IMCI Monitoring and Evaluation
Why is monitoring and evaluation of IMCI important?

Regular monitoring and evaluation are important for systematic tracking of progress of IMCI implementation and are part of the programme planning and implementation cycle (see Figure 1). Simply defined in the context of IMCI, monitoring is the process of reviewing how IMCI-related activities are delivered on the ground to identify and solve problems so that they can be implemented effectively. Without collecting and analyzing data on implementation, it is not possible for managers to know whether activities are taking place as planned and, if not, why they are not being carried out. Monitoring data are used to improve or correct activities that are not working and to sustain activities that are working.

Figure 1: Programme Planning and Implementation Cycle

Key points: Monitoring

- Is conducted continuously.
- Collects information on activities implemented and the results of activities.
- Is used to make immediate decisions and to plan implementation every one to two years.

1 WHO/Child and Adolescent Health and Development (CAH). Programme Managers Guidelines, April 2009
Evaluation is the periodic assessment of progress towards targets. It is a way of finding out how well the IMCI strategy is progressing towards improving intervention coverage and the health status of children under five years old. Evaluation is conducted at less frequent intervals than monitoring and more rigorous data collection standards are applied. Evaluation should help determine what strategies are working or not working and help to detect and solve problems. Evaluation results are used for strategic planning.

**Key points: Evaluation**

- Is done periodically (usually every two to five years).
- Collects information on intervention coverage and the health status of children.
- Is used to determine how well IMCI is reaching the target population, to identify problem areas and to plan what should be done next (strategic planning).

**What indicators are used to track progress with IMCI?**

Monitoring and evaluation data are collected based on agreed indicators. An indicator is a measurement that is repeated over time to track progress towards goals and objectives. The use of standard indicators in monitoring and evaluation activities helps decision-makers collect comparable information in different settings. Key indicators for tracking progress with child health in the Region have been developed based on the Regional Child Survival Strategy and incorporated in the draft MNCH Monitoring Guidelines. Countries are encouraged to use standard indicators for tracking progress with IMCI. The regional indicators are described below.

1. **Input indicators**

Input indicators measure whether the resources needed to conduct activities have been applied. These might include financial, human or material resources. Inputs also include key policies and guidelines that are needed in order to implement child health activities effectively. Data on inputs usually can be collected from programme documents or records. Changes in input indicators are expected in the short term. Key regional input indicators are shown in Table 1.

A number of general child health policies are important for implementing the IMCI strategy. These include a costed national plan for child health and laws that restrict the marketing of breast-milk substitutes. Technical policies on case management of newborn and childhood illness are important policy inputs.

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2 MNCH Monitoring Guidelines, Draft, 2010
Key technical policies and guidelines include:

- Zinc and low osmolarity oral rehydration salts (ORS) for case management of diarrhoea.
- IMCI updated to include management of sick newborn infants (and children with HIV, where appropriate).
- Standards for newborn care, including newborn resuscitation and essential newborn care.
- An essential drugs list which includes a minimum package of IMCI drugs (including prerereferral drugs).
- A policy to allow community-based management of pneumonia.
- Policies to ensure financial protection of infants and children.

<table>
<thead>
<tr>
<th>Activity Area</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy</td>
<td>Costed national plan available for ensuring universal access to newborn and child survival interventions</td>
</tr>
<tr>
<td></td>
<td>Proportion of key technical policies and guidelines adopted and being used</td>
</tr>
<tr>
<td></td>
<td>CRC reporting mechanism established and working</td>
</tr>
<tr>
<td></td>
<td>Mechanism for monitoring the International Code for Marketing of Breastmilk Substitutes established and working</td>
</tr>
<tr>
<td></td>
<td>Proportion of medical, nursing or other health worker training schools giving pre-service IMCI training</td>
</tr>
<tr>
<td>Planning</td>
<td>Proportion of districts implementing IMCI</td>
</tr>
<tr>
<td></td>
<td>Proportion of districts with a training plan for facility-based health workers</td>
</tr>
<tr>
<td></td>
<td>Proportion of districts with a training plan for community health workers</td>
</tr>
<tr>
<td></td>
<td>Proportion of proposed child health budget received in the previous year</td>
</tr>
</tbody>
</table>

2. **Output indicators**

Output indicators measure whether activities needed to deliver interventions have been conducted. These might include the proportion of health workers trained or the proportion of facilities with essential drugs and vaccines. Data for measuring many activity-related indicators may be collected from programme records as a part of programme monitoring. However, indicators of the quality of care provided at health facilities are measured using facility surveys. Changes in output indicators are expected in the short term as activities to deliver interventions are conducted.
Table 2: Output indicators for tracking progress, MNCH Monitoring Guidelines, Draft 2010

<table>
<thead>
<tr>
<th>Activity Area</th>
<th>Indicator</th>
<th>Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human resources</td>
<td>Proportion of first-level health facilities with at least 60% of health workers who care for children trained in IMCI</td>
<td>Health facility survey (HFS) Administrative records</td>
</tr>
<tr>
<td></td>
<td>Proportion of community-based health workers who have received community IMCI training</td>
<td>Administrative records</td>
</tr>
<tr>
<td>Systems</td>
<td>The proportion of hospitals or maternity facilities accredited as baby-friendly in the previous two years</td>
<td>UNICEF/WHO/Wellstart Baby-Friendly Hospital Initiative (BFHI) evaluation instruments</td>
</tr>
<tr>
<td></td>
<td>Proportion of first-level health facilities that have all essential medicines for IMCI</td>
<td>Supervisory records, Routine data, HFS</td>
</tr>
<tr>
<td></td>
<td>Proportion of facilities that manage severely ill children with oxygen and paediatric delivery systems available in the paediatric ward</td>
<td>Supervisory records, Hospital assessment</td>
</tr>
<tr>
<td>Quality</td>
<td>Proportion of sick children from birth to 59 months old needing an antibiotic who are prescribed the drug correctly</td>
<td>HFS</td>
</tr>
<tr>
<td></td>
<td>Proportion of sick children from birth to 59 months old who are positive for malarial parasite and who are prescribed an antimalarial drug correctly</td>
<td>HFS</td>
</tr>
<tr>
<td>IEC</td>
<td>Proportion of caretakers of children from birth to 59 months old who know at least two danger signs for seeking care immediately</td>
<td>Demographic and Health Survey (DHS), Multiple Indicator Coverage Survey (MICS), Maternal, Newborn and Child Health Household Survey (MNCH HHS)</td>
</tr>
</tbody>
</table>

3. **Population-based coverage indicators (outcome indicators)**

Coverage indicators, or outcomes, measure whether mothers or children have received interventions. Improved intervention coverage is needed in order to achieve impact. Coverage indicators are measured using population-based surveys. Indicators are collected for the newborn period, infancy and older childhood because IMCI targets newborns and children under five years old.

Coverage data collected using the Multiple Indicator Coverage Surveys and Demographic and Health Surveys are available relatively infrequently (three to five yearly) and cannot be estimated for the district level. Therefore, coverage data from these sources often are not available for district planning. More frequent small-sample coverage surveys, conducted at the district level, will be encouraged in the future.
<table>
<thead>
<tr>
<th>Period</th>
<th>Intervention</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatal</td>
<td>Skilled attendance during pregnancy, delivery and the immediate postpartum</td>
<td>Proportion of births assisted by skilled health personnel</td>
</tr>
<tr>
<td></td>
<td>Early initiation of breastfeeding</td>
<td>Proportion of infants less than 12 months of age with breastfeeding initiated within one hour of birth</td>
</tr>
<tr>
<td></td>
<td>Postnatal care visit</td>
<td>Proportion of mothers and newborns who received care contact in the first two days after delivery</td>
</tr>
<tr>
<td>Infants and children</td>
<td>Exclusive breastfeeding</td>
<td>Proportion of infants less than six months of age exclusively breastfed</td>
</tr>
<tr>
<td></td>
<td>Appropriate complementary feeding</td>
<td>Proportion of infants 6–8 months old receiving appropriate complementary feeding</td>
</tr>
<tr>
<td></td>
<td>Micronutrient supplementation</td>
<td>Proportion of children 6-59 months old who have received vitamin A in the past six months</td>
</tr>
<tr>
<td></td>
<td>Prevention of malaria (in high malaria risk areas)</td>
<td>Proportion of children from 0 to 59 months of age who slept under insecticide-treated nets (ITNs) the previous night</td>
</tr>
<tr>
<td></td>
<td>Careseeking for pneumonia</td>
<td>Proportion of children from 0 to 59 months old who had suspected pneumonia in the past two weeks and were taken to appropriate provider</td>
</tr>
<tr>
<td></td>
<td>Antibiotic treatment for suspected pneumonia</td>
<td>Proportion of children from 0 to 59 months old who had suspected pneumonia in the past two weeks and received appropriate antibiotics</td>
</tr>
<tr>
<td></td>
<td>Oral rehydration for diarrhoea</td>
<td>Proportion of children from 0 to 59 months old who had diarrhoea in the past two weeks and were treated with oral rehydration therapy (ORT)</td>
</tr>
<tr>
<td></td>
<td>Use of zinc for the treatment of diarrhoea</td>
<td>Proportion of children from 2 to 59 months old who had diarrhoea in the past two weeks and were treated with an appropriate course of zinc</td>
</tr>
<tr>
<td></td>
<td>Antimalarial treatment for malaria</td>
<td>Proportion of children from 0 to 59 months old who had confirmed malaria and were treated with appropriate antimalarial drugs</td>
</tr>
<tr>
<td></td>
<td>Immunizations against vaccine preventable diseases</td>
<td>Proportion of one-year-old children protected against neonatal tetanus through immunization of their mothers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proportion of one-year-old children immunized against measles</td>
</tr>
</tbody>
</table>
4. Impact indicators

An impact indicator is a measure of mortality, morbidity or nutritional status. Changes in impact indicators are expected over periods of five to 10 years or longer. Measurement of mortality usually requires large-sample population-based surveys such as DHS or MICS. Impact is the ultimate purpose of IMCI and expected impact changes are goals of the strategy.

<table>
<thead>
<tr>
<th>Category</th>
<th>Impact Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatal deaths</td>
<td>Neonatal mortality rate</td>
</tr>
<tr>
<td>Infant deaths</td>
<td>Infant mortality rate</td>
</tr>
<tr>
<td>Child deaths</td>
<td>Under-5 mortality rate</td>
</tr>
<tr>
<td>Under nutrition</td>
<td>Prevalence of wasting or low weight for height (z-score -2 or less)</td>
</tr>
<tr>
<td></td>
<td>Prevalence of stunting or low height for age (z-score -2 or less)</td>
</tr>
<tr>
<td></td>
<td>Prevalence of underweight or low weight for age (z-score -2 or less)</td>
</tr>
</tbody>
</table>

What methods are used for collecting data for monitoring and evaluation?

A number of methods have been used to monitor and evaluate implementation of IMCI. Effective monitoring and evaluation requires that data are used for making planning decisions. The methods that have been used are summarized below.

Population-based surveys

Population-based or household surveys are used to evaluate knowledge and practices of caretakers on the prevention and treatment of illness in children and newborns and coverage of child health interventions. In addition to standard indicators, they collect data on a number of other measures that are important for understanding child health behaviours. The primary sources of national population-based data are DHS and MICS. These surveys use a national sampling frame. A random sample of households is sampled and visited. Within each sampled household, questions are put to the caretaker of eligible children, using a standard questionnaire. In addition to DHS and MICS surveys, national nutrition surveys and reproductive health surveys are also conducted to collect data on standard indicators and programme-specific data. Large sample national surveys are conducted relatively infrequently (five yearly for DHS and three to five yearly for MICS).
Experience with household surveys has shown:

- Surveys do not always collect all key IMCI indicators. IMCI managers need to ensure that indicators are included when survey questionnaires are drawn up and reviewed as appropriate, since certain indicators may be better asked using specific data collection tools. Intervention areas that often are not included are neonatal care and some elements of case management practice for sick children such as the use of antibiotics for suspected pneumonia and zinc for the management of diarrhoea. Figure 2 shows coverage of IMCI treatment interventions collected through household surveys.

**Figure 2: Treatment interventions in seven Western Pacific Region countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>ORT for diarrhoea</th>
<th>Appropriate care-seeking for ARI</th>
<th>Antibiotic for ARI</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNG (Mongolia)</td>
<td>83</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td>PHL (Philippines)</td>
<td>63</td>
<td>71</td>
<td>63</td>
</tr>
<tr>
<td>VNM (Viet Nam)</td>
<td>59</td>
<td>65</td>
<td>55</td>
</tr>
<tr>
<td>KHM (Cambodia)</td>
<td>58</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>LAO (Lao People’s Democratic Republic)</td>
<td>NA</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>PNG (Papua New Guinea)</td>
<td>NA</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>CHN (China)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>


- Data from household surveys that use a national sampling frame often are not useful for regional or district planning because data cannot be disaggregated to these levels. The Maternal, Newborn and Child Health Household Survey developed by WHO is a tool that potentially could fill this gap. It uses the cluster sampling methodology to collect data on key coverage indicators along the continuum from mother to child, using a smaller sample. Data on knowledge and practices for key maternal and child health interventions are collected. Coverage indicators are consistent with DHS and MICS. Because of the smaller sample size, it is more feasible to conduct this survey at regional or district levels.

- Child health planners and managers at all levels need more experience with the interpretation and use of population-based data for planning activities. Reaching families and communities has proved to be the most challenging part of implementation in many countries.
Case example: MNCH HHS in Cambodia

MNCH HHS was conducted in four provinces in Cambodia in 2009 and included: Kampot, Siem Reap, Battambang and Kampong Thom. One hundred villages were selected randomly in Battambang, Kampong Thom and Siem Reap provinces and 120 in Kampot. In each village, a random selection of 10 households in which there lived at least one child younger than five years were surveyed, giving a final sample size of 1000 households (1200 in Kampot). Surveyors of the MNCH HHS were health staff from Siem Reap, Battambang, Kampong Thom, Kampot, and Kampong Speu provinces and from the Ministry of Health departments of Communicable Disease Control, Planning and Health Information, the National Immunization Program, National Nutrition Program, and the National Program for Control of Diarrheal Disease and Acute Respiratory Illness (CDD/ARI). Training of surveyors and pilot testing of the tool were undertaken prior to the survey.

The following summary illustrates how the survey results could be used to inform IMCI programme planning.

Cough and fever module

Relevant programmatic information

- Midwives, rather than nurses, are the main source information of danger signs in children.
- Less than half of children with suspected pneumonia receive appropriate antibiotics.
- Caretakers sought care for children with cough or fever in the public sector in 39%, private sector in 38% and in the community in 23%.
- Private clinics now are encouraged to obtain license. (December 2009, Ministry of Health)

Conclusions that will help formulate recommendations

- Nurses should improve their counseling.
- Refresher training is needed for nurses on management of cough and fever.
- IMCI supervision should be improved.
- IMCI should be implemented or strengthened.
- Essential drugs, especially antibiotics must be adequately supplied on time.

Health facility surveys

Health facility surveys are used to evaluate the quality of care provided at first- and referral-level health facilities. Facility surveys provide the best quality field data on case management practices for sick children and on the availability of drugs, equipment and supplies. A random sample of facilities is selected. Standard checklists and a standard protocol are used. Data are summarized as key facility-based indicators and then discussed and interpreted by local staff. These data are useful for identifying gaps and planning activities for improving training and follow-up. WHO has created an IMCI health facility assessment tool for outpatient health facilities that has been tested and used in a number of different countries. A hospital assessment tool uses similar methods as the health facility surveys, but with hospital-specific norms and standards.
Experience with the health facility surveys has shown:

- Outpatient facility surveys have been conducted by six countries (Cambodia, China, Mongolia, Papua New Guinea, the Philippines and Viet Nam). Hospital assessments have been conducted in seven countries (Cambodia, China, Kiribati, the Lao People’s Democratic Republic, Mongolia, Solomon Islands and Viet Nam).

- Facility surveys are still not conducted regularly by countries in the Region and facility-based data are rarely used for planning. These data are essential for evaluating the effectiveness of training, supervision and system elements needed to improve the quality of care. Facility surveys need to be part of IMCI plans so that they can be budgeted and conducted more regularly. Data are used to identify barriers and to formulate strategies for improving the quality of care.

**Case example: Health facility survey in Mongolia**

An IMCI health facility survey was conducted in Mongolia in 2006. A total of 41 health facilities were sampled from a list of 294 health facilities that were implementing IMCI. Fully 76% of the health facilities visited had trained at least 60% of staff seeing sick children in IMCI.

A total of 40% of sick children seen were weighed and plotted on a growth chart, an essential element of IMCI assessment. Fully 34% of sick children seen were assessed for rickets, a key adaptation added in Mongolia. Both of these measures suggested that the IMCI assessment tasks needed improvement. Of those caretakers who were given or prescribed antimicrobials, 56% knew correctly how to give them to their child when they left the facility, suggesting that the quality of counselling also needed improvement. Fully 95% of facilities had all essential vaccines available and 62% had all essential IMCI drugs.

The survey did not measure the frequency of supervisory visits, but reports from staff suggest that supervisory visits to primary health care facilities are not conducted regularly because of a lack of resources, including vehicles and fuel. Post-training follow-up visits were not always conducted for similar reasons. When supervision was conducted, it often did not include the use of checklists or observations of clinical practice. Feedback and problem-solving often were not carried out by supervisors. Referral generally worked well since transportation and services are provided by the government. However, referral remains more difficult for remote and migratory populations who must travel long distances.

The health facility survey and discussions with staff highlighted the following issues with the quality of care:

- Clinical care needed improvement. Data indicated that not all IMCI assessment tasks were completed and that caretakers did not receive adequate counselling about how to give antibiotics.

- Supervision needed improvement. Problems with clinical practice were thought to be related to a lack of regular high-quality supervision. Improvements were needed in both the resources available for visits and in the skills of supervisors.

- Vaccines and the drug supply relatively were good in most facilities. Essential IMCI drugs were not available in all facilities, suggesting that health workers need to monitor supplies more actively. Drug management and ordering procedures may need to be reviewed.

- Referral works well in most cases. Remote populations still need more assistance to reach referral sites in a timely fashion.

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Service Availability Mapping

Service Availability Mapping (SAM) is a census-based method for mapping services, human resources and health infrastructure. By mapping each of these elements, gaps and areas of weakness can be identified and targeted by planners. A standard tool for SAM has been developed by WHO.\(^4\) This approach has not been used widely in the Region. Since it requires considerable time and resources to complete, it is difficult to use this method in all districts. Widespread use of this method requires resource commitment for the survey and for improvement in the planning skills of local managers.

Routine reporting systems

Routine reporting systems collect data regularly from all or most facilities in a country. Data are collected in a number of areas, including births and deaths (vital registration), cases seen, treatment received and vaccinations given. Rates are calculated using data on total numbers of children from census records. The completeness of vital registration of births and deaths is highly variable between countries. It is common for both births and deaths that occur outside of health facilities to be missed. In addition, the calculation of rates from facility-based data requires that denominators (estimates of the number of infants and children) are accurate.

Experience with routine data has shown:

- Routine data are useful for local planning since they are available at the district level and are collected continuously.
- The validity and reliability of routine data are limited by a number of factors, including completeness of record-keeping, how cases are classified, timeliness of reporting and the accuracy of denominators. Estimates of local populations using birth and death records may not be accurate, particularly in areas where there are large migratory or displaced populations. Routine data are most useful for following trends over time rather than making statements about absolute rates.
- The routine system in most countries does not yet record cases using IMCI case definitions. Use of these definitions would make record-keeping easier at the facility levels and would reinforce the use of IMCI clinical case management. In addition, IMCI-trained health workers may be less likely to misclassify cases if they had to record IMCI classifications.
- Efforts to improve routine data systems should be continuing and, where possible, child health staff should support this process. There are some simple modifications in routine reporting systems that could make data more useful. In particular, collecting data on newborns (<28 days) as a separate age category would allow data to be generated about this group. In many systems, newborns are aggregated with infants less than 12 months. In addition, sentinel reporting sites may be useful even when the entire system is not working well. Sentinel sites may be particularly

\(^4\) WHO/CAH Service Availability Mapping Tool
useful for monitoring antiretroviral therapy (ART) use for HIV-infected pregnant women, for example, or the number of neonates admitted to referral sites.

**Programme reviews for child health**

The Short Programme Review for Child Health (SPR) is a method for systematically reviewing all aspects of child health programming and determining how well activities have been implemented. Main problems are identified and recommendations for the next workplan are drafted. This method is intended to build on the existing process of routine programme planning and can be carried out at any level. Child health-related activities are reviewed along the continuum of care for the mother and child and available data from all sources are used. The review is conducted by a team, including health staff from all levels, different departments of the ministry of health and partners. SPRs have been conducted by Cambodia, China and Mongolia.

The SPR process can be useful because it:

- Synthesizes available data from a number of sources and includes input from staff working in the field.
- Brings staff from different levels together. Input from those working on the ground is particularly useful for understanding what was really happening in the field.
- Brings staff from different technical areas together. A number of different programme areas are responsible for child health activities. Joint planning means that activities are better coordinated.
- Involves stakeholders. Local partners are able to explain what they have observed and what they are doing. All stakeholders are able to see where more work is needed. Resource needs can be discussed.
- Leads to concrete recommendations for action that can be implemented in the next workplan. In the longer term, it is hoped that this type of review can be carried out regularly.
**Case example: SPR in Mongolia**

In 2007, Short Programme Review was conducted in Mongolia to assess the progress towards child health programme goals and objectives; identify programmatic gaps; formulate recommendations; and decide on the next steps to inform workplan development. It was attended by staff from the central, provincial and soum levels of the Ministry of Health, the academe, and development partners. The methodology included document review, experience sharing and discussions.

At the conclusion of the four-day review, six core problems were identified along six areas: health policy, planning and management; human resources; health system; health education and communication; supervision and monitoring; and community mobilization. Recommendations for each core problem needed to be feasible based on local conditions and available budget. For example, it was recommended to advocate for a policy to make essential drugs available free-of-charge to under-5 children at first-level facilities; update IMCI training materials; and advocate for training of supervisors and provide sufficient budget for supervisory visits. Some of the recommendations were immediately incorporated into the existing workplan and others were added to the next annual plan.

**How are data used for making planning decisions?**

In order for data to be used most effectively, staff at all levels need to have the skills to collect, analyze and interpret data from different sources. The main principles that have been applied when using data for IMCI planning include:

- Ensuring that programme inputs and outputs are collected and used to take immediate local action. These data determine whether activities are being implemented properly. The data can be collected easily and cheaply from administrative reports or documents. Supervisors can collect data on some of the measures during routine visits.

- Ensuring that local programme staff are involved in data collection where possible. This trains them in the collection of data and the meaning of key indicators. In addition, they are more likely to understand the findings and use them to take local action.

- Targeting activities to populations of greatest need. Aggregate national level data tend to mask variations between subpopulations. National population data need to be disaggregated in order to identify high-risk groups. Variations in mortality are noted in all countries by region or geographic area, maternal education, rural and urban residence, birth interval (shorter birth intervals have increased risks of under-five mortality) and by wealth. Countries report challenges reaching remote and rural populations, migratory populations (particularly in Mongolia, where 67% of the population of soums are nomadic herders) and poor populations in both urban and rural areas. Equity remains a concern in all countries. In high-mortality countries where data are available by wealth quintile, the pattern of inequity is generally at the top, with the wealthiest quintile doing

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5 WHO/WPRO. *Short Programme Review for Child Health, Mongolia, 2007.*
better than all other economic groups. Programme plans should include strategies for reaching subgroups at the highest risk.6

- Planning collaboratively with partners, including donors, NGOs, bilateral and multilateral organizations. Collaborative planning helps to ensure that human, financial and material resources are shared and allocated to areas where they are most needed. It also can help to ensure that technical resources are pooled to find the best solutions to problems.

**Case Example: Mortality in China**

China has made good progress in reducing national infant and child mortality in the last 15 years. In 1990, the under-5 mortality rate (U5MR) was 49 per 1000 live births and by 2005 had been reduced to 27 per 1000 live births.7 If current trends continue, China will reach the Millennium Development Goal 4 (MDG 4) mortality target.

Overall mortality trends mask large differences in mortality within the country. The U5MR ranges widely from 10 per 1000 in urban areas to 37 per 1000 in type II and III rural areas. In type IV rural areas – the most rural – the U5MR is more than double the national average (64 per 1000 live births between 1996 and 2004). It is estimated that an average of 470 000 under-5 children die each year. Fully 75% of these deaths occur in type II and III rural areas. Type IV rural areas, where mortality rates are highest, account for an estimated 52 000 deaths per year because of their relatively low population density.8

These data highlight the need to examine data by subpopulations in order to determine where and how resources should be allocated.

**What are the challenges to monitoring and evaluating IMCI effectively?**

Many countries in the Region have made progress in monitoring and evaluating the IMCI strategy using standard indicators and methods. Impact and intervention coverage measures are now tracked by all countries and approaches to collecting and using data are increasingly recognized as important.

Common challenges remaining to monitoring and evaluating IMCI include:

- Planning is often not conducted systematically. Staff often do not have the skills to plan properly and do not know what data to use.
- Inadequate financial resources are available to support training in planning skills, strengthening routine health information systems and evaluating quality of care.

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• Programme inputs and outputs generally are not used for tracking implementation. Better use of these measures would help managers decide whether activities are being implemented on the ground and what they need to do to make improvements.

• Health facility assessments are not done regularly in most countries, so data on quality of care are not available for planning.

• Programme staff are often excluded from the process of survey data collection, which tends to be done by consultants or statistical staff. Feedback often is poor and delayed. The flow of information from the national level to districts and vice versa often does not happen systematically.

• Stakeholders are not always well coordinated. Resources for data collection are therefore not used efficiently. Different surveys sometimes use nonstandard definitions of indicators. Programme staff are not always informed of the results of surveys or assessments.

Addressing these barriers will require continuing advocacy and resource allocation for health information system development and improving staff skills in data for decision-making. An increased focus is needed on the use of inputs and outputs for tracking implementation and on the collection of and use of data on quality of care using facility assessments. Better coordination of stakeholders and partners involved with surveys will ensure that information collected is useful for programmes and used for planning.
Conclusions: IMCI monitoring and evaluation

- Monitoring and evaluation are required in order to track the progress of IMCI implementation and plan future activities.
- An indicator is a measurement that is repeated over time to track progress towards goals and objectives. The use of standard IMCI indicators in monitoring and evaluation activities helps decision-makers collect comparable information in different settings. Key indicators for tracking the progress of child health in the Region have been developed based on the Regional Child Survival Strategy.
- Data are needed on inputs and outputs in order to monitor IMCI implementation. These measures track whether human, maternal and financial resources are available and whether activities have been conducted on the ground.
- Population-based coverage indicators measure whether mothers or children have received interventions. Improved intervention coverage is needed in order to achieve impact. Coverage measures are measured using population-based surveys. Indicators are collected along the continuum of care for the mother and child.
- Impact indicators measure mortality, morbidity and nutritional status. Changes in impact indicators are expected over five to 10 years or longer. Impact is the ultimate purpose of IMCI and expected impact changes are goals of the strategy.
- A number of methods are used to measure indicators for monitoring and evaluating IMCI, including population-based surveys, health facility surveys, service availability mapping, routine health information systems and short programme reviews for child health. Most monitoring data can be collected from routine reports or programme documents.
- Using data for making decisions is an important part of planning IMCI activities. Approaches to improving planning include better use of input and output data, involving local staff in data collection and use of data, disaggregating data so that high-risk groups can be identified and targeted and planning collaboratively with stakeholders.
- Improving IMCI monitoring and evaluation will require continuing advocacy and resource allocation for health information system development. An increased focus is needed on the use of inputs and outputs for tracking implementation and the collection of and use of data on quality of care. Better coordination of stakeholders and partners involved with surveys will help ensure that information collected is useful for programmes and used for planning.
Integrated Management of Childhood Illness (IMCI)
Implementation in the Western Pacific Region

IMCI Monitoring and Evaluation