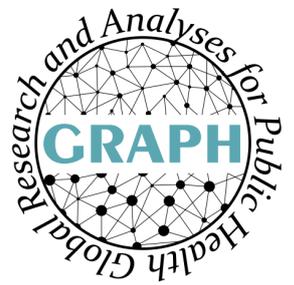


WHAT IS THE GRAPH NETWORK?

GLOBAL RESEARCH AND ANALYSES FOR PUBLIC HEALTH



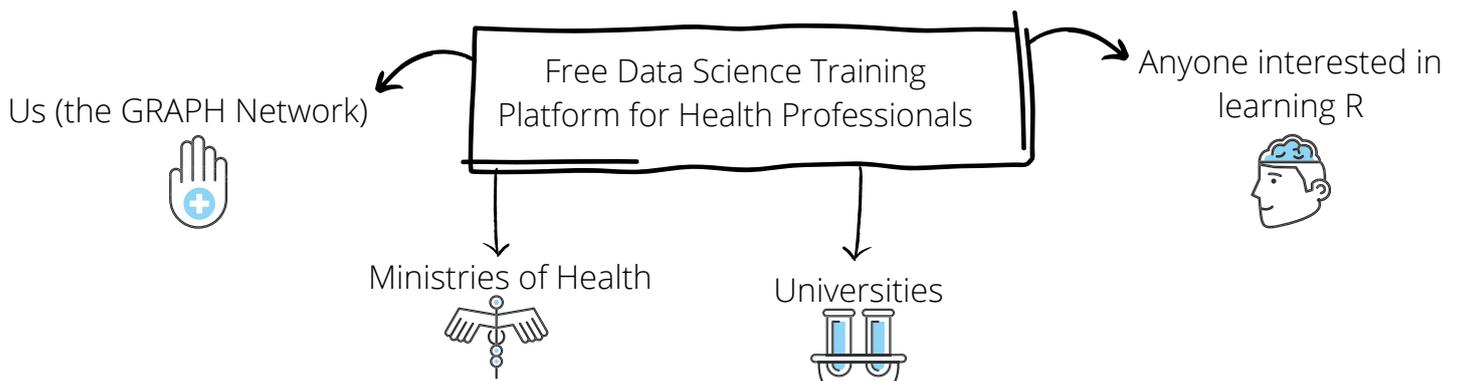
Our research group, the *Global Research and Analyses for Public Health (GRAPH) Network* is a multidisciplinary team of over 100 collaborators from 30+ countries whose overarching goal is to support epidemiological surveillance and analysis in resource-constrained settings around the world, thereby improving global capacity to respond to current and future disease threats.

At the onset of the COVID-19 pandemic in 2020, our team was engaged in a WHO-funded effort to track the progression of COVID-19 in Africa and provide actionable insights to support the pandemic response in partner countries. Over this period, we generated detailed analytical reports on the COVID-19 situation in 32 African countries, trained multiple in-country analysts in the use of R and RMarkdown for outbreak analytics, and developed a prototype application for generating epidemiological reports from individual line list data.

Based on our experience supporting pandemic response, the GRAPH network discovered three crucial gaps in the ability of countries to process and analyze data for public health surveillance: (1) an under-utilization of programmatic tools for data cleaning, analysis, and reporting, (2) a shortage of personnel trained in programmatic data science, and (3) the dependence on external sources for outbreak data analysis. In response to these identified gaps, the network is developing the open-source training and data platforms outlined below.

EDUCATION INITIATIVE: THE GRAPH COURSES

Skilled epidemiologists are the backbone of effective outbreak response. But a variety of bottlenecks obstruct the pipelines that should produce adequately trained health data analysts in LMICs. To fill this gap, the GRAPH network is developing an open-enrollment training program (thegraphcourses.org) that combines the best modern tools and practices for digital pedagogy into a scalable model for affordably training public health data analysts in LMICs.

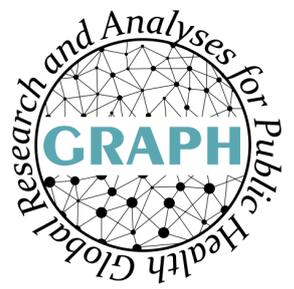


The rapid collection, analysis, and communication of data is a cornerstone of public health. The GRAPH courses aim to empower public health professionals with expertise in modern, programmatic tools for working with health data.

Our solution has a number of important features that, combined, make it unique among existing platforms. These include:

- Multi-modal content delivery: engaging videos and text tutorials that are accessible on desktop and mobile devices, and will be translated to multiple languages
- Interactive code tutorials with immediate, automated feedback on learner solutions
- User progress tracking, with placement tests, rigorous assessments, and accredited certificates

MORE ABOUT THE GRAPH NETWORK

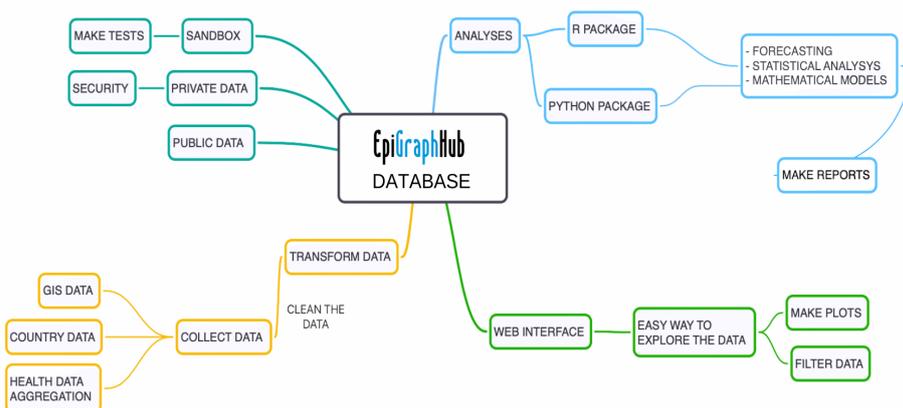


- Community support: discussion groups, lesson comments, and direct learner-to-learner messaging
- Authentic, project-based assignments that mirror the tasks epidemiologists encounter in the field
- Connection to our data warehousing and analysis platform, EpiGraphHub, which enables access to a rich portfolio of community-curated health datasets, as well as graphic-user-interface tools for common epidemiological analyses

We are building a best-in-class solution for learning epidemiological data science – our combined experience and expertise position us well for this task. As our work is still in its seed stages, we seek partners and funders interested in joining the effort.



OPEN-SOURCE DATA PLATFORM: EPIGRAPHHUB

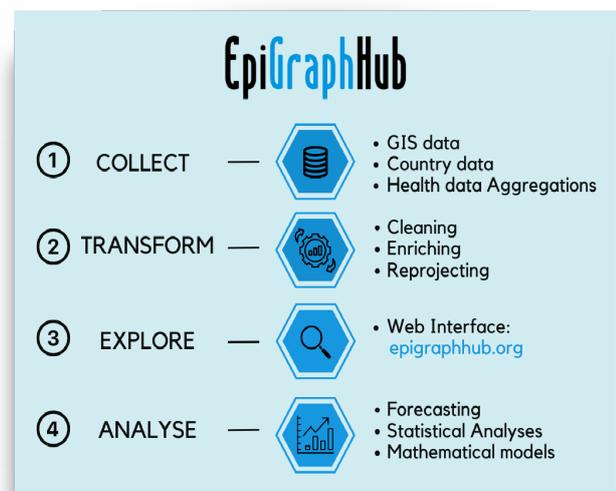


Observed bottlenecks in the response to COVID-19 and previous global health threats also motivated us to create an open-source epidemiological data platform, EpiGraphHub. This tool was designed to bridge key gaps in a fragmented global health data landscape by continuously aggregating, cleaning, and harmonizing data to produce actionable analytical reports (static and interactive) to health authorities in a timely manner.

The platform will guarantee access to up-to-date, openly available health datasets and facilitate access to local health management information systems such as DHIS2 and REDCap.

Additionally, this platform will be fully integrated into the GRAPH Network Training Program so that health professionals will learn to perform global-scale data analysis in their familiar R and Python environments without having to worry about how to find quality health data. As an open-source platform, any country will be able to deploy the EpiGraphHub on their local infrastructure and contribute to its development, facilitating closer collaborations between countries as well as technical agencies in surveillance and outbreak analyses.

Read more about the EpiGraphHub at epigraphhub.org.



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