IMCI Training Course for First-level Health Workers (In-service training)
What is IMCI in-service training?

Standard IMCI in-service training is an 11-day course for health workers at first-level health facilities that include hospital and health centre outpatient services, health posts, dispensaries and clinics. Health workers eligible for training include doctors, medical assistants, nurses, health assistants, midwives and other paramedical health workers who treat sick children.

The 11-day course combines classroom work with hands-on clinical practice. It is designed to train health workers to apply the IMCI standard case management approach for assessing, classifying and treating sick children from birth up to five years old. Children are screened for severe illness, acute respiratory infections, diarrhoea, measles, malaria and ear infections as well as undernutrition. The case management approach then provides guidelines for classifying each child, treatment and giving appropriate counselling. In addition to the management of the most common conditions in sick children, health workers learn to screen and update immunizations, give micronutrients, promote breastfeeding and provide feeding counselling.

The training modules are accompanied by a standard chart booklet and a set of wall charts that illustrate IMCI case management guidelines. In addition, a photo exercise booklet, two videos, a mother’s counselling card and IMCI case record forms are provided. Three facilitator guides have been created to accompany the IMCI modules.

Key points: Recommended WHO standards for 11-day IMCI in-service training

- Maximum of 24 participants per course
- Ratio of facilitators not less than 1:4
- Duration of 80 hours with 30% of the time allocated for clinical practice
- Minimum of 20 sick children managed by each trainee
- Completion of all training modules
- Follow-up visits at the health workers’ workplace to review practice of skills and reinforce competence gained during training. Ideally, follow-up visits will be conducted by training facilitators within a month from training
Key points: Modules of the IMCI 11-day in-service training course

1. Introduction
2. Assess and classify the sick child aged two months up to five years
3. Identify treatment
4. Treat the child
5. Counsel the mother
6. Management of the sick young infant
7. Follow-up

How widely has IMCI in-service training been implemented?

Fourteen countries in the Western Pacific Region have introduced IMCI. All began implementation with the standard 11-day course. All countries have made progress in establishing systems for training health workers in IMCI. The proportion of districts implementing IMCI in seven countries for which data are available range from 11% in Papua New Guinea to 100% in Mongolia. The proportion of health facilities in which at least 60% of health workers seeing sick children have been trained ranges from 15% in Viet Nam to 76% in Mongolia. IMCI Health Facility Surveys conducted in Cambodia, China, Mongolia, Papua New Guinea, the Philippines and Viet Nam have shown that health worker skills improved after IMCI training.

In order to conduct training on a wider scale, countries need trained facilitators and appropriate training sites which allow access to clinical cases. Most countries in the Region began with national training sites. Many are now adding subnational training centres. For example, China has two national training centres and one training site per IMCI county. The Philippines has established 17 regional and three provincial training centres which are linked with clinical sites.

What are the IMCI in-service training core competencies?

The 11-day IMCI course was designed to build a set of core competencies for health workers seeing sick children in the primary care setting. Core competencies are the minimum standards of clinical care that all health workers should have mastered by the end of the training. These should have been mastered regardless of any changes that country programmes may make in the methodology, duration or technical content of the training. Core competencies will vary slightly among countries if country-specific adaptations have been made for local causes of mortality and morbidity. Complementary competencies that might be added for local adaptations include assessment, classification and treatment of HIV infection, dengue fever, sore throat and wheezing.

1. WHO/UNICEF Workshop to Review Progress and Actions to Improve Child Survival, Xi’an, China, October 2009
Core competencies are summarized in the box below.

**IMCI Core Competencies**

**General**
- Know how to use the IMCI chart

**Danger signs**
- Know and recognize the general danger signs
- Provide prereferral treatment
- Counsel a caretaker about urgent referral
- Provide care where referral is not possible

**Competencies on main symptoms**
- Assess and classify for main symptoms: cough or difficult breathing, diarrhoea, fever and ear problems
- Provide appropriate prereferral treatment and refer
- Treat with antibiotic and/or antimalarial and other treatments with correct dosage and correct duration
- Counsel the caretaker of the child on when to return immediately and on follow-up

**Competencies on care of the sick young infant**
- Assess young infant from birth up to two months old for signs of very severe disease or local infections and treat or refer after prereferral treatment
- Assess young infant for signs of diarrhoea, classify and treat or refer
- Counsel a mother about infant feeding

**Competencies on malnutrition and anaemia**
- Check a child for malnutrition and anaemia and classify
- Identify the child with severe malnutrition and/or anaemia, provide appropriate prereferral treatment and counsel caretaker for referral
- Treat child with severe malnutrition, low weight for age and/or anaemia
- Counsel the caretaker on when to return immediately and on follow-up

**Competencies on immunization and feeding**
- Immunize a child presenting to a health facility
- Counsel mother on appropriate feeding
How has the standard IMCI in-service training course been modified in the Western Pacific Region?

Both the duration of the standard 11-day course and the methods used for training have been modified by several countries in the Region.

**Duration of the course**

Many countries have found the standard course expensive to offer since trainees are required to live at the training site for 11 days. Resident courses also mean that health staff are away from their posts for long periods. For this reason, two countries in the Region, China and the Lao People’s Democratic Republic, have created shorter in-service training courses. In China, township and village doctor training courses have been shortened to five days. Facilitators take a seven-day training course using the same training materials but with more exercises and clinical practice. In the Lao People’s Democratic Republic, training at a subnational level supported by the Kidsmile NGO has been shortened to five days. Those run by the World Bank have been shortened to six days.

The course generally has been shortened by removing small sections of the modules, reducing the number of exercises and assigning some exercises for home reading. In China, village doctors taking the shortened course reported finding clinical drills and clinical practice, participatory methods, counselling skills training and the use of multimedia to be most useful. Participants of the five-day course in China self-rated their skills after training as eight out of ten.

**Training methodology**

The methods used for clinical training have been modified by some countries. Cambodia has increased the use of explanations and case examples before seeing patients and prefers group to individual feedback. China has incorporated the use of text-based cases to increase the number of cases and assigns home reading. In addition, China has produced a single module to replace all modules, complemented by a chart booklet, a workbook and a facilitator’s manual. Fiji has introduced a new module integrating all IMCI modules, reviewed and changed some exercises and added more role-plays and drills. Other training methods, including on-the-job training, distance learning and clinical mentoring, have all been discussed as options but have not yet been used widely in the Region.

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The IMCI chart booklet has proved to be a practical tool for helping with clinical care. Clinical practice is considered a critical element of training and all countries have preserved the clinical component when modifying the course methodology.⁵

Key points: Standard 11-day IMCI in-service training vs. shorter courses

A meta-analysis of published and unpublished studies on the performance of IMCI-trained health workers concluded that⁶

• The standard 11-day in-service training course is more effective than short training.
• The magnitude of the difference between standard and shorter courses is unclear.
• Regardless of training duration, other interventions to support health workers after training are critical, including follow-up after training and strengthened supervision.

The IMCI Computerized Adaptation and Training Tool (ICATT)

ICATT is a computer-based IMCI training tool. It can be used to provide computer-based group classes or individual self-directed learning. It is particularly useful for refresher training for staff who have had basic training with clinical practice. ICATT allows local updates to the IMCI guidelines to be added easily and modification of the training materials to suit local training requirements. For example, local audiovisual materials and practice exercises are easily added to ICATT.

After completing the training using ICATT, trainees undergo standardized testing and receive certification, which may be incorporated into continuing in-service education. In the longer term, it will be important to evaluate ICATT trainees over time to assess the effectiveness of the method in building and sustaining the core competencies. Computerized training is not designed to replace clinical practice with real patients, and so training with ICATT will continue to require appropriate clinical content.

ICATT was introduced in the Western Pacific Region in June 2008. Cambodia, Kiribati, the Lao People’s Democratic Republic, Mongolia, the Philippines and Solomon Islands have begun introducing ICATT. Fiji had introduced ICATT in the medical and nursing pre-service training in 2008 and 2009, respectively.

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**Key points: Use of the IMCI Computerized Adaptation and Training Tool**

ICATT allows local adaptations to the IMCI guidelines to be regularly added, including:

- New treatment and management guidelines from evidence-based research
- New conditions based on local patterns of morbidity and mortality
- Local terms, expressions and feeding guidelines
- Local pictures and audiovisual materials

Refresher courses using ICATT allow trained staff to be familiarized with continuing developments so they can apply new knowledge and skills to their daily work.

**Case example: Integration of ICATT into the curriculum of the Fiji School of Medicine**

- Fiji began integrating IMCI into the medical curriculum in 2000. Sections of the IMCI handbook were incorporated into teaching materials for first-, second- and third-year medical students. IMCI clinical training was included in the fourth and fifth year and further reinforced during the internship year. IMCI teaching was regarded as an important strategy for improving students’ skills in primary care.

- ICATT was introduced in 2008. Students liked the approach and found it easy to use. IMCI facilitators reported that students who had completed ICATT training were easier to teach because they had a good basic knowledge of the IMCI approach and were better able to focus on practising clinical skills.

- ICATT has become an integral part of IMCI teaching. Students are introduced to ICATT in their first year. They are initially oriented about IMCI and about how to use the ICATT method. They work through the computer modules in the second and third years, completing them before the paediatric rotation begins in the fourth year. Students who complete the ICATT get a certificate and a copy of the *Pocketbook of Hospital Care for Children*. During the paediatric rotation, two students per week practice IMCI in the children’s outpatient department under the supervision of an IMCI facilitator. IMCI chart booklets and recording forms are provided for students to use. IMCI skills are assessed at the end of the paediatric rotation by direct observation of putting them into practice. The scores students receive contribute about 2% to their overall course score.

- In combination with clinical practice, ICATT has proved to be a useful tool for teaching IMCI. The early introduction of ICATT reinforces IMCI knowledge and skills throughout students’ medical training.
What is the follow-up after IMCI in-service training?

The standard IMCI course recommends that training facilitators conduct follow-up visits with participants a month after training. These visits are intended to assess practising IMCI in the clinical setting, to reinforce skills and to suggest measures to improve case management. Visits also give trainees a chance to identify barriers to implementation and discuss ways to overcome these barriers.

Follow-up visits are conducted using different methods, including observation of the participant as he or she sees cases, interviewing the participant, reinforcing acquired skills (e.g. counting the respiratory rate and recognizing clinical signs such as stridor) and encouraging appropriate counselling of mothers. The visit may include a review of records, checking of supplies, observing the work flow and interviews with child caretakers to determine how satisfied they are with the services provided. Visits are intended to be supportive and to emphasize practical problem-solving. Trainee attitudes towards these visits have been found to range from anxiety to enthusiasm for continuing support.7

It has proved difficult in many countries to ensure that follow-up visits take place regularly. The main reasons for this are a lack of resources for vehicles, fuel and per diems for site visits. Local in-service training budgets often do not include support for follow-up visits. In the longer term, it is recommended that follow-up visits be considered to be an essential part of training and be budgeted from the outset as a part of the training budget. Continuing supportive supervision after IMCI training remains important for ensuring that health workers use the IMCI approach. Methods of providing supportive supervision include facility visits from supervisors, regular district meetings and on-the-job supervision by senior staff.

What are the challenges to scaling up IMCI in-service training?

Fourteen countries in the Region have begun IMCI training, with training coverage highly variable. Although Mongolia has achieved national IMCI coverage, most countries have found it difficult to expand training quickly.

Common barriers to scaling-up IMCI in-service training include:

- Inadequate financial resources because of a lack of political will to invest resources required to meet all training costs and high costs of training.
- Inadequate numbers of training facilitators, including clinical instructors.
- Inadequate numbers of clinical training sites and difficulties getting sufficient numbers of clinical cases for the training.
- High staff turnover in some areas, so that trained staff leave facilities to which they are allocated.

7 WHO/WPRO. IMCI Implementation Survey, 2008 (unpublished)
Addressing these barriers will require continuing advocacy for IMCI expansion, increased resource allocation, alternative training methodologies that are cost-effective, development of subnational clinical training sites and wider strategies for addressing the problem of staff retention.

**Conclusions: IMCI in-service training**

- 11-day IMCI in-service training is an effective approach for educating first-level health workers.
- Alternative in-service training methods are being developed which reduce the total time required for training and which use different methods. ICATT is a new approach for group and individual learning, particularly useful for refresher training.
- In-service training must include an adequate level of clinical practice in order to be most effective in changing health worker practices.
- Whatever training method is used, trainee health workers should master the IMCI core competencies. The duration of training is not as important as the amount of supervised clinical practice in improving health worker competence.
- Follow-up after training and regular supportive supervision over time are important for reinforcing and maintaining health worker skills. Training budgets should include an allowance for one follow-up visit to trainees within four weeks of completing the training.
- In the longer term, further expansion of IMCI training will require continuing advocacy for IMCI expansion, increased resource allocation, alternative training methodologies that are cost-effective, development of subnational clinical training sites and wider strategies for addressing the problem of staff retention.
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