

# Scaling up integration:

## workforce lessons from global child health strategy<sup>1</sup>

Ameena E. Goga and Lulu M. Muhe

### Background

Integrated services that offer comprehensive care for all symptoms are critical for efficient, cost-effective, patient-centred health-care services; however, challenges exist in preparing the workforce for such integrated interventions.

The Integrated Management of Childhood Illness (IMCI) strategy, developed by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), has been identified as key to meeting the fourth Millennium Development Goal (MDG4). IMCI has three components: case management training (ICMT); strengthening the health system; and intensifying household and community behaviours to improve child health. It is presented as an 11-day course (usually residential) and teaches health-care providers to manage sick children up to the age of 5 years presenting to primary health-care facilities with illnesses that account for major childhood morbidity and mortality.

The course comprises six key modules and clinical practice. The WHO recommends that 44.2 per cent of course time is spent on clinical practice, 1.2 per cent on Introduction, 20.9 per cent on Assess and Classify, 4.9 per cent on Identify Treatment, 11.6 per cent on Treat the Child, 6.9 per cent on Counsel the Mother, 6.9 per cent on Sick Young Infant and 3.5 per cent on Follow-up. The IMCI management algorithms or charts are colour coded and each trained health-care provider is provided with a chart booklet to use during consultations.

Each ICMT course is facilitated by trained facilitators and a ratio of 1:<4 participants to facilitators is recommended. Follow-up after training is an essential component, as laid down in the IMCI information package. The package describes the follow-up as an opportunity to reinforce skills acquired during training and solve problems encountered during IMCI implementation. The approach to follow-up developed by the WHO Department of Child and Adolescent Health and Development (CAH) also serves as a bridge to ongoing district-level supervision.

ICMT has been shown to reduce under-five mortality and to improve antimicrobial use in first level facilities. Yet, despite data on the effectiveness of IMCI in decreasing inappropriate antimicrobial prescription by health workers and improving quality of care, child health indicators, quality of counselling provided to caregivers and bed net use, current global coverage by IMCI-case management-trained health workers is low. Furthermore, recent data from South Africa showed that although health workers there were implementing IMCI, clinical assessments using IMCI were frequently incomplete – only 18 per cent checked for all main symptoms. Focus group discussions among health workers in South Africa also showed that although they found the training interesting, informative and empowering, the training time was short and

follow-up visits, though helpful, were often delayed resulting in no ongoing clinical supervision.

### Study on IMCI implementation globally

In view of the potential contribution that IMCI scale-up could have on childhood morbidity and mortality and the dearth of documented information on how IMCI was actually being implemented globally, we conducted a survey in 2006 to review the training approaches and methods used for IMCI case management, document challenges to rapid scale-up of ICMT, document how countries are addressing these barriers and explore country experiences with follow-up. It was intended that this information be used to guide future approaches to ICMT. The first two questions (reviewing training approaches and methods) have been addressed in a separate paper (Goga et al., 2009). This paper reports the challenges to rapid ICMT scale-up, how countries have tried to address these and country experiences with follow-up of IMCI trainees.

All six WHO regions were included so that a global picture of IMCI training approaches could be ascertained. The WHO (CAH) purposively selected 27 countries (including one sub-national region – Kosovo). Country selection criteria included a high under-five mortality rate and presence of a WHO National Professional Officer (NPO). The study population comprised purposively selected key informants from each country: the national focal person for IMCI (one per country) and/or WHO National Programme Officer for IMCI (one per country); IMCI course directors or facilitators (two per region/province within each country) and IMCI-trained health workers. The course directors/facilitators should have directed/facilitated two or more IMCI case management courses. Data were collected over a five-month period (January to May 2007).

### Challenges to implementation – and how addressed

Tables 1 and 2 show the challenges to IMCI implementation, as perceived by IMCI national focal persons/WHO NPOs, in general (Table 1) and by country (Table 2). Inadequate funding for training was perceived as a challenge to rapid scale-up of implementation by 71 per cent of National Ministry of Health (MOH)/NPO staff and course directors/facilitators. The commonest challenges, as perceived by IMCI national focal persons/NPOs, were the high cost of the course, inadequate funds for training and the long duration of the course.

The commonest barrier to scale-up, as perceived by course directors and facilitators, was funding – specifically inadequate funds for/high cost of training. Qualitative work (open-ended questions and projective techniques) highlighted five themes that emerged as barriers to rapid acceleration of IMCI case



*Health-care providers treat children at a hospital in United Republic of Tanzania*

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management training: strategic differences regarding the role of IMCI (vertical programme versus integrative approach); lack of political support; lack of human and material resources and time for IMCI implementation; poor reading ability of health workers; and mismatch between training needs and resources available.

IMCI national focal persons and NPOs reported that challenges have been addressed in several ways, including increased advocacy for IMCI or creation of structural/ administrative links between district or national functioning and IMCI, redistribution of funds or increased donor support, non-residential courses, shortening the duration of training and reducing the amount of reading during training. A randomised trial in Zambia – which compared performance of primary health workers trained in the 11-day course with those trained in the 6-day abridged course – found no significant difference in 10 of 12 priority and 14 of 15 supplemental indicators assessing health worker performance (Mwinga et al., 2007). However, the efficacy of shortened training needs to be further investigated.

Several approaches to overcoming barriers to IMCI implementation are currently being tested:

- Since 2009 the IMCI Computerised Adaptation and Training Tool (ICATT) – an innovative software technology to support the

adaptation of generic IMCI guidelines at national and sub-national levels – has been tested in several settings including East Java, Indonesia, Peru and United Republic of Tanzania (WHO, 2010).

The course was tested in a classroom setting in Peru and Tanzania and then as distance-learning material in East Java, Indonesia and Tanzania. ICATT is still undergoing further refinement but could be an innovative way to reduce the burden of training both financially and from a human resource perspective.

- In United Republic of Tanzania D-Tree International has been working to improve the use of the IMCI protocols through the development of an electronic version of IMCI (eIMCI) for use on cell phones and other mobile devices (D-Tree International, n.d.). The software runs on a PDA or mobile phone and guides health workers step-by-step through the full IMCI assessment, classification and treatment plan. The software was designed for ease of use and the training of clinicians took less than one hour in all cases. D-Tree has piloted e-IMCI in rural Tanzania where initial results indicate that clinicians were enthusiastic about this and more closely adhere to the IMCI protocol when using it than without it. A large-scale study is currently underway to validate these initial findings and to examine e-IMCI's cost-effectiveness.
- In South Africa a distance-learning IMCI project is being implemented as a major alternative to ICATT and eIMCI.

## Challenges to follow-up after training

According to respondents 48.7 per cent (95 per cent CI 35.9–61.7 per cent) of IMCI trainees were followed up within six weeks of IMCI case management training, and only 52.5 per cent (IQR 44 per cent) of follow-up visits were linked with routine supervision. IMCI national focal persons/NPOs reported that the commonest challenges to IMCI follow-up were lack of funding for follow-up (93.1 per cent of respondents), travel (75.9 per cent); planning (44.8 per cent); lack of gas for travel (41.4 per cent); inadequately trained supervisors (41.4 per cent); inadequate number of skilled supervisors (41.4 per cent); and inadequate job aids (27.6 per cent).

IMCI national focal persons and NPOs reported several attitudes and experiences of follow-up after training. While some facilitators and course directors accepted that follow-up is an integral part of training, others seemed unable to plan for integration of IMCI follow-up activities into their daily work. Similarly although IMCI-trained health workers recognised the importance of follow-up, a group of trained health workers also expressed despondency about follow-up, likening it to policing. They also highlighted the lack of skill or possible lack of human resources to undertake follow-up. Furthermore four main suggestions about follow-up after ICMT emerged: viewing follow-up as an important part of IMCI training; emphasising that follow-up strengthens practical skills and establishes technical support; planning follow-up before a course is planned; and linking follow-up with ongoing routine supervision of services.

## Conclusions

Health systems constraints such as transport or supervision to scale-up and follow-up after training have been described in other studies. For example, Bryce et al. (2005) found that four of the five<sup>2</sup> IMCI multi-country evaluation countries (the exception is United Republic of Tanzania) had difficulties in expanding the strategy at national level while maintaining adequate intervention quality. They found that the full weight of health system limitations on IMCI implementation was not appreciated at the outset, and only after investigation was it clear that finding solutions to larger problems such as political commitment, human resources, financing, integrated or at least coordinated programme management and effective decentralisation are essential underpinnings of successful efforts to reduce child mortality.

Acknowledging that health systems in many countries where IMCI would be most beneficial are weak, almost all IMCI focal persons/NPOs suggested that the approach to IMCI training should be reviewed to avoid nominal implementation: the combination of a long, costly course to be rolled-out in countries with critical health system constraints such as staff shortages may only cripple the reputation of a strategy that could potentially be one of the key interventions to reducing infant and child mortality rates and meeting the fourth MDG.

This paper does not raise new issues about challenges to IMCI scale-up; in fact the follow-up recommendations echo the 1998 Follow-Up Guidelines in the IMCI information pack, signifying little

**Table 1**

### Perceived challenges to IMCI implementation globally – number (%)

	<i>Opinion of national Ministry of Health / WHO National Professional Officer</i>	<i>Opinion of Course Directors / Facilitators</i>
<b>Political</b>		
Lack of buy-in from regional stakeholders	14 (45.2)	38 (23.5)
Competing priorities	7 (22.6)	115 (71.4)
<b>Cost</b>		
Inadequate funds for training	22 (71.0)	115 (71.4)
Too expensive	23 (74.2)	55 (34.0)
Inadequate funds for printing modules	12 (38.7)	62 (38.3)
Inadequate funds for refreshments	11 (35.5)	52 (32.1)
Inadequate funds for copying video	10 (32.3)	45 (27.8)
Prohibitive financial regulations	13 (41.9)	43 (26.5)
<b>Human Resources</b>		
Lack of facilitators	15 (48.4)	16 (9.9)
Lack of clinical instructors	13 (41.9)	30 (18.5)
Demands too high calibre trainers	11 (35.5)	38 (23.5)
<b>Other</b>		
Inadequate facilities for copying the training video	8 (25.8)	28 (17.3)
Long duration of course	16 (51.6)	40 (24.7)
Lack of clinical materials	5 (16.1)	30 (18.5)
Lack of transport	6 (19.4)	22 (13.6)

change since 1998. But it does confirm the challenges based on data from all six WHO regions, twelve years after IMCI was implemented, and through the eyes of several cadres of health workers from national level to sub-district level. The grave concern is that the qualitative data highlights a sense of despondency that surrounds aspects of IMCI scale-up, e.g., follow-up after ICMT.

Integrated maternal and child health services that offer comprehensive care for all symptoms experienced by mothers and children – the ‘one-stop shop’ concept – is critical for efficient, cost-effective, patient-centred health-care services. This assumes more importance when chronic or non-communicable diseases underlie acute infectious disease processes. The usual dichotomy lies between ensuring quick actions – e.g., implementing interventions sufficiently early to prevent mother-to-child

transmission of HIV, which has resulted in vertical programmes – and working with existing systems to implement interventions, which is often time consuming. IMCI experiences have shown the benefits of implementing comprehensive integrated approaches to child health, and lessons learnt indicate that the workforce can be prepared for integrated strategies in several ways:

- Locate every new programme or intervention within the wider strategy and clearly describe this during orientation and training.
- Define and allocate clear lines of communication between managers and between managers and health-care personnel implementing the ‘new programme/ intervention’. More frequently, personnel implementing the ‘new package’ are also in charge of implementing the existing interventions.

**Table 2**

**Perceived challenges to rapid scale-up of IMCI implementation by region and country – data from MoH/NPO**

Region	Country	Lack of buy-in from national stakeholders	Competing priorities	Long duration of course	Prohibitive financial regulations	Too expensive	Inadequate funds for:					Lack of:				Course demands highly skilled trainers		
							T	PM	R	A	CV	CM	T	F	CI			
AFRO	Eritrea		✓	✓	✓		✓	✓	✓				✓	✓				
	Ethiopia		✓	✓	✓	✓	✓	✓			✓		✓	✓	✓		✓	
	Ghana					✓	✓								✓		✓	
	Kenya	✓		✓		✓	✓		✓	✓		✓			✓		✓	
	Madagascar	✓		✓	✓	✓	✓		✓	✓				✓	✓		✓	
	Niger		✓	✓	✓	✓	✓											
	Nigeria	✓		✓	✓	✓	✓						✓		✓		✓	
	Uganda	✓						✓	✓	✓		✓						✓
	United Rep. of Tanzania	✓					✓	✓			✓			✓				✓
	Zambia																	
WPRO	Cambodia	✓	✓	✓	✓	✓	✓					✓		✓	✓		✓	
	China			✓		✓	✓	✓	✓	✓	✓							
	Fiji		✓	✓			✓							✓	✓			
	Papua New Guinea																	
	Vietnam	✓		✓		✓												
SEARO	India			✓	✓						✓		✓	✓	✓			
	Indonesia	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
	Nepal				✓	✓												
EURO	Kazakhstan						✓	✓	✓		✓			✓				
	Kosovo	✓		✓		✓	✓	✓										
	Republic of Moldova	✓				✓	✓	✓	✓	✓				✓				
	Uzbekistan	✓				✓	✓	✓		✓	✓	✓						
EMRO	Sudan		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓		
PAHO	Peru		✓				✓							✓				
	Nicaragua						✓							✓				

**Key:** **Inadequate funds for:** T = Training; PM = Printing modules; R = Refreshments; A = Accommodation; CV = Copying video; **Lack of:** CM = Clinical materials; T = Transport to clinics; F = Facilitators; CI = Clinical instructors

- Develop cost-effective, resource-restrained, efficient training packages that make use of an existing cadre of trainers or training packages and capitalise on cell phone and e-technology for training.
- Extend training over a defined time period that combines in-service 'on the job in the routine facility' training with 'out of routine facility training' to facilitate implementation of learned information.

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## Endnotes

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<sup>2</sup> Bangladesh, Brazil, Peru, Uganda and United Republic of Tanzania.

**Ameena Goga** is a South African paediatrician and Lactation Consultant with a Masters in Epidemiology (Columbia University), Masters in Mother and Child Health (Centre for International Child Health, ICH, London) and Certificate in Integrative Medicine. Her experience includes clinical duties in South Africa and the UK, student supervision and examination (Masters, MMed and PhD students), evidence-based policy-making and research. **Lulu Muhe**, MD, PhD, works in the Department of Maternal, Newborn, Child and Adolescent Health (MCA) at the World Health Organization, Geneva and is Professor of Paediatrics, Addis Ababa University. She is currently responsible for development and updating of IMNCI, policy guidelines on paediatric HIV care and treatment and policy guidance to countries on training approaches (e-learning and distance learning) and is the focal person for child health in humanitarian emergencies.