Child Health and Nutrition: What Data is Available in Routine Health Information Systems in 23 Countries?

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Background

Most low and middle-income countries use routine data from health management information systems (HMIS) to manage and monitor child health and nutrition programs, as large-scale surveys are only conducted periodically. Limited international guidance exists for standard child health and nutrition indicators within HMIS. Countries’ national HMIS and the child health and nutrition indicators included in these systems vary. Understanding what data elements are present in countries’ routine HMIS and how they flow in the system are key first steps in the development of global consensus and guidance, as well as prioritization of data to collect at the country level.

Objectives

- To document the data elements related to child health and nutrition services, quality and health outcomes are currently included in selected countries’ HMIS.
- To identify gaps and commonalities across countries in order to advocate at the global level for recommendations of feasible indicators and provide guidance at the country level to prioritize child health and nutrition data elements to be collected and reported at each level.

Methods

The USAID global flagship Maternal and Child Survival Program (MCSP) conducted a review of the child health and nutrition data elements collected in 23 low and middle-income countries’ national HMIS to identify commonalities and gaps. The review included data elements related to the prevention, management and treatment of child illness and malnutrition; it excluded HIV/AIDS and immunization data. Box 1 shows the 23 countries included in the review. For each country, we collected national HMIS facility registers and summary forms, as well as patient forms, registers and reporting forms from community health information systems. Figure 1 demonstrates the types of forms collected and how they flow in the system. A standard extraction template was used to record the data elements collected and reported on each form or register at each level. Analyses were done in Excel.

Results

The review identified commonalities and gaps across countries in the classification and treatment of childhood illness and identification of malnutrition.

Classification and treatment of childhood illnesses

- The terminology used for pneumonia classification varies widely across and even within countries. Terms for pneumonia used include “Acute Respiratory Infection,” “cough and fast breathing,” “suspected pneumonia” and “cough and respiratory problems.”
- Cases of childhood pneumonia and diarrhea and their treatment are better recorded in registers or sick child forms and reported at the community level (figure 2).
- Treatment of pneumonia with antibiotics at the facility-level is only reported in 8 out of 23 countries and diarrhea treatment in 12 out of 23 countries (figure 2).
- Terminology for treatment of childhood diarrhea varies, with some countries reporting ORS and zinc treatment disaggregated, “ORS/zinc,” “ORS and zinc” or “diarrhea treated.”
- Trends in confirmed malaria cases (Rapid Diagnostic Test [RDT+] or microscopy positive) and treatment with first-line antimalarial follow similar trends. Countries document more detailed information at the community level (10/23 countries) versus 7/23 RDT+ cases at facility level.
- Almost half of countries have open-ended fields for diagnosis and treatment in outpatient registers at the facility level, even though they collect pneumonia, diarrhea and malaria-specific data in summary forms.

Malnutrition screening and identification

- Anemia diagnosis is more commonly reported at the facility level (16 out of 23 countries).
- Underweight cases are recorded and reported in 15/23 countries at the facility level and in 5/23 countries at the community level; a few countries record underweight in registers or child forms (2 at community and 3 at facility level), but do not report up to higher levels.
- 5/23 are collecting and reporting overweight (high-weight-for-length/height).
- Stunting is less commonly recorded and reported at the facility level (in only 9 out of 23 countries) and is not recorded at the community level in any of the 23 countries.
- Severe acute malnutrition (SAM) is more commonly recorded and reported at the community level, likely related to community workers’ use of mid-upper arm circumference (MUAC) to screen for SAM.

Summary and implications

- Many countries collect and report on high priority global indicators. Gaps remain, especially for data related to treatment of childhood illness.
- Non-standard or ambiguous terminology and definitions of data elements across levels and forms limit the comparability of data between and within countries.
- Open-ended fields likely affect quality of data compiled in summary forms.
- Global and country level consensus is needed about what priority HMIS data should be collected and available at each level of the health system for data use.
- Strategic investments will be needed to ensure priority data elements and indicators are captured and used in national HMIS.

Box 1: Countries included in the review of HMIS

- Afghanistan
- Bangladesh
- Burma
- DRC
- Ethiopia
- Ghana
- Haiti
- India
- Kenya
- Liberia
- Madagascar
- Malawi
- Mali
- Mozambique
- Nepal
- Namibia
- Nigeria
- Pakistan
- Rwanda
- Tanzania
- Uganda
- Zambia
- Zimbabwe

Figure 1: Common HMIS data flow and forms at facility and community levels

<table>
<thead>
<tr>
<th>Facility</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sick child/client recording forms</td>
<td>Register(s)</td>
</tr>
<tr>
<td>Summary form(s)</td>
<td>DHIS2 electronic platform</td>
</tr>
</tbody>
</table>

Figure 2: Recording and reporting of cases of pneumonia and diarrhea in community and facility HMIS

<table>
<thead>
<tr>
<th>Pneumonia</th>
<th>Diarrhea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not collected</td>
<td>In register or child form only</td>
</tr>
<tr>
<td>In summary form only</td>
<td>In both summary form and register/child form</td>
</tr>
</tbody>
</table>

Figure 3: Recording and reporting of cases of malnutrition in community and facility HMIS

<table>
<thead>
<tr>
<th>Malnutrition Area</th>
<th>Community</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anemia Diagnosis/Cases</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>Facility: Underweight (Low weight for age)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Facility: Stunted (Low height for age)</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Facility: Severe Acute Malnutrition (Low weight for height or red on MUAC)</td>
<td>13</td>
<td>5</td>
</tr>
</tbody>
</table>