**IMCI indicators, monitoring and evaluation**

**Introduction**

Integrated Management of Childhood Illness (IMCI) is a broad strategy to reduce child mortality and morbidity in developing countries. It encompasses interventions to prevent illness and reduce deaths from the most common child health problems and to promote child health and development. These interventions are delivered within three components: improving health worker case management skills, improving the health system to deliver IMCI, and improving family and community practices.

The WHO Department of Child and Adolescent Health and Development (CAH) is prioritizing monitoring and evaluation of IMCI and addressing the challenges this presents, including: developing recommendations for monitoring of IMCI at national and district levels; conducting worldwide monitoring of IMCI implementation; developing tools for national and district level evaluation; and assessing the impact of IMCI in a constellation of country settings. Each of these issues is discussed in more detail below.

**IMCI indicators**

An *indicator* is a parameter measured repeatedly over time to track progress towards objectives. The challenge for IMCI is to develop standard indicators for use in all monitoring and evaluation activities so that comparable information can be collected from different settings. The use of standard indicators will also allow regional and global progress in IMCI to be documented. A list of priority indicators for IMCI implementation at first-level health facilities and in the community (see Box 1) was developed and agreed upon by an Inter-Agency Working Group on IMCI Monitoring and Evaluation between 1997 and 1999. The working group includes members from WHO, UNICEF and other partners, and solicited suggestions and expertise from headquarters and regional staff of all participating agencies, as well as from several countries with experience in implementing IMCI. The key indicators reflect a careful process of selection and a number of different factors:
The indicators should be limited in number, while addressing the range of IMCI interventions.

The indicators need to identify problems and achievements, but cannot be expected to provide a detailed and comprehensive picture of IMCI implementation.

The indicators should be able to be measured in as many settings as possible, without country-specific or region-specific adaptations that would limit comparability.

The indicators should be measurable using low-cost approaches.

The indicators should provide valid results that are meaningful and easy to interpret.

A list of standard supplemental measures is under development to enable results to be compared from special evaluations or operations research related to IMCI, since the priority indicators will not cover all the information needed.

### National and district level monitoring

**Monitoring** is the continuous review of IMCI implementation to identify and solve problems. Countries and districts need to decide how monitoring information will be collected based on available resources. Preference should be given to activities that provide the best opportunities for immediate skill reinforcement and problem solving. For example, visits by IMCI-trained clinical supervisors to health workers providing child health services are an excellent opportunity to collect monitoring information and address problems.

IMCI monitoring and evaluation focuses on the district level for several reasons:

- Decentralization of management functions as a component of health sector reforms has shifted responsibility for planning, budgeting, delivering and supervising essential public health services to the district level in many countries.

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**Box 1: List of Priority IMCI Indicators**

#### Health worker skills

**Assessment**

1. Child checked for the four general danger signs
2. Child checked for the presence of cough, diarrhoea, and fever
3. Child’s weight checked against a growth chart
4. Child’s vaccination status checked
5. Caretaker of child under two years of age asked about breastfeeding and complementary foods

**Correct treatment and counselling**

6. Child needing referral is referred
7. Child needing an oral antibiotic and/or an anti-malarial is prescribed the drug(s) correctly
8. Caretaker of sick child is advised to give extra fluids and continue feeding
9. Child needing vaccinations leaves facility with all needed vaccinations
10. Caretaker of child who is prescribed ORS, and/or an oral antibiotic and/or an antimalarial can describe how to give the treatment

#### Health system support for IMCI

**Supervision**

11. Health facility received at least one supervisory visit that included observation of case management during the previous six months

**Drugs, equipment and supplies**

12. Health facility has all essential equipment and materials for IMCI
13. Health facility has all essential IMCI drugs available
14. Health facility has the equipment and supplies to provide full vaccination services

**IMCI training coverage**

15. Health facilities with at least 60% of workers managing children trained in IMCI

#### Caretaker satisfaction

16. To be determined at country level

#### Nutrition

17. Child under 4 months of age is exclusively breastfed
18. Child aged 6-9 months receives breastmilk and complementary feeding
19. Child under 2 years of age is low weight for age

#### Prevention

20. Child aged 12-23 months is vaccinated against measles before 12 months of age
21. Child sleeps under an insecticide-treated net (in malaria-risk areas)

#### Home case management

22. Sick child is offered increased fluids and continued feeding
23. Child with fever receives appropriate antimalarial treatment (in malaria-risk areas)

#### Care seeking

24. Caretaker knows at least two signs for seeking care immediately

*The precise definition of the indicators, including numerators and denominators, are available from WHO/CAH.*
Implementation of IMCI focuses on the district level, and its effectiveness depends on district level capacity.

District monitoring and evaluation provide information that is essential for sound decision-making by district managers.

IMCI monitoring should build on national and district experience with existing programmes, such as the Expanded Programme on Immunization (EPI) or the Control of Diarrhoeal Diseases (CDD), and existing routine monitoring activities and systems. Monitoring IMCI should be part of ongoing programmatic activities and should complement rather than duplicate other efforts to strengthen child health services at national, district and facility levels.

**Worldwide monitoring of IMCI implementation**

The progress of implementing IMCI in countries is monitored using milestones and indicators. **Milestones** are achievements related to the stages of IMCI implementation, and have been developed to reflect the three components of the IMCI strategy: improving health worker skills, improving the health system to support IMCI, and improving family and community practices. WHO Regional Offices and Headquarters, in collaboration with interested partners, document annually the number of countries reaching each milestone. Additional milestones and indicators will be defined as development and implementation of IMCI expands.

The number of countries achieving selected IMCI milestones by the end of June 1999 are shown in Figure 1. A complete list of milestones is available from the Department.

**National and district level evaluation of IMCI**

**Evaluation** is defined within IMCI as the periodic assessment of progress towards objectives. It may include in-depth reviews of monitoring information as well as surveys.
During annual planning and budgeting, countries and districts need to assess the completeness and quality of monitoring information and, if necessary, to collect additional information to address broader evaluation issues, such as sustainability or coordination of activities across programmes.

Periodic surveys in facilities can provide detailed information on facility-level care, or opportunities to validate monitoring results. However, periodic surveys cannot replace routine monitoring, which is essential for providing immediate feedback and for problem solving. Evaluation surveys used to assess first-level health facilities should be designed to build capacity among local personnel and to improve the quality of supervision and monitoring. CAH, in collaboration with partners, is currently developing tools for evaluation of IMCI at health facility level.

Surveys are also needed to measure household and community-based indicators. CAH encourages countries to use existing surveys (e.g. DHS, MICS) to measure these indicators. Additional recommendations and tools for evaluation of IMCI at household and community level will be developed.

**Multi-country evaluation of IMCI**

The multi-country evaluation of IMCI will assess the behavioral, nutritional and mortality impact of IMCI. The objectives are both to document the effect of IMCI interventions on health worker performance, health systems and family behavior and to measure the impact of the IMCI strategy as a whole on health outcomes. In addition, the evaluation will describe the costs of IMCI implementation.

The multi-country evaluation will consist of a set of studies, using complementary designs, all in programmatic settings where IMCI is being implemented. The studies in the evaluation will cover different scenarios in order to maximize the generalizability of the results.

In addition to assessing impact on family behaviors, child nutrition and mortality, the multi-country evaluation will produce and disseminate information on intermediate, shorter-term indicators of services provision, utilization and coverage. Information on such process indicators can help health planners at the district and national levels.

The multi-country evaluation of IMCI is part of a research agenda that includes efficacy evaluations of the individual interventions involved in IMCI and qualitative and operations research that is being addressed by WHO and its technical partners.

As of June 1999, three sites are participating in the multi-country evaluation: Tanzania (the Ifakara Health Research and Development Centre in collaboration with the Tanzania Essential Health Interventions Project), Bangladesh (ICDDR, B), and Uganda (the Johns Hopkins University and the Department of Population Studies and Institute of Public Health at Makerere, with support from USAID). In all sites, the Ministry of Health and specifically those implementing IMCI are key partners in the evaluation. Additional sites will be identified in the Americas.