Scorecards lead to data quality improvements in national health management information systems

National health management information systems (HMIS) are the data source for most routine indicators on scorecards. Over 80% of African countries use the District Health Information System Version 2 (DHIS2) as their national health management information system. The African Leaders Malaria Alliance's scorecard support to countries has revealed important lessons in how DHIS2 software is managed and how scorecards are instrumental to driving improvements in DHIS2 indicator configurations and therefore health management information system data quality.

In DHIS2, indicators are configured by the HMIS department's DHIS2 administrators (known as super users in DHIS2) using numerators and denominators that come from data reporting forms used in health facility registers. Much of the data reported in registers is disaggregated by age tranches, gender and types of commodities or services. Indicator numerators and denominators are usually composed of these aggregated 'data elements'.

For example, if you want to know how many pregnant women attended antenatal care (ANC), you need to add all the different age tranches of women that attended antenatal care. If even one age tranche is omitted from the calculation equation, it will result in incorrect figures. If there are updates or changes to the paper-based health registers, the indicator calculations must be updated in DHIS2 to reflect the new reporting form format.

Scorecards help countries identify DHIS2 data quality configuration issues

In the past 5 years, more and more countries have linked their scorecards to DHIS2 to nearly automate scorecard production and include health facility level data. As the scorecard embodies the highest priority indicators of health programmes, one would expect the scorecard indicators to be correctly configured in DHIS2 – the main source of data for health programmes. However, that has not proven to be case. The scorecard has allowed many countries to identify and address DHIS2 indicators configuration issues in a thoughtful and systematic way.

In many cases, the DHIS2 configuration issues are due to outdated calculation configurations, which happens when the HMIS department does not update the configuration after reporting forms are changed.

In other cases, the indicators were incorrectly configured from the start, usually because they have omitted an important data element in the numerator or denominator and because there was not enough feedback from the health programmes to inform the HMIS department of the mistake.

It is important to note that these issues do not only affect the scorecard. If the data is showing incorrectly on the scorecard, that means the entire country and all health programmes do not have access to quality data for those priority indicators that are incorrectly configured.

Supporting countries

ALMA has now supported several countries with addressing DHIS2 data quality configuration revealed through scorecards.

For example, in 2020, Nigeria updated the data collecting forms that states use to report data into DHIS2. In quarter 3 (July to September) 2020, when the country produced their RMNCAH scorecard, they noticed that many of the indicators were not populating data or were showing incorrect values. Upon further investigation, it was discovered that the indicator calculations were using DHIS2 numerators and denominators from the old reporting forms. ALMA supported the Ministry by organising a workshop to solve the indicator configuration issues in DHIS2, by bringing together DHIS2 administrators, the family health division and other key programmes and partners.

In Ghana, one of the great scorecard champions of the continent, in quarter 1 (January to March) 2021, after years of consistent and flawless scorecard production, the scorecard showed several empty columns of data. This was due to updates on the reporting forms which had not been reflected in DHIS2 indicator configurations. This prompted the DHIS2 department to call for a meeting with the Family Health Division to correct and update some the indicator configuration issues.

ALMA has also supported similar scorecard indicator configuration improvement initiatives in Angola, Burundi, Guinea, Kenya, Malawi, Mali, Senegal, Sierra Leone, South Africa, Tanzania and Zambia. These experiences demonstrates that scorecards can be critical to identifying data quality issues that would otherwise go unnoticed. Scorecards help to drive data quality improvements in national health information systems so the end users of data can make optimal use of scorecards.

Recommendations for your scorecards

- Link your scorecard to DHIS2 to include health facility level data conducive to more targeted bottleneck analysis of data quality and completeness.
- Link scorecards to DHIS2 to reduce the possibility of human error by automating and harmonising indicator calculations.
- Once linked to DHIS2, use scorecards regularly to quickly identify and address indicator configuration issues within DHIS2.
- Use scorecards to facilitate collaboration between HMIS departments and health programmes to ensure priority programme indicators are correctly configured and useful to the end users.
- If an indicator configuration issue is identified within DHIS2, it is useful to understand the various ‘data elements’ that make up an indicator numerator or denominator. Ensure that all necessary components are included in the numerator and denominator.