# Defining Electronic Health Technologies and Their Benefits for Global Health Program Managers

## Open Data

**DEFINITION**

**Open data: data that "anyone is free to access, use, modify, and share** . . .—subject, at most, to measures that preserve provenance and openness"

Source: Open Knowledge. The Open Definition. Available at: http://opendefinition.org/od/2.0/en/.

**Open data:** must also be "**non-personally identifiable**" and "**released under an unrestricted license**..."

Source: LinkedGov. 2011. "What is Open Data?" Available at: http://linkedgov.org/what-is-open-data/.

Such a license must state:

- "That people who use the data must credit whoever is publishing it (this is called attribution)"
- "That people who mix the data with other data have to also release the results as open data (this is called share-alike)"

Source: The Open Data Institute. "What Makes Data Open?" Available at: http://theodi.org/guides/what-open-data.

The U.S. Agency for International Development (USAID) understands open data to be "(…) public, accessible, fully documented, reusable, complete, timely, and updated or managed following release" (1). "Public" and "accessible" mean that the data must be "…structured in a way that enables. . . [them] to be fully discoverable and usable by end users," which, in most cases, means that they should be machine-readable and available in a public forum.

In recent years, demand for open data in developing countries has been significant—a hopeful trend for proponents of the use of government data to improve health governance and health status (2). Although the concept is relatively new in global health (3), public access to data through open data policies is often connected to transparency and citizen engagement with the government (4).

Open data can help developing countries more easily access data so that they can see trends in disease patterns, service coverage, financial expenditures, and other relevant areas. This information can be used to improve the efficiency and coverage of public health services. Open data can also contribute to growth in the private health sector, by identifying underserved areas and generating new health businesses.

In recent years, the United States, Canada, the United Kingdom, and other governments in the developed world have launched campaigns for open government data. Many of these initiatives include making health data available to the public. As a result, faults, limitations, and opportunities in health systems have been identified that might have been undetected if the data had remained "closed" (5–7).

> Open data are "public" data. They help citizens, governments, the private sector, and others easily access data to see trends in disease patterns, service coverage, and financing that might not be visible otherwise

MEASURE Evaluation, funded by USAID, has a mandate to strengthen health information systems in low- and middle-income countries (LMICs). For the past 20 years, our support for these systems

# Open Data

has been building capacity and accountability for LMICs to move toward the global priorities of an AIDS-free generation and ending preventable child and maternal deaths. We comply with USAID's open data policy.

### What Can Open Data Do for Global Health Program Managers?

Kenya launched its Open Data Initiative in 2011 (8)—the first developing country to do so. This initiative was followed by two more such initiatives for the continent as a whole: openAFRICA (9) and the Africa Information Highway (10).

The Africa Information Highway provides two types of portals for each of its 54 member countries. Statistical portals house official national statistical data (managed by the governments) related to poverty and economic and social development. Open data portals contain data from national and other sources and allow users to share data and other content.

An initiative relevant specifically to health was the cloud-based Ebola Open Data Repository, which was formed to gather and catalogue data relevant to relief organizations, government agencies, and policymakers responding to the Ebola epidemic (11). Data on such topics as locations of hospitals, testing locations, treatment centers, isolation wards, transit centers, laboratories, and finances were made available to all during the Ebola outbreak in West Africa. Select visualizations were also available on the portal. These data helped users to manage and mitigate the epidemic and to plan relief efforts. When the repository was paired with other technologies, such as social networking, new solutions were developed (see the MEASURE Evaluation fact sheet, "Crowdsourcing"). For example, one user developed computer models for the spread of the disease. Weekly forecasts were issued that alerted program managers to the probable path of disease transmission. Post crisis, EbolaData.org has merged the Ebola Open Data Repository into its databases.

An Ebola open database helped program managers understand the epidemic and plan relief efforts

**For more information on open data, go to**:
http://opendatahandbook.org/guide/en/why-open-data/

**For more information on MEASURE Evaluation, visit**:
www.measureevaluation.org

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## ALL ABOUT eHEALTH

Electronic health (eHealth) refers to the health sector's use of information and communication technologies (ICT) such as mobile phones, portable and handheld computers, Internet and cloud-based applications, open source software, and data warehouses. Advances in ICT have increased exponentially the amount of data that health information systems can collect, synthesize, and report. Expansion of these technologies in low- and middle-income countries (LMICs) promises to revolutionize the global health sector's response to these countries' most pressing health issues.

MEASURE Evaluation—funded by the U.S. Agency for International Development—seeks new ways to exploit such eHealth solutions as data dashboards and geospatial data analysis, as part of its mandate to strengthen health systems in low-resource settings. Even though health program managers in LMICs—as everywhere—are increasingly expected to use and invest in such strategies, many lack information about how the strategies work and how they can benefit the management of health programs.

To address this problem, we developed this glossary of eHealth strategies most likely to enhance data access, synthesis, and communication for health program managers at all levels of a health system who are eHealth novices. The list has been vetted and revised by an advisory group representing the World Health Organization, the Free University of Free Brussels/European Agency for Development and Health, the University of Oslo, the Public Health Foundation of India, and the National Institute of Public Health Mexico.

The complete set consists of fact sheets on the following eHealth strategies, in addition to this one:

- **Dashboards**
- **Crowdsourcing**
- **Hackathons**
- **Big data and data science**
- **Geospatial analysis**
- **Integration and interoperability**
- **App Competitions**

In each fact sheet, you'll find the following information:

- eHealth strategies that have been used in health information system strengthening efforts to improve access to and synthesis, presentation, and communication of health data for program management
- How the strategies have been adapted (or not) from their application in resource-rich country settings to health programs in LMICs
- An example of the strategy for global health program management
- Links to additional resources for more in-depth details on the strategies