

Summary 01 - Volume 01- October 2017

Making better use of routine data in Mozambique to improve quality

The National Healthy Observatory observation platform consisting of multidisciplinary team for generating information on women's and children's health and nutrition.

Routine data management

In 2003, a Program for the Development of Health Information System (SIS) was approved and the Basic Module (MB) software was developed to implement registration of health promotion, preventive and curative activities.

MB is an Access software- based tool for automating routine data from various health services, collected from the paper form at health facilities.

In order to respond to the growing demand for information and to improve the information system, on/off-line software, based on the DHIS2 platform, called Information System for Monitoring and Evaluation (SISMA), was introduced in 2016.

There are differences between the two systems, and table 1 shows the comparison of the selected indicators for maternal, neonatal, child and nutritional health extracted from the Basic Module. As shown, there are indicators that are currently collected in the SISMA in a different way from the Basic Module. Another feature of the SISMA is that some of the indicators are presented in the cohort (exclusive and mixed breastfeeding, ready to use therapeutic food, enriched feed mix, moderate acute malnutrition, severe acute malnutrition), often for monitoring retention in services.

Indicator in MB	Is the indicator available in the SISMA?	Existing differences MB vs. SISMA
Exclusive breastfeeding for 6 months	Yes, but modified	SISMA: Exclusive breastfeeding for 5 months
Formula feeding for 6 months	No	-
Mixed feeding for 6 months	Yes, but modified	SISMA: Mixed feeding for 5 months
ATPU/ CSB	Yes	No differences
DAM/ DAG	Yes	No differences
Child discharges and deaths from Malaria in health centers and hospitals	No	Deaths from Malaria: Aggregated without age group distinction
Child discharges and deaths from diarrhea in health centers and hospitals	No	Deaths from diarrhea: aggregated without age group distinction
Child discharges and deaths from malnutrition in health centers and hospitals	Yes	No differences
Child deaths from pneumonia in health centers and hospitals	No	Deaths from pneumonia: aggregated without age group distinction

Table 1. Comparison of certain indicators for maternal, neonatal and child health and nutrition. MAM: Moderate acute malnutrition; SAM: Severe acute malnutrition; RUTF: Ready-to-Use Therapeutic Food; EFM: Enriched Feed Mix.

In order to monitor health services performance and to improve strategies and actions, routine data is an available and useful source of information. However, the analysis results depend on the quality of the data.

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In this summary, we present the steps to be taken when looking at the quality of routine data using certain indicators for maternal and child health and nutrition services between January 2006 and March 2017.

Analysis of indicators for maternal, neonatal and child health and nutrition

Routine data of 40 indicators for maternal, neonatal and child health and nutrition were obtained from the Basic Module for data quality analysis. Pre and postpartum complications, institutional deliveries, Malaria, deaths and hospitalizations, discharges and hospitalization and malnutrition were selected. Data were not included in the SISMA because they were presented in a cohort format.

Data analysis can be made in three steps:

- Omitted values verification;
- Outlier values verification;
- Preferential digits verification.

1st Step: Omitted values verification

Table 2 shows the evolution of the selected indicators by identifying the omitted values for 12 months (April 2016 to March 2017).

Facility Unit	Total (Months)	Months with omitted values (%)
Central Hospital of Quelimane	12	7 (58)
Provincial Hospital of Quelimane	12	3 (25)
Districtal Hospital of Mocuba	12	2 (17)
Districtal Hospital of Alto-Molócue	12	0 (0)
Districtal Hospital of Gilé	12	0 (0)
Districtal Hospital of Gurué	12	0 (0)
Districtal Hospital of Milange	12	0 (0)
Districtal Hospital of Morrumbala	12	0 (0)
Total	96	12 (13)

Table 2. Verification of omitted values for “Malaria discharges” indicator in 8 health facilities at Zambézia’s province.

An analysis of omitted values gives a first indication of the quality of the information registration at the health facility level. In the example, in the period of one year, there is a lack of information in 13% of the months, mainly in the Central Hospital of Quelimane. In five district hospitals, there are no months with omitted values.

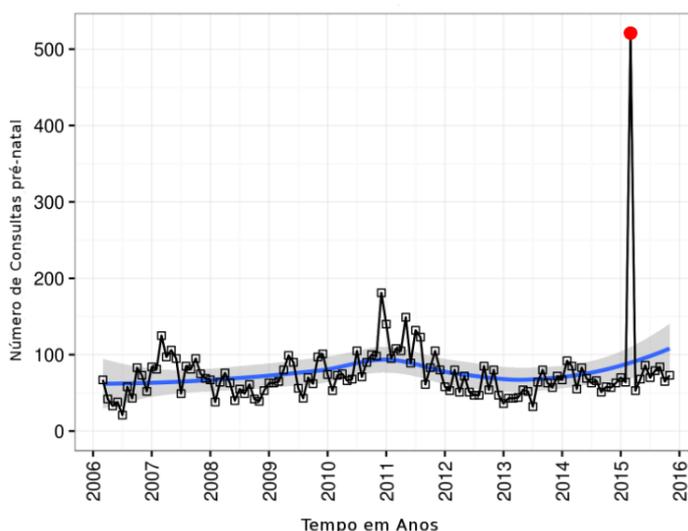
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2nd Step: Outlier values verification

The Figure 1, shows an example of outlier values for the indicator of the first antenatal visits at a health facility in Zambézia province during the period from 2006 to 2016.

Figure 1. Trend of first antenatal visits in Zambézia province (2006-2016).



The event observed in 2015 highlights the need for using primary sources (registration books and worksheets for counting health facilities or for requesting explanation at the services level) to confirm this type of abnormal values or to correct the value. It is worth emphasizing that outlier values may not be visible at the national or provincial level.

3rd Step: Last digits verification

Another way of verifying data quality is to evaluate registration frequencies of the last digit. It is expected that there be a random distribution of the last digits of the recorded data. Where there is a preference in the frequency of the last digit, it may be an indicative of a problem in data quality.

As an example, see the analysis in relation to the Malaria discharge indicator for Zambézia province (Figure 2).

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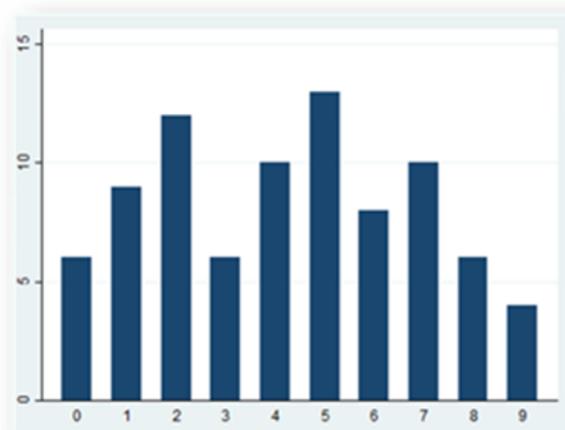


Figure 2. Analysis of preferential digits for “Malaria discharges” indicator for Zambézia province (April 2016-March 2017).

Recommendations:

- Routine health data are an extremely important source of information for health monitoring and evaluation programs.
- It is important that data users acknowledge the existence of indicators of which definition and form of aggregation in the SISMA differ from that of the Basic Module.
- It is worth acknowledging the limitations in routine data use. Therefore, the analysis of data quality is essential and should be done periodically.
- Problems with data quality at the Health Facility level may not be visible in aggregate reports at the higher level and there is a need for verification at each level.
- The use of validation criteria at the SISMA level would be useful for strengthening the data quality monitoring system.

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The Platform for Women's, Children's Health and Nutrition is a systematic approach that compiles and analyzes data on maternal, children and adolescents health and nutrition to assess the effectiveness of health and nutrition programs. The multidisciplinary technical team consists of members from the Ministry of Health, National Institute of Health, National Statistics Institute, Ministry of Economy and Finance, Technical Secretariat for Food Security and Nutrition and Ministry of Education and Human Development.

