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Publication

A roadmap for using DHIS2 data to track progress in key health indicators in the Global South: experience from sub-Saharan Africa

High quality health data as collected by health management information systems (HMIS) is an important building block of national health systems. District Health Information System 2 (DHIS2) software is an innovation in data management and monitoring for strengthening HMIS that has been widely implemented in low and middle-income countries in the last decade. However, analysts and decision-makers still face significant challenges in fully utilizing the capabilities of DHIS2 data to pursue national and international health agendas. We aimed to (i) identify the most relevant health indicators captured by DHIS2 for tracking progress towards the Sustainable Development goals in sub-Saharan African countries and (ii) present a clear roadmap for improving DHIS2 data quality and consistency, with a special focus on immediately actionable solutions. We identified that key indicators in child and maternal health (e.g. vaccine coverage, maternal deaths) are currently being tracked in the DHIS2 of most countries, while other indicators (e.g. HIV/AIDS) would benefit from streamlining the number of indicators collected and standardizing case definitions. Common data issues included unreliable denominators for calculation of incidence, differences in reporting among health facilities, and programmatic differences in data quality. We proposed solutions for many common data pitfalls at the analysis level, including standardized data cleaning pipelines, k-means clustering to identify high performing health facilities in terms of data quality, and imputation methods. While we focus on immediately actionable solutions for DHIS2 analysts, improvements at the point of data collection are the most rigorous. By investing in improving data quality and monitoring, countries can leverage the current global attention on health data to strengthen HMIS and progress towards national and international health priorities.