

# Report of Technical consultation on IMCI training approaches and Pre-service IMCI

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# Acronyms

ADH	Adolescent Health
AFRO	Regional Office for Africa
AIDS	Acquired Immune Deficiency Syndrome
AMR	American Region
CAH	Child and Adolescent Health
CTEVT	Council for Technical Education and Vocational Training (Nepal)
DRC	Democratic Republic of Congo
EMR	Eastern Mediterranean Region
EUR	European Region
HIV	Human Immunodeficiency Virus
HIVC	Human Immunodeficiency Virus Infant Feeding Counseling
ICATT	IMCI Computerized Adaptation and Training Tool
ICMEG	Interagency Child Mortality Estimation Group
IMAI	Integrated Management of Adolescent & Adult Illness
IMCI	Integrated Management of Childhood Illness.
IMCNI	Integrated Management of Neonatal and Childhood Illness
IYCF	Infant and Young Child Feeding
MDG	Millennium Development Goal
MOH	Ministry of Health
MCE	Multi-Country Evaluation
NGO	Non Governmental Organization
PHC	Primary Health Care
SEAR	South-East Asia Region
UNICEF	United Nations International Children's Emergency Fund.
USAID	United States of Agency for International Development
WPRO	West Pacific Regional office
WHO	World Health Organization

# Executive summary

The implementation of Integrated Management of Childhood Illnesses (IMCI) strategy has been shown to improve health workers performance and quality of service. The critical element of this strategy is the evidence-based integrated approach with a focus on identifying, treating and/ or referring the most common childhood conditions that are responsible for over 70 per cent of all deaths in children under the age of 5 years in resource poor settings.<sup>1</sup> Currently, more than 100 countries have adopted this strategy.

Initial efforts of IMCI implementation were focused on improving the skill of health workers through in-service training using the 11 day standard IMCI course. Pre-service IMCI training was later introduced in order to increase coverage and address the huge organizational and resource demand for in-service training. Despite these measures, the coverage of IMCI remains low. Among the challenges are: lack of resources, inadequate number of trained facilitators, long duration of training(11 days) and the need to expand/adapt the IMCI training materials to accommodate other conditions (e.g. HIV, Infant and Young Child Feeding (IYCF), Dengue, and care in the first week of life). Many countries have responded to local constraints on the delivery of training particularly in terms of time and finances, by adapting the way the courses are delivered.

In order to review IMCI training approaches, IMCI pre-service experience and make recommendations to increase IMCI coverage, the Child and Adolescent Health (CAH) Department of the World Health Organization (WHO) organized a Technical Consultation Meeting on IMCI training approaches and Pre-service IMCI from 19-23 November 2007. Thirty nine participants representing the 6 WHO regions, IMCI/CAH Regional advisors, IMCI national professional officers (NPOs), faculty members from teaching institutions, resource people in the area of curriculum and teaching materials development and partners attended the meeting. Preliminary results of a survey on IMCI training approaches, pre service IMCI and a meta- analysis of findings from studies on the effects of IMCI training duration and effectiveness were presented. The experiences from countries and regions were also shared. Two sessions of group work were convened with the aim of reaching a consensus on core/basic and complementary/ supplemental IMCI competencies and options for accelerating IMCI training to increase coverage and solutions to overcome the challenges for IMCI pre-service education.

A CAH/WHO commissioned survey reviewed the experience of training approaches in 26 countries from all 6 WHO regions. The results showed that the integrated approach of IMCI is beneficial and should be continued; the IMCI chart booklet is an essential component of any IMCI training package; clinical practice is an important and non-negotiable part of IMCI training package. It was also noted that IMCI trainees recognize the variety of the teaching methods as the strength of IMCI training course. The survey concluded that IMCI training is progressing slowly and the following were identified as the main barriers to rapid acceleration:

- inadequate funds for training,
- long duration of training,

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<sup>1</sup> Where and why are 10 million children dying every year? The lancet 361.June 28, 2003.www.thelancet.com

- shortage of facilitators / clinical instructors and
- Lack of commitment of national authorities.

The respondents to the survey questionnaire recommended:

- To reduce the duration of IMCI course;
- To target different cadre of health workers with different durations of course;
- To design short courses for managers with focus on health systems strengthening;
- To integrate IMCI into routine district management and supervision;
- To use alternative training approaches such as distance learning, and integrating IMCI into other WHO training courses.

A Zambian study that compared the standard 11 day with a 6 day IMCI training course concluded that the skills of trained health workers from the two groups were comparable and that the shortened course was 40-50% cheaper. A similar study from Kosovo showed no significant difference in IMCI care by doctors trained in 8-day versus 11-day course. However, the training cost per participant fell from \$430 for 11-day standard training to \$240 for an 8-day course. Both studies emphasized the importance of regular monitoring/supervision of health workers trained in IMCI for successful implementation of the strategy.

A meta-analysis that compared the effectiveness of the standard (11 day) IMCI in-service training with shortened training (<11 days) suggested that the standard in-service IMCI training course is more effective than short training; although the magnitude of the difference is unclear.

A cross sectional survey of pre-service IMCI experience from 36 countries showed that 83% have incorporated IMCI into the teaching curriculum. Early involvement of academic staff and commitment of MOH and stakeholders has facilitated implementation. The most frequently mentioned sources for financial and material support were WHO (69%) and MoH (51%). The main challenges facing pre-service IMCI implementation include lack of sustainable commitment/leadership of national authorities; complexity and diversity of curriculum across the different teaching institutions; limited availability of resources and large number of students making logistics and organization of clinical practice and supervision difficult.

The experience with distance education, lessons from Integrated Management of Adolescent & Adult Illness (IMAI) training, regional experience and IMCI Computerized Adaptation and Training Tool (ICATT) were discussed by a panel of experts. The discussion highlighted that ICATT and long distance learning provide alternative approaches to standard IMCI training. The experience on distance learning showed that knowledge, skills, attitudes and behavior can be changed and improved using distance education. The use of local instructors to support the clinical practice was also found to be feasible. The experience from IMAI suggests that IMCI training can be accelerated with alternative training and learning methods. It was emphasized that there is need to explore these alternative approaches and link IMCI with existing training opportunities in other programs e.g. EPI, HIV, Malaria and IMAI.

Group work on IMCI training approaches defined and listed the core competencies of IMCI. Core competencies are those that address major causes of childhood deaths and those conditions that have effective interventions. Complementary competences were defined as those that address less important causes of mortality or other major causes of childhood morbidity. The group also discussed options to

accelerate IMCI training and made suggestions on training methods, changes in planning and scheduling, and sustainability of skills.

Group work on pre-service IMCI training identified challenges related to introduction, implementation and evaluation of pre-service IMCI in medical and paramedical schools and proposed solutions. The main challenges were: negotiating adequate time and placement of IMCI in the curriculum, ensuring adequate facilities and organization for clinical sessions, sustaining the supply of teaching materials and coordinating between different academic programmes.

The meeting recognized that official and unofficial adaptations are being made at country level including shortening the duration of IMCI training. Many countries have also introduced pre-service IMCI in medical and paramedical schools. However IMCI coverage is still limited within countries. Major challenges include high cost of the 11-day training, inadequate funds, high attrition rate of facilitators and lack of commitment from Governments and partners.

It was agreed that new approaches should be sought to facilitate increased IMCI coverage whilst optimising health workers skill and performance. The need to focus on a measurable set of core competencies that have maximum impact on under-five mortality was also emphasized and a list of core competencies was agreed upon. The meeting recommended:

1. To define a strategy and plan for increasing IMCI coverage with the necessary amendments to the duration and innovative approaches of IMCI training courses.
2. To develop/update a set of orientation and advocacy package targeting the different stakeholders and health cadres
3. To adopt a shortened competency based training package in line with the target health worker and pre service training course (e.g. medical and paramedical schools).
4. To advocate, support and implement alternative training approaches including distance learning, computer/web based training etc.
5. To introduce an ongoing clinical mentoring (on-the-job training) to maintain and reinforce health worker skills, and teach additional skills incorporated in the adaptation of IMCI materials.
6. To strengthen monitoring and evaluation, including maintaining a database and mapping training coverage as an integral part of IMCI planning and implementation.

# 1

## Introduction

The progress towards the achievement of the Millennium Development Goal (MDG-4-reducing child mortality by 2/3 by the year 2015) has been encouraging in some regions but remains a significant challenge among resource poor countries, such as South Asia and sub-Saharan Africa. In these settings, a limited number of health conditions (pneumonia, diarrhoea, measles and malaria, and neonatal causes such as, preterm birth, birth asphyxia, and infections) are responsible for over 70 per cent of all deaths in children under the age of 5 years. For a large proportion of these deaths, malnutrition is the single most important underlying cause<sup>1</sup>. Close to 40% or nearly 4 million of the under 5 deaths occur during the neonatal period (first 28 days of life). Since the dawn of the epidemic, HIV/AIDS has increasingly contributed to significant burden of childhood morbidity and mortality especially in Southern Africa.<sup>1</sup>

Among the challenges for improving under 5 survival are shortage/lack of trained health care workers, scarcity of diagnostic supports including laboratories, and lack of drugs and equipment. These challenges are particularly serious for the primary health facilities where most children obtain care and treatment.

Experience shows that the WHO/UNICEF training course on IMCI improves the case management skills of a broad range of first-level health professionals.<sup>2</sup> The IMCI clinical guidelines promote an evidence-based, syndrome integrated approach to the most common childhood conditions, with a focus on the prevalent causes of death. In addition, the use of this approach supports the rational, effective and affordable use of diagnostic tools and drugs.

However, in-service training in IMCI for all relevant health workers would require an enormous organizational effort and significant resources. In recognition of this, most of the countries that have adopted IMCI have introduced pre-service IMCI training into medical, nursing and other health professional schools to potentially broaden health system coverage by IMCI trained health workers in a cost-effective and sustainable manner. In addition, countries have implemented various approaches of in-service training to reduce cost. However the results of these changes have not been evaluated

Since the early 90's the content of IMCI has expanded, and knowledge has been generated through research in areas such as newborn health, management and treatment of children infected with HIV, IYCF, etc. As the content of IMCI expands, the implementation experience has generated a number of lessons that will need to be addressed systematically in order to look for ways of addressing challenges in training approaches and scaling up IMCI implementation.

In order to review and share experiences and identify challenges and solutions, the Child and Adolescent Health (CAH) department, World Health Organization (WHO) held a Technical Consultation Meeting on IMCI training approaches and Pre- service IMCI , 19-23 November, 2007 in Geneva.

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<sup>1</sup> Millennium development goals: Goal 4: The context <http://www.who.int/mdg/goals/goal4/context/en/index.html>

<sup>2</sup> The Multicountry Evaluation of IMCI Effectiveness, Cost and Impact Progress Report, May 2001 - April 2002 WHO/FCH/CAH/02.16 [http://www.who.int/child-adolescent-health/publications/IMCI/WHO\\_FCH\\_CAH\\_02.16.htm](http://www.who.int/child-adolescent-health/publications/IMCI/WHO_FCH_CAH_02.16.htm)

Thirty nine participants drawn from all the 6 WHO regions including IMCI/CAH Regional advisors, IMCI national professional officers (NPOs), faculty members from teaching institutions, resource people in the area of curriculum and teaching materials development and partners attended the meeting (Annex 1). This report contains the main issues from plenary sessions, group work, discussions, and recommendations for the way forward to facilitate increased IMCI training coverage.

# 2

## Objectives

The key objectives of the meeting were:

- To review IMCI training approaches and make recommendations in relation to new approaches to facilitate increased IMCI coverage while preserving its impact on health worker performance
- To review IMCI pre-service experience and propose way forward.

The first part of the meeting (Nov 19-21) focused on IMCI training approaches and had the following specific objectives

- To examine health worker competencies/skills needed to practice IMCI
- To examine IMCI training approaches in relation to performance and competencies
- To make recommendations on competency-based IMCI training that will facilitate increased coverage

The second part of the consultation was on IMCI pre-service (Nov 22-23) and had the following specific objectives:

- Review experience to date in introducing and implementing IMCI pre-service in the medical and paramedical schools and summarize lessons learned
- Propose way forward for further strengthening of IMCI pre-service
- Identify additional guidance, tools and materials needed to support countries introduce and implement IMCI pre-service teaching

# Opening of the Meeting

## 3

Dr Elizabeth Mason, Director of CAH opened the meeting with welcoming remarks and highlights of the objectives and the expected outcomes of the meeting. The following were the expected outcomes:

- Recommendations for CAH on way forward on competency-based IMCI training approaches that facilitate increased coverage
- Recommendations on way forward for further strengthening IMCI pre-service
- List of additional guidance, tools and materials identified to support countries in IMCI and IMCI pre-service.

# 4

## Methods

The methods included plenary sessions, panel discussions and group work. The participants were provided with background materials prior to commencement of the meeting. These materials included preliminary results of surveys that examined IMCI training approaches, background paper on Pre-service IMCI and preliminary results of the survey on implementation status, a review of the effectiveness of shortening IMCI training studies, and comparison studies from Zambia and Kosovo on shortened IMCI courses versus the 11-day standard IMCI training.

The plenary presentations were made by participants representing regional offices, countries, partners, and education & curriculum experts. The various aspects of current global status of IMCI were also presented by CAH staff and consultants. The first group work was aimed at reaching a consensus on core/complementary competencies for IMCI, options for accelerating IMCI training to increase coverage and sustain continued learning. The objectives of the second group work were to discuss challenges for IMCI pre-service education and to suggest solutions for overcoming these challenges. Participants were also asked to provide recommendations to CAH on additional guidance, tools and materials needed to support IMCI pre-service education. The final activity was developing the recommendations based on the deliberations of the meeting.

Following the opening address and introduction of the participants, the plenary session began with presentations followed by discussions as outlined in the meeting agenda. (Annex 2-Meeting agenda). The following summarizes the presentations and issues discussed on IMCI training approaches (Part I) and Pre-service IMCI (Part II).

## PART I - IMCI TRAINING APPROACHES

### 5.1 SUMMARY OF PRESENTATIONS ON IMCI TRAINING APPROACHES

#### Challenges to implementation of IMCI training

(J. Martines)

IMCI has been adopted by over 100 countries and has been shown to reduce child mortality, improve child nutrition, services' use, health workers' performance and care at lower costs per child when correctly managed.

The main challenge is that IMCI coverage is still limited within countries. Other challenges include:

- The growing need for adaptation to include additional conditions (e.g. HIV, Infant and Young Child Feeding (IYCF), Dengue, and care in the first week of life);
- The long duration of training (11-days);
- The need for skilled facilitators and course directors;
- The complex organization to meet the demand of high proportion of practice sessions, individualized attention and low participant/facilitator ratios.

These characteristics of IMCI result in high training costs that sometimes exceed the country's available resources and require additional investment. Additional challenges include having a single course applied to wide-range of trainees (from doctors to health assistants) and the ambivalence of donors and policymakers in the promotion of investments in health. It is also noted that IMCI training plans so far, do not accommodate the private sector and are generally restricted to public sector workers. In addition, the development of community and health systems' components are often non-performing, restricting the opportunities and support for increased population coverage with services. Therefore examination of the country experiences with IMCI training provides an opportunity for responding to the above challenges while preserving the gains of IMCI.

## IMCI training approaches and IMCI competencies/skills

(L. Muhe)

- IMCI competencies address major causes of under-five mortality and morbidity and these have been revised, added or expanded with adaptation to include additional conditions. It is recognized that structuring the training around clearly defined competencies allows greater flexibility in training. In general an IMCI trained health worker needs to know how to use the IMCI chart. The core competencies and skills in IMCI training may include: IMCI general danger signs (inability to drink or breastfeed, lethargic or unconscious, vomiting everything, history of convulsions and convulsing now)
- IMCI main symptoms (cough or difficult breathing, diarrhoea, fever and ear problem)
- Checking every sick child for malnutrition, anaemia, immunization and
- Nutritional counseling.
- Additional competencies include checking a child and classification for HIV, dengue, sore throat, classify, treat or refer; Counsel a child/caretaker on adherence to ART and initiate ART; Counsel an HIV-positive mother on feeding her infant and Counsel a child for care for development.

The major issues related to delivering these competencies are:

- The implication in terms of adding new areas to IMCI training (e.g. dengue, HIV/AIDS, care for development etc.)
- The promotion of sustainability of follow up after training and how to maximize its use in filling gaps during training
- The organization of training to suit different target audiences
- The reduction of the duration of the course from 11-days to achieve the same competencies
- The development of the expected competencies without compromising quality

## Studies on duration of IMCI training in Kosovo

(S. Skender)

**Background:** In Kosovo, since the first IMCI training course was held in August 2000, two models (standard 11 day and adjusted 8 day) of training courses are being used. So far, 210 and 230 physicians were trained in 11 and 8 day IMCI training courses respectively. The objective of the study was to compare the quality of care received by sick children managed by health workers trained in IMCI for 11 and 8 days courses, respectively.

**Methods:** The research design was a health facility-based comparative, randomized study using both quantitative and qualitative methods. Observation was carried out on representative samples of health workers and consultations in both study groups. After each consultation, caretakers were interviewed and children re-examined. Health workers' performance was evaluated against IMCI guidelines. In addition, survey teams reviewed health facilities for conditions affecting health workers abilities to manage sick children and conducted four Focus Group Discussions (FGD) to gain a better understanding of IMCI implementation and identify challenges for health workers.

**Results:** The surveyors observed 56 (28 in each group) doctors' IMCI performance in clinical sessions with 351 children at 30 facilities in six districts of Kosovo; 45 doctors participated in FGD. In almost all aspects of IMCI, there was no significant difference ( $p > 0.05$ ) between study groups. Children were systematically assessed for an average of seven clinical signs or symptoms (out of 10 IMCI Kosovo-recommended clinical signs or symptoms) regardless of why they were brought to the facilities,

demonstrating that many health care providers performed integrated management. Overall, correct IMCI classifications were 81% and 84% in IMCI for the 11 and 8 day study groups, respectively. The overall treatment prescribed by HW in both study groups was correct in >90%. Caretakers in both study groups showed similar satisfaction about the health services and counselling delivered. The presence of health system support for IMCI implementation seems to be in place in most of the health facilities visited.

**Conclusion:** The results of this study suggest that there is no significant difference in the effectiveness of IMCI adapted for 8 days versus the WHO IMCI standard (11 day) in the performance of health workers after training and on the quality of care offered to children under 5 in health facilities. However, the training cost per participant fell from \$430 for 11-day standard training to \$240 in 8-day course. Therefore, it is recommended that the 8 day IMCI training continue within specialization of family medicine and incorporation of IMCI strategy in the curricula of the Medical Faculty.

### **Studies on duration of IMCI training in Zambia**

**(K. Mwinga)**

**Background:** In Zambia, the cost of training on IMCI is too high for district-wide expansion of the strategy. The study aimed to explore cost-effective alternatives to the standard 11-day IMCI course and to compare the performance of primary health care workers trained in the standard 11-day course and those trained in the 6-day IMCI abridged course for physicians.

**Methods:** The study population consisted of health workers caring for sick children in Primary Health Care (PHC) centres in 8 districts in Zambia. The health workers were randomly assigned to attend either the 11-day or the 6-day course. A health facility survey was done in April/May 2006 to assess the quality of care being provided to sick children by the health workers in the study. A team of surveyors were trained for one week on survey methodology and the WHO IMCI health facility survey standard forms adapted to the Zambian situation were used to collect the data.

**Results:** Performance of health workers were comparable between those trained in 11 day and those trained in 6 day course for 10 out of 12 IMCI priority indicators. Results were also comparable between the two groups for 14 out of 15 IMCI Supplementary Indicators. However, health workers trained in 11 day course were better than those trained in 6 day course in prescribing oral medications for sick children and knowledge of children's caretakers on how to administer them ( $p=0.038$ ). They were also better than the 6-day course graduates on advising caretakers "on when to return immediately for deteriorating child's condition" ( $p=0.003$ ). The health workers trained for 6 days performed better in advising caretakers to give extra fluids and continue feeding ( $p=0.002$ ). From the three 11 day trainings and three 6-day trainings held, the cost of running the 11-day training was between 40-50 percent higher than running a 6-day course.

**Conclusion:** The results indicated that the skills of health workers in managing sick children were comparable among those trained in the eleven-day course and those trained in the six-day course. The six-day IMCI training course was 40 to 50 percent cheaper than the eleven-day and resulted in reduced absence from service provision for health workers for both the facilitators and participants.

**Recommendations:** The key recommendation from the study was that the Zambian Ministry of Health should consider using 6-day abridged IMCI course for training of health care workers. The government should also address health system issues including increasing the number of trained health workers in health centres, improving availability of drugs and supplies in management of sick children and

improving supervision of health workers from the districts. During the supervisory visits, the supervisor should observe case management to help sustain skills acquired during training.

## Findings of global survey on IMCI training approaches

(A. Goga)

**Background:** This survey is part of CAH/WHO/HQ initiative to systematically review the range of training approaches used for IMCI training and their effectiveness in improving health worker competencies.

**Methods:** Three self-administered forms (questionnaires) were used to gather quantitative and qualitative information from National focal IMCI persons, course directors /facilitators, and IMCI trainees from 26 countries. Data was gathered on respondents' perceptions of the pace of IMCI training, barriers to IMCI training, approaches to implementing IMCI, and on the different courses being offered. For each course, specific attention was paid to the adaptations made to course content and training methodology, duration of training, proportion of time spent on each content area including clinical; practice and respondents' rating of the course. Countries were selected for this survey on the basis of high under-five mortality as well as the presence of a national professional officer to facilitate the survey.

### Results:

- *Adaptations to content:* Countries had made varied adaptations to course content, depending on local circumstances. Most countries (91.3%) had made adaptations to 'fever'; 52.2% had included 'first week of life' to their IMCI training courses and 30.3% had included 'wheeze' or 'HIV diagnoses or 'HIV classification'.
- *Adaptations to training duration and clinical practice:* Duration of training ranged from a 32 hour course in Kenya to a 6-day short interrupted course in Uganda to a 155-hour (25-day) post-graduate in-service training course in Kazakhstan. Materials had also been adapted within each country, and for the shortened courses (e.g. 5/6-day courses) many countries had developed one integrated module. Some countries such as China were not offering the 11-day course and only offering a shortened course (5-day). Other countries had extended the 11-day course to 14 days or more for health workers with limited knowledge of English/lower literacy level. There was no significant difference between respondents ratings of the 11-day versus any shorter course (both rated as 8/10 on a scale of 0 to 10). The median time spent on clinical practice in general was 28.5% (Q1-Q3 was 20-42%). The generic WHO IMCI recommends 40-50% of the total duration of the course or a total of 38 hours to be devoted to clinical practice.
- *The 11-day IMCI training course:* the median number of hours spent on clinical training was 36 (inter-quartile range was 22); trainees rated their skill post-training as 8/10; 40% of 11-day course trainees reported that the course was too hurried and 34.9% reported that it was too short; IMCI trainees most enjoyed the integrated management, individual feedback, participatory methods- drills, exercises and role plays and least enjoyed the homework and at home reading. The ten-day course spent a median of 30 hours on clinical practice (IQR=2) while the 12-day training course spent a median of 43 hours on clinical practice (IQR=1)
- *Seven or eight-day courses:* A median of 28 hours is usually spent on clinical practice; IMCI trainees rated their skill post training as 6.5/10; 83% of IMCI 7/8-day trainees felt that it was too hurried; participants most enjoyed the integrated management, classroom reading, participatory methods, variety of teaching methods and least enjoyed the homework and at home reading.

- *Five-day courses:* A median of 14 hours is usually spent on clinical practice (IQR=7) – IMCI trainees indicated that 20-50% of time was spent on clinical practice; IMCI trainees rated their skill post training as 8/10; participants most enjoyed the drills, integrated management, clinical sessions, participatory methods, role plays and discussions and least enjoyed the short duration, homework and at-home reading. The IMCI approach to managing children was hailed as an appropriate model by all respondents. The IMCI chart booklet was referred to as the most essential material in IMCI, and its depth, colour and approach was appreciated by course directors, facilitators and IMCI trainees.

The IMCI trainees are of the opinion that the variety of teaching methods used, including clinical practice, participatory methodology, drills, role plays, individual and group feedback and exercises are the strengths of IMCI training courses.

The national IMCI focal persons and course directors/facilitators thought that IMCI training was progressing slowly due to the high cost of the 11-day IMCI training course, its long duration, lack of facilitators/clinical instructors and lack of buy-in from national level. The respondents made the following *recommendations / suggestions:*

- Different training courses, with different depth of content are needed to target different cadre of health workers.
- Implementers at PHC level need a shorter, action-orientated course.
- Managers need a shorter course, with a focus on health systems strengthening, integrating IMCI into routine district management and supervision.
- The course for academics needs to focus on the rationale/evidence behind IMCI so that they are able to comfortably teach the course.
- The approaches used by other WHO training courses e.g. IYCF, IMAI etc need to be closely examined to improve the approach of IMCI training.

**Conclusion:** All respondents (IMCI focal persons at MoH, NPOs, course directors, facilitators and IMCI trainees) are of the opinion that the integrated approach to managing children, as followed by IMCI, is beneficial and should be continued; the IMCI chart booklet is the sine qua non of IMCI. Most see it as a necessary and essential component of any IMCI training package and the clinical practice is an important and non-negotiable part of IMCI training package.

### **Meta-analysis of published and unpublished studies on performance of IMCI trained health workers using different approaches (A. Rowe)**

**Background:** A central component of IMCI is an 11-day in-service training course for health workers on clinical guidelines. In some countries, to reduce training costs and the time health workers are away from their clinics during training, the course has been shortened. However, it is not known whether shortening IMCI training reduces its effectiveness.

**Methods:** A systematic review was conducted to compare the effectiveness of the IMCI strategy that used standard in-service training (duration >11 days) versus shortened training (<11 days). There were only three studies that directly compared these training approaches, and thus an indirect evaluation was done by comparing the effects of “standard training versus no IMCI” with the effects of “short training versus no IMCI”. The effects of other interventions to support IMCI and that of IMCI over

time for the two training approaches were also examined. Outcomes abstracted from the studies included direct measures of health worker behavior (e.g. tasks related to treatment or counseling) and patient knowledge of how to administer therapy at home. Two meta-outcomes were analyzed: the median of effect sizes for all outcomes from a given study, and the percent of patients treated according to IMCI guidelines. A main analysis included only studies with an “adequate” design, and a sensitivity analysis included studies with either an adequate design or an “inadequate” design that had a comparison group.

**Results:** The search strategy identified 206 reports, 47 of which were included. The 47 reports presented results from 27 distinct studies. Seven (26%) studies had an adequate study design, 17 (63%) had an inadequate design with a comparison group, and 3 (11%) had an inadequate design without a comparison group. Direct comparisons revealed a possible small advantage of standard training, with median effects from different analyses ranging from “-3 to 7 percentage points” (%-points) (median 5 %-points). In all indirect comparisons, effect sizes for standard training versus no IMCI were greater than short training versus no IMCI. However, the median differences varied considerably among analyses, from 3 to 36 %-points (median 20 %-points). Analyses of training duration as a continuous variable generally showed that IMCI’s effect increased with longer training duration. Several analyses suggested that after standard training, IMCI’s effect increased. IMCI’s effect with other interventions was almost always greater than without other interventions, with the median effects from different analyses ranging from “-3 to 42%-points” (above and beyond effects of training).

**Conclusions:** There were too few direct comparisons of standard and short training with adequate study designs to conclude firmly whether, and to what degree, shortening IMCI training reduces its effectiveness. Available evidence suggests that the standard in-service IMCI training course is more effective than short training; although the magnitude of the difference is unclear, ranging from -3 to 36 %-points. The best estimate was a difference of about 11 %-points. Countries should consider implementing other interventions to support health workers after IMCI training, regardless of training duration.

## 5.2 SUMMARY OF DISCUSSIONS

A number of questions for clarification on methodology were raised in regards to the Meta analysis. Participants recommended excluding very short courses (1-2 day) that seem to be orientation workshop or briefing training for managers from the meta-analysis. They also suggested categorizing comparison groups; such as very short (2-4 day) vs. 11-day course or a shortened (6-8 day) vs. 11-day course and comparing short-term and long-term benefits of courses of different lengths.

Among the major challenges to IMCI training in countries, the participants recognized lack of funding for scaling up of training activities, weak commitment by Governments, donors’ “fatigue”, irregular follow-up after training, introduction of new areas of child health, and the long duration and cost of 11 day standard training. The main issues addressed, lessons learned and suggestions forwarded are summarized below:

### Health system support and funding

- IMCI training is strongly linked to strengthening of the health system. Support such as financing, drugs provision, supportive legislation and supervision, setting up standards and incentives are critical elements that impact the process.

- Lack of financing is a serious barrier for efforts to increase IMCI coverage. However, in recognition of the changing global perception to child health, it was felt that opportunities should be sought for funding through the various child survival initiatives and interventions.
- It is essential to promote existing and new partnerships in support of IMCI training including collaboration with NGOs, private sector, bilateral agencies, government etc.
- Development of long-term training strategy that embraces pre-service and in-service training activities is seen as essential step in the process of increasing coverage

### **IMCI training course**

- Integrated concept and approach of management of major childhood illness is well recognized as beneficial and needs to be sustained
- The use of innovative training approaches is critical to increase coverage of IMCI. There is a need to use innovative collaboration with other sectors and programs to use alternative approaches e.g. distance learning...etc
- Successful experience from EMRO (development of IMCI training strategy, strong team of facilitators, follow-up visits integrated into routine supervisory system, IMCI pre-service training) has been drawn to attention
- Strong facilitation is critical for IMCI clinical training. The need for highly qualified facilitators will increase as countries move towards conducting shorter IMCI courses
- Training content and learning objectives targeted to the task of different cadres can assist in the decision of the duration of training.
- Standard materials should be developed based on job description and competences required. Participants emphasized the importance of analytical look at what is feasible and what is educationally desirable to keep the balance of matching duration of training with quality.
- Refresher training could complement pre-service training or upgrade skills of already trained health staff
- Supportive and systematic follow-up, additional job-aids, incentives such as accreditation and certification were suggested as ways of strengthening the training while countries move towards shortened IMCI courses
- Development and agreement on generic minimum content of training material based on competences is required. However, it will require adaptation to country specific context.

### **Supportive and systematic supervision**

- If IMCI course becomes shorter, it will be more critical to sustain IMCI Follow-up after training
- Availability of funds for follow-up visits may be a challenge. Integration of IMCI follow-up visits into routine supervisory system is an efficient way to sustain and improve effectiveness of IMCI training

## Research, evidence and demonstration

There is a need for research agenda to:

- Identify innovative approaches of IMCI training including training of community health workers (CHWs)
- Monitor and demonstrate benefits of in-service training implementation and impact
- Identify effective and affordable interventions to maintain health worker (HW) performance
- Demonstrate effects of pre-service training on HWs skills after graduation

### 5.3 SUMMARY OF GROUP WORK ON TRAINING APPROACHES

The objectives of the group work were to reach consensus on core and complementary competencies for IMCI and to discuss options for accelerating IMCI training to increase coverage and sustain continued learning. The group was also asked to define the criteria for defining basic/core competencies. (Annex 3 Guide for group work I &II). The following is the summary of the group work.

#### Group Work I -Competencies in IMCI

Core competencies were defined as those which address major causes of childhood deaths or those related to effective proven interventions to prevent mortality. A core list of competencies was agreed on (see box 1). Competencies that address major additional causes of childhood deaths in the country were identified as additional country-specific core competencies.

All health workers should be efficient in use of learning materials, particularly the chart booklets and communication with caregivers. They should be able to implement the competencies effectively and continue to self-learn. Besides the above general competencies health workers should have specific competencies for assessing, classifying and treating diarrhoea, cough or difficult breathing, fever, malnutrition and anaemia. The other specific competencies identified were immunization, and IYCF. Specific competencies for the care of sick young infants and newborns like keeping the baby warm, early and exclusive breastfeeding, hygiene, care seeking, and additional care of Low Birth Weight (LBW) were considered essential.

Complementary competences were identified as those that address less important causes of mortality or other major causes of childhood morbidity (see box 2). These included assessment and classification of HIV infant feeding, chronic HIV care, Dengue, care at birth, including newborn resuscitation. Other country specific competencies were treatment of severe illness (including newborn sepsis) where referral is not possible, assessment, classification and treatment of sore throat and ear infection, counsel on care for child development, counseling for advanced infant and young child feeding and de-worming.

It was emphasized that there is a need to provide technical information and present clinical rationale while teaching physicians. It was also suggested that minimum duration be defined for building core competencies using improved methods of training for the different target group of health workers. The initial emphasis should be given to core competency training to be followed by on-site “ongoing” learning of additional competencies using innovative methodologies e.g. distance learning, clinical mentoring, etc.

## BOX 1: IMCI CORE COMPETENCIES

### General:

- Knows how to use the IMCI chart

### General danger signs:

- Knows, recognizes the general danger signs
- Provides pre-referral treatment
- Counsels a caretaker on urgent referral
- Provide care where referral is not possible

### Competencies on Main Symptoms (ARI, Diarrhoea, Fever)

- Assess and classify for main symptoms: cough or difficult breathing, diarrhoea, and fever
- Provide appropriate pre-referral Rx & refer
- Treat with antibiotic and/or antimalarial, ORS, Zinc., with correct dosage, correct duration
- Counsel the caretaker of the child on
- When to return immediately and on follow up

### IMCI 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 pre-referral 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

### IMCI competencies on immunization, Infant and Young Child Feeding, Newborn care

- Immunize a child presenting to a health facility
- Counsel a mother on infant/young child feeding
- Assess a young infant ( 0 up to 2 mo) for signs of very severe disease, or local infections and refer after pre-referral treatment or treat
- Assess a young infant for signs of diarrhoea, classify and treat or refer

## BOX 2: IMCI COMPLEMENTARY COMPETENCIES

- Check a child for HIV infection, classify for HIV status and treat or refer
- Assess for dengue, classify, treat or refer
- Assess for sore throat, classify, treat or refer
- Counsel a child/caretaker on adherence to ART and initiate ART
- Counsel an HIV-positive mother on feeding her infant
- Counsel a child for care for development

## Group work II- Options to accelerate IMCI training

### Changes in Training methods:

- Alternative approaches including satellite, share points, diploma course, internet learning, continuing education , paper-based distance learning with one-on-one or group peer training, interactive learning via electronic media (e.g., CD-ROMs)
- Centralized (away from health workers site) shorter duration training on core competencies to be followed with “ongoing”/continuous education courses.
- Focus on “action-oriented” learning (e.g., videos, role play, and clinical practice) with the objective to ensure skill acquisition.
- Update training materials by omitting repetitions and developing an “integrated module” with essential information relevant to core competencies.
- Develop specific training based on job description and task distribution of health workers and train them accordingly.

### Changes in Planning and Scheduling:

- Increase coverage by providing good program management tools
- Involve regional and district managers as well as donors and partner agencies in the planning phase
- Shorten IMCI course with particular attention to use of chart booklet, accompanied by structured follow-up
- Ensure clinical integration by collaborating other programs including malaria, HIV, and IMAI
- Identify participants via simple monitoring system to find areas of low coverage (“map” participants)
- Create a critical mass of competent facilitators by:
  - motivating health care professionals to become facilitators and clinical instructors (e.g., earn CME credit while training)
  - requiring minimum competency standards before facilitator/clinical instructor (CI) is allowed to train
  - sensitizing private sector health professionals to IMCI
  - identifying and selecting facilitators from local academic and clinical settings (“map” facilitators/CI; professional facilitators may be considered)
- Conduct systematic “flood training” to build capacity for trainers as well as implementers

### Sustainability of Skills:

- Make IMCI training a government priority
- Institutionalize IMCI training into routine health training system
- Provide refresher training and make available job aid and updated materials
- Ensure systematic follow-up, monitoring and evaluation
- Provide ongoing mentoring to sustain what was learned during training (using locally-identified mentors). Identify competent local mentors among;

- Health professionals from academic and clinical settings
- “Excellent” participants from training course
- Motivate mentors using incentives (accreditation, CME credits, licensing requirements)
- Provide environment where mentoring is easily accessed by or available to HWs (e.g., peer mentors, use of mobile phones)
- Make mentoring more structured by providing guide for mentors
  - Who should give mentoring? (Training facilitator? Supervisor? Peers?)
  - When to mentor? (timing)
  - What should be the frequency of mentoring?
  - What competencies should be checked during mentoring session? (Core only? All?)
- Supplement centralized training with decentralized training
  - Self-empowered, paper-based distance learning with local mentoring
  - Electronic interactive media
- Feedback mechanism: Regular meetings of IMCI coordinators

## 5.4 PANEL DISCUSSION

A panel discussion was held on “IMCI additional/alternative training approaches: what changes may need to be made?” The panelists made brief presentations on pre-service IMCI training (Dr A. Mbewe); Distance learning (D. Woods), IMCI Computerized Adaptation and Training Tool (ICATT - F. de Haans); and Innovative methods to improve IMCI training (S. Gove). The main issues discussed were as follows.

### Distance learning

(D. Woods)

The presentation elaborated on the self study course - Child health care for professionals. The materials include problem based exercises, question and answers, case study summaries, flow diagrams, self monitoring with multiple choice questions (MCQs), and group discussion where appropriate. The training on clinical skills is organized using local facilitators. A study showed that the mean pre-test (to evaluate the performance of trainees) using this method was 63.1% while the mean post test was 95.5 % with  $P < 0.00001$ . This training approach enables health workers to take responsibility for their own continuing education and professional growth and is a cheap and practical way to reach health workers who may not be able to attend the traditional teaching courses.

### Innovative methods to improve IMCI training

(S. Gove)

A number of suggestions were made from the experience of Integrated Management of Adult and Adolescent Illnesses (IMAI) to make shortened IMCI courses more efficient. Some of the suggestions included use of card sort exercise, replacement of role plays by interactions with expert mother and child-trainers, more use of clinical and counseling training videos and moving towards modular training. It was also suggested to transfer some of the learning to follow up after training with distance learning, use of casebooks for continued practice and clinical mentoring to continue IMCI learning through case

reviews. It was noted that support materials need to be available to prepare clinical mentors to be thoroughly familiar with IMCI and sustain teaching activities. The opportunity for on site learning could be maximized through supportive supervision using improved quality assurance tools with on site feedback.

The organization of training can also be adjusted to be parallel with separate training for the different cadres to enhance team learning. Training efforts can also be scaled up using back to back training and through provision of both primary care and second level IMCI training for medical officers and doctors.

It was noted that IMCI training can be strengthened with alternative training and learning methods and through consideration of the following:

- More attention to training strategies and plans that propose a different, accelerated approach to scaling up rapidly with the ‘new’ IMCI implementation strategy and additional new tools
- Re brand the pocket book of hospital care as IMCI; with the new CHW training- clearly present IMCI supporting a district network at 3 levels- hospital, health centre, and community.
- Take advantage of IMCI’s huge relevance to malaria, HIV, nutrition, as well as the MDGs etc.

### **IMCI Computerized Adaptation and Training Tool**

**(F. de Haans)**

IMCI Computerized Adaptation and Training Tool (ICATT) contain the most up-to-date WHO generic guidelines on case management of key childhood illnesses and generic training materials which can be used in different ways to train various categories of health care providers. It also has an electronic library of the latest scientific reference materials, and allows local adaptation, updates and translation of the above at any time. The main components are a Chart booklet builder that permits easy national and sub-national adaptation and updates of IMCI clinical guidelines and summarizes them in a printable chart booklet. Library includes reference and educational materials on IMCI and related child health issues developed by WHO and other international agencies. Training allows for adaptation of the generic ICATT training course to suit different training approaches depending on local needs.

The system has an “Open” interface that allows to: change/adapt guidelines and create chart booklet; update library of documents, and other resources; and design locally appropriate training programs. The “Closed” end-user interface is designed to be used by individuals or for group teaching. The Training Player has a user friendly interface and is personalized and keeps information about the progress made by each individual user. The player is based on building blocks – training units and has free navigation between units.

ICATT provides an opportunity for scaling up IMCI and early application is planned for y2008-09. ICATT Version 1, 2008 will be available in early 2008 with documentation in selected countries (India, Peru, Tanzania,)

## Summary of Discussion

The following summarizes the highlights of the discussion.

- A shortened course may be appropriate and feasible for many settings. However, the principles of integrated management should be maintained. In addition, follow-up and clinical mentoring should be part of a training plan
- The IMCI core course should be based on measurable core competencies.
- A modular approach to training should be explored with possible use of self-instructional modules.
- More emphasis is needed on good facilitators (not necessarily having more, but selecting facilitators well and training them appropriately).
- Experience with distance education has shown that knowledge; skills, attitudes and behavior can be changed and improved. The use of local resources for clinical work has also been shown to facilitate learning.
- Ways to sustain IMCI skills included on-going clinical mentoring of trained health workers and building IMCI training and supervision into district health plans
- ICATT and long distance learning provide alternatives to standard IMCI training. There is need to explore these alternatives as well as link IMCI with existing training opportunities in other program e.g. EPI, HIV, Malaria & IMAI.
- There is need to re-package IMCI training to focus on acquisition of learning rather than teaching.

## PART II - PRE-SERVICE IMCI

### 5.5 SUMMARY OF PRESENTATIONS ON PRE-SERVICE IMCI

#### Objectives of IMCI pre-service training tools & guidelines

(S. Aboubaker)

The lessons learned from the medical education process in strengthening pre-service education of Diarrhoeal Diseases (1993-1994) and Acute Respiratory Infections (ARI) during 1998 revealed that:

- One workshop with 2 to 3 representatives from a school is not enough. A *series of activities* at different levels (i.e. national, school, etc) and scales are needed.
- The *academic community should be involved early* in the national introduction of new strategies and case management guidelines (i.e. orientation, planning, training, etc.)
- Teaching institutions tend to adapt or modify WHO standard teaching *materials* in order to satisfy needs within their institutions.
- *Collaboration* between ministries, governing bodies, and teaching institutions is critical to strengthen core curricula in a way that emphasizes major local health problems

Since 1998, CAH in collaboration with regions and teaching institutions identified *a process for strengthening pre-service education* using IMCI as the focus area. The process was *shared with other WHO departments and regional offices and it was agreed to use the same process for strengthening other areas such*

as IYCF, ADH. The experiences at different levels have been critical for review of Global recommendations, identification of gaps and setting of priorities at national level and at teaching institutions.

Several IMCI resource materials for students, teachers, planners and implementers were developed and made available to countries. As new evidence emerges, training materials and guidelines are being updated to include important conditions such as HIV, Newborn health etc... These materials are being adapted at national level to suit the local conditions.

Additional resources available or soon to be available include:

- Updating the textbook on Primary Child Care: a manual for health workers (2nd edition)
- IMCI Computerized Adaptation and Training (ICATT) tool
- List of Possible Learning Objectives and Model Chapter for Textbooks for Infant and Young Child Feeding
- List of Possible Learning Objectives and Model Chapter for Textbooks for Newborn Care
- List of Domains and Competencies for Adolescent Health
- Learning Package on Effective Teaching: A guide for educating healthcare providers and Learning package on effective teaching to improve teaching skills

Potential opportunities for scaling up IMCI training using ICATT:

- Adaptation possible at different levels of health systems
- Individual learning using computers in in-service settings
- Individual learning using computers in pre-service settings
- Tailored courses for individual groups of health workers
- Distance learning courses using computers
- Computer-based facilitation
- Internet or satellite-based facilitation
- Computer-based video/sounds/pictures

Challenges:

- Scaling up implementation and sustaining efforts
- Strengthening the health system to allow graduates to use newly acquired skills
- Negotiating for adequate time in the curriculum (theoretical and practical)
- Space/facility for outpatient teaching
- Giving priority to interactive and skill-oriented teaching
- Ensuring coordination of teaching between different academic programmes and units (e.g. paediatrics vs. community medicine)
- Sustaining interest and commitment
- Institutionalizing process and approach as the content of IMCI expands

## Global status of Pre-Service IMCI Training and lessons learned and Preliminary report of pre-service IMCI Training Survey (S. Kebede)

The following summarizes the presentation on the main lessons learned from the review of Pre-service IMCI implementation.

- Pre-service IMCI is feasible and acceptable by teachers and students in medical and paramedical schools.
- National ownership and leadership plays a critical role in advancing the progress of Pre-service IMCI implementation.
- Early engagement of academic staff early in the orientation and planning phase is critical for successful introduction and implementation of Pre service IMCI.
- Scaling-up pre-service IMCI implementation requires investment in building capacity at national level to increase the pool of trainers.
- There is a need to advocate and plan for sustainable supply of training materials to ensure continuity of IMCI training.
- There is a need to develop/use innovative alternative training approaches to cater for the various categories of health workers.
- There is a need for strengthening the health system to effectively support Pre-service IMCI.

**Background:** In order to complement the review process, additional information was sought through a cross sectional survey conducted using a questionnaire.

**Methods:** In October 2007, a questionnaire designed to collect both quantitative and qualitative data was sent by e-mail to all WHO Regional Offices requesting countries with experience in Pre-service IMCI to complete the forms. Information was collected on Orientation and Planning of Pre-service IMCI; Placement of IMCI and Teaching Methods Used; Information on Academic Programme(s) implementing pre-service IMCI; Training of Teachers and Relevant Clinical Staff; Clinical Practice; Teaching, Learning and Assessment Materials; Follow- up, Monitoring & Evaluation. The questionnaire also provided room for comments and description of challenges or difficulties in implementation of various aspects of Pre- service IMCI.

**Results:** Thirty-six countries (19-AFR, 8-AMR, 3-WPR, 3-EUR, 2-EMR, and 1-SEAR) responded to the questionnaire within the stipulated period of time. Pre-service IMCI Training was first introduced in the study countries in 1997 while the majority (38%) was introduced between 2000 and 2003. Ninety four percent (94%) of the countries have conducted Pre-service orientation and 71% have developed a plan of action. Fifty-Seven percent (57%) of the countries claimed having a national Pre-service IMCI coordinator and 78% have adapted the IMCI training materials.

Eighty-three (83%) have incorporated IMCI into the teaching curriculum with 75% and 77% of the countries having introduced at the medical and paramedical schools respectively. Among these, 36% responded that introduction of IMCI into the teaching curriculum was easy while 62% said it was difficult. Seventy six percent (66%) conducted student assessment on IMCI training using oral, written or practical exams and 35% responded that they follow up graduates after deployment. The teaching approaches used include mixed, block, and staggered with 66%, 28%, and 6% respectively. Seventy-eight percent (78%) of the countries claimed that they teach IMCI with related subjects such as Pulomonolgy, Gastroenterology, hematology, Pediatric Infectious diseases and Infant Nutrition. Other subjects mentioned include neonatology, community medicine, vaccination, and pharmacology. The

average number of sick children managed by students during IMCI training was < 5 in 32%, 5-9 in 20%, 10-14 in 16%, and >15 in 32% of the countries. The materials kept by the students after completion of IMCI training were IMCI modules (47%) and chart booklet (41%). Other materials mentioned were the student hand book, student manual, mother's card, wall chart, and videos. In 12% of the countries there was no material that students were able to keep following their IMCI training. The most frequently mentioned sources for financial and material support were WHO (69%) and MoH (51%). Other sources include partners (39%) and teaching institutions (universities/Colleges) 24%.

The main challenges for pre-service IMCI introduction and implementation were:

- Lack of commitment and leadership at the national level;
- Shortage of resources including financial, human, and material to sustain pre-service training;
- Complexity and diversity of curriculum across the different teaching institutions;
- Lack of coordination among the different departments;
- Large number of students at the training institutions making logistics and organization of clinical practice and supervision difficult.

**Conclusion:** The number of countries introducing IMCI into the teaching institutions is growing indicating the interest of countries in implementing the strategy. The lessons learned include the need to advocate for national leadership and institutionalization of Pre service IMCI for improved coordination thus ensuring sustainability. The balance between the duration and quality of training needs to be balanced as the content of IMCI expands and new ways and means become available. The high attrition rate of trained tutors calls for innovative means of incorporating IMCI into teaching curriculum by employing various training approaches such as distance learning, self learning etc.)

The results of the survey and review of published and unpublished data highlighted the importance of having a functional database for regular documentation, data analysis and use of information for monitoring the progress of pre-service IMCI and sharing of experiences globally.

## Regional and country Experiences

### PAHO

(C. Drasbek)

IMCI was introduced in the American region in 1996. Pre-service was initiated in 2001 in nursing schools. A cross sectional survey identified that child health topics in these nursing schools were taught with 83% of the 140 academic institutions teaching IMCI conditions. Columbia has developed Long distance community IMCI and trained 40 nurses. The survey concluded that there is a need to strengthen curriculum, guidelines and use new technology to improve teaching. In addition, there is a need to improve data base, Monitoring & Evaluation. It is envisaged that IMCI diploma courses will soon be instituted in the region.

### Tanzania

(G. Mutahyabarwa)

The country adopted IMCI in 1995. Pre-service IMCI was introduced to two medical schools in 1997 with the target to train clinicians. Subsequently, training expanded to nursing schools. A survey result showed that curriculum was reviewed, 215 tutors trained in 27 schools with the total graduates of

over 4000. Assessment tools were also developed and IMCI questions placed in the examination of students. The main challenges were the lack of sustainable source of training materials, inadequate number of clinical cases and high attrition rate of IMCI trained tutors. Among the lessons learned are that there is a need for a budget line and strengthening of follow-up of students.

### **Egypt**

**(M. Omar)**

Pre service IMCI training was initially introduced at the University of Alexandria in 1999. Since then, 7 other universities, plus 190 nursing schools have introduced IMCI teaching. The process was similar to other countries and included orientation and planning, followed by consensus, endorsement and establishment of a working group at each station. IMCI was incorporated to the curriculum. The contents of IMCI have been incorporated to the usual textbooks and supply of teaching materials is supported by MOH and WHO. IMCI teaching is placed in paediatrics and community medicine and taught using the staggered approach. IMCI carries about 10% of the total, summative assessment. The students are pleased and recognize the benefits of practical sessions. Self Learning IMCI CD is under development and there is also a plan to introduce accreditation.

The main challenges include inadequate functioning of working group, high turnover of IMCI trained tutors and resistance of some staff. Long term availability of materials is a concern and the large number of students poses difficulty for the teaching and assessment process. As a way forward, consideration is being given for organizing regular national meetings where experiences and challenges could be discussed, for establishing national IMCI pre-service education committee, and Annual IMCI forum.

### **Sudan**

**(Z. Karrar)**

A survey was conducted to evaluate IMCI pre-service in the Sudan. The assessment included the skills, knowledge, performance and students/staff attitudes. The survey found that students appreciate the stepwise approach and variability of teaching methods of IMCI. In addition some said that IMCI enabled them to face the real life situation; help realize the importance of PHC interventions; provided more confidence to deal with patients and caretakers. The assessment of breastfeeding, nutritional status and vaccination/vitamin were also described as very exciting and interesting. The main challenge for the students was the high cost of training materials.

The IMCI trained staff appreciated that the IMCI is addressing the main child health problems in the country, the holistic approach of IMCI and the outpatient sessions that enabled students to have effective interaction with caretakers. The challenges include the logistics in terms of space, large number of students per group and limited number of teaching staff. There is also a concern in the final clinical examination because of the limited number of cases for the examination. Additional challenge is the lack of adequate update on IMCI

### **India**

**(S. Bhatnagar)**

In 2002, WHO supported a pilot project to introduce IMNCI strategy in four medical schools in India. The evaluation done in 2005 concluded that the program was feasible to be implemented within the existing academic curriculum. IMCNI was considered as an additional tool for improving clinical skills. There was an initial concern about a conflict with traditional pediatrics teaching and this was found to be less of a concern as more faculty members were trained on IMNCI. The study recommended teaching of IMNCI jointly by paediatrics and community medicine departments during

early rotation of students. It also recommended sustaining of activities after initial support has been provided by each institution individually. Currently there are 50 colleges that have introduced IMNCI with 1300-1500 students graduating each year. India has also introduced IMNCI teaching through distance learning as an alternate route for speedy implementation of Pre- service IMCI training.

## **AFRO**

**(A.Mbewe)**

Currently there are 25 countries implementing Pre-service IMCI in the region. The rationales of teaching IMCI in medical and paramedical include:

- To give priority and emphasis to the most frequent and serious health problems of children
- To provide a link to real-life situations where diagnostic tools and drugs may be scarce
- To promote rapid recognition of the severity of a child's illness and action, including rapid referral for severely ill children.
- To increase the number of trained health workers in IMCI case management skills.
- To prepare undergraduates to work in out-patient situations and first level health facilities.
- To provide additional skills in important areas such as nutrition counselling
- To accelerate coverage of IMCI trained health workers in a more sustainable manner.
- Prepare students to support and follow national guidelines and to work within the national health system

The main challenge is the shortage of facilitators to establish and monitor training. The shortage of facilitators is more profound at medical schools. Other challenges include inadequate funds to sustain training, large number of students, and availability of modules. In addition, donor fatigue, competing programs and lack of regular adaptations in keeping up with the new evidence present an obstacle for scaling up Pre –service IMCI.

## **Towards the development of a responsive curriculum**

**(K. Forsyth)**

Prof. K. Forsyth highlighted the importance of a 'Learner-Centred' approach that places responsibility of knowledge and skill acquisition on the learner. In this approach the learner actively constructs networks of knowledge and skills to build links between new information and existing knowledge base and continually modifies and reorganises knowledge networks to accommodate new information. The Educator's role is to facilitate the process of knowledge acquisition in order to equip learners with strategies to effectively acquire, assimilate, apply and retain knowledge. Effective learning involves four key steps:

- Identification and analysis of learning needs
- Development and implementation of an ongoing learning plan
- Formative assessment and feedback
- Regular and critical review of progress, reassessment of needs and refocussing of learning plan as required

Learning plans:

- Assist in the organisation, management and critical review of the overall learning process
- Define the focus, content and timing of learning
- Align curricula with learning objectives
- Facilitate the integration of theory and practice

He also emphasized the fact that assessment drives learning but that we should ensure ‘Learning requirements also drive assessment’.

## 5.6 SUMMARY OF DISCUSSIONS

The main issues discussed following the above presentations are summarized below.

- Primary health care interventions including IMCI are key approaches that contribute to the reduction of child mortality.
- IMCI pre-service is feasible and acceptable approach that responds to the burden of diseases. It is therefore essential to strengthen its implementation at medical and paramedical training institutions.
- Clarity during orientation, and where possible more in-depth orientation is needed to ensure understanding of pre-service IMCI placement in medical and paramedical schools and the objectives of the training for the different health cadre
- IMCI pre-service training is a sustainable way of increasing coverage. The creation of a supportive environment at Ministries of health and Education, and universities is important. National leadership and private sector involvement is essential to move the process forward
- Most of the IMCI pre-service training has been project driven and teaching institutions do not have funds to sustain teaching. There is a need for innovative ways to secure funding including collaboration with MOE and interested partners in education
- There is a need to find local champions for advocacy and mobilization of resources and renewing commitment as well as find new partners.
- IMCI does not replace traditional Paediatrics but is relevant in the teaching of medical schools as it will allow for graduates to support IMCI implementation at the primary health facility level.
- There is also need to bridge the classification and diagnosis with the aim of creating an understanding of the IMCI approach and its role in early identification and management of common childhood conditions responsible for the majority of under 5 deaths.
- Curriculum revision is considered a major challenge. It is acknowledged that curricula might only change every 5–10 years. A key solution is to engage opinion leaders early in the process. It was suggested that curriculum should respond to health needs and is required to fit the local context.
- IMCI teaching does not necessarily require “changing” the curriculum, but rather harmonizing current curricula with concepts and approaches of IMCI.
- Early involvement of senior faculty facilitates, students and all other stakeholders early in the process of introduction of IMCI is key to success.
- IMCI pre-service training should not be the responsibility of only the Department of Paediatrics and child health.

- Incorporation of IMCI into students' examination gives weight to IMCI & ensures institutionalization. However it is recognized that there is need to review assessment tools.
- A network for IMCI pre-service and or Network of medical institutions should be considered. There is indication that Partners exist with interest in this area.
- The need for functional data base both for in-service and pre-service IMCI is critical for monitoring progress and sharing experiences.

## 5.7 GROUP WORK III AND IV

The objective of the group work was to discuss challenges for IMCI pre-service education and to suggest solutions for overcoming these challenges. In addition participants were asked to provide recommendations to CAH on additional guidance, tools and materials needed to support IMCI pre-service education. The following is the summary of the group work (table 1).

**TABLE 1: INTRODUCTION at national level, in medical, nursing and paramedical schools**

Challenges	Solutions
<ul style="list-style-type: none"> <li>■ Lack of clarity regarding the role of IMCI pre-service for the different cadre of health workers.</li> <li>■ Resistance from conventional teachers</li> </ul>	<ul style="list-style-type: none"> <li>■ Clearly define objectives of IMCI pre-service education for the health worker at different level of the health system</li> <li>■ Develop an disseminate advocacy package</li> <li>■ Conduct orientation and re-orientation</li> </ul>
<ul style="list-style-type: none"> <li>■ Lack of commitment and leadership at national level</li> </ul>	<ul style="list-style-type: none"> <li>■ National coordinating committee that can provide leadership, advocate and assist to ensure education, and (i.e., curricula) address health priorities of the country.</li> <li>■ Formal decree by MoH followed by written endorsement by the institution to institutionalise pre-service training</li> </ul>
<ul style="list-style-type: none"> <li>■ Resistance of teaching staff at universities.</li> </ul>	<ul style="list-style-type: none"> <li>■ Involve academics and opinion leaders, partners early in the planning phase</li> <li>■ Set up institutions as centres of excellence to serve as models for care</li> </ul>
<ul style="list-style-type: none"> <li>■ Inadequate funds</li> </ul>	<ul style="list-style-type: none"> <li>■ Examine ways to better use existing funds e.g. local printing, photocopying wall charts in black and white.</li> <li>■ Advocate with new partners</li> </ul>

**TABLE 2: IMPLEMENTATION at national level, in medical, nursing and paramedical schools**

Challenges	Solutions
<ul style="list-style-type: none"> <li>■ Availability of materials</li> <li>■ Availability of IMCI trained teaching staff</li> </ul>	<ul style="list-style-type: none"> <li>■ Maximise use of human resources for teaching e.g. use skilled junior medical staff, skilled nurses</li> <li>■ Ongoing training of trainers to keep up with attrition</li> <li>■ Log book to indicate student skills</li> <li>■ Global / National web site to communicate information (including technical updates) on institution / country experiences</li> </ul>
<ul style="list-style-type: none"> <li>■ Lack of communication with regulatory bodies</li> </ul>	<ul style="list-style-type: none"> <li>■ Links with regulatory bodies</li> <li>■ Networking between professors and Ministries of Health</li> <li>■ National Working Group for pre-service training that bridges gap between institutions and Ministry of Health</li> </ul>
<ul style="list-style-type: none"> <li>■ Harmonisation of IMCI teaching into the curriculum and text book</li> </ul>	<ul style="list-style-type: none"> <li>■ Textbook and curriculum revision to include IMCI</li> <li>■ Foster inter-departmental cooperation to place IMCI teaching with the respective departments (e.g. Pediatrics and Community medicine)</li> </ul>
<ul style="list-style-type: none"> <li>■ Limited number of cases for teaching</li> </ul>	<ul style="list-style-type: none"> <li>■ Improvise - use group demonstrations and other innovative ways to demonstrate key signs including videos, case simulation .. etc.</li> <li>■ Use primary health care level</li> </ul>
<ul style="list-style-type: none"> <li>■ Lack of awareness on how IMCI teaching could be used by the students</li> </ul>	<ul style="list-style-type: none"> <li>■ Clarify objectives of training according to the task of the trainees.</li> <li>■ Institutionalise IMCI into outpatient practice and internship.</li> <li>■ Include assessment of performance</li> </ul>
<ul style="list-style-type: none"> <li>■ Lack of a nodal person</li> </ul>	<ul style="list-style-type: none"> <li>■ Identify/designate a nodal person for IMCI within each institution should be clearly identified. This person should have management skills and should be influential.</li> </ul>

**TABLE 3: EVALUATION at national level, in medical, nursing and paramedical schools**

Challenges	Solutions
<ul style="list-style-type: none"> <li>■ Standardised student assessment</li> </ul>	<ul style="list-style-type: none"> <li>■ Develop or adapt standard assessment tools</li> </ul>
<ul style="list-style-type: none"> <li>■ Inconsistent training by different units</li> </ul>	<ul style="list-style-type: none"> <li>■ Develop a mechanism for evaluation of the teaching process</li> <li>■ Guidance should be available to institutions on how to evaluate quality of teaching</li> </ul>

### **Recommendations to CAH on additional guidance**

- Pre-service education should be listed as a priority in the CAH work plan and a focal person should be appointed
- Regional consultations on pre-service training should be held as a follow-up to this technical consultation to move the agenda forward
- CAH should develop and disseminate advocacy package for pre-service IMCI training
- CAH should guide countries on how to develop linkages with other WHO strategic objectives

### **Recommendations to CAH on tools and materials**

- IMCI materials should be adapted to include the newborn infant
- The IMCI planning guide should be updated
- Existing documents, tools and materials from countries on pre-service training should be gathered and made available to other countries
- CAH should assist with the development of innovative tools that facilitate self learning such as cards with clinical scenarios, simulation games (pen and paper – not necessarily electronic)
- ICATT should be finalised, rolled-out and distributed to countries as soon as possible
- CAH should identify priority areas of operational research for pre-service education

# Conclusions and Recommendations

## 6

### 6.1 CONCLUSIONS

The consultation noted that many countries globally, and all 26 countries included in the survey of in-service IMCI training approaches, are currently conducting IMCI courses shorter than 11 days. Some countries are conducting only shortened IMCI courses, whilst others are offering both the 11-day standard course in addition to shortened IMCI courses. Many of the countries have also introduced and are implementing pre service IMCI in medical and paramedical schools. The adaptations include reducing the amount of reading, eliminating redundant text, reducing the number of exercises and individual feedback and increasing group work or group feedback. However, there is lack of data on measuring the quality of training and health worker's skill in regards to the shortened IMCI courses. The main challenges for both in-service and pre-service IMCI include lack of commitment from Government & partners, inadequate fund, shortage of facilitators and inadequate supply of training materials.

### 6.2 RECOMMENDATIONS

In line with the expanding content of IMCI and in order to increase coverage the consultation agreed on the following principles and suggested recommendations:

1. To define a strategy and plan for increasing IMCI coverage with the necessary amendments to the duration and innovative approaches of IMCI training courses.
2. To develop/update a set of orientation and advocacy package targeting the different stakeholders and health cadres
3. To adopt a shortened competency based training package in line with the target health worker and pre service training course (e.g. medical and paramedical schools).
4. To advocate, support and implement alternative training approaches including distance learning, computer/web based training etc.....
5. To introduce an going clinical mentoring (on-the-job training) to maintain and reinforce health worker skills, and teach additional skills incorporated in the adaptation of IMCI materials.
6. To strengthen monitoring & evaluation, including maintaining a database and mapping training coverage as an integral part of IMCI planning and implementation.

### 6.3 NEXT STEPS

- § Consolidate and use the recommendations and suggestions of this consultation
- § Review in greater detail, if needed, country experiences with alternative courses
- § Explore innovative approaches to learning e.g. ICATT, distance learning and clinical mentoring
- § Propose concrete actions for the way forward to facilitate increased IMCI coverage
  - Explore feasible ways of strengthening monitoring and evaluation of in-service and pre-service IMCI training.
  - Strengthen linkages with and seize opportunities posed by other well-funded strategic objectives relevant to child health at district, national and global levels e.g. EPI, HIV, malaria to accelerate coverage of IMCI

The meeting came to an end with a closing remark from the ADG, Daisy Mafubelu. The ADG stressed the importance of this consultation in line with the efforts towards the MDG goal in reducing the high burden of child mortality. She also highlighted on the good news about the recent report on reduction of mortality from measles in the African region and expressed her commitment to support the actions that will follow the recommendations of this meeting.



# Annexes

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## ANNEX 2: AGENDA

### Day 1

Chairperson:		E. Simoes
Rapporteurs:		A. Kuttumuratova L. Muhe
09:00 - 09:30	Introduction, objectives of consultation	E. Mason
09:30 - 09:45	Introduction to IMCI: Challenges to implementation of IMCI training	J. Martines
09:45 - 10:00	Discussion	
10:00 - 10:30	IMCI training approaches and IMCI competencies/skills	L. Muhe
10:30 - 11:00	Coffee Break	
11:00 - 11:30	Discussion	
11:30 - 12:10	Studies on duration of IMCI training from regions/countries Kosovo Zambia	S. Skender K. Mwinga
12:10 - 13:00	Discussion	
13:00 - 14:00	Lunch	
14:00 - 14:30	Findings of global survey on IMCI training approaches	A. Goga
14:30 - 15:30	Discussion	
15:30 - 16:00	Coffee Break	
16:00 - 16:30	Findings of a meta-analysis of published and unpublished studies on performance of IMCI trained health workers using different approaches	A. Rowe
16:30 - 17:30	Discussion	

## Day 2

Chairperson: E. Simoes  
Rapporteurs: S. Bhatnagar  
R. Bahl

09:00 - 09:15 Synthesis of key points from day 1 Rapporteurs of day 1

09:15 - 09:30 Criteria for deciding core(basic) versus supplemental (advanced) competencies E. Simoes

09:30 - 10:00 Introduction to group work I L. Muhe  
Group work I: Consensus on core (basic) and supplemental (advanced) IMCI competencies

10:00 - 13:00 Group work

13:00 - 14:00 Lunch

14:00 - 15:00 Group work presentations

15:00 - 15:30 Discussions

15:30 - 17:30 Introduction to group work II L. Muhe  
Group work II: Options to accelerate IMCI training to increase coverage and ensure sustain continued learning

18:30 Reception

## Day 3

Chairperson: J. Martines  
Rapporteurs: K. Mwinga  
A. Goga

09:00 - 10:00 Group presentations

10:00 - 10:30 Discussion

10:30 - 11:00 Coffee Break

11:00 - 13:00 Panel discussions: IMCI additional/alternative training approaches: what changes may need to be made?  
Pre-service IMCI training (topic of next two days)  
Distance learning D. Woods  
ICATT E. de Haans  
Innovative methods to improve IMCI training S. Gove

13:00 - 14:00 Lunch

14:00 - 15:30	Discussions on recommended options of IMCI training methods
15:30 - 16:00	Coffee Break
16:00 - 17:30	Recommendations to CAH on way forward

## Day 4

### IMCI pre-service training

Chairperson:		D. Oluwole
Rapporteurs:		A. Mbewe F. de Haan
09:00 - 09:30	Objectives of IMCI pre-service training tools and guidelines developed by CAH	S. Aboubaker
09:30 - 09:50	Global status and lessons learned (brief presentation from the background document)	S. Kebede
09:50 - 10:30	Discussion	
10:30 - 11:00	Coffee Break	
11:00 - 12:30	Review of country experiences from paramedical schools The PAHO experience and lessons learned (20 minutes) The Tanzanian experience and lessons learned (20 minutes) Discussion	C. Drasbek G. Mutahyabarwa
12:30 - 13:00	IMCI pre-service training in the medical schools Experience from Egypt on the process of introducing IMCI pre-service (20 minutes presentation) Discussion	M. Omar
13:00 - 14:00	Lunch	
14:00 - 14:20	Experience from Sudan: Evaluation of IMCI pre-service in medical schools, lessons learned	Z. Karrar
14:20 - 14:40	Challenges in strengthening teaching on child health: The African experience	A. Mbewe
14:40 - 15:00	IMNCI pre-service evaluation: Experience from India on sustainability and expansion	S. Bhatnagar
15:00 - 15:45	Discussion	
15:45 - 16:15	Coffee Break	
16:15 - 17:30	Group work to discuss challenges and solutions	

## Day 5

Chairperson:  
Rapporteurs:

E. Mason  
C. Drasbek  
A. Rowe

09:00 - 10:00	Plenary - presentation of group work	
10:00 - 10:30	Towards the development of a responsive curriculum	K. Forsyth
10:30 - 11:00	Coffee Break	
11:00 - 11:30	Discussion	
11:30 - 13:00	Group work on what CAH should do to support strengthening teaching in medical and paramedical schools	
13:00 - 14:00	Lunch	
14:00 - 15:00	Plenary group presentations on what CAH should do	
15:00 - 15:30	Coffee Break	
15:30 - 17:00	Recommendations and way forward for CAH	



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