

# Criteria for **Successful Integration of Community Health and Social Service Data in DHIS 2**

Governments depend on information about the health and social service needs of their population to enable effective policymaking and resource allocation. Most governments have established a health information system (HIS) to track critical health indicators, and these data are often captured in the district health information system software known as DHIS 2.<sup>1</sup> However, the nationally adopted health management information system (HMIS) platforms, such as DHIS, are not often linked to the data systems used by social and community services, where people often access care. As a result, the systems are fragmented and unable to provide holistic information for decision making on health and social services.

In many countries, parallel nonhealth information systems for social and community services are being scaled up. This process is typically driven by various funding priorities and reporting requirements. With this proliferation of systems comes the risk that community health workers will duplicate the efforts of facility health workers. This can lead to double-counting individuals within the system.

The solution might seem to be to integrate disparate systems, but this, too, poses challenges. Information flow may not be the same in social services and health sectors, because ministries often have different national and subnational structures and their own ways and frequency of collecting and reporting data. Data definitions may not align, collection tools may not be standardized, and technology may not be compatible across sectors. Data management is also likely to differ, and as a result data quality standards and data reporting frequency may not be compatible.

DHIS 2 has its origins in the health sector, but it is becoming a routine aggregated data management system of choice in other

<sup>1</sup> The University of Oslo developed DHIS 2 as a routine HIS platform for global use. DHIS 2 is a free and open-source health management information system used to manage, analyze and report health facility-level aggregated data. It is currently being deployed in more than 47 countries across four continents.



Woman and child leaving Nanighi Health Centre, Garissa, Kenya.  
Source: USAID/Kenya

sectors, too. Recent DHIS 2 applications are being used both for community-level health data and social service data, for example. This presents an opportunity to examine criteria that could support the integration of community health and social service data in DHIS 2. Doing so could reduce the number, burden, and expense of parallel systems in countries, opening the door to a comprehensive health and social service information system.

When leaders working in facility-based health programs, community-based health programs, and programs for orphans and vulnerable children were interviewed, the following themes emerged as keys to successful integration of community health and social service data in DHIS 2.

## **1. Strengthen political will.**

The government needs to be committed to developing the interoperable or integrated system and invest time and resources to ensure sustainability. There also needs to be a lead agency—preferably outside of a health ministry if more than one ministry is involved—mandated by the government to spearhead the process from concept through design and implementation. Also, champions within the government should be identified, because they will be essential in moving the process forward, and especially in aligning ministries.

## 2. Develop strong governance structures.

Memoranda of understanding (MOUs) need to be developed and signed by ministries and departments whose systems will be integrated or made interoperable. Once MOUs are signed, national-level steering committees made up of community and social services stakeholders should be put in place to make decisions about information needs, harmonization of indicators to be captured in DHIS 2, definitions of indicators, what data should be captured at each level, who captures and reports the data, how frequently it is reported, if the system should be integrated or interoperable, what security measures need to be included, and who has access to what data. These decisions can be governed by standard operating procedures, developed in concert with all system stakeholders.

An information and communications technology (ICT) technical working group also is essential to outline the technical components of the system, to establish the technological infrastructure, monitor compliance, and establish strategies and standards to integrate or extract data for the various ministries. The working group should assess the current informatics environment in health and social services and develop an eHealth and social services strategy that will establish a governance mechanism for coordination and control of the system. It also should provide guidelines for developing and investing in the system.

## 3. Develop standard tools for community-based health and social service data collection/reporting.

Once the steering committee harmonizes the indicators and indicator definitions to be captured by the electronic system, standard tools should be developed to collect the data to report on the indicators across community-based programs, to ensure they are collecting the same information. With standardized tools, programs can ensure that they are collecting the same data in the same way. The tools—whether paper-based or electronic—should be compatible with DHIS 2 and developed so that community and facility data can be distinguished but with the same classification system and indicator definitions. Data collection tools for community-based and facility-based data also should be aligned, because many local organizations collect community-level data using different tools and with varying degrees of quality.<sup>2</sup>

<sup>2</sup> Guenther, T., et al. (2014). Routing monitoring systems for integrated community case management programs: Lessons from 18 countries in sub-Saharan Africa, *Journal of Global Health*, 4 (2):1–8. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4267095/>.

## 4. Improve the DHIS 2 user interface.

Countries should work with the University of Oslo to make their systems user-friendly and intuitive for community-based program staff. This would entail speaking with the data collectors, data entry staff, and end users to understand their computer literacy and opinions of how data should flow into the database. It also would require speaking with community-based organizations to understand their information needs and the types of reports and dashboards they want the system to generate for decision making.

## 5. Strengthen ICT and monitoring and evaluation

### (M&E) capacity.

Both ICT and M&E capacity at the national and subnational levels need to be developed for DHIS 2 to be successfully implemented and used for reporting and decision making. Improving capacity requires skills-building and also ensuring that ICT and M&E positions are staffed at each level. Skills needed to successfully implement DHIS 2 include, but are not limited to, governance, database programming, network administration, data administration, and computing. Individual and organizational M&E capacity will be needed in indicator development and harmonization; articulation of information needs for decision making, reporting, and data quality; data analysis and interpretation; and data use.

## 6. Improve the quality of data in the system.

Because the quality of data coming from community-based programs is often considered to be lower than that of facility data, data quality checks should be in place. These can range from quality control checks built into the electronic system to regular data quality assessments conducted on the data entered in the system.

## 7. Promote data use.

Leadership should promote the use of data for decision making at all levels to increase accountability and data quality. To promote use, the steering committee should understand who uses the data and for what purpose, to ensure that DHIS 2 can produce relevant reports or graphics for each level of the system.

**DHIS 2 is a database structure that can house aggregate data from any development sector. When data from different sectors are integrated in one DHIS 2 database, certain criteria need to be considered to ensure that data of high quality are entered in the system, and that they can be used for decision making. Integration or interoperability can succeed if political will and governance are strong.**