time, the leading application of information technology (IT) in global health was in the collection of data through electronic surveys and data collection forms, primarily for disease surveillance. Previously paper-based data collection forms have been digitalized. This ranges from aggregated disease reporting forms from healthcare facilities to disease investigation surveys administered by surveillance agents. In addition to electronic data collection forms, data from paper-based forms is entered into surveillance information systems on a central level by data clerks. Disease surveillance data collected through surveys and forms are transferred and stored in centralized surveillance information systems. These databases are often found on a country-level. A more recent trend is the use of graphical information as well as decision support systems to make use of the surveillance data [3,4]. Today, medical data are being generated in large quantities by personal health devices, by healthcare systems

as part of the healthcare delivery process, through public health measures and research projects. However, these data are rarely used beyond their primary purpose.

The application of big data methods to medical data offers the opportunity to transform healthcare [5]. However, these data are rarely used beyond their primary purpose and even less beyond the country-level, for example, in regional or global databases. If data is shared, it is only shared in highly aggregated form, drastically reducing its usefulness for decision making. Increased data sharing of public health data would be most beneficial for low- and middle-income countries, as most of the morbidity and mortality burden of infectious diseases lies in them. The 2019/2020 global pandemic of the novel coronavirus (COVID-19) has shown the importance of public health data sharing and its benefits on a worldwide scale, including high-income countries. Several scholars have argued for sharing epidemiological and public health data related to COVID-19 to increase the public health response globally [6,7]. In addition to the data-sharing issue, these public health data are rarely used beyond their primary purpose. Secondary use of health data is still scarce compared to the amount of health data that is

being collected. The application of big data methods to health data offers the opportunity to transform healthcare [5]. However, the healthcare industry has been a lot less thriving than other industries in applying these new tools. The main reasons for this are privacy concerns and the fact that medical data are scattered across institutions [8]. While scholars have identified some barriers to sharing public health data [9], a number of scholars have highlighted the enormous benefits and potential of increased sharing and frequent utilization of public health data to improve public health globally [10-13].

### Call for Action

The authors make the following claims regarding public health data and a call for action to improve public health data sharing:

- a. Infectious diseases do not care about country borders: While public health data is collected locally and aggregated at the national level, infectious diseases do not care about country borders. The conducting public health interventions in border regions, it is therefore crucial for the success of a program to have access to cross-border surveillance data. This is especially important for elimination settings, where even a single case across the border can cause the reemergence of a disease in a region.
- b. The global health community is missing out on a big opportunity by only using their public health data for their primary purpose: By using their public health data only for their primary they are collected for, the global health community is missing out on great opportunities for secondary data use. Secondary data use could include research to gain additional insights into the primary disease the data was collected for as well insights on related diseases based off the data.

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