



INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS

Global Survey Report



World Health
Organization

Integrated Management of Childhood Illness global survey report
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Dr Anthony Costello

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My first action as Director of the WHO Department of Maternal, Newborn, Child and Adolescent Health was to commission a review of the Integrated Management of Childhood Illness (IMCI) strategy. As a paediatrician who has worked in resource-poor countries, I have witnessed IMCI's vital contribution to reducing child mortality and morbidity and in ensuring practitioners and policymakers take a holistic view of the health of the child. IMCI and its sister policy, integrated Community Case Management (iCCM), are two of the most widely implemented child health strategies worldwide. Whether in Nepal or India, Ethiopia or Malawi, I have met front-line health workers grateful for the IMCI training they received, because it helps them feel confident about providing children with the best standard of care. Nonetheless I realised we lacked a comprehensive data set on the extent to which the IMCI strategy had been implemented worldwide. After 20 years of implementation, we needed to know much more about the IMCI coverage, successes and challenges.

This report presents the results of a 2016 global survey of IMCI and iCCM implementation – the most comprehensive review yet of on-the-ground realities of two leading child health strategies focusing on case management. Included are responses from 95 countries accounting for around 95% of the 5.9 million deaths occurring among children less than five years of age. In addition to providing detailed statistics, the survey also shares reflections from the people charged with implementing these strategy. These views provide insights into factors that facilitated or blocked progress, and ideas for the way forward. The results provide a further look at the dynamics previously explored in the 2003-05 Multi-Country Evaluation and the 2004 Analytic Review of IMCI.

This survey is important for the future. As we engage in a re-design of our child health strategies, the IMCI survey data will help understand the base we are working from – and what is needed to prevent newborn and child mortality and ensure each child's healthy growth and development. WHO's new Director-General Dr. Tedros Adhanom Ghebreyesus has made universal health coverage and the health of women, children and adolescents as two of his five priorities. Progress has been good but there is much to be done. This survey report gives us much food for thought about how we can accelerate progress.

I'm so proud of the many people who have contributed to the report, from colleagues at regional level who helped design and refine the survey instrument, to the hundreds of people in countries who took the time to locate and report accurate information and reflect on their experiences with IMCI in country. At WHO headquarters, many staff members participated, but special thanks are due to Cynthia Boschi-Pinto and Guilhem Labadie, who worked tirelessly to ensure this report's accuracy, readability, and aesthetic excellence. Children are our most precious resource – and IMCI has played a central role in protecting their health. This report will help us to refine and improve care for children everywhere.



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Abbreviations and acronyms

ACT	Artemisinin Combination Therapy	SAM	Severe Acute Malnutrition
AIDS	Acquired Immune Deficiency Syndrome	SMS	Short Message Service
BCC	Behaviour change communication	SDG	Sustainable Development Goal
BCG	Bacillus Calmette–Guérin vaccine	TB	Tuberculosis
CHD	Child Health and Development	UNICEF	United Nations Children’s Fund
CHW	Community Health Worker	UN	United Nations
c-IMCI	Community Integrated Management of Childhood Illness	UN-IGME	United Nations Inter-Agency Group For Child Mortality Estimation
CCM	Community Case Management	U5MR	Under Five Mortality Rate
diMCI	Distance-learning Integrated Management of Childhood Illness course	WHO	World Health Organization
DHIS2	District Health Information Software version 2		
DIVA	Diagnose, Intervene, Verify and Adjust		
DPT	Diphtheria Pertussis Tetanus		
ECD	Early Childhood Development		
EDC	Essential Drugs Concept		
e-Health	Electronic Health		
EML	Essential Medicines List		
EQUIST	Equitable Impact Sensitive Tool		
ETAT	Emergency Triage Assessment and Treatments		
GDP	Gross Domestic Product		
Hib	Haemophilus influenzae type B		
HIV	Human Immunodeficiency Virus		
HMIS	Health Management Information System		
ICATT	Integrated Management of Childhood Illness Computerized Adaptation and Training Tool		
icCM	Integrated Community Case Management		
ICT	Information Communication Technologies		
IMCI	Integrated Management of Childhood Illness		
IMNCI	Integrated Management of Newborn And Childhood Illness		
LMIC	Low- And Middle-Income Countries		
LMIS	Logistics Management and Information Systems		
BBB	Marginal Budgeting for Bottlenecks		
MDG	Millennium Development Goal		
MDG4	Millennium Development Goal – Target 4		
m-Health	Mobile Health		
MOH	Ministry of Health		
MNCH	Maternal, Newborn and Child Health		
NGO	Non-Governmental Organization		
NPOs	National Professional Officers		
ORS	Oral Rehydration Salts		
PCV	Pneumococcal Conjugate Vaccine		
PIFRA	Pakistan Improvement to Financial Reporting and Auditing Project		
PHC	Primary Health Care		
QOC	Quality of Care		
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health		
RTV	Reservoir-Targeted Vaccines		



Executive summary

Each year 5.9 million children under-five die, mainly from easily preventable and treatable causes (Liu et al., 2016) and many more fail to reach their full potential in terms of healthy growth and development. Integrated Management of Childhood Illnesses (IMCI) is a premier global child health strategy created in the mid-1990s to address these problems, and is widely implemented around the globe. Much work has been done and published in the scholarly and gray literatures on different aspects of this strategy's implementation and effectiveness over the past 20 years, but to date there has been no holistic description of IMCI implementation worldwide. This report, based on results from a global survey on IMCI implementation, attempts to fill that gap.

The global survey was part of the Strategic Review of IMCI (WHO 2016) and was carried out from April – June 2016 to assess the extent to which this strategy has been adopted and scaled up in countries since its outset. This report presents the main results from the survey and provides an overview of the current status of global implementation of IMCI as informed by countries. It also describes the main strengths and barriers of implementation, as stated

by respondents, as well as ways forward suggested by country-level implementation partners in countries around the world.

Questionnaires were sent to 130 WHO Member States, and 104 countries (80%) responded. In the end, 95 countries implementing IMCI were considered for the final analysis, which in 2015 were home to 82% of the global under-five population and accounted for 95% of the 5.9 million child deaths occurring that year.

In 1998, shortly after IMCI's inception, 12 countries had already moved into a phase of expansion of the first IMCI component - improving health worker skills, and had begun introducing the strategy's other two components: strengthening health systems and improving family and community practices (Tulloch 1999). Twenty years later, coverage of IMCI is reported to be comprehensive in many target countries: at least two-thirds of the 95 countries that responded to the survey questionnaire reported implementation in 90% or more districts in 2016. However, although many countries have expanded aspects of implementation to a large proportion of their districts, few have achieved full scale up and, in many aspects, implementation remains incomplete.

Moreover, despite the high reported implementation rates, the strategy is still not reaching the children who need it most: coverage of IMCI is lowest in high mortality countries.

One of the factors originally identified by early reviewers of IMCI as influencing the general success of IMCI was the establishment of a management structure, such as a working group or task force, with early experience also suggesting the need to identify a coordinator. As countries have moved towards decentralization in recent years, the existence of sub-national focal points has increased in importance. Results from this survey show a higher proportion of countries with an IMCI focal point at national level than at the sub-national (regional or district) level. Notably, nearly 90% of high mortality countries had a national focal point, but less than half had sub-national focal points.

There is widespread recognition that IMCI will only result in improvements in child health and survival if training activities are accompanied by effective efforts to strengthen health systems and reach children and mothers in the community. The first component, improving health worker skills, is the most widely implemented. Ninety-two of 94 responding

countries (98%) reported having implemented it. In addition, in most countries (58%; 43/74), half or more of the first level health facilities had at least 60% of health workers involved in child care trained in IMCI (a key indicator of effective implementation). Many countries have added conditions to the guidelines to adapt them to regional and national epidemiological profiles, or to emerging priorities. For example, recognizing the increased importance of the burden of newborn mortality, nearly all countries (95%) have adapted IMCI guidelines to include care of the sick newborn in the first week of life. Countries have also made changes to make IMCI implementation more feasible or affordable, such as by using shortened or abridged versions of the original 11-day course. Some limited evidence suggests that the original longer course is more effective than shortened training, but there is a trade-off due to concerns regarding the longer training's cost and the resulting lengthier absence of health workers from the services.

Regarding the second component, strengthening health systems, 89 of 94 countries (95%) reported implementing it, although significantly lower numbers reported adopting specific activities under this component. For example,

while improving and sustaining the quality of paediatric care is an integral part of strengthening health systems, only 58% of the 92 responding countries reported having a paediatric quality of care improvement programme for health facilities in their Ministry of Health (MoH). Supervision – considered key for sustainable health system strengthening – was found to be the weakest area, with only 15% of countries reporting that more than 75% first level health facilities had at least one supervisory visit in the six months before the survey. Monitoring of IMCI implementation – also considered critical for strengthening health systems – was found to be infrequent. Only one-third of countries (30/91) reported having a comprehensive IMCI monitoring and evaluation plan, and in high mortality countries, this existed in only 15% (3/20).

With respect to the third component, 78 of 94 countries (83%) reported implementing activities toward improving family and community practices. While 89% (48/54) of medium and high mortality countries said they implemented this component, only 75% (30/40) of low mortality countries reported implementing it. In general, activities to promote key family practices for child health have been conducted

through home visits, and through social mobilization or community groups. Most commonly used delivery mechanisms were home visits for counselling on key family practices; home visits in the postnatal period; and home visits during pregnancy and community groups. Social mobilization was reported by 59% of countries. Overall, the proportion of countries using home visits as delivery mechanism was higher among high implementer countries.

Activities to strengthen health systems and reach communities were by far the least implemented of IMCI's three components, across all countries. Thus, full implementation of this strategy has yet to be seen.

Community case management (CCM) was not initially included in IMCI and came later on its heels, after policymakers realized that many child deaths occurred in the community, before the child reached the health centre. Although many countries reported having adopted policies and having implemented CCM using community health workers (CHWs) to diagnose and treat diarrhoea and malaria, this was much less common for pneumonia. In 2012, the key elements of CCM were integrated and brought together in a package

- iCCM, typically delivered by CHWs at the community level. iCCM was reported to be implemented in 72% of countries, although the policy was present in a higher proportion.

Forty-four countries have reported implementing IMCI in more than 90% of districts and also having all three IMCI components in place; these are considered full implementer countries. These countries are home to 160 million of the global under-five children. MDG4 achievement is a critical consideration in measuring country's success in the reduction of under-five mortality. Full implementer countries were 3.6 [95% CI 1.5 – 8.9] times more likely to achieve MDG4 than other (not full implementer) countries. Our results reinforce the original concept that full implementation of IMCI can lead to substantial impact on child health and survival.

The survey asked respondents to identify key strengths and barriers in the implementation of IMCI, providing valuable field-level perspective on what has worked – and what hasn't worked – from country stakeholders familiar with operational details. Before this survey, such a detailed subjective evaluation of IMCI implementation was not available from such a broad global sample of country stakeholders and implementers. Perhaps

unsurprisingly, the most commonly mentioned barriers to implementation have their roots in insufficient funding and weak health systems: staff turnover, motivation and retention were cited as major challenges. Nevertheless, the major strengths identified - the holistic approach to the child, the rational use of medicines, the quality of health services, and the efficiency of service provision - offer both a validation of the strategy's overall conception, and useful feedback for global stakeholders working on a forthcoming re-design of global strategies for child health and development.

Limitations inherent to survey design, such as the fact that respondents may tend to provide a more "positive" scenario than the reality, condition interpretation of its results. However, the 2016 IMCI survey provides a unique and needed data set to understand how and in which direction the implementation of IMCI has evolved over 20 years since its inception – as well as stakeholders' subjective perceptions about what worked well, and what could have worked better. The results are also valuable in that they provide the first comprehensive look at this global key strategy for addressing child health in countries with the highest levels of mortality and morbidity.

Results also point to a unique opportunity to help steer future policies, programmes and strategies. Given the many competing priorities of survey respondents, the 80% response rate obtained reveals the interest IMCI still elicits, especially in low and middle income countries, and suggests a strengthened IMCI has a role to attend the call for "Survive, Thrive, Transform" from the Global Strategy for Women's Children's and Adolescents' Health 2016-2030. The 95 countries that responded to the survey are home to the vast majority of under-five population and account for 95% of under-five deaths. These results therefore provide learnings from the past and directions on the future of global child health strategies, as well as guidance on how to promote the health and survival of children, including in emergency settings. Recognized by implementers as an efficient and equitable strategy, IMCI full implementation in health facilities and communities with a critical focus on health system strengthening and on emergency crises will be decisive for countries to secure Universal Health Coverage (UHC) and to help achieve the UN health-related, post-2015 Sustainable Development Goals (SDGs).



Introduction



Background: a short history of IMCI evolution

In the early 1990s, child health experts observed that most sick children presented with signs and symptoms that were related to more than one condition. Moreover, there was recognition that single treatments or programmes alone were not obtaining success in reducing mortality as expected. Therefore, consensus began to form that a more integrated approach to managing sick children was indicated and that child health programmes needed to go beyond single diseases and address the overall health of the child. As a response, the WHO Department of Child Health and Development (CHD), in collaboration with other WHO programmes and UNICEF, developed the strategy on **Integrated Management of Childhood Illness (IMCI)**¹ (Tulloch, 1999) to respond to the challenge of reducing death, decreasing the frequency and severity of illness and disability and improving child growth and development (WHO, 1999e). The strategy was targeted to be appropriate for countries where under-five mortality rate (U5MR) was higher than 40 per 1000 live births (WHO, 1999d; Gove, 1997), focusing on the most important causes of child mortality. Fig. 1. shows a health professional treating a child using IMCI.

Part of the rationale behind the integrated approach of

the strategy resides in the following:

- More than one diagnosis may be necessary because most sick children present with signs and symptoms of more than one condition. Thus, health workers need to be prepared to assess the signs and symptoms of all of the most common conditions, not simply those of a single illness;
- When a child has several conditions, therapies for those conditions may need to be combined. Health workers need to be prepared to treat conditions when they occur in combination;
- Care needs to focus on the child as a whole and not just the diseases and conditions affecting the child;
- Other factors that affect the quality of care delivered to children, such as drug availability, organization of the health system, referral pathways and services, and community behaviours, are best addressed through an integrated strategy (WHO, 1999b).

IMCI Planning Guide was published in 1999 and describes a phased approach to planning and implementing the strategy (WHO & UNICEF, 1999b). From the beginning, the strategy has been based on three components : 1) **Improving skills of health**

workers through the provision of training, locally adapted case management guidelines and activities to promote their use; 2) **Strengthening health systems'** effective management of childhood illness, including supervision and supply; and 3) **Improving family and community practices** (WHO, 1999b) through recommended actions at household and community level.

Regarding the first component, the generic IMCI chart booklet was developed and published in 1995 based on existing evidence (WHO, 2008). At that time, half of the current 194 WHO Member States had an U5MR higher than 40 per 1000 live births (UNICEF et al., 2015). With the substantial worldwide progress in reducing U5MRs since then, this proportion fell to 42% in the year 2000 and to 30% in 2015 (UNICEF et al., 2015). Together with the decline in the level of mortality, the relative importance of the main causes of death has also been shifting over time (Were et al., 2015). At IMCI's inception, in the mid-1990s, approximately 11 million children in developing countries died before reaching their fifth birthday, many during the first year of life. Most of these deaths were caused by acute respiratory infections, diarrhoea, measles, malaria

¹ For simplification purposes, IMCI will be discussed here as a broad term, also encompassing IMNCI (Integrated Management of Neonatal and Childhood Illness), which includes care for newborns and young infants; and iCCM (integrated community case management of childhood illnesses)

or malnutrition - and often by a combination of these problems (WHO, 1997b). In the year 2000, more than half of the 9.8 million under-five deaths were still due to these same diseases and conditions. This proportion is currently 43% (WHO, 2017a). Although pneumonia and diarrhoea remain among the top causes of death of the young child, congenital anomalies, non-communicable diseases, and injuries, for example, are becoming increasingly important causes of morbidity and mortality in childhood in countries where under-five mortality is declining (Were et al., 2015).

The generic algorithm and

training tools of IMCI were adapted over time to allow the inclusion of other conditions such as HIV and tuberculosis. National adaptations took into account local epidemiology as well as health system characteristics (including emergency contexts). They also responded to cultural specificities, such as local terms for signs of illness, and local foods for infant and young child feeding. Management of illnesses in the first week of life was added to the strategy later on. In 2002, the IMCI Adaptation Guide (WHO & UNICEF, 2002) was developed to assist countries to adapt the generic IMCI guidelines.

The Pocket Book for

hospital Care for Children was developed in 2005; it was revised and reissued in 2013, and an electronic version was made available in 2015. In addition, alternate approaches to training have been developed and tested, including IMCI Computerized Adaptation and Training (ICATT) and IMCI Distance Learning Course both developed in 2009.

Regarding the second component, health system improvements were supported by "Guidelines for Follow-up After Training" in 1999. These guidelines describe tasks related to follow-up visits. In order to evaluate the quality of care delivered to sick

children attending outpatient facilities, WHO published the Health Facility Survey tool (WHO, 2003a). Managing programmes is essential for strengthening health systems. WHO published a package devoted to this – "Managing Programme to Improve Child Health" in 2009 (WHO, 2009).

The third component of IMCI, or improving family and community practices, became known by the shorthand term "Community IMCI" or "C-IMCI", an approach intended to empower communities and households to develop healthy and safe practices to protect the health of children under 5 years of age. In 1998, WHO and UNICEF developed "Family and Community Practices", a set of 16 effective key family practices to improve child health (WHO, 1999g). Between 2004 and 2012, WHO and UNICEF broadened the approach to include

hands-on care and released three related joint statements successively: on the management of pneumonia in community settings (WHO & UNICEF, 2004); on home visits for newborn care (WHO & UNICEF, 2009); and on the integrated community case management (iCCM) (UNICEF & WHO, 2012). Intended as a community-based adaptation and extension of IMCI, iCCM is an equity-focused strategy that complements and extends the reach of public health services by providing timely and effective treatment of malaria, pneumonia and diarrhoea to populations with limited access to facility-based health care providers (WHO, 2016a).

Finally, in 2015, the package Caring for newborns and children in the community (WHO, 2015) was released. This three-part package targets the community health worker (CHW), and provides

guidance on home visits for newborn health; home visits and other contacts for children's healthy growth and development; and iCCM of childhood illness. Figure 2 summarizes the story of IMCI.

Previous reviews of IMCI have been conducted over time. The Multi-Country Evaluation of IMCI was carried out in 2001 onwards (Bryce et al, 2004) and included studies of the effectiveness, cost, and impact of the IMCI strategy in Bangladesh (Arifeen et al, 2008), Brazil (Amaral et al, 2004), Peru (Huicho et al, 2005), United Republic of Tanzania (Armstrong Schellenberg et al, 2004), and Uganda (Pariyo et al, 2005). The Analytic Review was carried out in 2002/2003 and included desk reviews, visits by inter-agency teams, and key informant interviews (WHO, 2003b).



Fig. 1. A doctor treats patients at the IMCI facility at the General Hospital in Tangail on 10 March 2013.

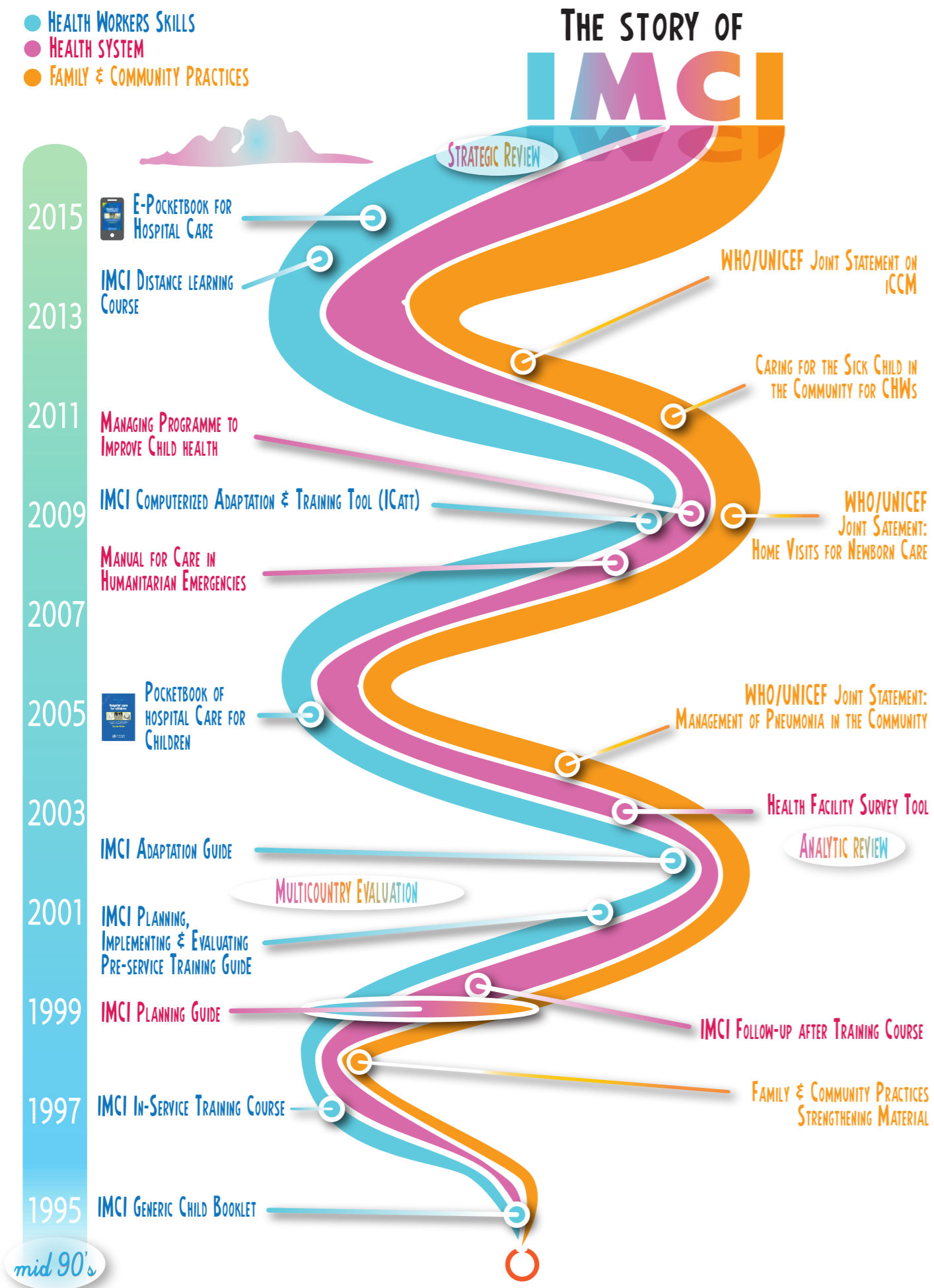


Fig. 2. The story of IMCI



The global implementation survey

Since the launch of IMCI, evidence of effective interventions, delivery approaches and technologies to increase access and coverage of essential child health interventions have evolved rapidly. There is global recognition that the strategy requires review and repositioning. In 2016, WHO conducted a global assessment of IMCI implementation and situation analysis to provide strategic directions on how to achieve the ambitious goal of ending preventable newborn and child mortality and promoting child health and development (WHO, 2016c; Dalglish, 2017). As part of this Strategic Review, the IMCI Global Survey was carried out in April – June 2016 to assess the extent to which the strategy has been adopted and scaled up in countries over the past two decades and to understand the current implementation status, challenges and evolution of IMCI. The survey looked at coverage; organization and funding of IMCI; policy and guidelines

developed/adopted; implementation of each of the three IMCI components and of additional activities; innovations; strengths and challenges. This report brings together the main results of the survey and provides an overview of the current status of global implementation of IMCI as informed by countries. It also presents the main strengths and barriers in IMCI implementation, as stated by respondents, as well as suggested ways forward.

Purpose of the survey

The Global IMCI Survey was designed to show the extent to which each of the three components of IMCI have been adopted and scaled up in countries.

Methodology

The survey instrument (Annex 3) was developed by WHO with inputs from UNICEF and tested by staff in different WHO regions (African, Eastern Mediterranean and South-East Asia) to ensure that questions were clear and appropriate. The testing also allowed an estimate of the amount of time needed to complete the questionnaire. Most questions are close-ended but some open-ended questions on strengths, barriers and ways forward are also included at the end of the questionnaire.

The final version of the survey

was made available in all six UN languages (Arabic, Chinese, English, French, Spanish and Russian). WHO regional offices provided support and follow-up. Questions and data analysis focused on providing: 1) a general overview of the current level of organization and financing of IMCI at country level; 2) a description of implementation of IMCI's three original components and of some additional components, such as iCCM; and 3) an account of the innovations, barriers and opportunities in expanding access to care for the

sick child. Questionnaire instructions asked that responses be provided by in-country teams consisting of representatives of the ministry of health (MoH) and country offices of WHO and UNICEF. Responses were tracked by WHO regional offices to maximize return and clarify inconsistencies or omissions.

Data analysis was disaggregated by levels of under-five mortality rates (U5MRs), WHO regions, national income, and extent of IMCI implementation. Information on under-five



mortality (numbers and rates) for 2015 was obtained from the United Nations Inter-agency Group for Child Mortality Estimation (UN-IGME) report on levels and trends in child mortality (UNICEF, WHO, World Bank and UN-DESA Population Division, 2015) and mortality rates were categorized into low (≤ 40 deaths per 1000 live births), middle (40-80 deaths per 1000 live births) and high (> 80 deaths per 1000 live births). Countries were classified by income level (low, middle, and high) according to current gross domestic product (GDP) per capita (2016) using World Bank data (World Bank, 2017), and as high ($> 90\%$ of districts reported to have implemented IMCI), middle

(50-90% of districts reported to have implemented IMCI) and low implementers ($< 50\%$ of districts reported to have implemented IMCI), according to the proportion of districts reported to have implemented the strategy. Information on under-five population for the year 2015 was obtained from the UN Population Division (UNDESA, 2015). A single data file was created containing all information collected. Analysis was performed using STATA version 11. The final compilation of completed questionnaires, cleaning and analysis of data were carried out by WHO headquarters, with inputs from WHO regional and country offices and UNICEF. Analyses included descriptive statistics

that synthesize and organize the information obtained using numerical procedures, and/or graphic techniques to describe the characteristics of IMCI in the respondent countries. Results are presented in tables, graphs, maps and other infographics. The composition of each of the six WHO regions, the classification of countries according to their U5MRs, income level and implementation rates are shown in Annex 1. In-depth assessments and country profiles of IMCI implementation were carried out in nine countries (Bangladesh, Democratic Republic of the Congo, Ethiopia, India, Kazakhstan, Myanmar, Nepal, Nigeria, and Yemen).

Response rate

Questionnaires were sent to a total of 130 WHO Member States. The survey had a general response rate of 80%. Response rates varied, however, from 58% in the region of the Americas to 96% in the African region (Table 1).

Table 1. Response Rate to the IMCI Global Survey

WHO Region	Total number of WHO Member State	Number of WHO Member States to which a survey questionnaire was sent	WHO Member States that responded to the survey*	WHO Member States that reported no IMCI (did not answer the survey questionnaire)	WHO Member States that responded IMCI not in national plan; no district implementing IMCI; none of three component implemented	Response rate
African Region	47	47	45	4	0	95.7
Region of the Americas	35	33	19	4	0	57.6
South-East Asia Region	11	11	9	0	0	81.8
European Region	53	7	6	0	0	85.7
Eastern Mediterranean Region	21	16	14	0	0	87.5
Western Pacific Region	27	16	11	0	1	68.8
Total	194	130	104	8	1	80.0

* Includes those WHO Member State s that responded not having adopted IMCI and that therefore did not answer the questions of the survey

Of the 104 countries that responded to the survey, eight reported no IMCI in the country (Algeria, Antigua and Barbuda, Cape Verde, Mauritius, Saint Lucia, Saint Vincent and the Grenadines, Seychelles, and the Bolivarian Republic of Venezuela), leaving 96 countries for the general analysis. One country was dropped from the analysis (Brunei Darussalam) because IMCI was not reported to be part of their national child health plan or strategy, no district was reported to be implementing IMCI, none of the three components was reported to be in place (Fig. 3 and 4). Ninety-five countries were therefore retained for final detailed data analysis. Of these 95 countries, only two (Oman and Uruguay) are classified as high-income countries according to the World Bank; 64 (67%) are classified as middle-income and 29 (31%) as low-income (Annex 1). There were 80 malaria-endemic countries participating in the survey.

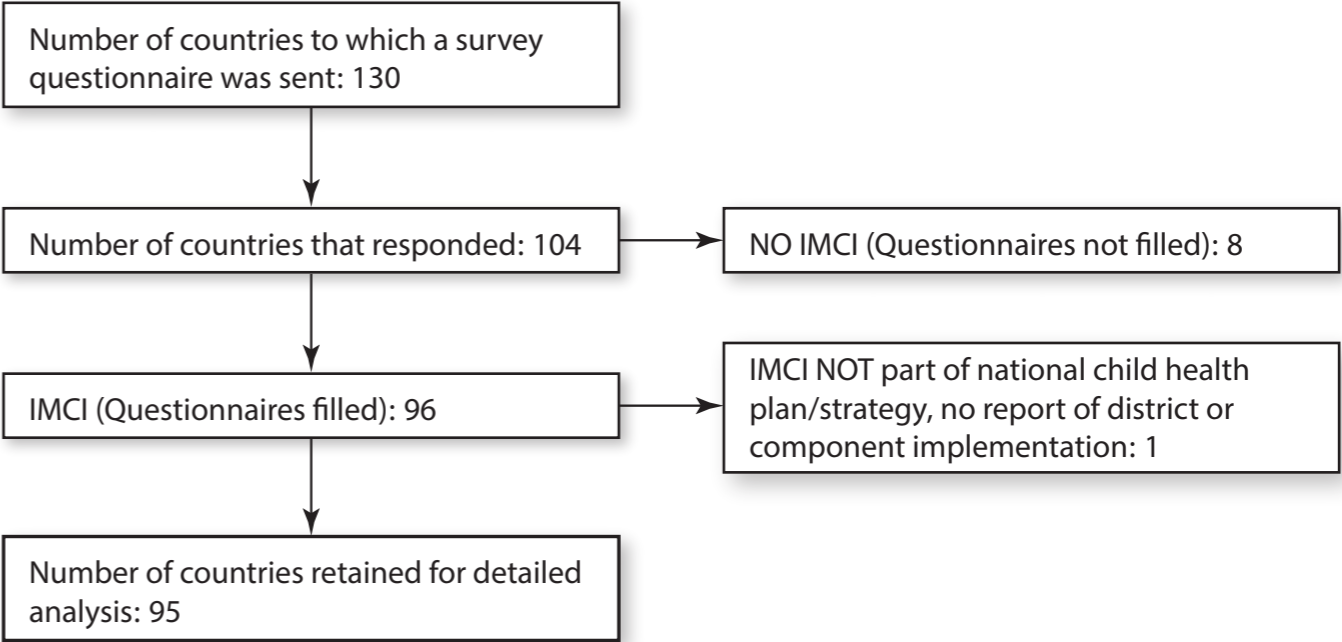


Fig. 3. Flow diagram

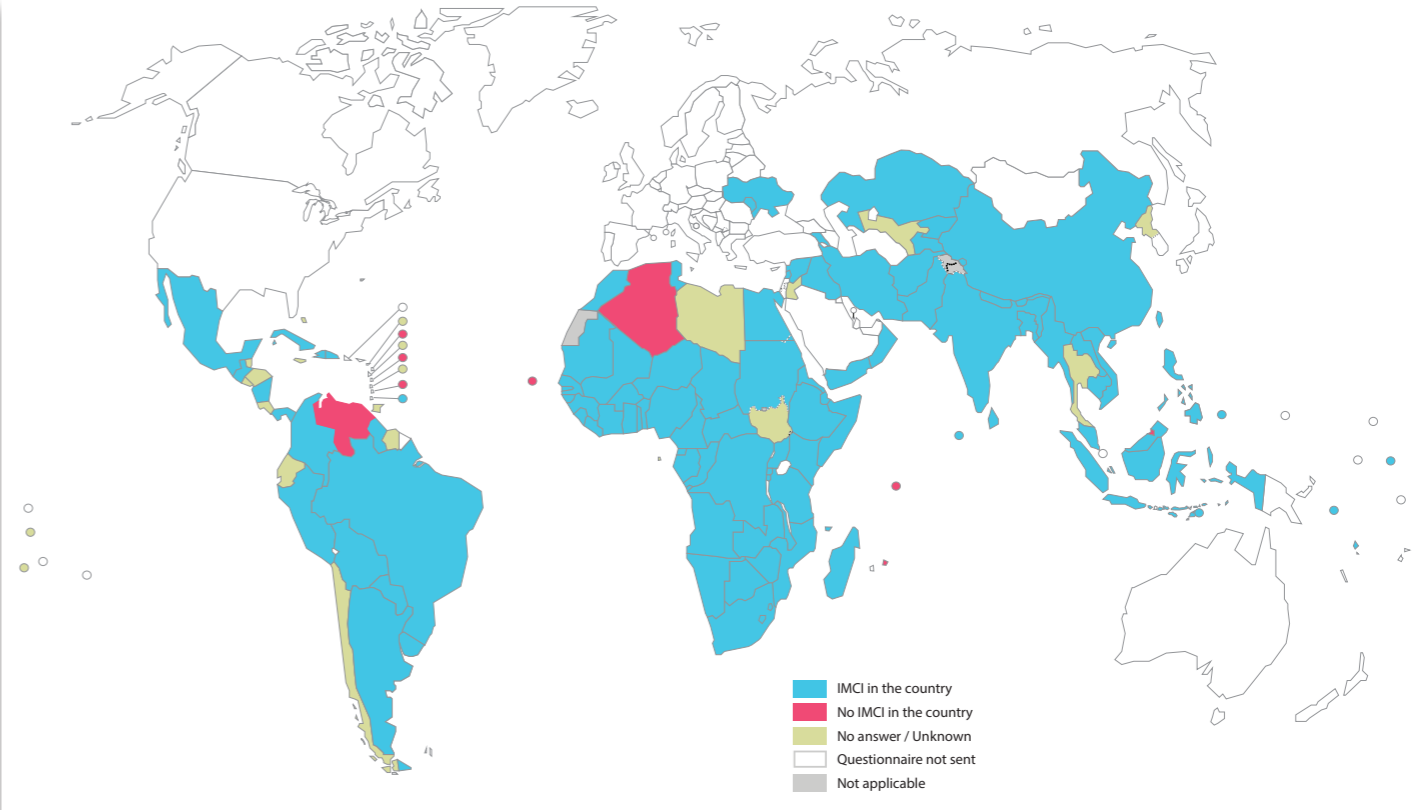


Fig. 4. Survey summary map

The 95 countries that participate in this Global Survey are home to 82% of the global under-five population and account for 95% of the 5.9 million deaths that occurred among children less than five years of age in 2015 (UNICEF, WHO, World Bank and UN-DESA Population Division, 2015). Forty-one of these countries are from the African region (43%), making it the most represented region in the survey responses. In contrast, the countries in the European region represent only 6% of survey respondents (Fig. 5). Population wise, South-East Asian (32%), African (28%) and Western Pacific (20%) children are those most represented.

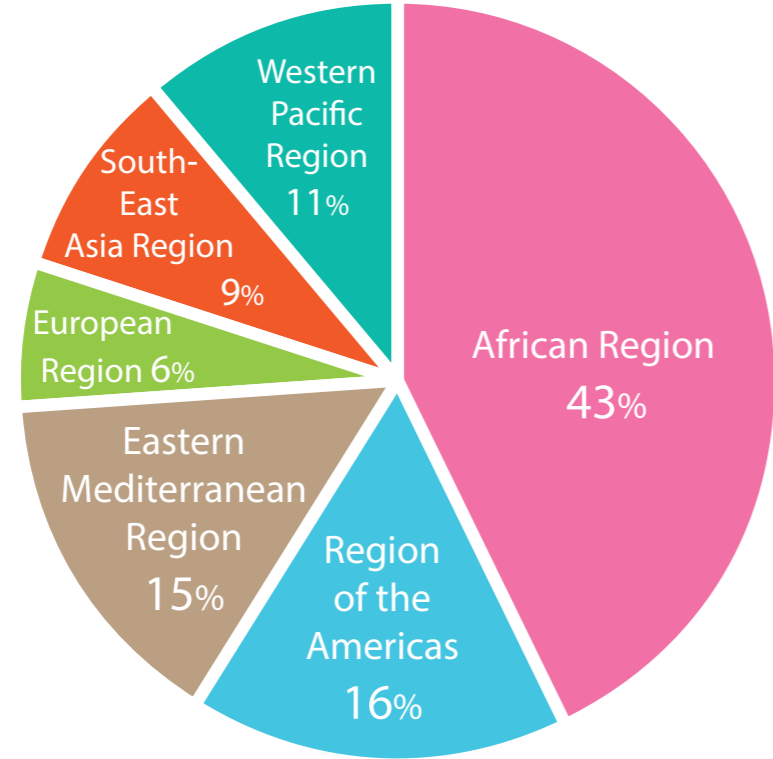


Fig. 5. Proportion of countries included in the final analysis by WHO region (N=95)

According to the questionnaire instructions, responses were to be given by an in-country team consisting of representatives of MoH and country offices of WHO and UNICEF. However, as shown in Table 2, this instruction was only followed in five countries (5%). In the majority of countries (55%; 52/95) the MoH alone provided answers, whereas in 19 others (20%) the respondent was only WHO. Representatives of WHO and MoH answered together in 15 countries (16%). For three countries (3%), the information on respondents is not available.

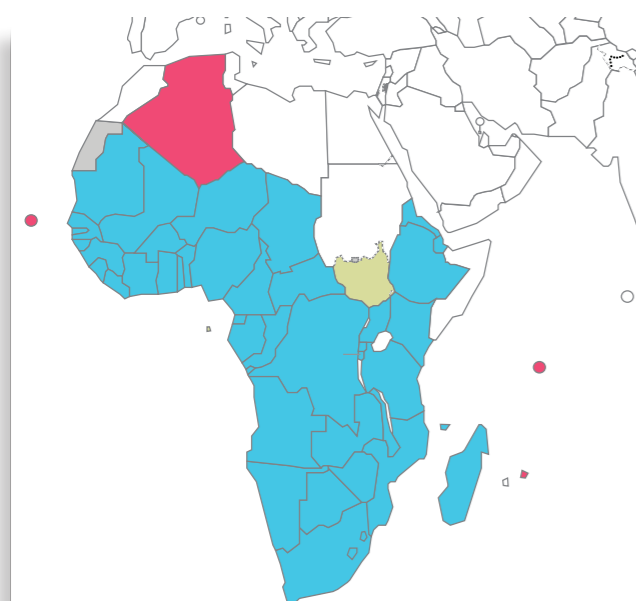
Table 2. Respondents to Global IMCI Implementation Survey by WHO Region

WHO Region	Questionnaires included in final analysis	Three-team response (MoH/ WHO/ UNICEF)	Response by MoH/ WHO team	Response by MoH alone	Response by WHO alone	Response by WHO/ UNICEF team	Unknown
African Region	41	1	1	22	14	0	3
Region of the Americas	15	0	5	9	1	0	0
South-East Asia Region	9	0	0	6	3	0	0
European Region	6	1	0	3	1	1	0
Eastern Mediterranean Region	14	3	8	3	0	0	0
Western Pacific Region	10	0	1	9	0	0	0
Total	95	5	15	52	19	1	3

Limitations

Most limitations of this survey are inherent or common to general survey design. First, respondents may not feel comfortable providing answers that present the country in an unfavourable manner and therefore may not provide accurate answers. Also, respondents may not always be fully aware of the situation in the country. To minimize this limitation, we provided clear instructions for questionnaires to be answered by a three in-country team, but only five countries followed this instruction. In another 15 countries, questions were answered by a two-respondent team. It is possible that responses are not fully correct and accurate. They may tend to provide a more “positive” scenario than the reality in the country. We have included some open-ended questions that gave respondents the opportunity to speak freely about IMCI advantages, disadvantages, and ways forward. Biases due to non-response may also have occurred as respondents who chose to answer certain questions may differ from those who chose not to respond. Finally, the WHO African region is likely to be overrepresented in the survey responses, with 43% of responding countries located in this region, while the European region represents only 6% per cent of responding countries. Disaggregation by mortality level and income groups reduces the effect of this overrepresentation on the interpretation of results.

WHO African Region



responding countries represented:

153 million children
47% of total U5 deaths
23% of world U5 population

Questionnaires were sent to all 47 WHO Member States in the African region. Four countries (Algeria, Cabo Verde, Mauritius, and Seychelles) responded that they had not adopted IMCI and therefore did not participate in the survey. Responsible officers from South Sudan and Sao Tome and Principe did not respond to the survey. The African region had the highest response rate (96%) of all WHO regions. Most respondents in the region (54%) were from the MoH alone; second were those from WHO (34%). Ethiopia was the only country with a joint MoH, WHO and UNICEF response. For three countries, there is no information on who completed the questionnaire.

- IMCI in the country
- No IMCI in the country
- No answer / Unknown
- Questionnaire not sent to countries in the region
- Not applicable

WHO Region of the Americas



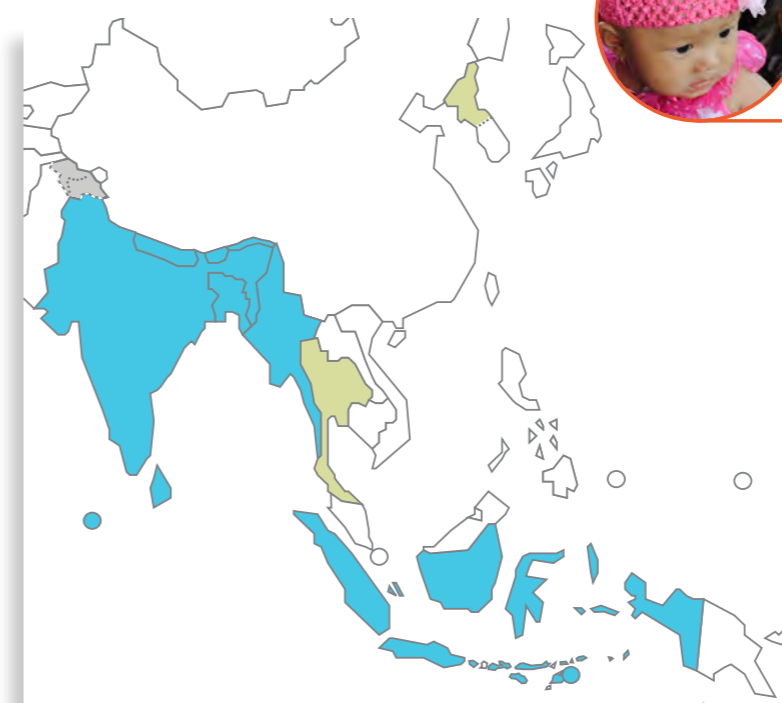
responding countries represented:

34 million children
2% of total U5 deaths
5% of world U5 population

Questionnaires were sent to all 33 low- and middle-income WHO Member States in the region, of which 19 (58%) responded. Four countries (Antigua and Barbuda, Saint Lucia, Saint Vincent and the Grenadines, and the Bolivarian Republic of Venezuela) responded that they had not adopted IMCI and therefore 15 countries were included in the survey. The region of the Americas had the lowest response rate of all WHO regions. Most respondents were from the MoH alone (60%), followed by those who provided a joint MoH and WHO response (33%). In one country WHO alone responded to the questionnaire.



WHO South-East Asia Region



responding countries represented:

173 million children
26% of total U5 deaths
26% of world U5 population

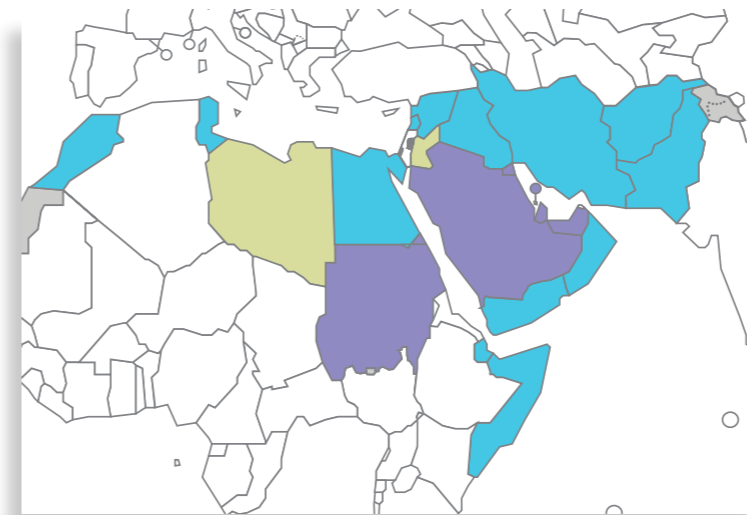
Questionnaires were sent to all 11 WHO Member States in the region, of which 9 (82%) responded. Most respondents were from the MoH alone (67%); in three countries, respondents were from WHO alone (33%).



WHO Eastern Mediterranean Region



responding countries represented:
74 million children
15% of total U5 deaths
11% of world U5 population



Questionnaires were sent to 16 WHO Member States in the region known to have adopted and implemented IMCI. These countries have been contacted regularly by the Regional Office for issues related to IMCI, and include low-, middle- and high-income countries. Responses were received from 14 countries, constituting one of the highest response rates of all WHO regions (88%). In three countries (Afghanistan, Egypt and Pakistan), questionnaires were filled out by an in-country team consisting of representatives of the MoH, WHO and UNICEF (21%). Fifty-seven per cent of the respondents were from the MoH and WHO together and 21% from MoH alone.

WHO European Region



responding countries represented:
7 million children
0.5% of total U5 deaths
1% of world U5 population

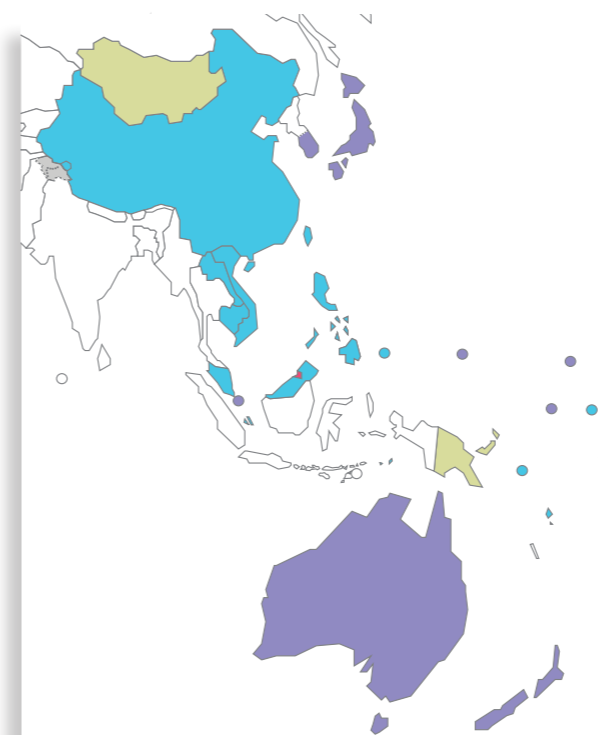


Of the 53 countries in the region, 15 have introduced and/or implemented IMCI at different points in time and on varying scale. Survey questionnaires were sent to seven WHO Member States where WHO National Professional Officers (NPOs) were present, and six responded (86%). In Kazakhstan, the questionnaire was filled out by an in-country team consisting of representatives of the MoH, WHO and UNICEF. Most questionnaires were filled out by respondents from MoH alone (50%). In one country, responses were provided by a team from WHO and UNICEF and in one other country by WHO alone.

WHO Western Pacific Region



responding countries represented:
107 million children
5% of total U5 deaths
16% of world U5 population



Questionnaires were sent to 16 low- and middle- income WHO Member States in the region, and 10 (69%) were included in the final detailed analysis. Questionnaires were filled out mainly by a representative of the MoH (90%). One country had a team from WHO and MoH who answered the questionnaire.



General overview



IMCI in national strategies and plans

Among the 94 countries responding to the question on whether they have a national plan/strategy for child health, 94% (88 countries) responded positively. IMCI is part of the national child health and survival strategy in 86 (98%) of these countries (Figure 6), showing that it is considered an important strategy for improving child health and reducing mortality. This holds true across countries with differing mortality rates: 95% (20/21) of countries with an U5MR higher than 80 per 1000 live births include IMCI as part of their national child health plan/strategy; this proportion is 93% (66/71) in countries where the under-5 mortality rate is equal or less than 80. It also holds true across WHO regions, with all regions affirming that at least 80% of reporting countries include IMCI in their national child health plan or strategy. All middle and high implementer countries reported that IMCI is part of their national child health strategy/plan. For low implementer countries, this proportion was only 68%, suggesting a general lower level of commitment with the strategy.

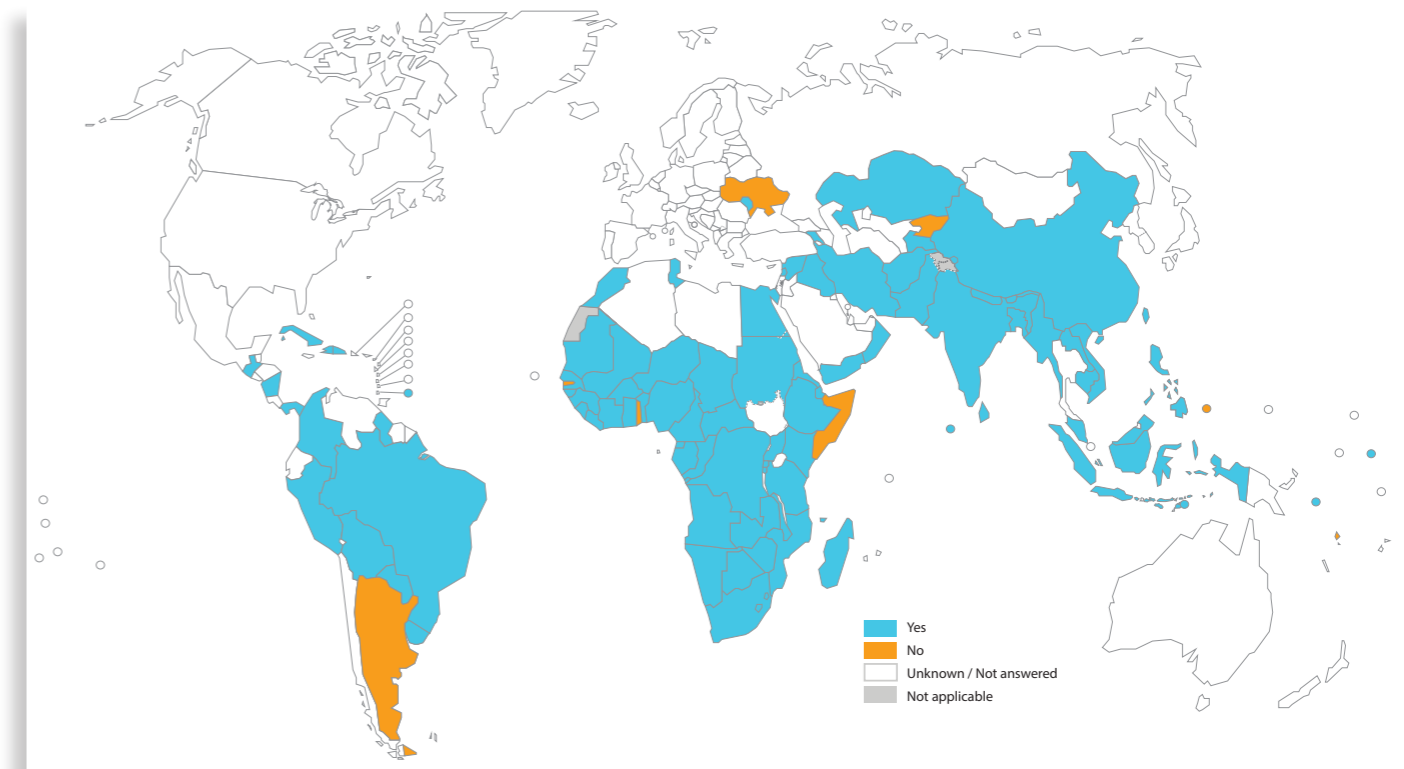


Fig. 6. Countries that reported including IMCI as part of their national child health and survival strategy



Presence of IMCI focal points

One of the factors originally identified as influencing the success of IMCI was the establishment of a management structure, such as a working group or task force. Indeed, early experience also suggested that countries needed to identify a coordinator for the IMCI management structure (WHO, 1999f). In 1999, the WHO IMCI Planning Guide recommended that countries assign at least one person to work full-time on IMCI activities. This focal person would be responsible for ensuring that planning and implementation moved ahead at a steady pace, and for managing IMCI activities, such as inviting members of the working group to meetings, circulating information, and participating in and supporting the work of the subgroups (WHO,

1999b). The existence of a focal point can indicate the government's commitment to the strategy, and ensure that implementation is closely followed and supported. Focal points are often responsible for leading the development of a national or sub-national plan, and for ensuring that IMCI is an integral part of strategic documents. As countries move towards decentralization, the presence of sub-national focal points increases in importance.

At district level, a focal person for IMCI would coordinate with the central level, including the IMCI management structure and its subgroups. The focal person represents the interests of the district, helping the central level plan for activities in the district and helping the district health team obtain

advice and support needed from the central level.

Of the 94 responding countries, 82 (89%) reported the presence of an IMCI focal point at national level. In fact, at least three quarters of responding countries in all WHO regions reported having national focal points. However, the proportion of countries with IMCI focal points at sub-national (regional or district) level was much lower (68%; 62/91) (Fig. 7). More than 85% (17/20) of high mortality countries had a national focal point, but less than half this proportion (42%; 8/19) had subnational focal points. In countries with U5MRs equal or lower than 80 per 1000 live births, the presence of national focal points was 88% (65/74), while that of regional/district focal point was 75% (54/72).

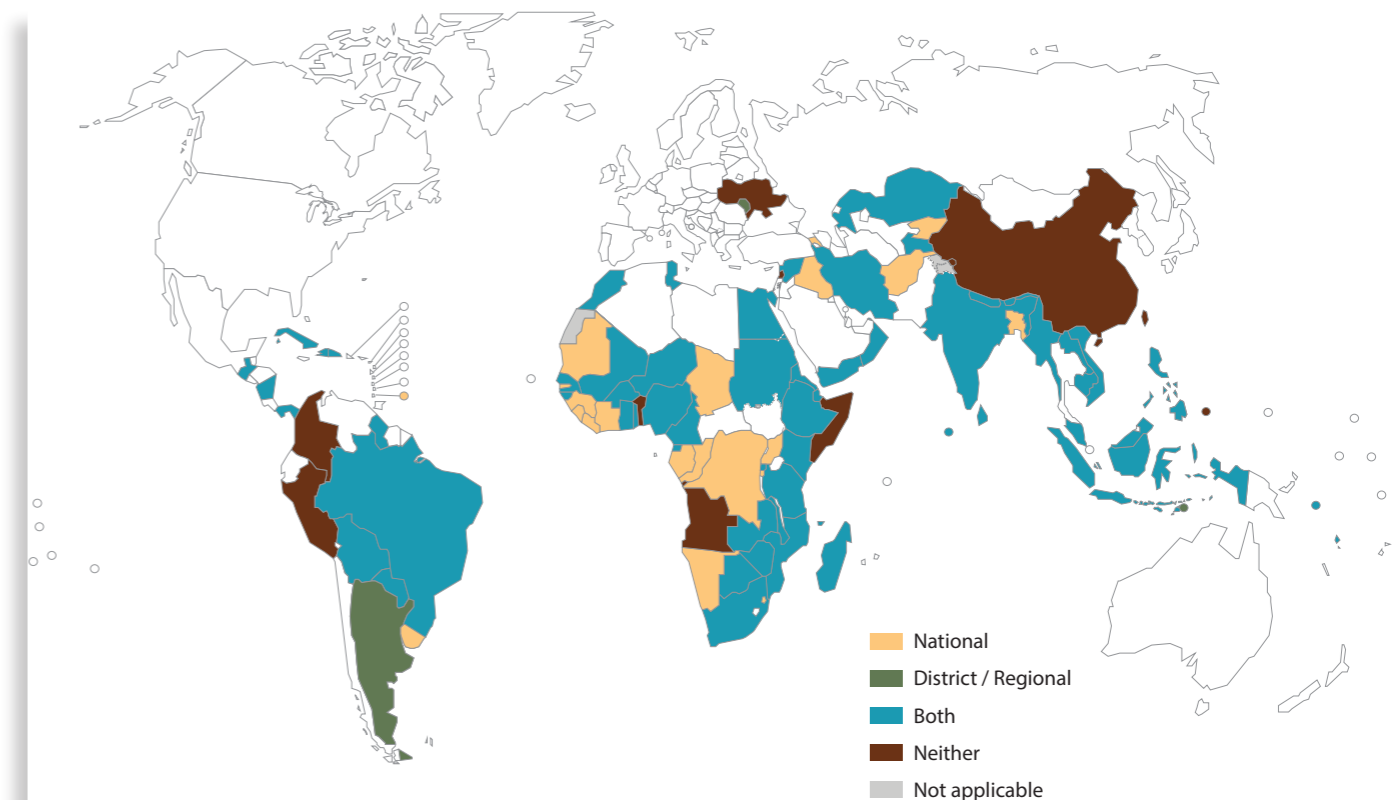


Fig. 7. Countries that reported having national and/or district/regional IMCI focal points



Funding

The government is reported to be the principal funding source for IMCI activities and elements at first level health facilities and in the community, except for the training courses and per diem. For the latter, donors constituted the main sources of funding (Fig. 8).

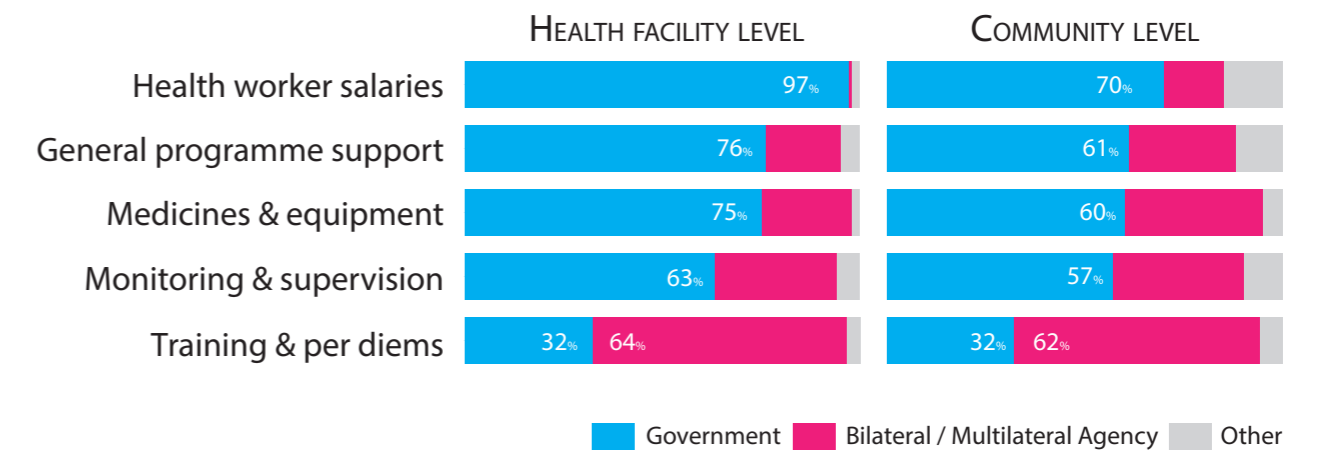


Fig. 8. Main sources of funding reported for different IMCI implementation elements at health facility and community level

The government finances a greater share of IMCI-related activities in those countries with U5MRs less or equal to 40 per 1000 live births and in the higher income groups. This may be due to a greater dependence on donor support in less privileged countries. In Fig. 9 we show the proportion of countries reporting government as primary funder of different elements of IMCI in first level health facility by under-five mortality level.

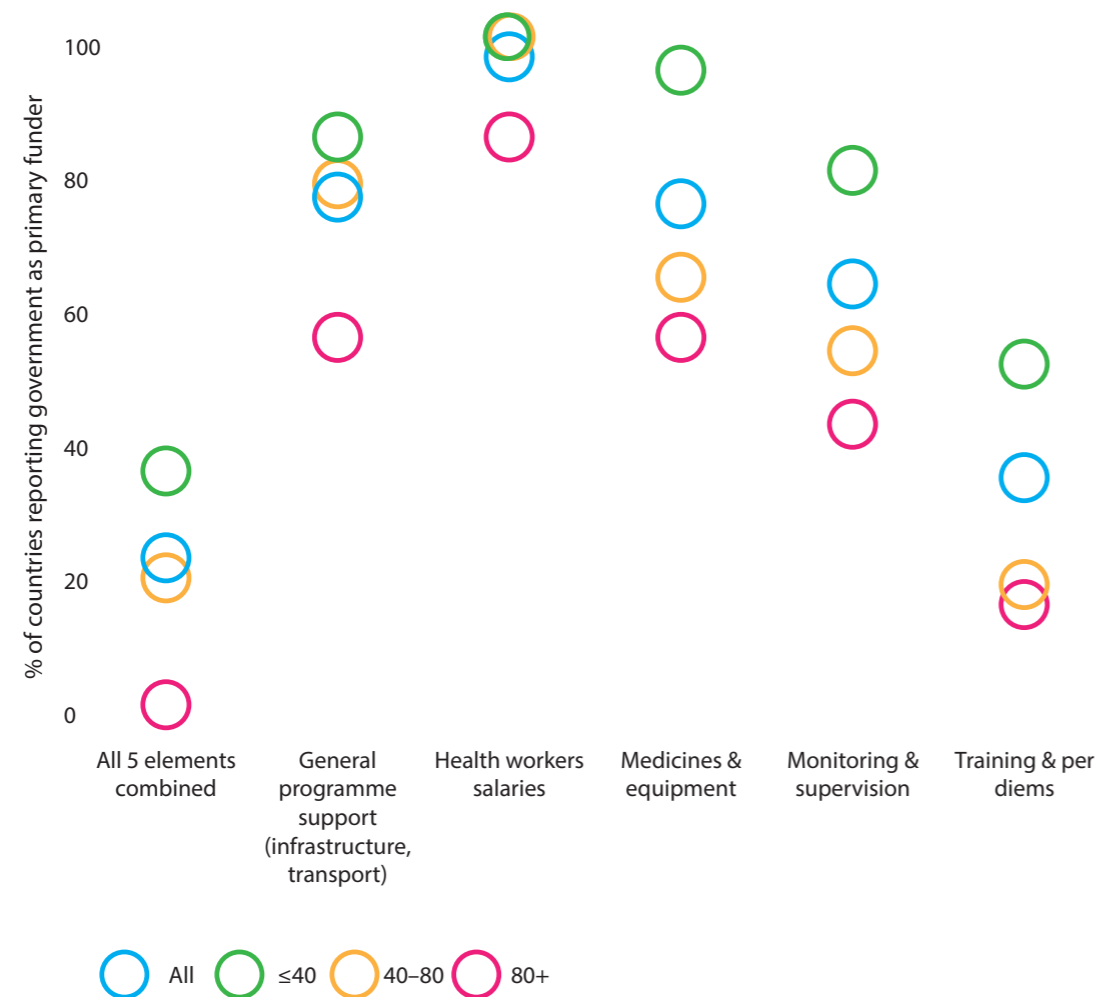


Fig. 9. Proportion of countries reporting government as primary funder of various elements of IMCI in first level health facility by level of under-5 mortality rate





Implementation

The first countries introduced IMCI in 1995 (WHO, 1997a). Implementation of IMCI in countries involves three phases and three components. The three phases include: introduction of IMCI, which enables the ministry of health and its partners to make an informed decision about IMCI as a suitable strategy in the country context resulting in the formal endorsement of IMCI as a national strategy by the concerned ministry of health authorities (or not); early implementation, in which adaptations of the generic IMCI clinical guidelines to national epidemiological and cultural characteristics take place; and expansion, during which a broad range of IMCI activities are introduced,

based on the experience acquired in the previous phases (Lambrechts, Bryce and Orinda, 1999).

In June 1999, 63 countries were at various stages of IMCI implementation (Fig. 10): 20 countries were in the process of introducing IMCI; 31 countries had successfully introduced IMCI and were preparing for implementation in selected districts; and 12 countries had moved from early implementation to expansion of activities and of geographic coverage (WHO and UNICEF, 1999a). It is noteworthy that 20 of these 63 countries that were pioneers in the implementation of IMCI had U5MRs lower than or equal to 40 deaths per 1000

live births, the majority of which were from the Region of the Americas. Of these 63 countries at different phases of implementation in 1999, 53 responded to the current survey questionnaire. Countries that were early implementers but did not participate in the current survey are: Azerbaijan, Belarus, Ecuador, El Salvador, Georgia, Honduras, Turkey, Turkmenistan, Uzbekistan, and Venezuela. In the European region, questionnaires were only sent to one (Uzbekistan) of these countries. Non-participant countries in the region of the Americas were those that did not respond to this survey.

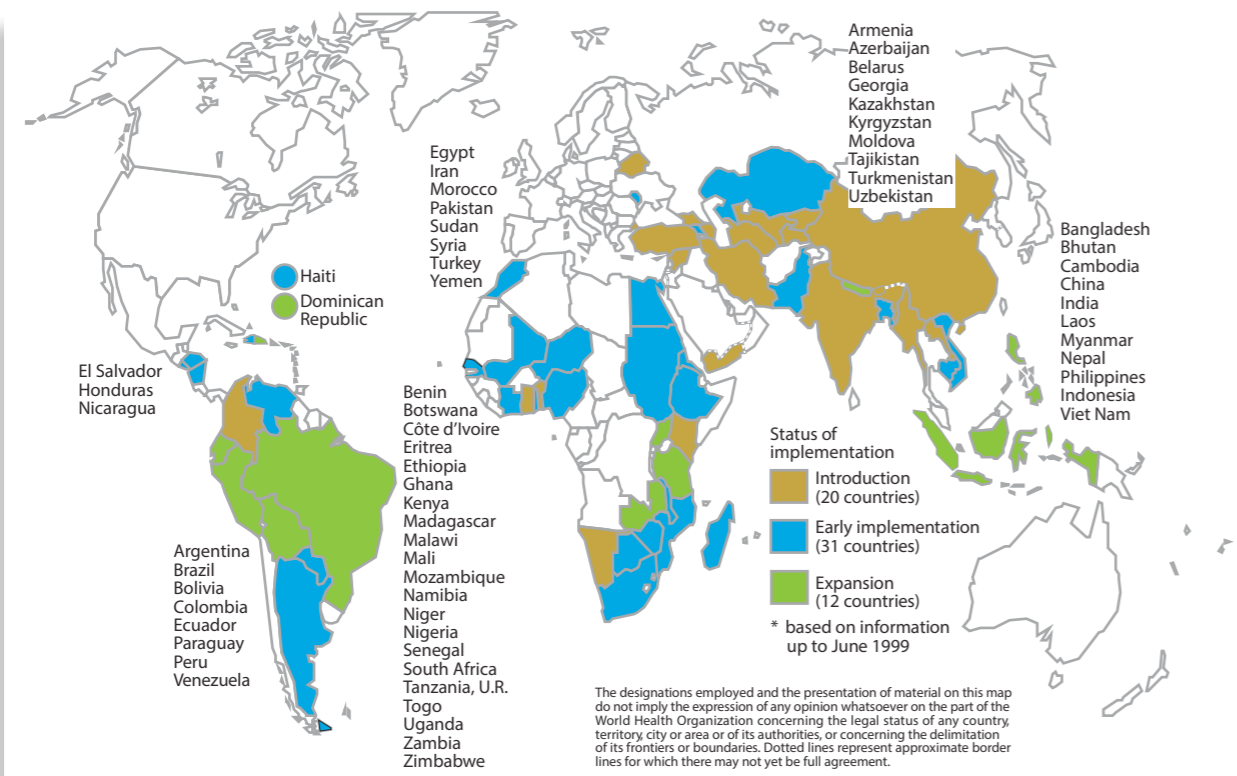


Fig. 10. Status of IMCI implementation by country (1999)

Source: IMCI information package. *INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS (IMCI)*. [online] Geneva: World Health Organization. Available at: http://www.who.int/maternal_child_adolescent/documents/chs_cah_98_1a/en/ [Accessed 17 Jun. 2017].



Global snapshot

For the purpose of the survey, IMCI is considered to be implemented if (1) it is included in national and district work plans (when existing) and budget and (2) district health facilities use IMCI guidelines when providing care for the sick child (with or without community-based IMCI). Coverage of IMCI was reported to be comprehensive in many target countries. Of the 95 countries included in the full analysis, 81 responded to the question on the proportion of districts implementing IMCI: 51 (63%) countries reported implementing IMCI in all districts; 54 (67%) in 90% or more districts and 62 (77%) countries reported implementing it in at least three quarters of their districts. In the European Region, all four responding countries reported implementation of IMCI in all districts (100%). Despite these high reported implementation rates, inequities persist and the strategy is not yet reaching the children who need it most as implementation in more than 90% of districts is lowest in high mortality countries (39%; 7/18), where it is probably most needed. Only seven (13%) of the 54 high implementer countries had U5MRs higher than 80 per 1000 live births. In the African region, high implementers were 66% of responding countries (23/35). Among these, only six (12%) had an under-5 mortality rate greater than 80. Fig. 11 shows the distribution of implementation rates by country.

Fig. 12 shows the proportion of countries reporting implementation by component of IMCI. The first component - improving health worker skills, was reported to be implemented by the largest percentage of countries (98%; 92/94), followed by the second - strengthening health systems (95%; 89/94), and

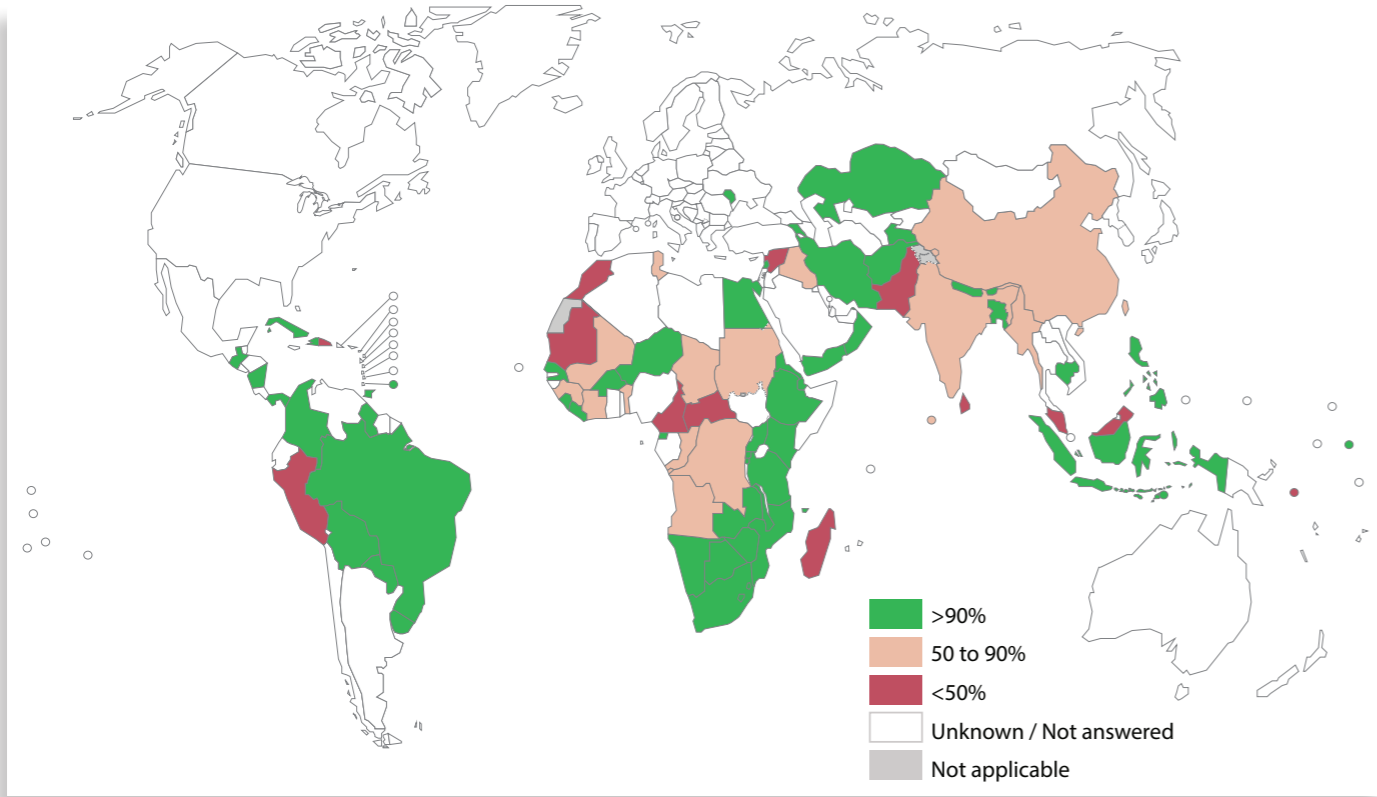


Fig. 11. Proportion of districts reported to be implementing IMCI by country (2016)

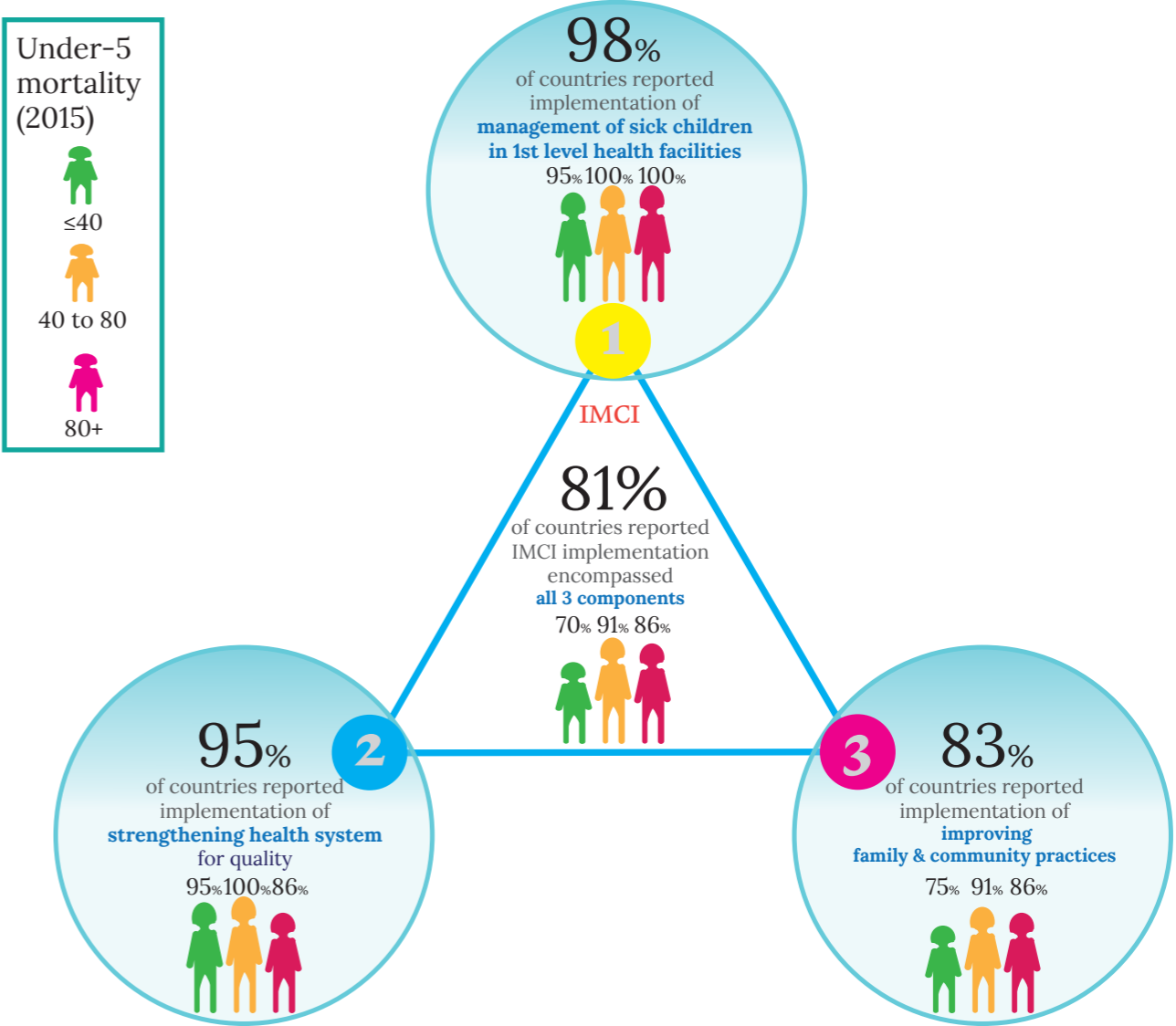


Fig. 12. Proportion of countries reported to be implementing each IMCI component, disaggregated by level of U5MR

then by the third component of IMCI - improving family and community practices (83%; 78/94). The third component was more often implemented in countries where U5MRs were greater than 40 per 1000 live births. The two first components had high rates of implementation in all six WHO regions, while implementation of the third component varied from 46% (6/13) in the Eastern Mediterranean

region to 93% (14/15) in the region of the Americas. It should be noted that 69% (9/13) of countries with low IMCI coverage rate (< 50% of districts) implemented the third component, while 85% of countries with higher overall implementation rates (≥50%) had the third component in place. Further to the three original IMCI components, the survey questionnaire also

asked about two additional elements: treating sick children in the community and improving management of sick children in referral facilities. Regarding these two additional elements, 72% (68/94) of responding countries reported treating children in the community and 80% (75/94) reported improving management of sick children in referral facilities.



The first of the three IMCI original components focuses on improving health worker skills. According to the original 1999 IMCI information package, this objective would be achieved

through several activities: development/adaptation of case management guidelines and standards; training of public health providers; definition of roles for non-governmental / private

providers; improvement and maintenance of health worker performance; use of training to orient health workers to problem solving in the community (WHO, 1999f).

Training

The main core tool developed by WHO and UNICEF for this purpose was an 11-day course for first-level health workers intended to teach them effective management of sick children between the ages of one week and five years. The course combines classroom work with hands-on clinical practice, and also includes disease prevention and communication with caretakers. Health workers learn about routine immunization, micronutrient supplementation, promotion of breastfeeding, and assessment of child's feeding and counselling to

solve feeding problems. The second essential element of IMCI training is a follow-up visit within one month of the training course.

The training course for health workers is still one of the key elements of IMCI strategy. The original "gold standard" course lasted 11 days, with 30% of time spent in clinical sessions. However, concerns regarding the high perceived costs of training in terms of time and resources and the absence of health workers from the services have led to the development of shortened versions (Goga et al., 2009).

Shortened or abridged courses were developed in and by countries. In 2008, a systematic review to evaluate the impact of shortened IMCI training was conducted. It suggested that the standard in-service IMCI training course was somewhat more effective than short training, although the magnitude of the difference was unclear (Rowe et al., 2012). In any event, most countries currently use shortened or abridged versions of the original course. An IMCI Computerized Adaptation and Training Tool (ICATT) was developed in 2006, and a distance learning course (diIMCI) based on this tool was created in 2014 (Fig. 13).

Improving health workers skills

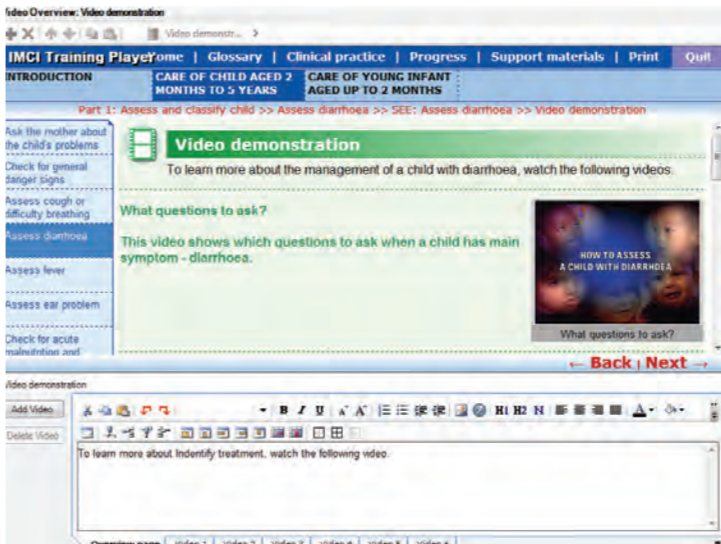


Fig. 13. Screen capture of IMCI Computerized Adaptation and Training Tool (ICATT) developed in 2006

As shown in Fig. 14 and 15, many responding countries (42%; 39/92) indeed reported shortened or abridged versions of the original course. Less than one third (29%; 27/92) used the standard 11-day course. Use of other available tools was reported to be low, ranging from 2% to 12%. Clinical practice was at least 25% of the training time in 79% of the countries (72/91). Initially, training activities in IMCI were limited to in-service (on-the-job) training of first-level health workers in order to demonstrate how the clinical guidelines would perform (WHO, 1999b). Over time, training has evolved and has been modified. It is no longer only limited to in-service training, but is now also

carried out as part of the basic training of various cadres of health workers ("pre-service") in some countries. In 2001, WHO introduced a guide on IMCI pre-service training to improve sustainability and influence the practice of health professionals in both the public and private sectors (WHO, 1999h). Later strategies included developing appropriate training approaches and materials, in collaboration with selected teaching institutions in developing countries.

Nearly three quarters of countries (72%; 67/93) reported implementing some sort of IMCI pre-service training. A majority of middle and high implementer

countries (81%; 54/67) reported conducting pre-service training, whereas 46% (6/13) of low implementer countries (countries with fewer than 50% of districts implementing IMCI) did so. High mortality countries had the lowest proportion (27%; 4/15) of pre-service education in at least 75% of training institutions. This held true for nursing/midwifery schools (29%; 4/14), medical schools (23%; 3/13) and medical officer schools (11%; 1/9).

One of the main programmatic IMCI indicators to measure the implementation of training is a 60% threshold of trained personnel in a given first-level health facility. Apart from health workers training,

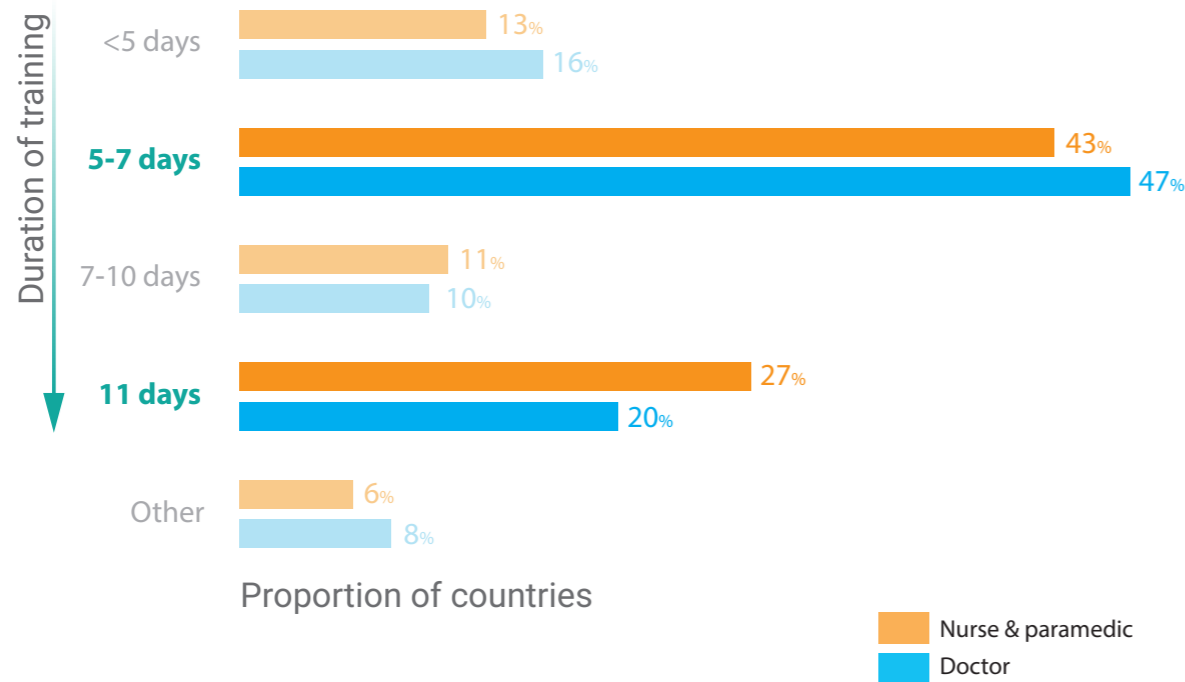


Fig. 14. Proportion of countries reporting different duration of in-service IMCI training for doctors, nurses and paramedics

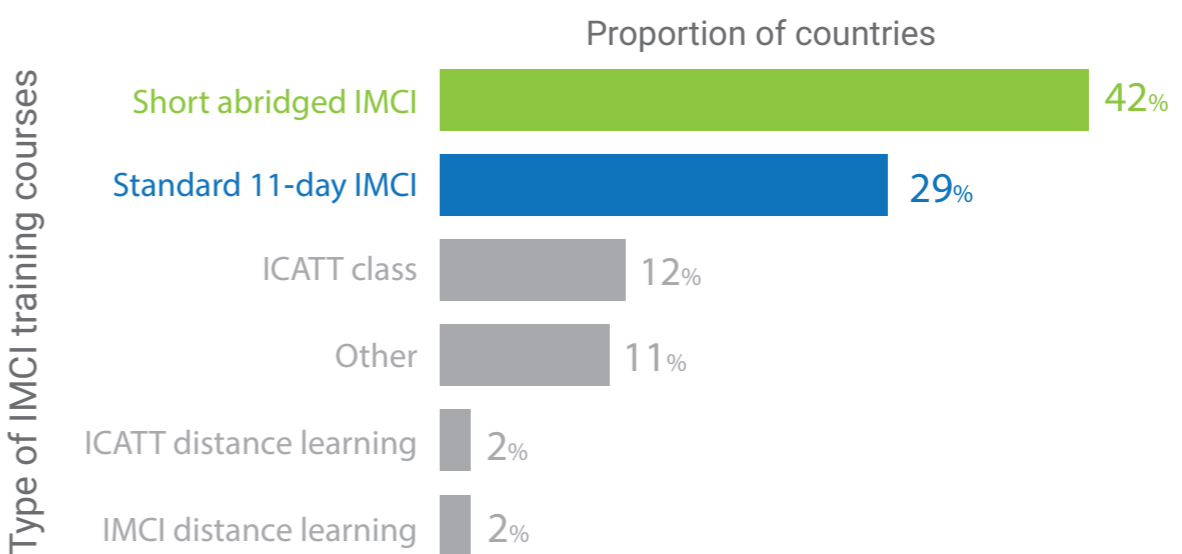


Fig. 15. Proportion of countries reporting different types of IMCI courses for training of health workers

it also reinforces health system support for IMCI. Fig. 16 maps the proportion of first level health facilities reporting that 60% of their personnel are trained in IMCI. In most countries (58%;

43/74), half or more of the first level health facilities had at least 60% of health workers who care for sick children trained in IMCI. More detailed information by country and level of mortality is shown in

Fig. 17. Most countries with more than three quarters of such health facilities had low U5MRs.

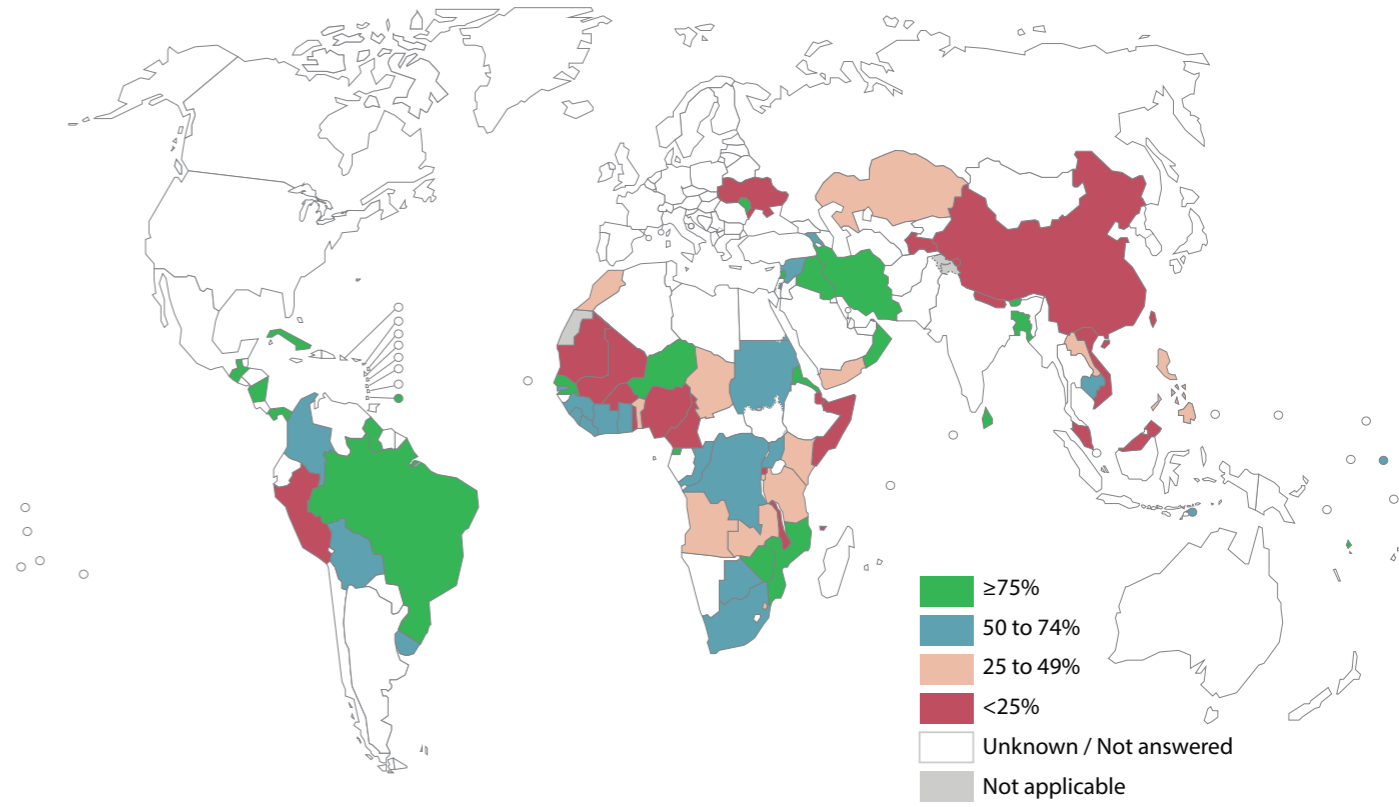


Fig. 16. Proportion of first level health facilities with at least 60% of health workers trained in IMCI by country

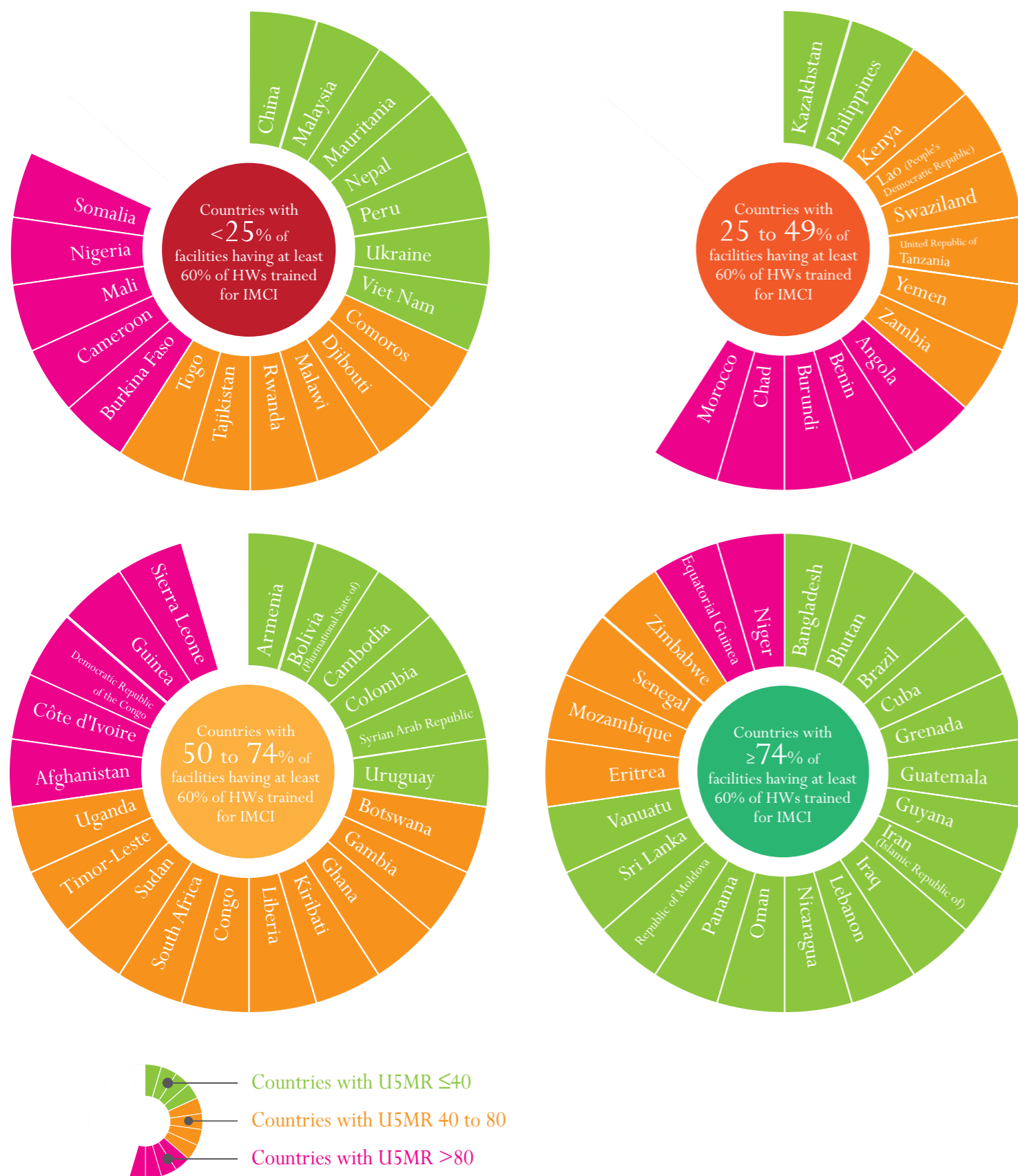


Fig. 17. Proportion of first level health facilities with at least 60% of health workers trained in IMCI by country and level of U5MR.

Guideline update, adaptation and use

IMCI training strategy, case management guidelines, charts, and related training materials were originally designed by WHO and UNICEF to target countries where U5MR was higher than 40 per 1000 live births, and where there was transmission of *P. falciparum* malaria (Gove, 1997; WHO and UNICEF, 1999a). These generic materials concentrated on the top causes of under-five mortality. In 1995, half of the 194 WHO Member States had an U5MR higher than 40 per 1000 live births (UNICEF et al., 2015). Thanks to progress in reducing U5MRs in the past

decades, in 2015, only 58 of the 194 WHO Member States still had an U5MR higher than 40. Along with reduced mortality, the main causes of death have also changed, shifting away from some infectious disease to include congenital anomalies, non-communicable diseases and injuries (WHO, 2017a). Indeed, it has been shown that as U5MR declines from 55 per 1000 live births to 25 or less per 1000 live births, the relative contribution of congenital anomalies, non-communicable diseases, and injuries together is likely to increase from 12%

to about 34% of all deaths in under-fives. Meanwhile, the relative contribution of infectious diseases is likely to decline from 53% to 24% or less (Were et al., 2015). In the next fifteen years, with the enticement of the new Sustainable Development Goals (SDGs), such changes are likely to occur in the 58 countries where current under 5 mortality is higher than 40/1000 live births as they are striving to achieve the absolute SDG target of reducing under-five mortality to 25 or less per 1000 childbirths.



Due to its flexibility to add conditions according to regional and national epidemiological profile and also to update recommendations according to new evidence, the IMCI chart booklet has been continuously adapted to the context of each country and according to developing evidence (WHO, 2002) and will continue to be so as epidemiological profiles change. Since the last global update in 2014, 69 of 85 countries (81%) reported having updated their national chart booklets. Sixty percent or more of countries updated the chart booklets on cough or difficult breathing (60/94) and fever (58/94). Fifty-four per cent (51/94) updated them on diarrhoea. Thirty-four percent of countries (32/94) updated on all 6 conditions listed in the questionnaire (cough or difficult breathing, diarrhoea, fever, HIV, malnutrition and anaemia).

Recognizing the increased importance of the burden of newborn mortality over time, nearly all countries (95%;89/94) have adapted IMCI guidelines to include care of the sick newborn in the first week of life, complying with WHO 2008 recommendations. As a response to the fifth element added to the original three IMCI components - improving management of sick children in referral facilities, the development or revision of national treatment guidelines based on the 2013 revision of the WHO Pocket Book of Hospital Care for Children, and of the adaptation of the Pocket book in referral facilities was reported by 48/87 (55%) and 39/88 (44%) countries, respectively. Countries with low U5MRs as well as the regions of the Americas and Eastern Mediterranean were less likely to comply with these recommendations. Only 29% (22/77) of countries reported having updated all four items, which include national chart booklets; guidelines on care of the sick newborn; and the use of the Pocket Book of Hospital Care for Children for developing/revising national guidelines and/or its adaptation for direct use in referral facilities (Fig. 18). Definitions of the training and guideline documents as well as illustrations of the chart booklet and of the pocket book of hospital care for children can be found in Box 1.

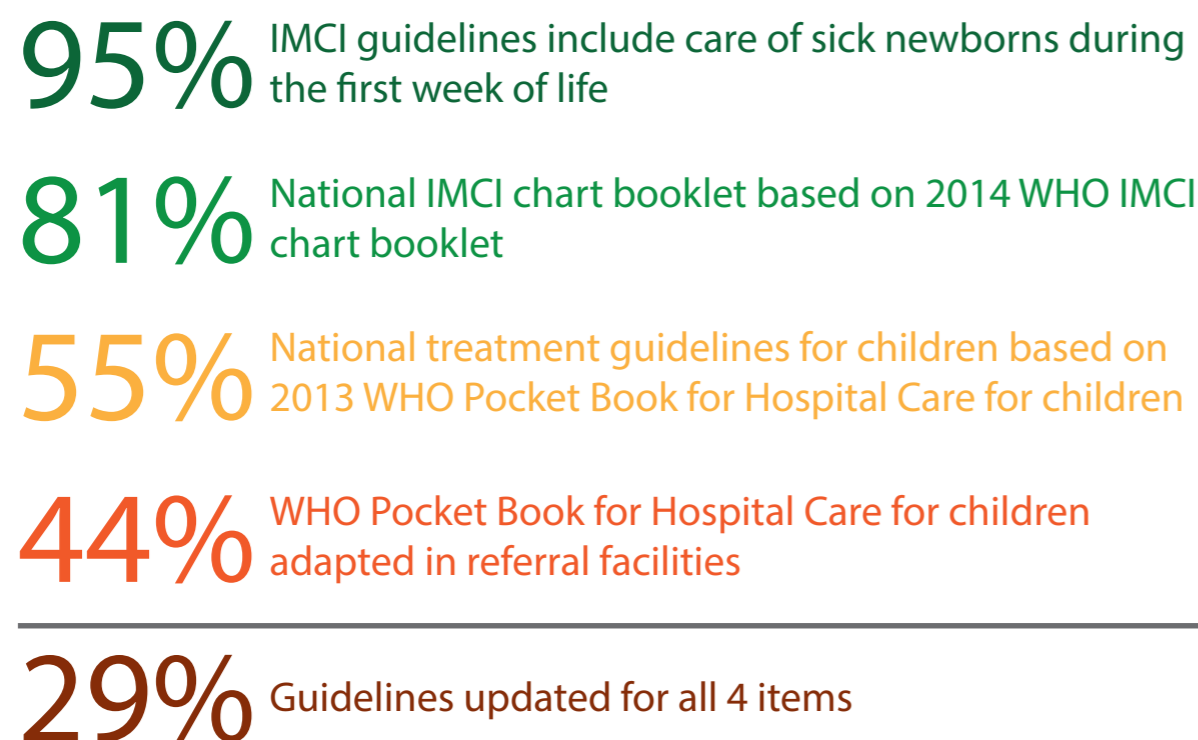


Fig. 18. Proportion of countries reporting having updated /adapted different IMCI-related guidelines

WHAT IS...

IMCI Chart Booklet

The IMCI chart booklet is for use by doctors, nurses and other health professionals who see young infants and children under five years of age. It facilitates the use of the IMCI case management process in practice and describes a series of all the case management steps in a form of IMCI charts. The chart booklet is divided into two age groups: sick infants up to two months of age; and sick children from two months to five years (WHO, 2014).

THEN ASK ABOUT MAIN SYMPTOMS:
Does the child have cough or difficult breathing?

<p>If yes, ask:</p> <ul style="list-style-type: none"> For how long? 	<p>Look, listen, feel*:</p> <ul style="list-style-type: none"> Count the breaths in one minute. Look for chest indrawing. Look and listen for stridor. Look and listen for wheezing. <p>If wheezing with either fast breathing or chest indrawing: Give a trial of rapid acting inhaled bronchodilator for up to three times 15-20 minutes apart. Count the breaths and look for chest indrawing again, and then classify.</p> <p>Fast breathing is: 50 breaths per minute or more 40 breaths per minute or more</p>	<p>Classify COUGH or DIFFICULT BREATHING</p> <p>CHILD MUST BE CALM</p>	<ul style="list-style-type: none"> Any general danger sign or Stridor in calm child. 	<p>Pink: SEVERE PNEUMONIA OR VERY SEVERE DISEASE</p>	<ul style="list-style-type: none"> Give first dose of an appropriate antibiotic Refer URGENTLY to hospital**
<p>If the child is: 2 months up to 12 months 12 Months up to 5 years</p>	<ul style="list-style-type: none"> Chest indrawing or Fast breathing. 		<ul style="list-style-type: none"> No signs of pneumonia or very severe disease. 	<p>Yellow: PNEUMONIA</p>	<ul style="list-style-type: none"> Give oral Amoxicillin for 5 days*** If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days*** If chest indrawing in HIV exposed/infected child, give first dose of amoxicillin and refer. Soothe the throat and relieve the cough with a safe remedy If coughing for more than 14 days or recurrent wheeze, refer for possible TB or asthma assessment Advise mother when to return immediately Follow-up in 3 days
				<p>Green: COUGH OR COLD</p>	<ul style="list-style-type: none"> If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days**** Soothe the throat and relieve the cough with a safe remedy If coughing for more than 14 days or recurrent wheezing, refer for possible TB or asthma assessment Advise mother when to return immediately Follow-up in 5 days if not improving

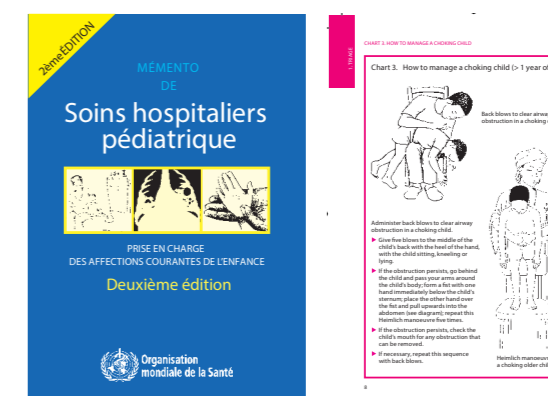
*If pulse oximeter is available, determine oxygen saturation and refer if < 90%.
**If referral is not possible, manage the child as described in the pneumonia section of the national referral guidelines or as in WHO Pocket Book for hospital care for children.
***Oral Amoxicillin for 3 days could be used in patients with fast breathing but no chest indrawing in low HIV settings.
****In settings where inhaled bronchodilator is not available, oral salbutamol may be tried but not recommended for treatment of severe acute wheeze.

Guidelines on care of the sick newborn

At the beginning of IMCI, the first week of life was excluded. In 2008, inclusion of newborn care was recommended by WHO and introduced into guidelines by countries, mainly due to the fact that approximately half of neonatal deaths occur in the first week of life, and that many of these deaths could be averted if parents recognized warning signs, undertook appropriate feeding practices or had access to skilled health workers and facility-based care. Most countries updated guidelines accordingly, modifying IMCI with specific actions to promote neonatal health and survival. Some renamed IMCI "IMNCI", many included jaundice and some included newborn resuscitation.

Pocket book of hospital care for children

This is a pocket-sized manual for use by doctors, senior nurses and other senior health workers who are responsible for the care of young children at the first referral level in developing countries. It presents up-to-date clinical guidelines which are based on a review of the available published evidence by subject experts, for both inpatient and outpatient care in small hospitals where basic laboratory facilities and essential drugs and inexpensive medicines are available (WHO, 2005b).



Box 1. Selected IMCI training and guideline documents

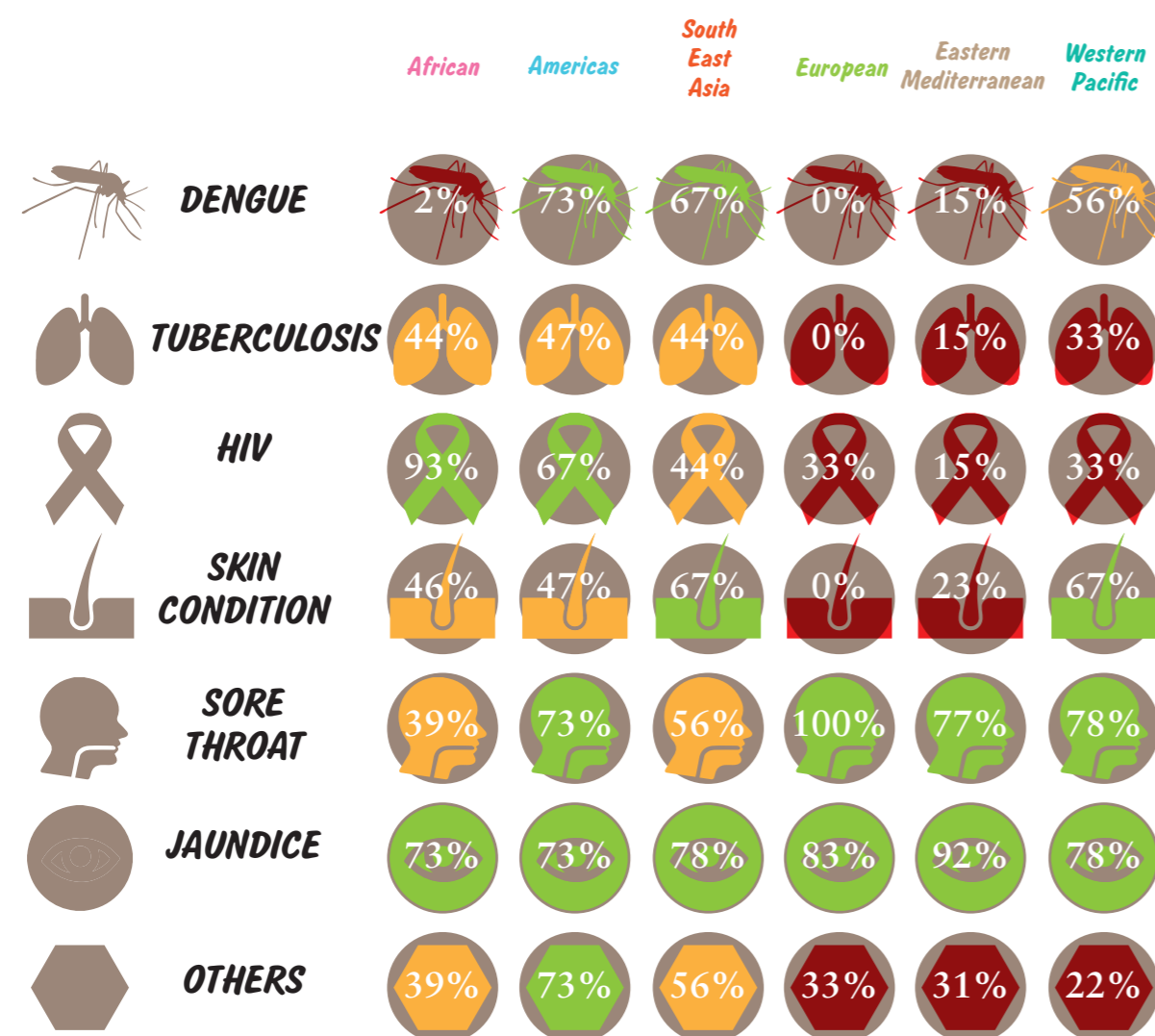


Fig. 19. Proportion of countries by region reporting adaptation of IMCI guidelines for specific diseases and conditions

The most common conditions added to the IMCI algorithm were jaundice in newborn babies and young infants, HIV, sore throat, and skin conditions. When the first week of life was integrated into the guidelines, neonatal jaundice became the most frequently added condition. It has been included in 72 (77%) of 93 countries for which the response was available; all countries except for two

are the same ones that had added the first week of life into the guidelines. Jaundice was added in at least 70% of countries in every region.

Other illnesses frequently included are tuberculosis and dengue haemorrhagic fever. Adaptations varied according to regional or national epidemiological profile (Fig. 19). For example, dengue haemorrhagic fever was added in 73% of countries in

the region of the Americas and in 67% of countries from South-East Asia. The proportion of countries that added tuberculosis varied from 47% in the Region of the Americas to 15% in the Eastern Mediterranean and no country in the European region; management of HIV/AIDS was added in 93% of countries in the African region, but in only 15% in the Eastern Mediterranean.

Deaths of children in the hospital often occur within the first 24 hours of admission. Many of these deaths could be prevented if very sick children were identified and appropriate treatment started immediately upon their arrival at the health facility. This can be facilitated by rapid triage for all children presenting to the hospital in order to determine whether any emergency or priority signs are present and by providing appropriate emergency treatment. WHO published guidelines and training materials for paediatric Emergency Triage, Assessment and Treatment (ETAT) in 2005 (WHO, 2005a). The guidelines and materials were destined mainly for

low-resource settings and aim to prevent death by identifying children who require urgent appropriate care. Since the first edition of the ETAT guidelines in 2005, new evidence has become available and a number of international guidelines have changed. Subsequent updates were carried out in 2013 (WHO, 2013a) and 2016 (WHO, 2016b). Despite the huge demand from countries, introduction of ETAT in hospitals is very low. Although considered very important to prevent deaths and reduce morbidity, only 23% (15/65) of responding countries stated that ETAT had been introduced in at least 75% of their hospitals. This proportion is higher

(38%; 9 countries) in the 24 low mortality countries as compared to the 41 countries with mortality rates greater than 40 per 1000 live births (15%; 6 countries). The highest proportions of reported use of ETAT were observed in the regions of the Americas (56%; 5/9) and Europe (40%; 2/5). No countries in the South-East Asia region reported implementing ETAT in at least 75% of their hospitals. This reinforces the need for all components and additional elements of IMCI to be in place and to work in an articulated and integrated way. To have an impact on survival both referral mechanisms and well-trained emergency triage personnel need to be in place.





Strengthening health systems

Effective IMCI implementation requires action at different levels of the health system as well as in the home and the community. Activities related to the improvement of the country's health system include supervision of health services; linkage of IMCI

and the health information system; organization of work at health facility; availability of drugs and equipment needed for IMCI through improving supply and management; improvement of service quality and organization at health facilities; and

reinforced referral pathways and services (WHO, 1999b; WHO, 1999d). Innovations in the delivery of care also have critical roles in the strengthening of health systems.

Supervision

Supportive supervision is assumed to have a positive effect on the sustainability of health workers' performance over time. Regular supervision of first level facilities is deemed very important in assuring that performance is as expected and that health workers are fulfilling their

duties and responsibilities. Very few countries (10/66; 15%) reported more than 75% of first level facilities having had at least one supervisory visit in the last six months. The region of the Americas showed the highest proportion despite the low numbers (33%; 3/9). There

were no such countries in the Eastern Mediterranean region, Europe or Western Pacific region. It is worth noting that almost half of the countries (33/66) reported that less than 25% of first level health facilities had had at least one supervisory visit in the last six months.

Monitoring and evaluation

Monitoring and evaluation of IMCI should build on national and district experience with existing programmes and ongoing routine monitoring activities and systems. Monitoring is the continuous review of IMCI implementation to identify and solve problems. Countries and districts need to decide how monitoring information will be collected based on available resources. A list of suggested priority indicators for IMCI implementation at first-level health facilities and in the community (Box 2) was

developed and agreed upon by an Inter-Agency Working Group on IMCI Monitoring and Evaluation between 1997 and 1999 (WHO, 1999c). In general, monitoring of IMCI implementation has been relatively infrequent and inconsistent. Only 33% of countries (30/91) reported having a comprehensive IMCI monitoring and evaluation plan (Fig. 20). Fifteen per cent (3/20) of high mortality countries reported having such a plan, while this proportion was 38% (27/71) in middle and low mortality

countries. The Region of the Americas had the lowest proportion of countries with a comprehensive monitoring and evaluation plan (20%; 3/15), while the European region had the highest (50%; 3/6).

More than two thirds of countries (70%; 66/94) reported that their Health Management Information System (HMIS) includes monitoring indicators for IMCI. Monitoring of IMCI indicators ranged from 47% (7/15) in the Americas to

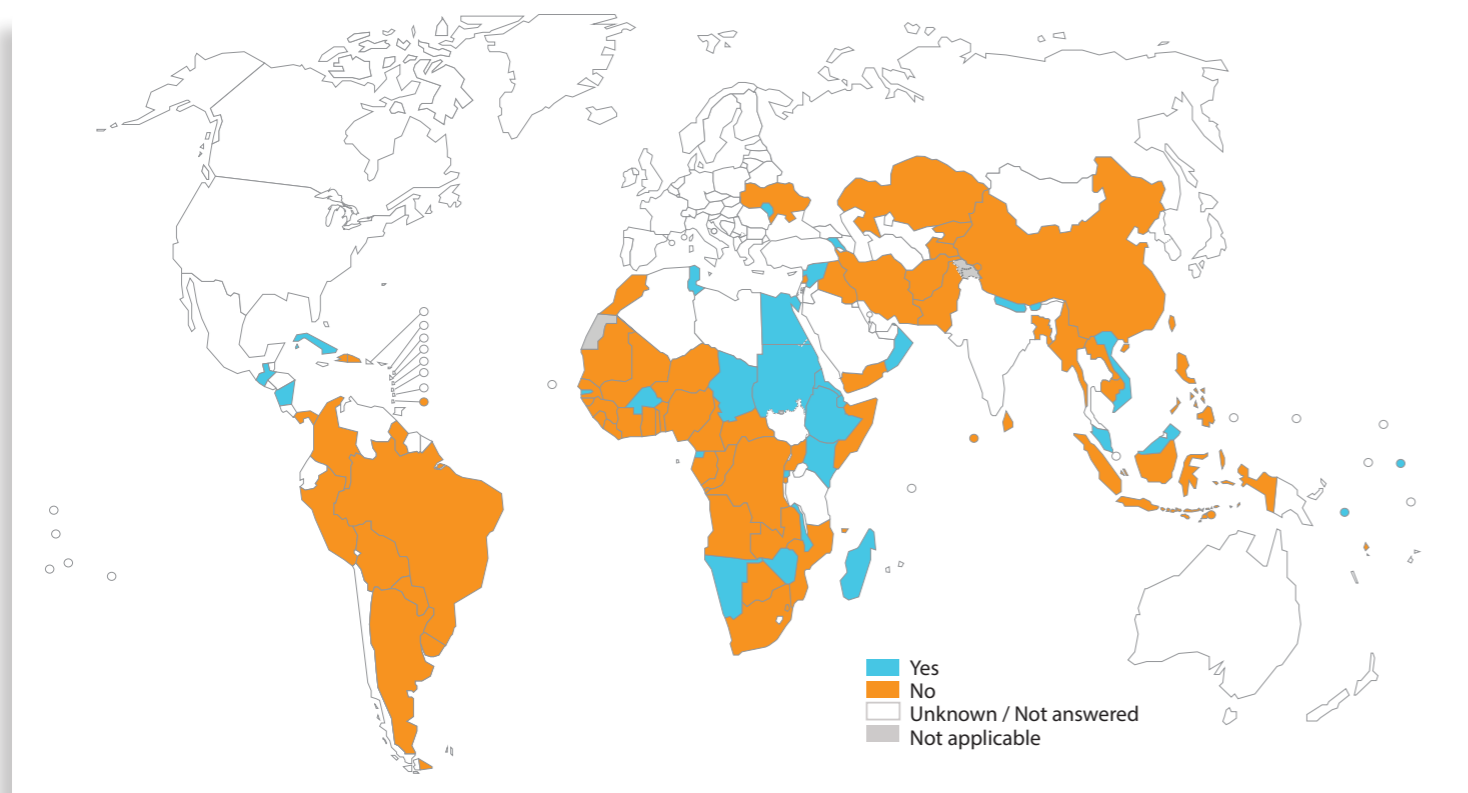


Fig. 20. Countries reporting a comprehensive monitoring and evaluation plan for IMCI

93% (13/14) in the Eastern Mediterranean region. Most of these indicators are collected at the primary health care level (83%; 54/65); only four countries reported having monitoring indicators for IMCI collected at community level.

IMCI Health Facility Survey was designed to assess the quality of care delivered to sick children attending outpatient health facilities;

caregivers' understanding of home treatment and key messages after visiting these facilities; health system support for quality care; and facility utilization by sick children (WHO, 2013c). These surveys were reported to have been conducted in about one third of countries (34%; 32/95) in the last five and a half years (2011 to mid-2016). Another 22 countries (23%) conducted health facility

surveys between 2002 and 2010. Most countries that carried out health facility surveys in the last five and a half years were high mortality countries (52%; 11/21). Conversely, only 20% (8/41) of low mortality countries conducted such surveys. Geographically, the range spanned from 7% (1/15) in the region of the Americas to 51% (21/41) in Africa.

Health worker skills

Assessment

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

Correct treatment and counselling

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

Health system support for IMCI

Supervision

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

Drugs, equipment and supplies

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

IMCI training coverage

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

Caretaker satisfaction

16. To be determined at country level

Nutrition

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

Prevention

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

Home case management

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

Care seeking

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

Box 2. List of priority indicators for IMCI (1999)

Programme management

Managing programmes to improve child health is an ongoing cycle for every country, carried out in somewhat different ways at different management levels. Child health programme managers at national and sub-national levels must understand the child survival problems in their areas and the framework specified in the country's strategic plan for child health. They must then plan to implement the selected interventions for child health in a manner that will be effective in their administrative areas,

manage that implementation on an ongoing basis, and periodically evaluate what has been achieved. In 2009, WHO released the "Child Health Programme Management" package. The package helps programme managers to identify which areas need strengthening, based on previous experiences, and to set new priorities if necessary. It also provides advice on how to review implementation status of interventions for child health at various levels (facility and community level or outreach). The Child Health Programme training has been

introduced in almost half (48%; 42/88) of responding countries. The number of trained managers per under-five population varies widely, ranging from one manager per 840 000 under-five children in Lao People's Democratic Republic to one manager for 1500 children in Kiribati – a more than 500-fold difference. Fig. 21. shows the number of managers by countries' under-5 population at the log scale. Over a third (37%; 35 countries) of the 95 responding countries have actually conducted a review since 2014.



Fig. 21. Number of trained Child health programme managers by under-5 population

There are four principal tools to assist programme management and costing: OneHealth, Equitable Strategies to Save Lives (EQUIST), Diagnose, Intervene, Verify and Adjust (DIVA) and Marginal Budgeting for Bottlenecks (MBB), defined in Box 3. These tools have been introduced in 33 of the 79 responding countries (42%). As shown in Fig. 22, among the 32 countries that provided detailed information, 22 (69%) use MBB; 20 (63%) OneHealth tool; eight (25%) indicated that they had used DIVA; and one (3%) uses EQUIST.

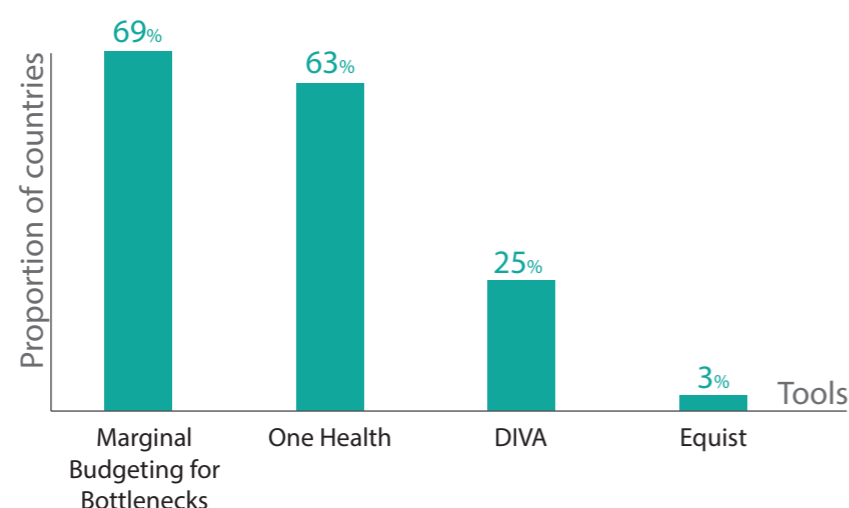


Fig. 22. Proportion of countries reporting different tools used for bottleneck analysis and strategic planning

WHAT IS...



The **ONEHEALTH TOOL** is a software tool used to support national strategic health planning in low- and middle-income countries. OneHealth links the strategic objectives and targets of disease control and prevention programmes to the required investments in health systems. It provides planners with a single framework for scenario analysis, costing, health impact analysis, budgeting and financing of strategies for all major diseases and health system components. OneHealth is designed in a modular fashion allowing for programme-specific as well as health system component costing (OneHealth Tool, 2017).

EQUIST is an online tool designed to help health policy-makers and programme managers sharpen plans and policies and make responsible decisions about how to strengthen their health systems. EQUIST can be adjusted to focus on specific aspects of the health system (such as primary care or malaria programmes) or on the health system as a whole. The explicit goal of EQUIST is to reduce health disparities between the most marginalized and the better-off mothers and young children (Equist, 2017).

DIVA is a flexible outcome-based four-step approach to identify and respond to health system and demand-side bottlenecks at the district level. Its four steps are Diagnose, Intervene, Verify and Adjust. Focusing on young child survival and development high-impact interventions that span health, nutrition, water and sanitation and HIV/AIDS, DIVA aims to increase coverage of high impact interventions, particularly for disadvantaged populations. It strengthens local health systems and programmes by increasing the capacity of district management team, monitoring in real-time using local data and engaging communities and stakeholders as key partners in improving the health of children and women. Lastly, it aims to track progress towards equity of access for the most deprived populations (UNICEF and Management Sciences for Health, 2010).

MBB is a planning and budgeting tool that utilizes knowledge about the impact of selected interventions on child and maternal mortality in a country, identifies implementation constraints and estimates the marginal costs of overcoming these constraints. Through five steps, it helps set targets for proven high-impact interventions, and estimates their expected impact, cost per life saved and additional funding requirements, as well as a projection of the required fiscal space to finance these extra costs. By examining underlying causes of bottlenecks and developing promising strategies to overcome them, adequate, effective and achievable coverage levels can be set once bottlenecks have been removed (Bitrán & Asociados, 2008).

Box 3. Main programme management and costing tools

Essential medicines

The success of IMCI depends largely on the availability and rational use of appropriate drugs. Irregular supply or lack of access to essential drugs at health facilities is a major constraint. National drug programmes are commonly based on the Essential Drugs Concept (EDC). Like the IMCI strategy, the EDC was developed by WHO. It was introduced in 1977 (Kar, Pradhan, and Mohanta, 2010) and is based on the premise that the majority of health needs of a population can be met with relatively few drugs. EDC has resulted in

the development of Essential Drug Lists of 30 to 40 drugs for first-level primary health care facilities in developing countries. Since one of the principal target groups for primary health care is mothers and children, there are many similarities between the lists of essential medicines and the drugs needed for IMCI (WHO, 1999b). Although inclusion of a medicine in the EDC list does not mean availability or use of drugs, it provides the first step of information on countries' compliance with general rules and regulations. Thirteen

medicines were included in the survey questionnaire: seven antibiotics; two medicines for diarrhoea, three antimalarial drugs and one anti-asthmatic drug.

Among the 78 malaria-endemic countries that responded to the question, only 13 (17%) had all of medicines on their list (Fig. 23). On the other hand, among all 91 respondent countries, 58% (53 countries) reported having all but antimalarial drugs in their Essential Medicines List (EML).

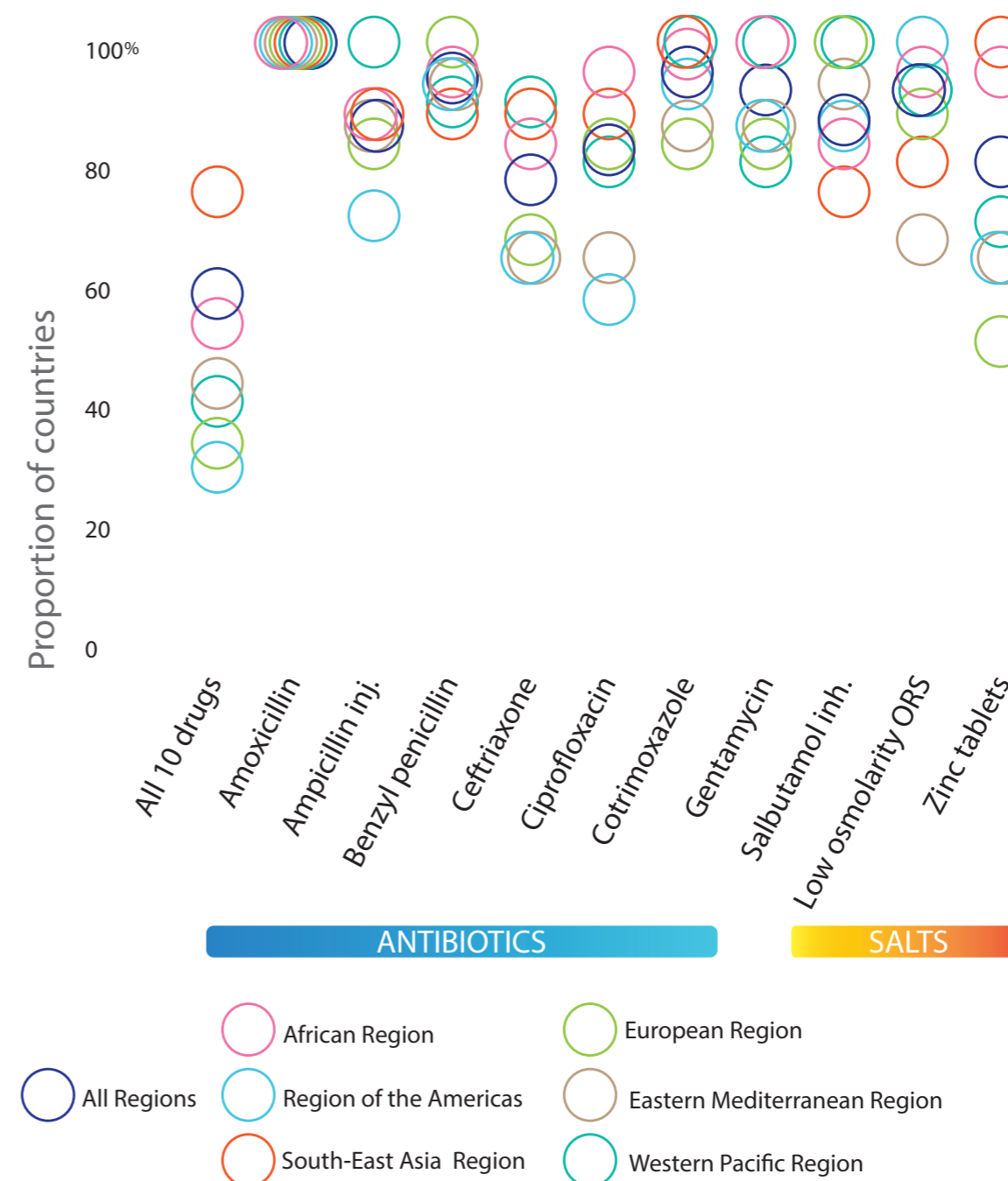


Fig. 23. Proportion of countries reporting inclusion of specific drugs in the Essential List of Medicines by WHO Regions



Quality of care

The WHO definition of Quality of care (QoC) is “the extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centred.” Improving quality of care and patient safety are critical if we want to accelerate reductions in mortality. Quality of care is also a key component of the right to health, and the route to equity and dignity (WHO, 2017b).

We have collected information on whether countries run assessments of quality of paediatric hospital care and assessments of QoC to improve management of childhood diseases at referral

level hospitals. Information on the presence of QoC improvement programme for health facilities was also gathered. General assessment of the quality of paediatric hospital care was carried out in less than half (42%; 39/92) of responding countries. All countries in the European region reported it, in contrast with only two countries out of 14 (14%) in the Eastern Mediterranean region. An assessment of QoC efforts to improve management of childhood illnesses in referral hospitals was conducted in 47% (44/94) of responding countries (Fig. 24). Fifty-six per cent (38/68) of middle and high implementer countries reported having assessed QoC at referral hospitals, but

no low implementer country reported it. There were no important differences in assessments of QoC between countries with high or low mortality rates.

Fifty-eight per cent of the 92 responding countries reported having a paediatric QoC improvement programme for health facilities in their MoH. Countries implementing it are shown in Fig. 25. This proportion varied from 44% (4/9) in the South-East Asia region to 67% in the European (4/6) and Eastern Mediterranean (8/12) regions. Countries that reported improvement programmes account together for nearly 3 million (50%) of all 5.9 million under-five deaths that occurred worldwide in 2015.

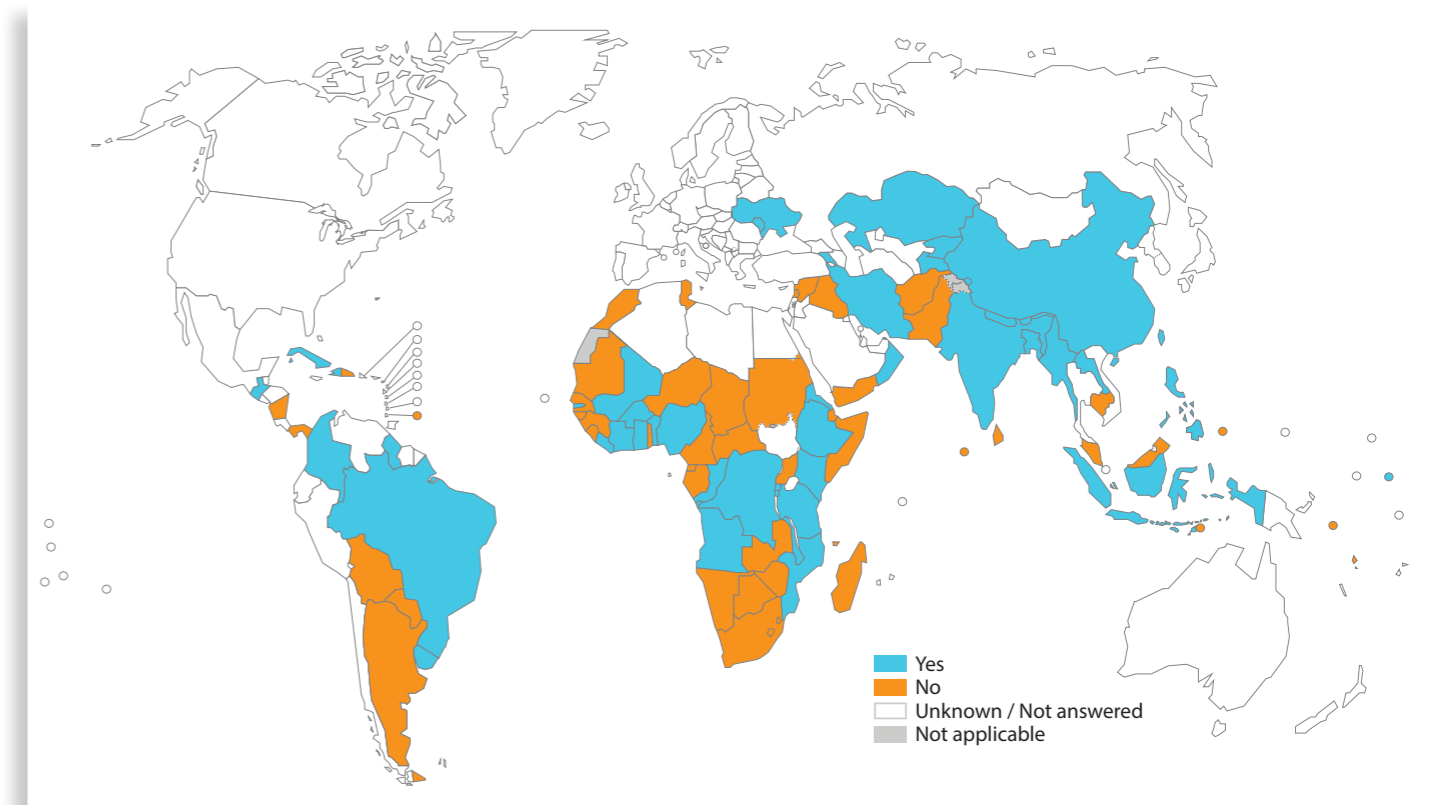


Fig. 24. Countries reporting having conducted assessments of quality of paediatric hospital care

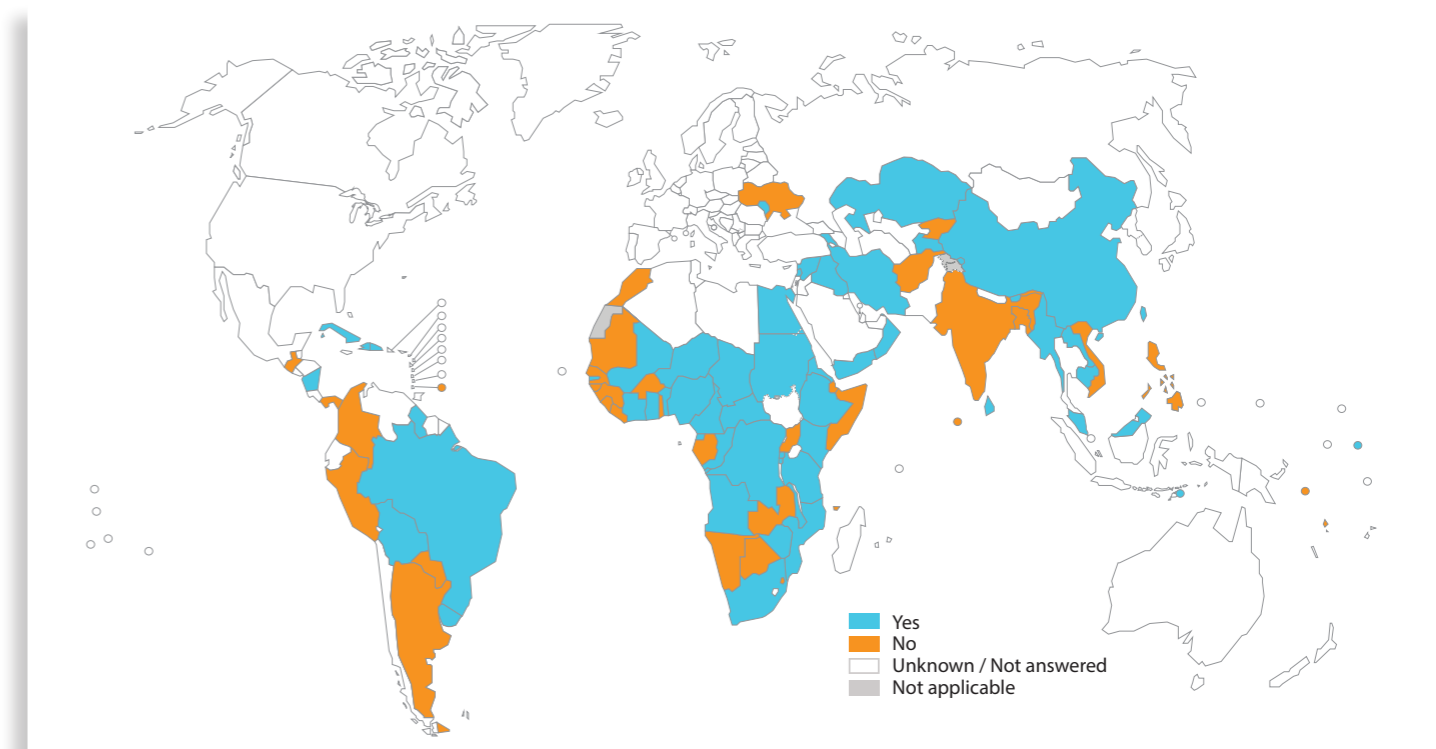


Fig. 25. Countries reporting existence of a paediatric quality of care improvement program for the health facilities at the Ministry of Health



Innovations

The main cross-cutting innovations used and reported by countries include information communication technologies (ICT), e-Health, m-Health and Rapid SMS. RapidPro and Lean and Six Sigma have also been mentioned by a few countries (see box 4 for definitions). These innovative tools are being used in many different settings to improve health services and strengthen the overall health system. Many countries reported provider training and education innovations utilized to promote behaviour change communication, improve data collection and reporting, inform decision making, train health provider, support supply chain management, and improve financial transactions and incentives. District Health Information Software version 2 (DHIS2) is the preferred health management information system in many countries and for many organizations.

ICT

Information communication technologies (ICT) represent a varied set of goods, applications and services used to produce, store, process, distribute and exchange information. They include the “old” ICTs of radio, television and telephone, and the “new” ICTs of computers, satellite and wireless technology and the Internet (Tools for Development Using Information and Communications Technology to Achieve the Millennium Development goals, 2003).

e-Health is the cost-effective and secure use of ICT in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research (United Nations, 2005).

m-Health (also known as mobile health) is the use of mobile devices – such as mobile phones, patient monitoring devices, personal digital assistants and wireless devices – for medical and public health practice. Examples of m-Health applications cover a broad spectrum from telephone helplines and text message appointment reminders, to mobile telehealth and mobile access to electronic patient information (WHO, 2017c).

RapidSMS is a free and open-source platform for speedily building text message services (SMS) for collecting data, streamlining complex workflows, and coordinating groups. This information, sent from basic cell phones to a central point, can be aggregated and uploaded to the internet as soon as it is received (RapidSMS.org, 2017).

RapidPro is a free and open-source software, which allows the user to visually build the workflow logic for running mobile-based services. It can be used to manage contacts, graphically analyse data, connect to multiple communication channels (for example SMS, voice, and social media), send messages in multiple languages, and interact with external systems (Community.rapidpro.io, 2017).

Lean and Six Sigma

Lean is a process to identify and eliminate sources of waste and activities that do not add value to create maximum productivity. Six Sigma is a proven systematic approach to improve measurable results for any organization (University of California Irvine, n.d.).

DHIS2 is a free and open source, web-based tool, which helps government health organizations to manage their operations more effectively, monitor processes and improve communication (Dhis2.org, 2017).

Box 4. Selected reported innovations

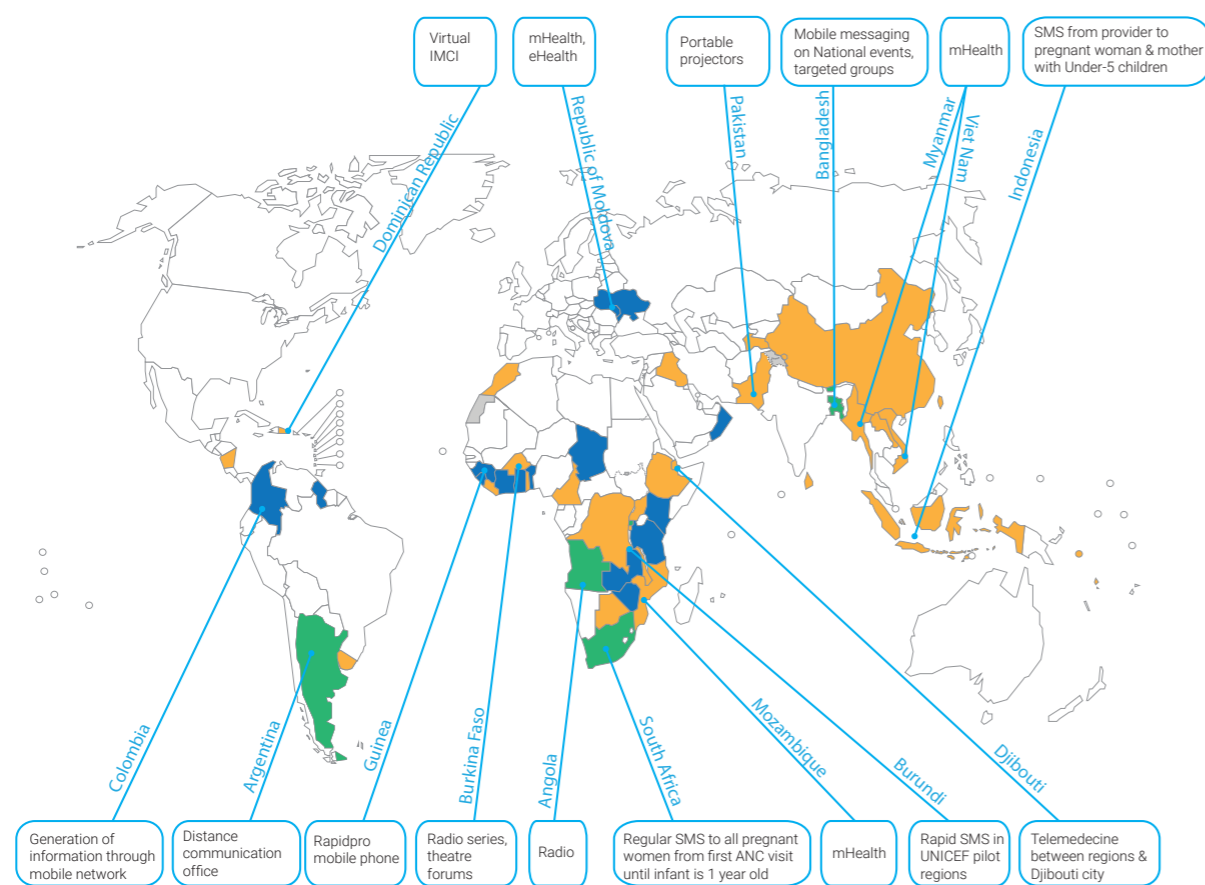


Fig. 26. Status of implementation of behaviour change communication innovations by country

Behaviour change communication via technological innovations has been explored or implemented in 48 countries (Fig. 26). Nine countries reported using m-Health. For instance, Bangladesh used it nationwide to publicize national events and also to target specific population groups. Indonesia explored it to send messages from the health provider to pregnant women or mothers of small children, while South Africa

used it on a national scale to send regular text (SMS) messages to all pregnant women from their first antenatal care visit until the child reached one year of age. Djibouti explored telemedicine for health workers in rural areas, Angola and Burkina Faso used the radio; Burkina Faso also used theatre forums, and Pakistan used portable projectors. Other examples were provided by Burundi and Guinea. Burundi explored rapidSMS

- Exploration
- Partial scale-up
- Nationwide scale-up
- Unknown / not answered
- Not applicable

and Guinea partially scaled up RapidPro. Innovations used for behaviour change communication have been scaled up to national level in seven countries.

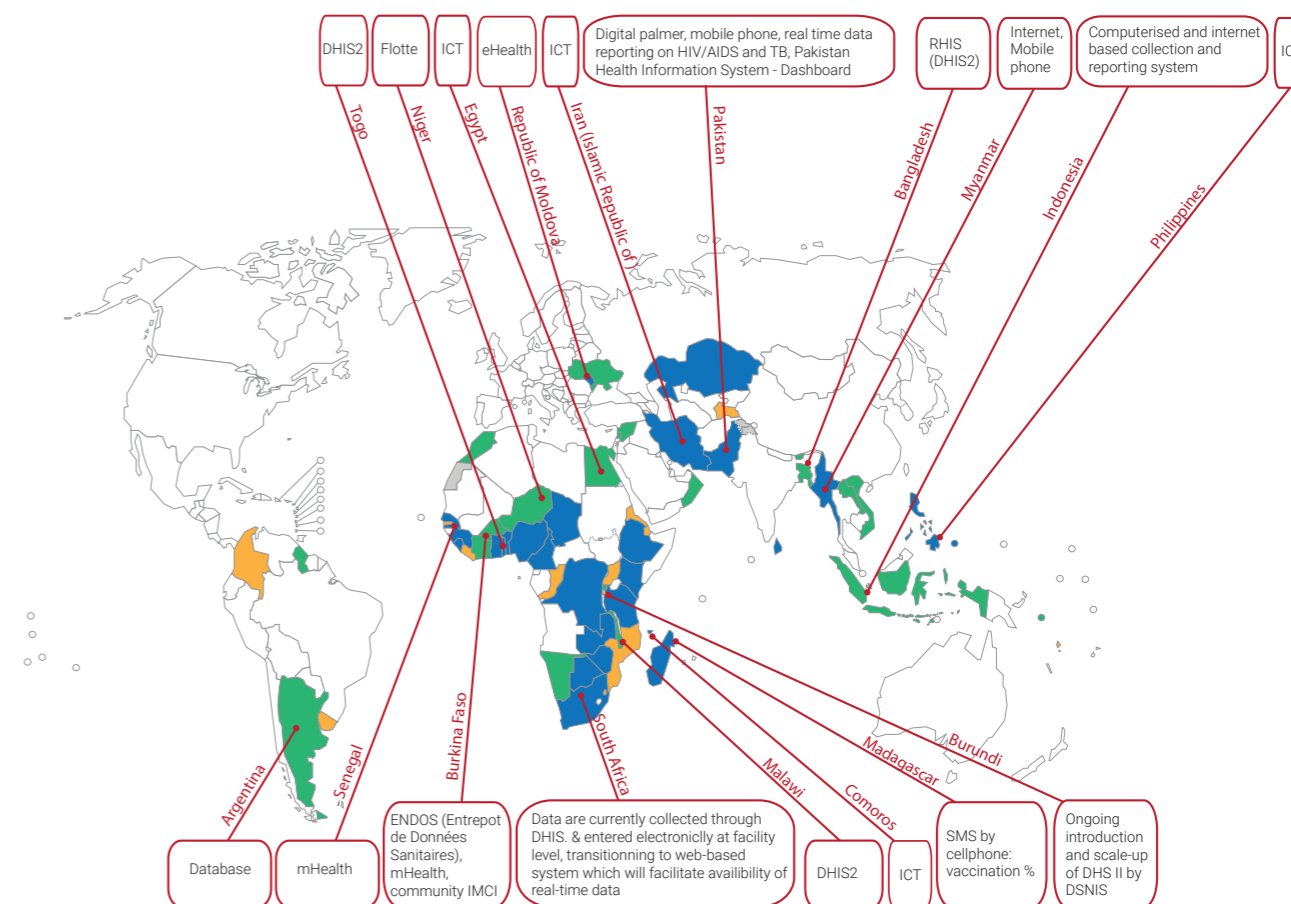


Fig. 27. Status of implementation of data collection and reporting innovations by country

Data collection and reporting innovations were described by 60 countries (Fig. 27). Some countries have provided detailed information on the type of innovation used. DHIS2 is the most commonly used health management information system. For example, South Africa reported that data are currently collected through an electronic DHIS and that they are transitioning to a web-based system that will facilitate the availability of real-time data. This has been

partially scaled up. In Burundi, the National System for Health Information Department (Direction du Système National d'Information Sanitaire) is introducing and scaling-up DHIS 2. DHIS 2 use was also reported in Bangladesh at national scale. Burkina Faso reported scaling up nationwide a software developed from DHIS 2 (Kabore, n.d.), called L'Entrepôt de données sanitaires (Endos-BF).

e-Health was reported

by Indonesia, Moldova, Myanmar and Pakistan. Pakistan, for example, used digital "palmer" and mobile phones to get real-time reporting on HIV/AIDS and TB, whereas Indonesia used a computerized and internet-based system. Burkina Faso, Madagascar, Myanmar, Niger, Pakistan and Senegal used m-Health; in Madagascar, portable telephone SMS were used to measure vaccination coverage, while in Burkina Faso m-Health was used for community IMCI.

ELECTRONIC DECISION SUPPORT

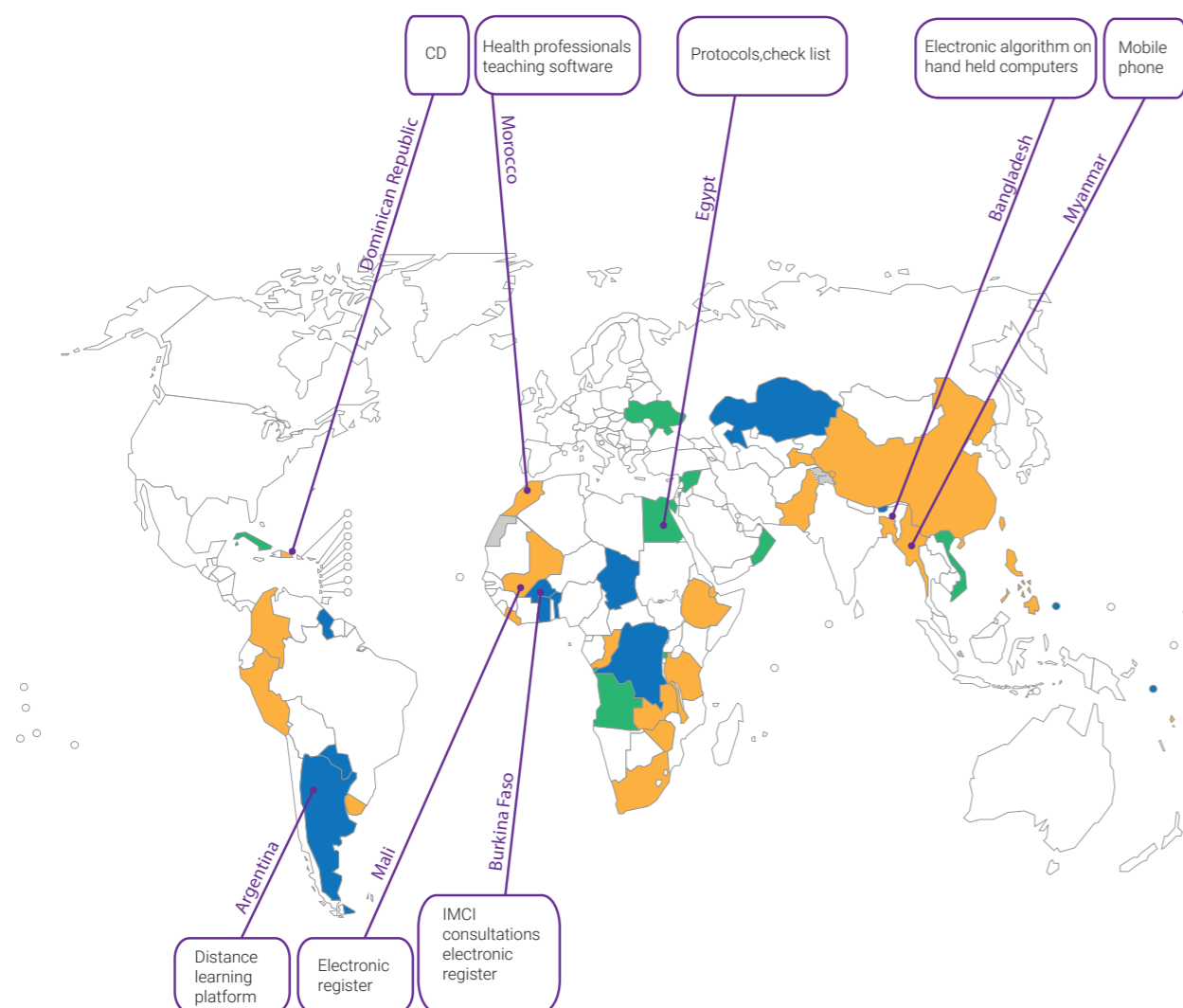


Fig. 28. Status of implementation of electronic decision support innovations by country

Electronic decision making support, including protocols, algorithms and checklists, has been fully or partially scaled-up in 20 countries and explored in another 22 countries (Fig. 28). Bangladesh used an electronic algorithm on hand-held computers, Burkina Faso and Mali used electronic registers, Egypt reported electronic systems for its protocols and checklists, Myanmar used m-Health, and the Dominican Republic used

compact discs.

The experience from Tanzania was described in detail in the literature and desk review carried out for the Strategic Review (Armstrong et al., 2004). In Zanzibar, D-tree International developed a decision-support mobile job aid to improve adherence to IMCI protocols. These 'eIMCI' electronic protocols reportedly increased clinical adherence to IMCI protocols from 60% to 84%. In 2011, D-tree

expanded its programme activities to include a more comprehensive system that supports community health workers to deliver services to women and children from the antenatal period across to the postpartum period. It also provided reminders to follow-up on pregnant women and post-partum care. A mobile money payment system incentivized timely and appropriate referrals by money transfers to the local community drivers.

PROVIDER TRAINING AND EDUCATION

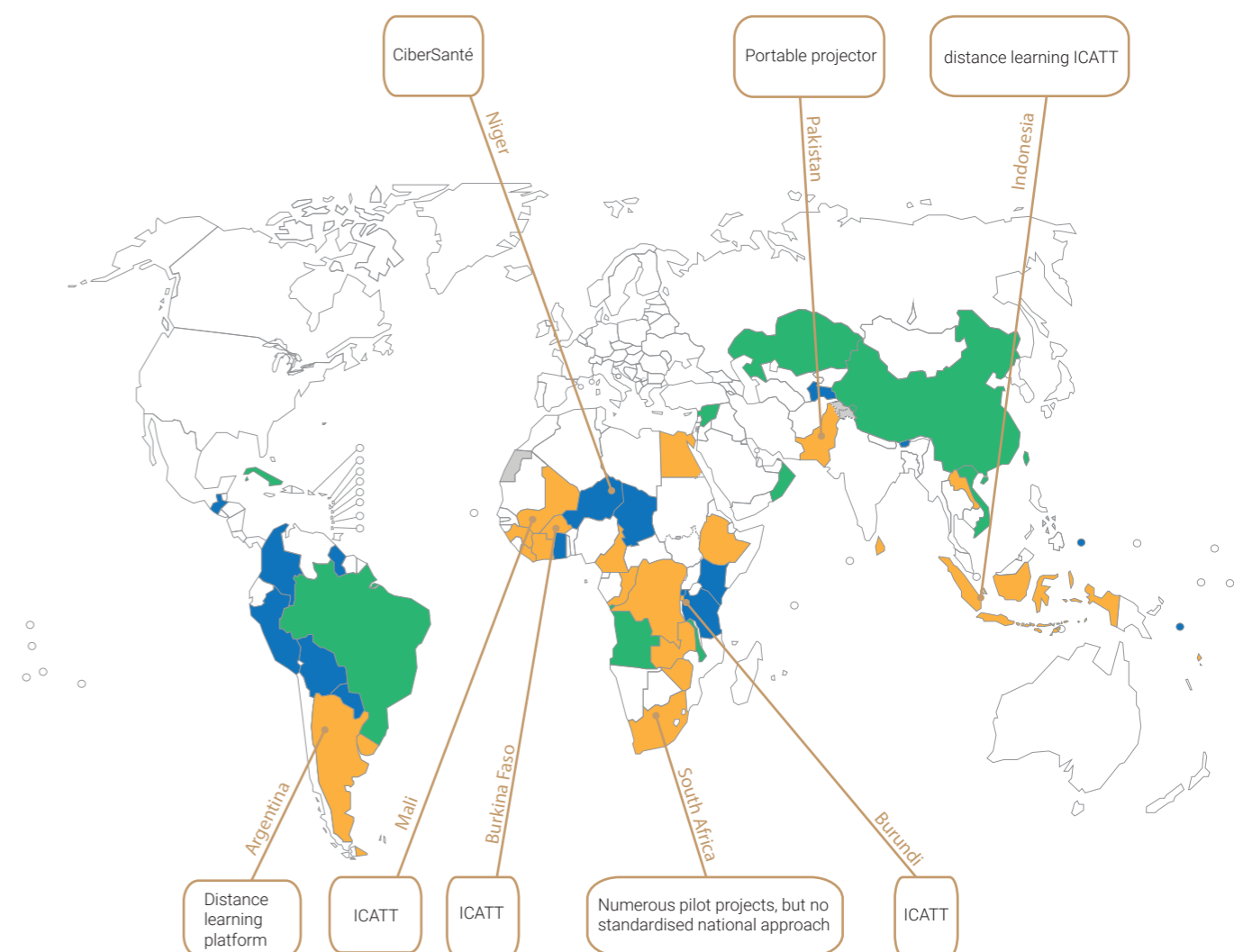


Fig. 29. Status of implementation of provider training and education innovations by country

Forty-six countries reported innovations for provider training and education (Fig. 29). Some of these (for example, ICATT, reported being used by Burkina Faso,

Burundi, Indonesia and Mali) have been described in the section on improving health worker skills. Niger reported the presence of a "Ciber santé" (cyber health), where

people can use technology to access information and literature. Pakistan used portable projectors.

SUPPLY CHAIN MANAGEMENT

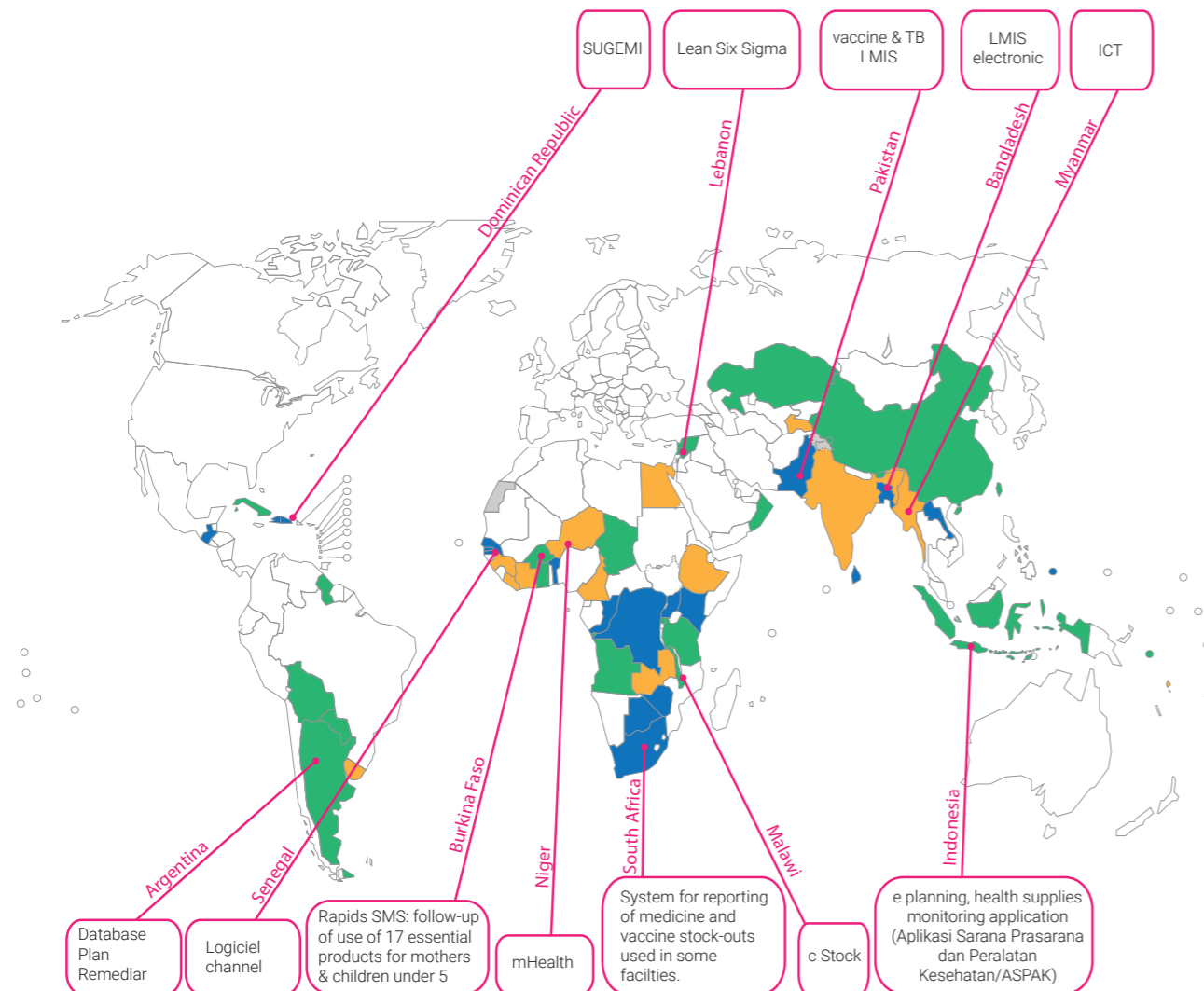


Fig. 30. Status of implementation of supply chain management innovations by country

Innovations supported supply chain management in 51 countries (Fig. 30). Indonesia fully scaled up e-Health for planning, management of facilities, infrastructure and medical equipment, with a specific application for monitoring health supplies. Burkina Faso implemented rapidSMS nationwide to follow the use of 17 essential products for mothers and young children. Malawi scaled up cStock (Shieshia et al., 2014) nationally to allow health surveillance assistants to report community-level stock outs of IMCI drugs via text messaging. Bangladesh, Pakistan and South Africa reported various types of logistics management and information systems (LMIS). Bangladesh used an electronic LMIS, Pakistan used a similar system for vaccines and TB medications, and South Africa identified stock outs of medicines and vaccines in health facilities. The Dominican Republic used an integrated medicine and supply management system (SUGEMI), with functions distributed among five different entities: the national and regional pharmaceutical management units; the essential medicines programme, disease control programmes, and health facilities (USAID, 2014). In Lebanon, Lean and Six Sigma were used for logistics management.

FINANCIAL TRANSACTIONS AND INCENTIVES

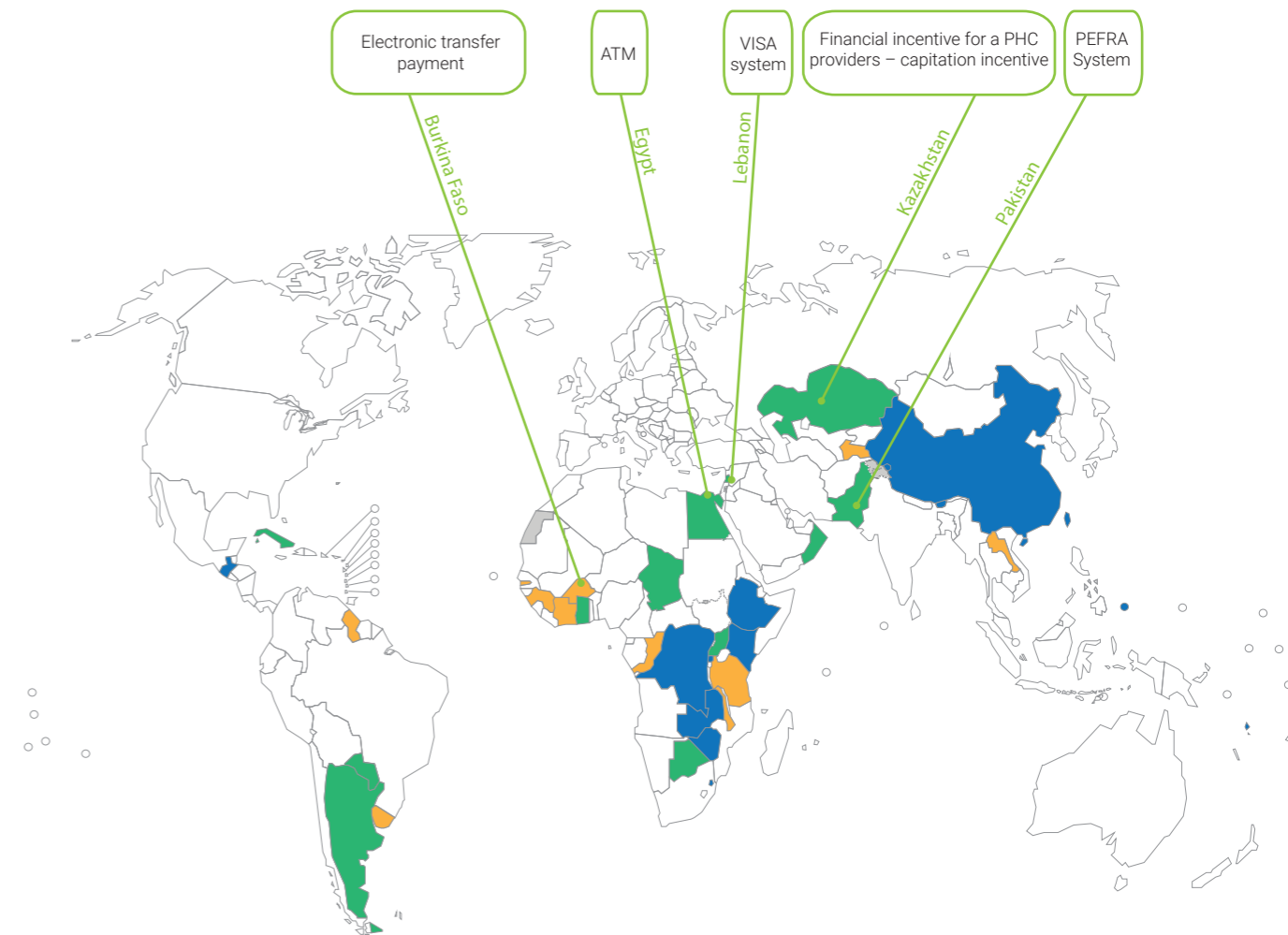


Fig. 31. Status of implementation of financial transactions and incentives innovations by country

Innovations used for financial transactions and incentives were reported by 35 countries (Fig. 31). Burkina Faso, Egypt and Lebanon used money transfers, while Kazakhstan provided financial incentives for primary health care providers. Pakistan described a project to improve financial reporting and auditing system. to Financial Reporting and Auditing Project - PIFRA) to support a top-to-bottom government budgeting, accounting and auditing system.



Improving family practices and community care

Reducing child mortality and morbidity requires a partnership between health workers and families, with support from communities. Families need to be able to provide adequate home attention to the healthy growth and development of their children and to respond appropriately when their children are sick, by seeking adequate and timely care

and giving recommended treatments (WHO, 1999g). Improving family and community practices was reported to be implemented by 83% (78/94) of responding countries (Fig. 12). Eighty-nine per cent (48/54) of medium and high mortality countries reported implementation of this component, while 75% (30/40) of low mortality countries reported

implementing it. At least 90% of responding countries in the African region (90%; 37/41), the region of the Americas (93%; 14/15) and the Western Pacific region (90%; 9/10) reported implementation of the third component. In contrast, only 46% (6/13) of countries in the Eastern Mediterranean region reported it.

Characteristics of CHWs

CHW educational profile

Secondary/high school was the most frequently reported level education required for CHWs (41%; 35/85), followed by primary school (25%; 21/85) and minimal literacy and numeracy (20%; 17/85). As shown in Fig. 32, the proportion of countries in which primary school is the basic education requirement is higher in high mortality countries (40%, 8/20), showing a mortality-related

gradient: it was lower in countries with medium rates (30%, 10/33), and lowest in countries with low mortality rates (9%, 3/32). Very few countries with high mortality require a secondary school level education (10%, 2/20). It is also more common to have CHWs with primary level of education among low income countries (35%; 10/29) and CHWs with secondary/high school

education in middle income countries (47%; 26/55). The African region has the highest proportion of countries where primary school is a minimum education requirement (40%, 15/40); while the regions of South-East Asia (67%, 6/9) and Western Pacific (75%, 6/8) have the highest proportion of countries where secondary/high school is a minimum education requirement.

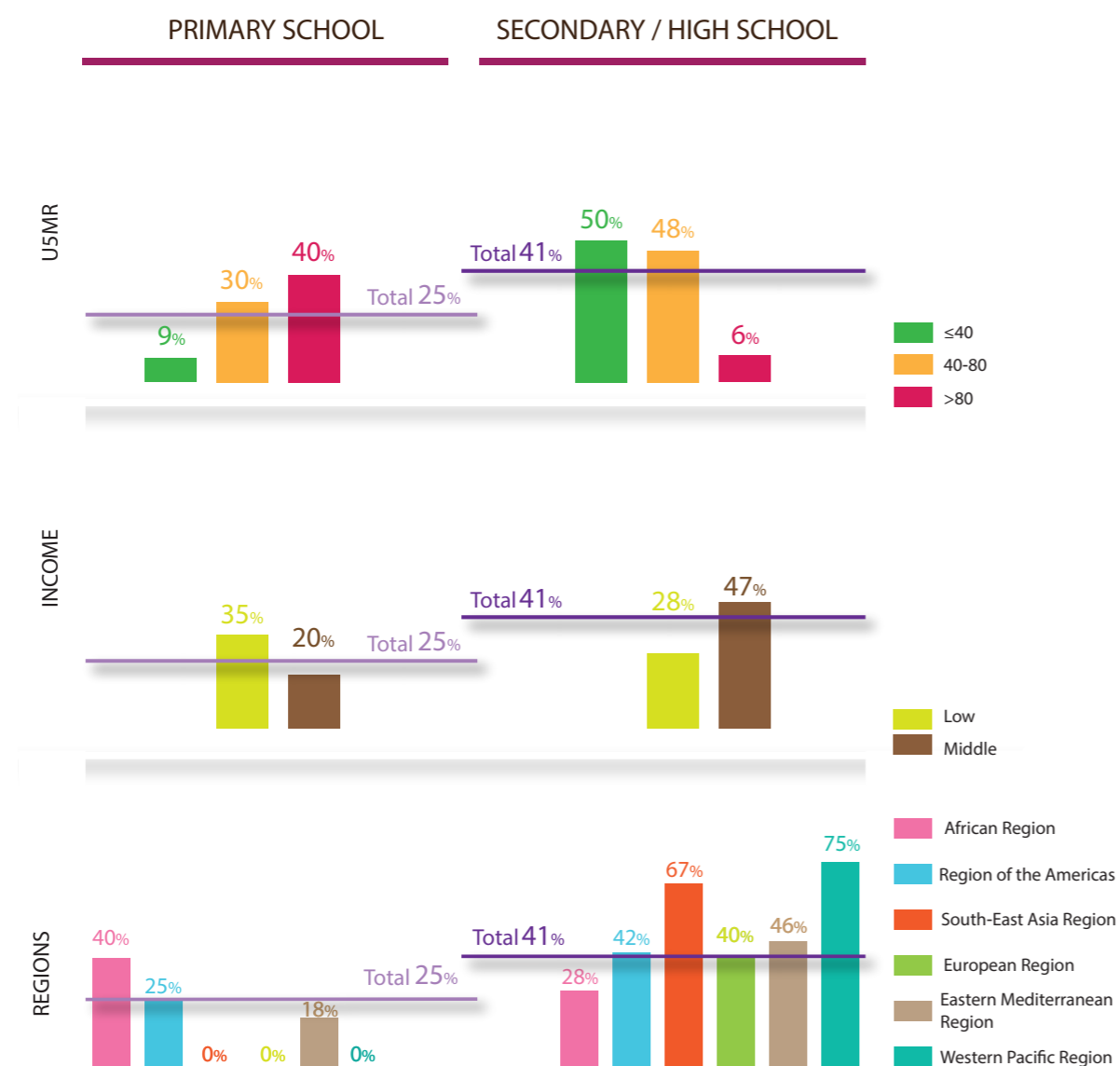


Fig. 32. Minimum education requirement for CHWs providing care for Newborns and Children in the community by U5MR, income level and WHO regions

Incentives

Among the 84 responding countries, 14 (17%) stated that CHWs received neither incentives nor remuneration. Non-monetary incentives were reported by 23% (19/84) of countries and monetary remuneration by 61% (51/84). Among countries that reported CHWs are paid,

61% (31/51) said they are provided a salary and 29% (15/51) indicated that they receive a type of results-based or performance-based stipend. Payment by salary is more common in low mortality countries than in high mortality countries: 53% (17/32) versus 25%

(5/20) (Fig. 33). Similarly, CHW payment by salaries is two times more frequently reported among middle income (44%; 24/54) than among low income (21%; 6/29) countries.

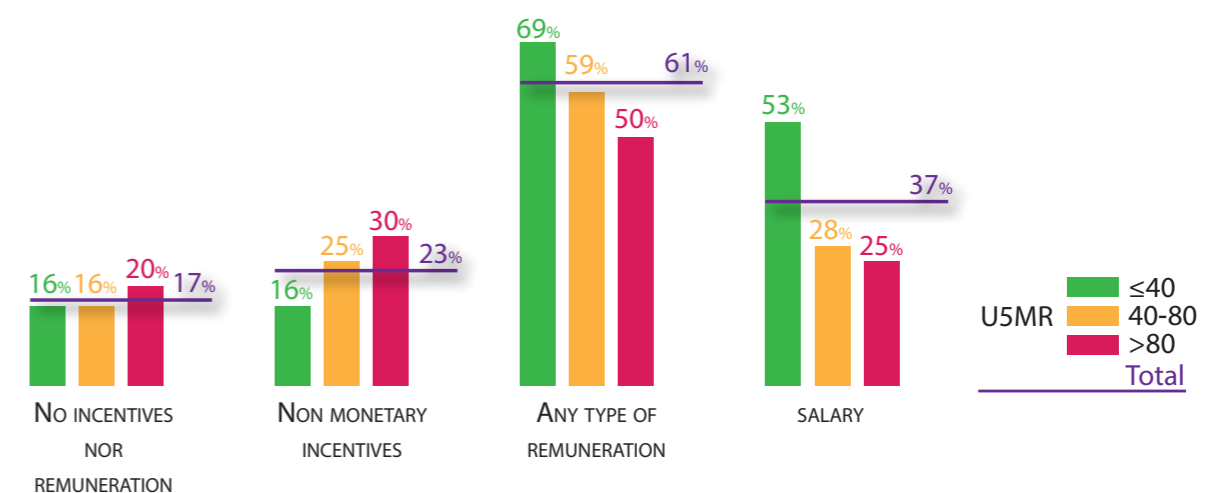


Fig. 33. Type of incentive / remuneration received by CHWs according to levels of U5MR

Population coverage, supervision and referral activities

The majority of responding countries (71%; 45/63) reported that one CHW covered up to 1000 under-five population. Bangladesh and Botswana reported a density of one per more than 5000. Where U5MRs were higher, there was a higher proportion of countries with a catchment population up

to 1000. Supervision for CHWs was mainly provided by an IMCI trained supervisor (63%; 58/92) and through mentorship in health facilities (45%; 41/92), followed by a non-IMCI trained supervisor (27%; 25/92), and peer-support (15%; 14/92). Ninety-five per cent (89/94) of the responding

countries stated that CHWs facilitated referrals. The main mechanisms used by CHWs to facilitate referrals were: referral note (71%; 67/94), phone communication to referral centres and transportation (46%; 43/94 for both).

Implementation of key community and family practices

Key family practices include:

1. Breastfeeding infants exclusively for at least six months (HIV positive mothers need special counselling support on infant feeding to understand and practice the safest option)
2. Starting at about six months of age, feeding children freshly prepared energy and nutrient rich complementary foods, while continuing to breastfeed up to two years or longer.
3. Ensuring that children receive adequate amounts of micronutrients (vitamin A and iron, in particular), either in their diet or through supplementation or point-of-use fortification of foods with micronutrients.
4. Disposing of faeces, including children's faeces, safely; and washing hands after defecation, before preparing meals and before feeding children.
5. Taking children as scheduled to complete a full course of immunizations (BCG, OPV, HepB, DPT, Hib, RTV, PCV and measles) before their first birthday.
6. Protecting children in malaria-endemic areas, by ensuring that they sleep under insecticide-treated bednets and seasonal malaria chemoprevention during the malaria season in areas of highly seasonal transmission.
7. Promoting early childhood development by responsive parent–child interactions, and through talking, playing, early learning and providing a stimulating environment.

8. Continuing to feed and offer more fluids, including breastmilk, to children when they are sick.
9. Giving sick children appropriate home treatment for infections.
10. Recognizing when sick children need treatment outside the home and seek care from appropriate providers.
11. Following the health worker's advice about treatment, follow-up and referral.
12. Ensuring that every pregnant woman has adequate antenatal care (including at least eight antenatal visits with an appropriate health care provider, and receiving the recommended doses of the tetanus toxoid vaccination). Ensuring that the mother has support from her family and community in seeking care at the time of delivery and during the postpartum and lactation period.
13. Taking action to prevent child abuse or any form of maltreatment, recognizing it has occurred and take appropriate action.
14. Adopting and sustaining appropriate behaviour regarding HIV/AIDS prevention and care for the sick and orphans.
15. Ensuring that men actively participate in providing childcare, and that they are involved in reproductive health initiatives.
16. Preventing and providing appropriate treatment for child injuries.

Box 5. Description of key family practices (Adapted from WHO, 1999g)

In general, activities to promote key family practices for child health (WHO, 1999g) (Box 5) have been implemented through home visits, and through social mobilization or community groups. Delivery mechanisms used are illustrated in Fig. 34. Among 82 responding countries, 64 (78%) reported

providing home visits for counselling on key family practices; 57 (70%) made home visits in the postnatal period; and 54 (66%) reported home visits during pregnancy and community groups. Social mobilization was reported by 48 countries (59%). Overall, the proportion of countries using home visits

as a delivery mechanism was higher among high implemter countries. It was lower in the Eastern Mediterranean and Western Pacific regions. Community groups were less frequently used in the European region.



Fig. 34. Percentages of responding countries having implemented any or a specific mechanism to promote key family practicies for child health

Community case management

The community case management (CCM) of childhood illnesses has been defined as the community-level provision to children of curative treatments for diarrhoea, pneumonia, malaria and/or neonatal infections by CHWs (de Sousa et al, 2012). Compared with other approaches to health care, the provision of services at the community level is likely to reach not only more people but also the populations most in need. Because of its potential to increase the number of care providers at the community level, it can possibly accelerate progress towards ending preventable child deaths. CCM was not initially included in IMCI and was introduced after policymakers realized that many child deaths occurred in the community, before the child reached the health centre. In terms of its organization, 64% of the 90 responding countries report presence of a focal point for C-IMCI at national level (Fig. 35). This proportion was higher in high mortality (80%; 16/20) and low income countries (83%; 24/29).

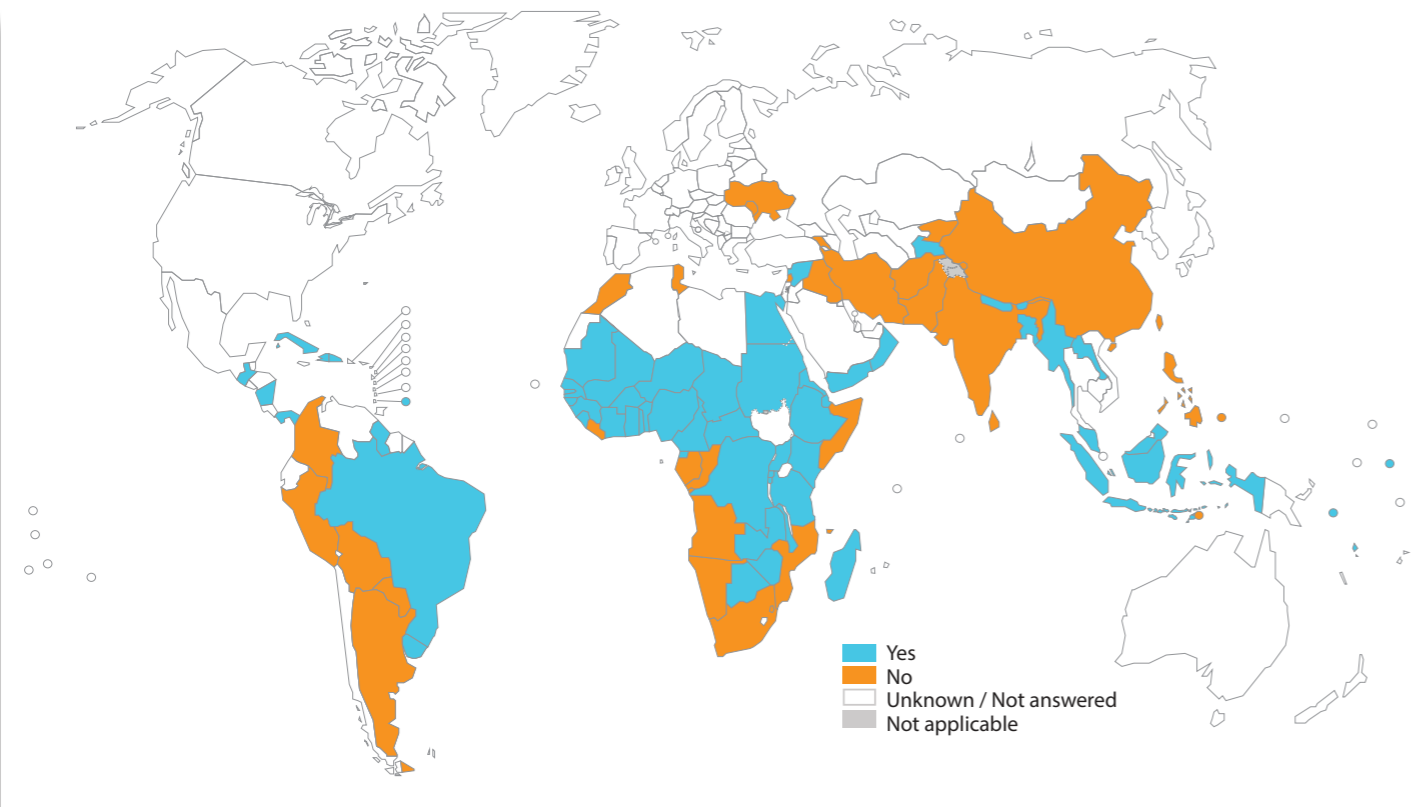


Fig. 35. Countries reporting existence of a focal point for community IMCI at national level

It has been shown that countries that had adopted CCM policies for the management of pneumonia and diarrhoea were three times more likely to achieve the Millennium Development Goal 4 (MDG4) target of reducing under-five mortality by two-thirds between 1990 and 2015 than countries that did not have these policies in place (Boschi-Pinto, Dilip and Costello, 2017). Countries reported on whether or not they have written policies that allow CHWs to treat childhood illness (Fig. 37 and 38). Overall, 61 countries (66%, 92 countries) reported having written national policy for community-based care for children. This proportion was higher among high implementers (71%; 37/52) than among middle (64%; 9/14) and low (50%; 6/12) implementers. Policies are more frequently reported in low income countries (89%; 25/28).

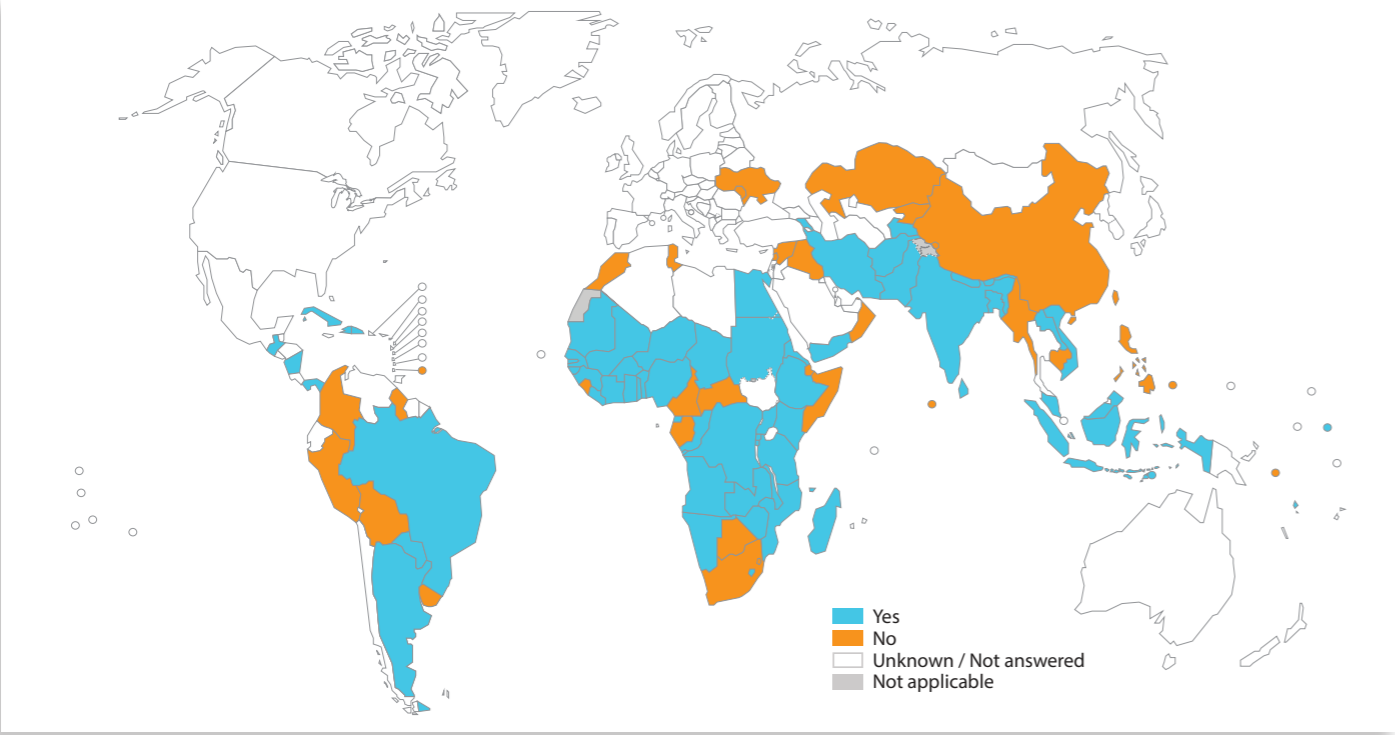


Fig. 37. Countries with a written national policy for community case management of childhood illness

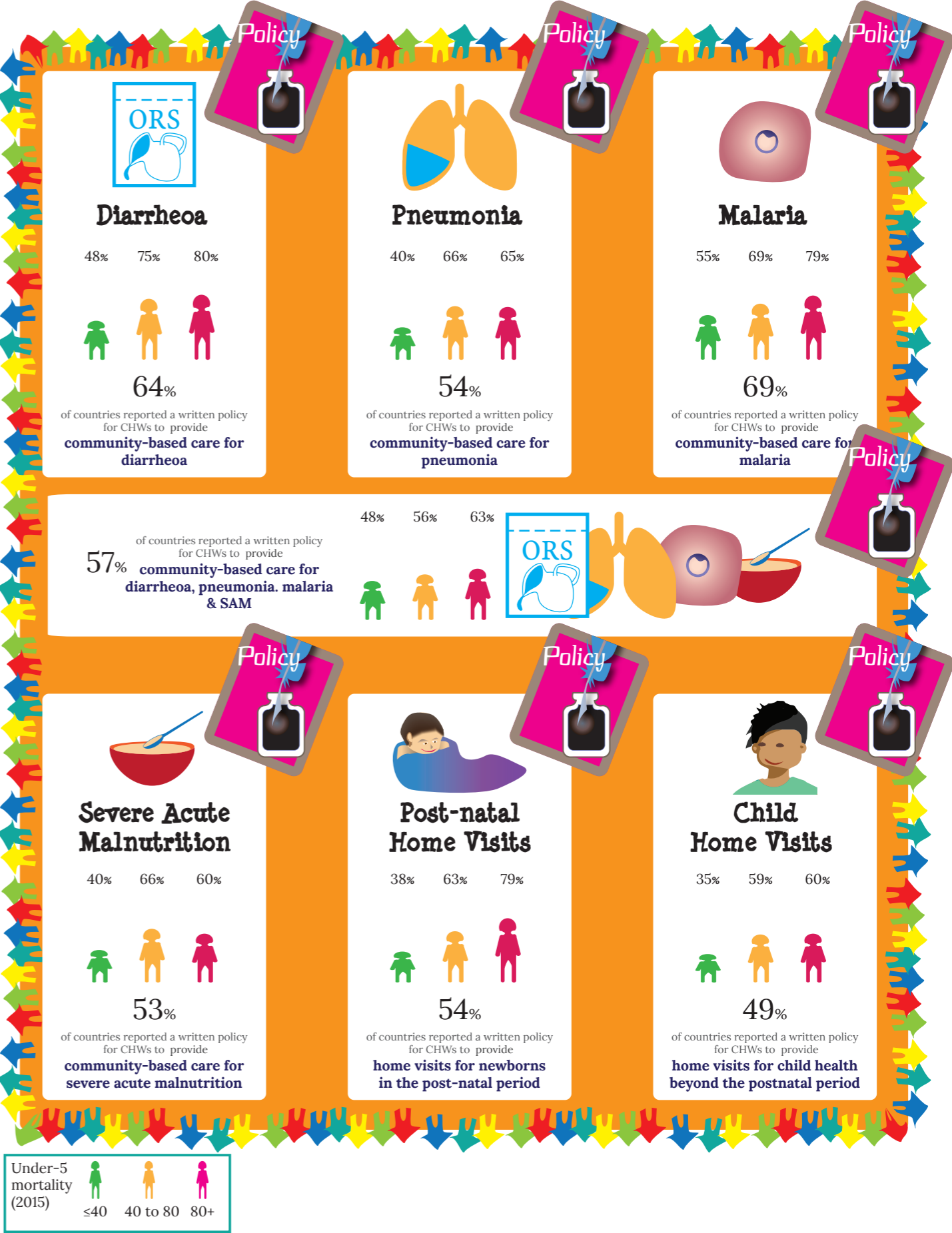


Fig. 38. Proportion of countries reporting home visits and specific CCM policies for childhood illnesses and conditions by level of U5MR

Care for children under five years of age was reported to be provided by more than three quarters (78%, 72/92) of responding countries (Fig. 39). The implementation of CCM, in general, was higher in high (85, 17/20) and medium (94%, 31/33) mortality countries as compared to low mortality countries (62%, 24/39). These variations are similar to those observed for the presence of CCM policy in countries. The proportion of CHWs providing care for children was also higher among high implementers (87%; 45/52) than among middle (73%; 11/15) and low (67%; 8/12) implementers (Fig. 40).

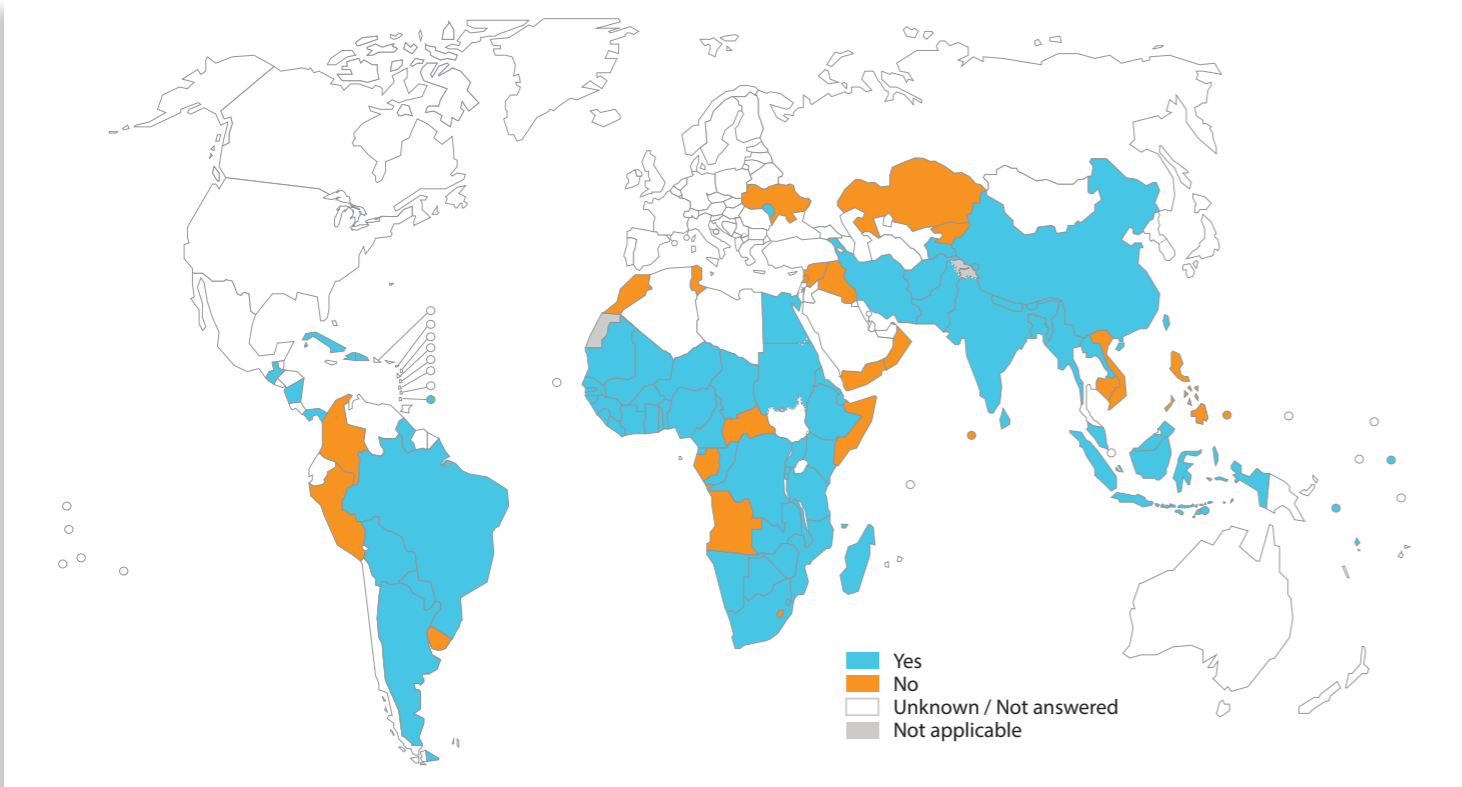


Fig. 39. Countries reporting that CHWs provide care for children

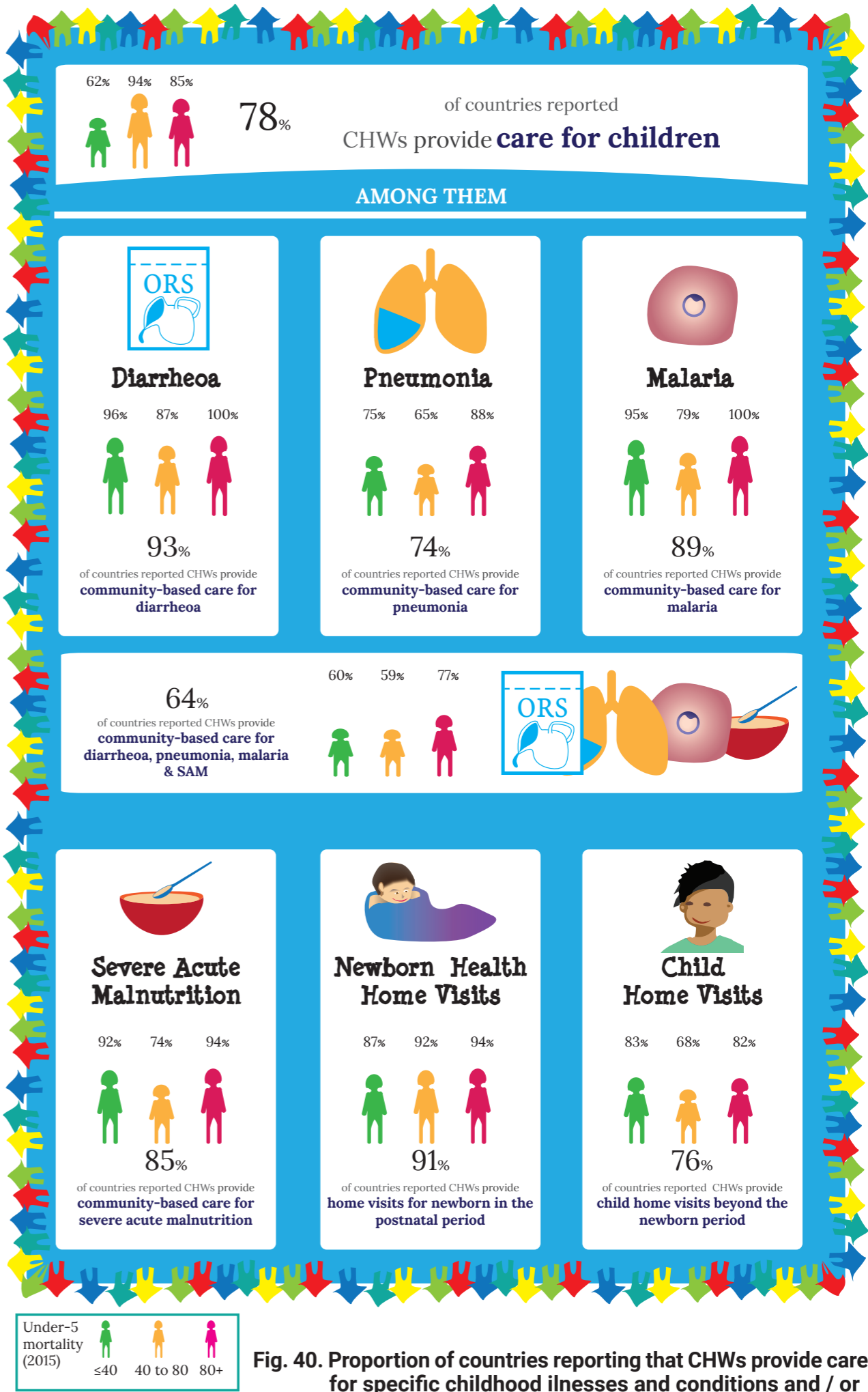


Fig. 40. Proportion of countries reporting that CHWs provide care for specific childhood illnesses and conditions and / or through home visits by level of U5MR

Implementation of CCM for diarrhoea for children under 5 years of age was the highest among all conditions. Among the 72 countries reporting that CHWs provide care for children, nearly all (93%; 67 countries) reported having CCM for diarrhoea. Amid these 67 countries, all but one responded to the corresponding question on policy and 80% (53/66) reported having the relevant written policy in place. Conversely, four countries reported having the policy in place but not implementing it. All countries in the regions of the Americas, Europe, and South-East Asia reported having implemented it (12, 3, and 8 countries, respectively). The African region reported 92%, (34/37), the Eastern Mediterranean reported 83% (5/6) and the Western Pacific

reported 83% of countries (5/6) implementing it. The proportion was highest in low-income countries (96%, 26/27). In contrast to the 93% of countries that reported providing CCM for diarrhoea, only 74% (53/72) reported that CHWs provide CCM for pneumonia. From these 53 countries, 43 reported having the relevant written policy in place. The proportion of countries that reported providing CCM for pneumonia was higher in the European (100%, 3/3) and South-East Asia (88%, 7/8) regions, and lower in the Western Pacific (40%, 3/6). The proportion was also highest in low-income countries (82%, 22/27).

Most of the 66 malaria-

endemic countries (89%; 59/66) that responded to the question reported CCM for malaria by CHWs. All 27 low income countries and all 17 high mortality countries implemented it. Among the 59 countries that responded, reporting CCM for malaria, 49 (83%) also reported having the corresponding policy.

Other aspects of community care, also supported by WHO and UNICEF (WHO et al., 2007; WHO and UNICEF, 2009), include the management of severe acute malnutrition (SAM) and home visits. CCM for SAM was mentioned by 85% (61/72) of countries. Of these 61 countries, 41 (67%) also had the corresponding policy in place. Regarding home visits, more responding countries reported providing it to newborn babies (91%,

59/65) than for children beyond the newborn period (76%; 55/72). Corresponding

policies for SAM in children beyond the newborn period were reported for 39 of the 55

responding countries (71%).

integrated CCM (iCCM)

Between 2010 and 2012, the key elements of CCM were brought together in a package : integrated community case management (iCCM) (UNICEF and WHO, 2012), typically delivered by CHWs at the community level. It encompasses treatment for i) childhood pneumonia with antibiotics, ii) diarrhoea with zinc and oral rehydration salts (ORS) and iii) malaria

with artemisinin combination therapy (ACT). The provision of this timely and effective integrated treatment of diarrhoea, pneumonia and malaria by CHWs to populations with limited access to facility-based health care providers was reported by 72% (52/72) of the responding countries. Among the 66 malaria endemic countries that responded to

this question, 73% (48/66) reported the existence of iCCM. Policies were present in 88% of these countries (42/48 countries with iCCM, Figure 41). Twenty-four (57%) of these 42 countries are in the African region.

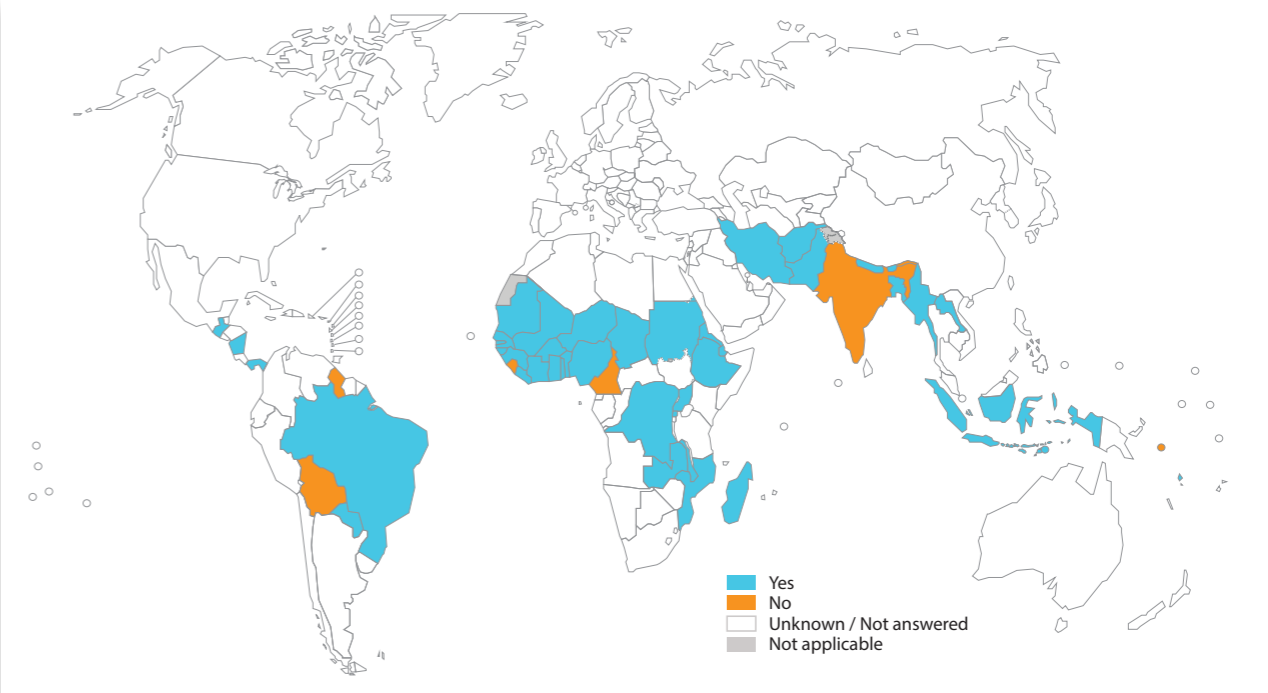


Fig. 41. Malaria endemic countries reporting iCCM implementation and who also report that they have a written national iCCM policy





Implementation of the three IMCI components

Coverage of IMCI is reported to be comprehensive in many target countries. However, although many countries have expanded aspects of implementation to a large proportion of their districts, few have achieved full scale up and, in many aspects, implementation remains incomplete. Moreover, despite the high reported implementation rates, the strategy is still not reaching the children who need it most: coverage of IMCI is lowest in high mortality countries.

Forty-four countries have reported implementing IMCI in more than 90% of

districts and to have all three IMCI components in place; these are considered full implementer countries (Fig. 42). These countries are home to 160 million of the global under-five population (UNDESA, 2017). The Table 3 below provides detailed information for these 44 countries.

MDG4 achievement is a critical consideration in measuring country's success in the reduction of under-five mortality. It is striking to observe that among the 26 low and lower-middle income countries that have achieved MDG's 4 target, 20

(77%) are full implementer countries. Moreover, full implementer countries were 3.6 [95% CI 1.5 – 8.9] times more likely to achieve MDG 4 than the remaining countries (Medcalc): 22 of the 44 (50%) full implementer countries achieved MDG 4, while only 11 out of the 51 (22%) other countries did so. Our results reinforce the original concept that full implementation of IMCI can lead to substantial impact on child health and survival.

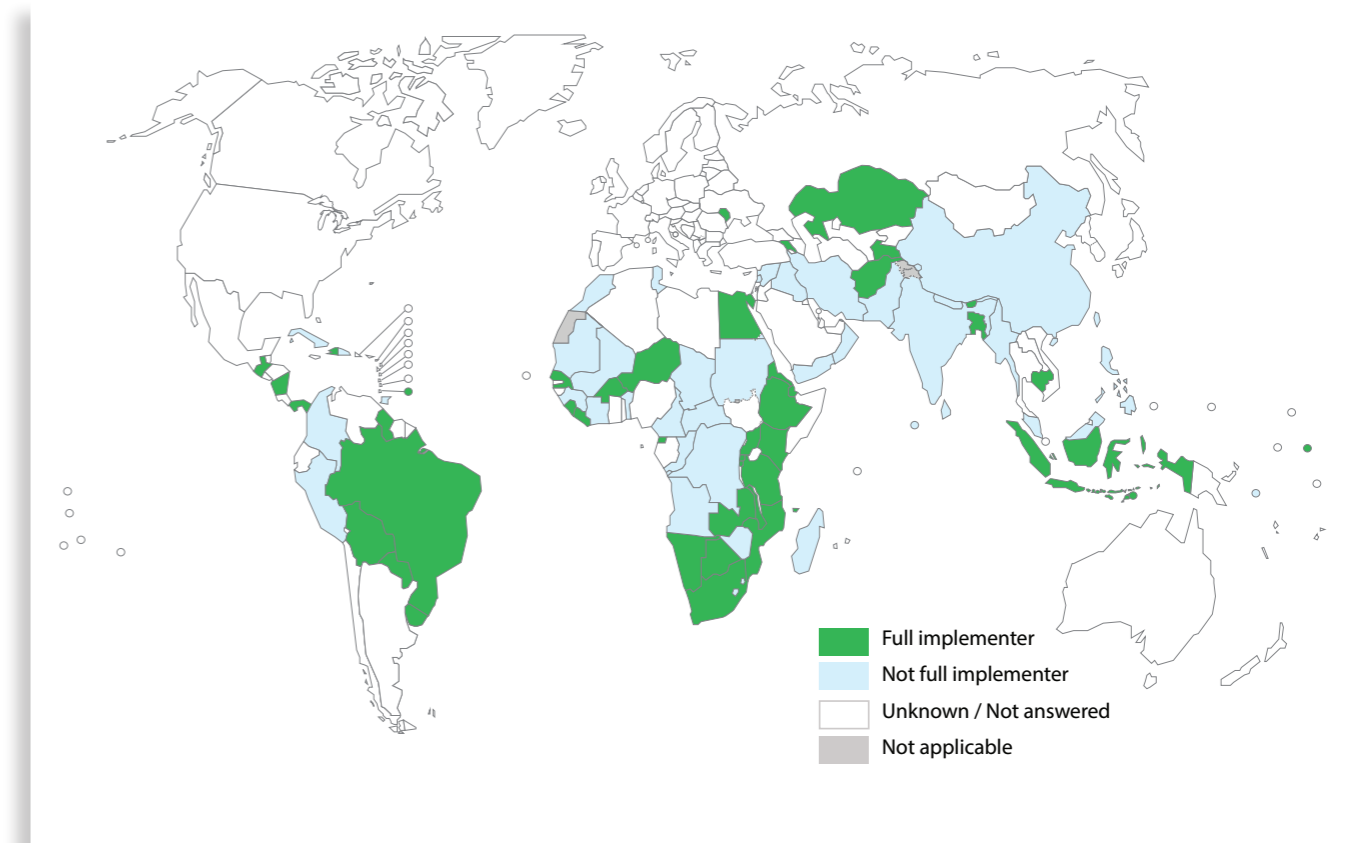


Fig. 42. Full implementer countries

Table 3. Full implementer countries

Country	U5MR	WHO region	Income	MDG4
Afghanistan	91	Eastern Mediterranean Region	Low	No
Armenia	14	European Region	Lower middle	Yes
Bangladesh	38	South-East Asia Region	Lower middle	Yes
Bhutan	33	South-East Asia Region	Lower middle	Yes
Bolivia (Plurinational State of)	38	Region of the Americas	Lower middle	Yes
Botswana	44	African Region	Upper middle	No
Brazil	16	Region of the Americas	Upper middle	Yes
Burkina Faso	89	African Region	Low	No
Burundi	82	African Region	Low	No
Cambodia	29	Western Pacific Region	Lower middle	Yes
Comoros	74	African Region	Low	No
Djibouti	65	Eastern Mediterranean Region	Lower middle	No
Egypt	24	Eastern Mediterranean Region	Lower middle	Yes
Equatorial Guinea	94	African Region	Upper middle	No
Eritrea	47	African Region	Low	Yes
Ethiopia	59	African Region	Low	Yes
Grenada	12	Region of the Americas	Upper middle	No
Guatemala	29	Region of the Americas	Lower middle	No
Guyana	39	Region of the Americas	Upper middle	No
Haiti	69	Region of the Americas	Low	No
Indonesia	27	South-East Asia Region	Lower middle	Yes
Kazakhstan	14	European Region	Upper middle	Yes
Kenya	49	African Region	Lower middle	No
Kiribati	56	Western Pacific Region	Lower middle	No
Liberia	70	African Region	Low	Yes
Malawi	64	African Region	Low	Yes
Mozambique	79	African Region	Low	Yes
Namibia	45	African Region	Upper middle	No
Nicaragua	22	Region of the Americas	Lower middle	Yes
Niger	96	African Region	Low	Yes
Panama	17	Region of the Americas	Upper middle	No
Paraguay	21	Region of the Americas	Upper middle	No
Republic of Moldova	16	European Region	Lower middle	No
Rwanda	42	African Region	Low	Yes
Senegal	47	African Region	Low	Yes
Sierra Leone	120	African Region	Low	No
South Africa	41	African Region	Upper middle	No
Tajikistan	45	European Region	Lower middle	No
Timor-Leste	53	South-East Asia Region	Lower middle	Yes
Uganda	55	African Region	Low	Yes
United Republic of Tanzania	49	African Region	Low	Yes
Uruguay	10	Region of the Americas	High	No
Zambia	64	African Region	Lower middle	Yes
Zimbabwe	71	African Region	Low	No





Strengths, barriers and ways forward



Countries were requested to identify the principal strengths of IMCI and barriers to its implementation by agreeing or disagreeing with a suggested list. They then named actions to be taken in the future to sustain and improve implementation.

The major strengths of IMCI

identified by 93 responding countries included the holistic approach to the child (90%; 84 countries), the rational use of medicines (89%; 83 countries), the quality of health care services (87%; 81 countries), and the efficiency of health care services provided (80%; 74 countries). Compared to other regions,

South-East Asia seems to be the least appreciative of these different IMCI strengths overall. Efficiency in programming and in service provision, and equity in access and coverage of intervention were more appreciated by low income than by middle income countries.

Strengths





Barriers

National level

At national level, the reported major barriers to implementing IMCI were budget for training (85%; 78/92), mentorship and supervision (74%; 68/92), cost or sustainability of activities (63%; 58/92), and availability of dedicated budget line (60%; 55/92). The two least commonly reported barriers were strategic planning (34%; 31/92) and adaptation of new guidelines (19%; 17/92). Countries with high U5MRs and/or low national income

were more likely to report barriers related to budget for training and to medicine procurement/supply chain. Countries with higher levels of IMCI implementation were more likely to report issues around mentorship and supervision, and less likely to report barriers related to programme management and political support and ownership.

Budget for training and medicine procurement/supply

chain were reported more frequently as barriers by low income countries (97%; 28/29 and 62%; 18/29, respectively) as compared to middle income countries (80%; 49/61 and 43%; 26/61, respectively). Countries where 90% or more of districts implement IMCI (high implementers) were less likely to report political support and ownership as a barrier (82%; 42/51) and more likely to report as a barrier mentorship and supervision (31%; 16/51).

Regional level

Major barriers reported at regional/district level were staff turnover (84%; 76/91), budget for training (82%; 75/91), and mentorship and supervision (74%; 67/91). By region, reports of staff

turnover as a barrier ranged from 93% (13/14) in the Eastern Mediterranean region to 58% (7/12) in the region of the Americas. The largest range in relation to the U5MR disaggregation pertains to

medicine procurement / supply chain management. Sixty per cent (12/20) of high mortality countries report it as a barrier in contrast to only 29% (11/38) of low mortality countries.

Facility level

Barriers reported at facility level included staff retention (80%; 73/91), mentorship and supervision (79%; 72/91), and staff motivation (74%; 67/91). These barriers were more frequently reported among high mortality

countries. Reporting of staff retention as a barrier ranged from 93% (13/14) in the Eastern Mediterranean region to 42% (5/12) in the region of the Americas. The least commonly reported barriers by all countries

were lack of guidelines (24%; 22/91). In contrast, the lack of enforcement of implementation of IMCI guidelines and job aids was reported by 69% (63/91) of countries.

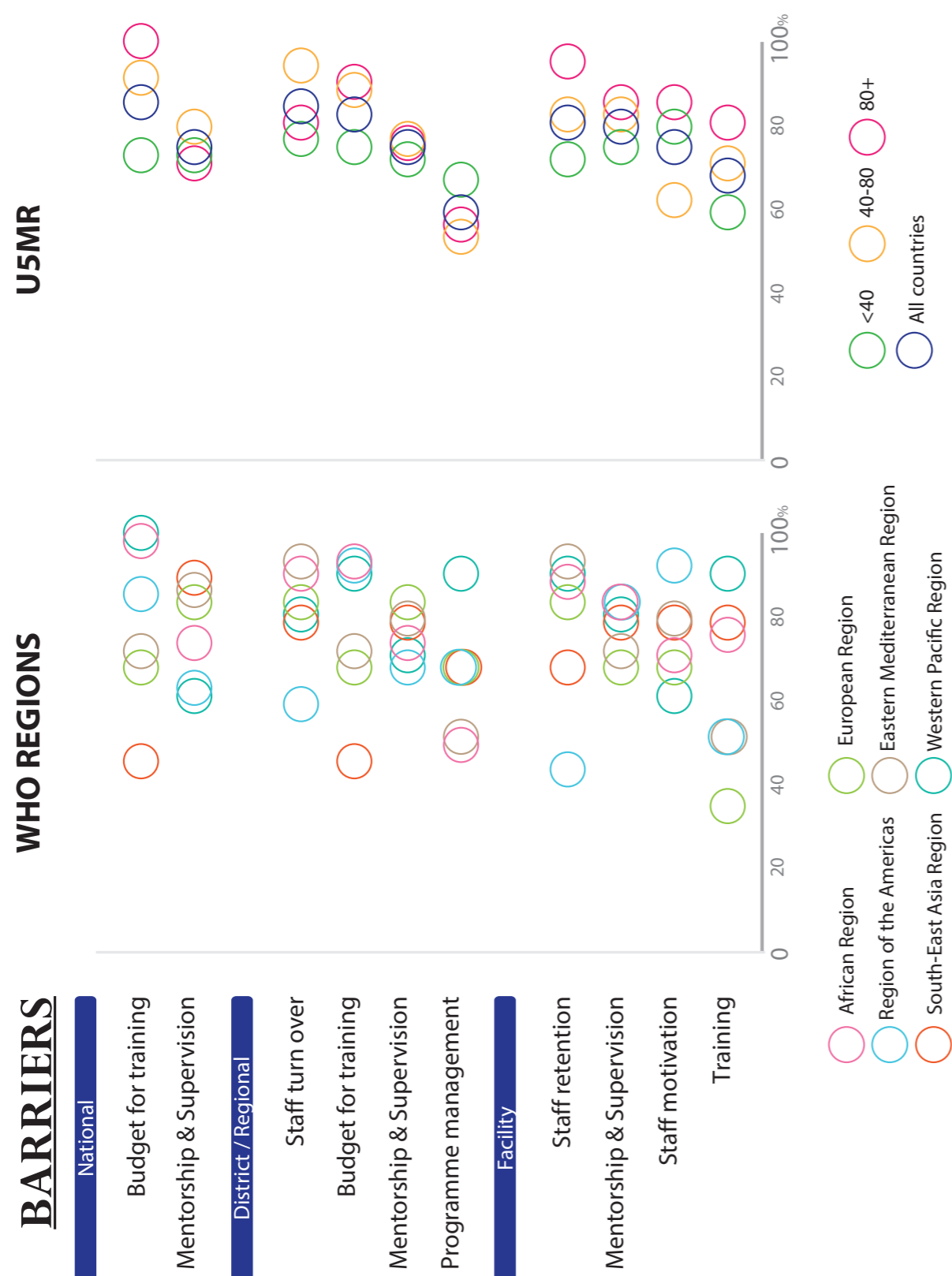


Fig. 43. Proportion of countries reporting specific barriers for the implementation of IMCI at national, district / regional and health facility level by WHO region and U5MR



Fig. 44. Proportion of countries reporting specific barriers for the implementation of specific IMCI activities at national, district / regional and health facility level by source of funding



Ways forward

Countries were requested to suggest ways to strengthen access to child health services, to increase quality and coverage, and to make IMCI more relevant to their needs. Suggestions included better integration of current strategies into general health services, with a costed workplan and committed budget. Countries also mentioned improved training at all levels, including pre-service, and a need for better supervision and mentoring. Health systems issues were perceived as limiting implementation, with strong requirements for a functioning supply chain, HMIS and a monitoring and evaluation system. It was suggested that compliance with national guidelines and good implementation practices should be recognized and rewarded. Community-level activities, including outreach and home visits, need more emphasis. Similar comments were received for the management of sick newborns at all levels. Urgent attention is required for high-level advocacy and political will to ensure government leadership and ownership. Strategic planning and improved internal coordination (such as a dedicated focal person for child health, regular review meetings and a functioning national steering committee) are essential, as is effective coordination with partners to overcome fragmentation.

Countries in the African region expressed a strong need

for greater resources, both domestic and external. Some suggested having a national budget line for RMNCAH, or transforming IMCI into a programme to ensure state financing. There were suggestions for a community and social health insurance scheme, and a need was underlined to improve human resources, including more staff, and better retention and motivation. In The Americas, countries focused on improving programming for home care / community-level care, and on strengthening community participation and programmes for social protection. Eastern Mediterranean and European countries alike mentioned increased and sustained funding, stronger political commitment and advocacy to institutionalize gains, and needed improvements in primary health care systems. Countries in the European region also suggested an empowered role of primary health care providers. Countries in the South-East Asia region perceived the need to clearly define the place of IMCI within national strategies. They suggested expanding coverage to urban health clinics and improving village health units, particularly in remote areas. As in the region of the Americas, they also mentioned national health insurance schemes, but went a step further in suggesting that these could also reinforce standards of care. The Western Pacific region focused on the need

to provide training for parents and caregivers in nurseries to recognize and act on danger signs.

The most frequent suggestions to make IMCI more relevant to today's needs included:

- Greater investment in pre-service training and supportive supervision/mentoring. IMCI skills should be included in health training schools. To support this, the guide for including IMCI in pre-service training will need to be updated, and modules developed that can be implemented in the form of on-the-job training and mentoring.
- Better use of communication technologies. There is very strong demand for ICATT, for electronic versions of other IMCI documents, for mobile phone applications and for digitizing the IMCI chart booklet. Links with monitoring and evaluation could be done through m-health/e-health platforms.
- Increased attention to community outreach and mobilization, and implementation of C-IMCI. All regions mentioned this. Home visit strategies should be revised, and roles and structural issues clearly defined to avoid duplication.
- Increased funding and political commitment needs were mentioned by all regions, except Europe. Suggestions included integrating IMCI into other financing modalities, advocating for the inclusion

Conclusion

of IMCI in country workplans with clear budget lines, and re-appropriation of IMCI by funders.

- Continued generation of evidence and support to IMCI as the best option to deliver high impact child health interventions.

- Institutionalization of IMCI and country ownership. IMCI should be included

under health insurance coverage, and would benefit from stronger coordination between different and cross-cutting areas and programmes. It should also be made mandatory for every PHC worker and institution.

As stated by a survey respondent in the European region “IMCI cannot be implemented successfully separately. It has to be

implemented in an integrated way along with other quality improvement activities ...” Finally, some countries requested an update and consistency check on modules concerning newborn health, while others suggested an alignment with the SDGs and with the private sector.

Results point to a unique opportunity to help steer future policies, programmes and strategies. Given the many competing priorities of survey respondents, the 80% response rate obtained reveals the interest IMCI still elicits, especially in low and middle income countries, and suggests a strengthened IMCI has a role to attend the call for “Survive, Thrive, Transform” from the Global Strategy for Women’s Children’s and Adolescents’ Health 2016-2030. The 95 countries that responded to the survey are home to the vast majority of under-five population and account for 95% of under-five deaths. These results therefore provide learnings from the past and directions on the future of global child health strategies, as well as guidance on how to promote the health and survival of children and to help achieve the UN health-related, post-2015 Sustainable Development Goals (SDGs).

Our results also reinforce the original concept that full implementation of IMCI can lead to substantial impact on child health and survival. Indeed it is striking to observe that the 44 full implementer countries were 3.6 times [95% CI 1.5 – 8.9] more likely to achieve MDG4 than the other 51 countries. However,

full implementation is least common in high mortality countries and hence, the strategy is not yet reaching many children in particular those who need it most.

As stated by WHO Director-General, “Ensuring universal health coverage [...] is the foundation for achieving the health objectives of the Sustainable Development Goals[...]. Our top priority must be to support national health authorities’ efforts to strengthen all the building blocks of health systems and to enact policies aimed at ensuring health care is equitable and affordable for all.” The development of resilient and robust global and local health systems capable of responding to public health emergencies and closely linked to efforts to achieve universal health coverage, is paramount. Moreover, “strengthening health systems is the best way to safeguard against health crises” (Ghebreyesus T, 2017). As shown in this survey, low income countries particularly hailed IMCI efficiency in programming and in service provision, as well as equity in access and coverage of intervention. Sadly, results highlight the weakness of the implementation of IMCI second component. Supervision and mentorship,

availability of essential medicines, and functional referral systems were among the areas with the least impressive results. Especial attention should be directed to both the second component of IMCI and to the current status of implementation of IMCI in emergency settings.

Despite the multiple and extensive limitations in IMCI implementation reported here, the findings of this survey provide an indication of the value and esteem that country-level stakeholders assign to IMCI. Truly, IMCI has generated a paradigm shift towards integrated programming for child health globally and in countries. This must be built upon in the current era of the sustainable development goals, when global leaders have committed to reach a grand convergence in child health and end preventable newborn and child mortality. Full implementation of IMCI in health facilities and communities with a critical focus on health system strengthening and on emergency crises will therefore be decisive for countries to secure UHC and to help achieve the UN health-related, post-2015 SDGs.

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Country cases

BANGLADESH

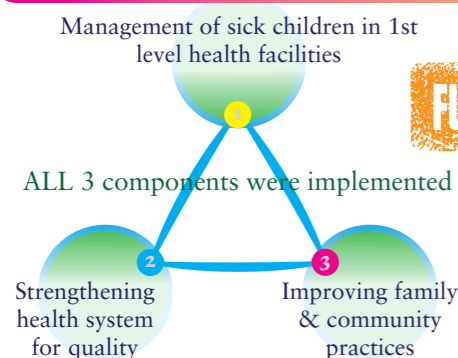
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Government is the Primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million):	15
Under 5 Mortality Rate (per 1,000 live births):	38
Neonatal Mortality Rate (per 1,000 live births):	23
MDG 4 achievement:	YES

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓

≥75% of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Guidelines

- IMCI guidelines include care of sick newborns in the first week of life
- No data National IMCI chartbooklet based on 2014 WHO IMCI chart booklet
- National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care
- Adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✗ Child Health Programme Management Training not introduced
- ✗ No Tools for bottleneck analysis & Strategic Planning

M&E

- ✓ HMIS includes IMCI monitoring indicators
- 2014 Last Child Health Programme Review conducted

Quality of Care

Q Assessments of Quality of Paediatric Hospital Care

Q No Paediatric Quality of Care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers are paid by salary

CCM	care	policy
diarrhoea	★	★
pneumonia	★	★
malaria	★	★
SAM	★	★
home visits newborn	★	★
home visits child	★	★
iCCM	★	★

Since 1998, IMCI has been Bangladesh's main health strategy for reducing child mortality and morbidity. The country has experienced large improvements in child health from the late 1990s to the present, and stakeholders say that IMCI has played a significant role in these improvements, citing improved access to care, good overall quality of care, and capacity building of healthcare providers as its main contributions.

IMCI is implemented nationwide and is one of the full implementer countries that achieved MDG4 in 2015. It is run by Bangladesh's Maternal, Newborn, Child & Adolescent Health and Reproductive Health departments. A national IMCI coordination team guides development and updating of guidelines and plans. Since 2003, the country has a "Health, Nutrition and Population" sector program to strengthen the health sector, which includes IMCI for guidelines to manage sick children alongside a number of other programs and strategies related to child health. There is a budget allocation for IMCI at national level but it is not detailed.

The country's policy environment is supportive of IMCI, as government, partners and ICDDR,B (a research body) all coordinate and collaborate on this strategy. Indeed key informants stated that the collaborative support of key partners around IMCI is its greatest strength, alongside the country's political commitment, leadership, aligned strategies, ownership, and the fact that IMCI is integrated as part of the overall health system. The initial capacity building of

program managers starting in 2000 was a crucial first implementation step of the IMCI planning guide.

IMCI is implemented in all 64 districts, in 460 of 491 Upazillas¹, in 3500 of 3827 union-level facilities, and in medical college hospitals. Implementation of pre-service IMCI is not yet scaled up but 23 colleges have included it in medical school curriculum. Adaptations to IMCI were made in 2002, 2009 and 2014, including revisions to newborn care guidelines to include infants from day 1. In addition, pre-service training was adapted several times by the government, making it part of the paediatric curriculum since 2005. Informants stated that, with appropriate training and supervision, adapted IMCI guidelines are considered safe and effective for management of severe pneumonia, especially if referrals are difficult because of geographic, financial, or cultural barriers. IMCI guidelines have been digitalized (eIMCI guidelines) in 3 districts, and web-based HMIS started with IMCI and is now common place.

While ownership of IMCI exists at highest levels, stakeholders said that this is less the case when it comes to mid and lower level managers. This is demonstrated by a reluctance to use the protocol in practice (reasons cited for non-use include time constraints and the fact that it does not include all health conditions). Stakeholders noted the need for strengthening lower level case-management training, referral linkages, supervision, monitoring, and follow up training. Although community IMCI exists, it is not as widespread as facility IMCI, since informants said the

"It should be a program of district managers"

Stakeholder at NGO

community does not feel ownership over it, and it is run by NGOs. Staff turnover, inadequate training and lack of complete commitment to the practice of pre-service IMCI by teachers in medical school were cited as limitations, as well as the strategy's focus on only the public and not the private sector (where many Bangladeshis receive care).

Capacity building (which Bangladeshi stakeholders said was the core of IMCI) needs to be improved and pre-service training needs to be expanded by encouraging its use in medical education, not only in public but also in private medical colleges, along with continuous in-service training (currently, this is carried out as a single, one-time event). Concerns about the duration of training need also to be addressed.

Other clear points for improvement include increasing the national budget for IMCI, providing supervision, monitoring and feedback on a regular basis, and addressing on-the-ground realities and limitations, such as a lack of drugs or supplies.

¹ Upazila: one of the regional administration units in Bangladesh. The administrative structure consists in fact in Divisions, Districts and Upazilas.

DEMOCRATIC REPUBLIC OF THE CONGO

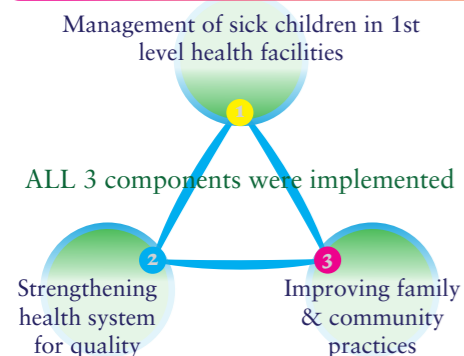
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Bilateral / Multilateral agencies are the primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million):	14
Under 5 Mortality Rate (per 1,000 live births):	98
Neonatal Mortality Rate (per 1,000 live births):	30
MDG 4 achievement:	NO

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓

50 to 74%

of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Quality of Care

- Q Assessments of Quality of Paediatric Hospital Care
- Q Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers are paid by non-monetary incentives

CCM	care policy
diarrhoea	★ ★
pneumonia	★ ★
malaria	★ ★
SAM	★ ★
home visits newborn	★ ★
home visits child	★ ★
iCCM	★ ★

Guidelines

- IMCI guidelines include care of sick newborns in the first week of life
- National IMCI chartbooklet was not based on 2014 WHO IMCI chart booklet
- National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care
- Adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✗ Child Health Programme Management Training not introduced
- ✓ Tools for bottleneck analysis & Strategic Planning

M&E

- ✓ HMIS includes IMCI monitoring indicators
- 2015 Last Child Health Programme Review conducted

IMCI was introduced in the DRC in 1999, and the Ministry of Health created an IMCI office to oversee this first planned strategy for reducing mortality. Expansion began in 2004 with the creation of provincial training pools. In 2006, the guidelines were revised to include HIV/AIDS and a shortened clinical management course was developed. In 2009, neonatal health was added to the strategy. At national level, implementation of the clinical component is coordinated by the ARI programme, while the community component is coordinated by the CDD programme. There are IMCI focal points at provincial and health district levels.

The clinical component of IMCI has been introduced in all 11 provinces in the country, but coverage is partial and depends on resources provided by partners. The government mandated teaching IMCI in medical schools in 2004, but there has been some resistance by professors and challenges include the large number of students to train, lack of resources, lack of trainers, and lack of hands-on practice time. Some training has been maintained in nursing schools, but the number of people to be trained are beyond the budget and capacity.

The community component went beyond the initial design of promoting key family practices, starting in 2003, when CCM was introduced to extend access to clinical services. Activities, including the promotion of messages through churches and the introduction of family planning at community care sites, have been scaled up to 10 of the 11 provinces. As of 2015, 446 of a total of 516 districts had community health sites, but only 105 provide both promotion of key family practices and iCCM.

IMCI has strong political support at national level, from the government and from partners. The strategy is considered relevant for the country, and there is general consensus on the added value of IMCI in improving access to care. The clear guidelines and directives of IMCI and its implementation are appreciated.

On the negative side, because the central government does not have sufficient budget to cover the entire country, which is large, funding depends deeply on donors in specific geographic areas. International partners each have their own priorities, agenda and financing mechanisms. IMCI does not function as an integrating, coordinating child health strategy and there is some sense that it is an additional, stand-alone programme. Other obstacles to implementing and scaling up IMCI include the high costs of training, and the mobility of health workers.

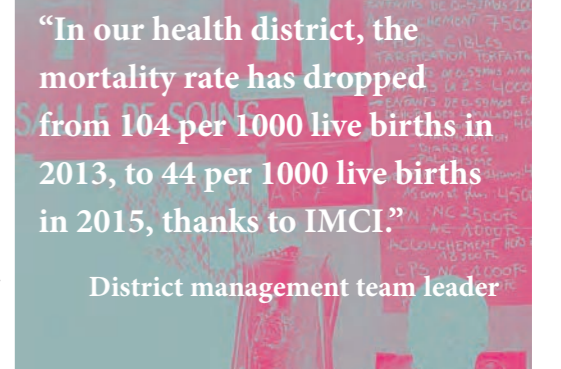
As a result of these challenges, although implementation is nationwide, it is irregular and piecemeal. Even though the three components are recognized, they have never been implemented in a coordinated and harmonious fashion. With no national scale-up plan, activities are determined by the commitment, enthusiasm and skills of provincial or district leaders. The health system is generally weak, and thus unable to provide the training, supervision and supplies needed to the great numbers of health workers needed to cover the country. Lack of availability of medicines, for example, continues to pose a large problem.

Although the country assessment documented stakeholder enthusiasm

for the community component of IMCI, the main challenge here remains the lack of motivation for local healthcare volunteers. Informants reported some success in motivating volunteers with incentives such as bicycles, provision of a meal and regular supervision.

Some innovative activities that involve the use of cell phones are being tested, and two districts are exploring the use of rapid diagnostic tests for malaria by private sector pharmacists. In addition, efforts have been made to improve monitoring through the use of scorecards.

To ensure scale-up and sustainability, stakeholders say that a budgeted, strategic plan would be a boon to supporting IMCI and ensuring funding. Also, they state that resources need to be allocated to the national budget and current activities expanded. In addition, they cite that the three components need to be better harmonized and balanced, along with fuller coordination of activities under IMCI and other health programmes. Finally, regarding human resources, trained health workers need better support once they return to their health facilities, and local solutions must be found and implemented to motivate community health workers.



ETHIOPIA

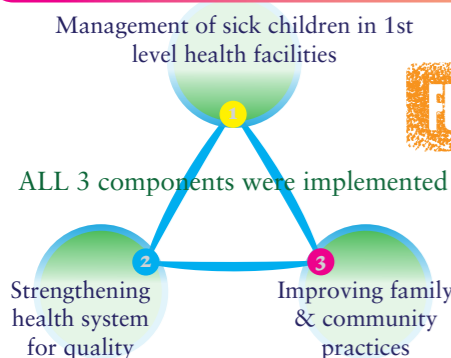
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Government is the primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million):	15
Under 5 Mortality Rate (per 1,000 live births):	59
Neonatal Mortality Rate (per 1,000 live births):	28
MDG 4 achievement:	YES

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓

No Data

of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Quality of Care

- Q Assessments of Quality of Paediatric Hospital Care
- Q Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers are paid by salary

CCM	care policy	
diarrhoea	★	★
pneumonia	★	★
malaria	★	★
SAM	★	★
home visits newborn	★	★
home visits child	★	★
iCCM	★	★

Guidelines

- IMCI guidelines include care of sick newborns in the first week of life
- National IMCI chartbooklet based on 2014 WHO IMCI chart booklet
- National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care
- Adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✓ Child Health Programme Management Training introduced
- ✓ Tools for Bottleneck Analysis & Strategic Planning

M&E

- ✓ HMIS includes IMCI monitoring indicators
- 2015 Last Child Health Programme Review conducted

IMCI has been and remains a **core child survival strategy** for Ethiopia. The country introduced IMCI in 1996/7 during implementation of the first of four successive Health Sector Development Programs (HSDP I – IV) as a strategy for reducing child mortality and morbidity. Ethiopia expanded IMCI as a comprehensive package for newborns and children at community and facility level, adding neonatal care (IMNCI) in 2003, iCCM (through its health extension workers) in 2010 and community based newborn care in 2013. Updates and revisions of the management of pneumonia were carried out in 2016 as well as the integration of childhood tuberculosis to IMCI national chart booklet. Stakeholders said the country recognizes the importance of a balanced approach among the three components of IMCI. Respondents also said that IMCI responds to multiple contexts and brings quality and logic to the management of common newborn and childhood conditions.

IMCI is being **implemented nationwide**, and Ethiopia is one of the full implementer countries that achieved MDG4. Two different reports from 2014 indicate that between 85%-95% of health facilities provide IMCI services (health posts provide iCCM), although there is variation in the coverage and quality of IMCI services in health facilities and communities across different regions, with rural areas much worse off than urban areas.

Organization of IMCI is **well-planned and well-documented**, and is led by the government, where it is reflected in the latest Health Sector Transformation Plan (HSTP). There is a national scaling-up implementation plan, with specific activities at national, regional

and district levels, developed in collaboration with stakeholders; activities are budgeted for. The country also has a separate National Newborn and Child Survival Strategy (2015/16 – 2019/20) that is aligned with the transformation plan. A national coordinating mechanism guides the development and updating of national IMCI guidelines and implementation plans, which are used as a basis for developing regional plans. The IMCI program is an integrated part of the child health program in the Maternal and Child Health (MCH) Directorate, and there are IMCI focal persons in MCH Directorate at national and regional levels.

“With IMCI, we started to train health extension workers, and what I should tell you is, it really worked.”

Stakeholder at NGO

Stakeholders attribute the **success** of IMCI implementation to strong national leadership, ownership, and commitment; coordination of in-country partners as directed by government leaders; the existence of resources to implement the strategy and local adaptation and preparation; the inclusion of IMCI in pre-service teaching in mid-level teaching institutions; and the fact that IMCI expanded as a comprehensive package including community and facility, child and newborn care. In addition, the country has added such innovations as a Health Development Army (to educate, provide information and increase demand); and internal supervision, mentoring and peer review at facilities, a government

program that is currently being implemented and helps address identified problems of quality of care, turnover and rotation.

Challenges to successful implementation consist of high turnover and absenteeism of health workers, along with facility-level stock outs. In addition, a lack of ownership is acknowledged at district/woreda level, and, specifically, poor managerial and planning capacity. Pre-service training is restricted to public health officers and nurses and reservations exist in integrating IMCI in pre-service teaching of medical doctors. Finally, low demand and utilization at community level continues to pose a problem. Recent efforts are underway to combat this, such as the Health Development Army.

National scaling-up will continue to **require** strong FMOH leadership, policy support and national partnership. National financing (15% of GDP target) of IMCI is needed for its sustainability and to promote equity. Linking IMCI to health insurance schemes will be an important challenge for the future. Health systems strengthening is considered key in this process and includes improving planning and management capacity at woreda level. Linkages should be reinforced, including with the private sector. In addition, follow up and supervision are needed (continuous professional education), along with the better use of data and technology for decision-making. Finally, the importance of non-health factors, such as women's education for increased demand of health services must be a long-term priority.

INDIA

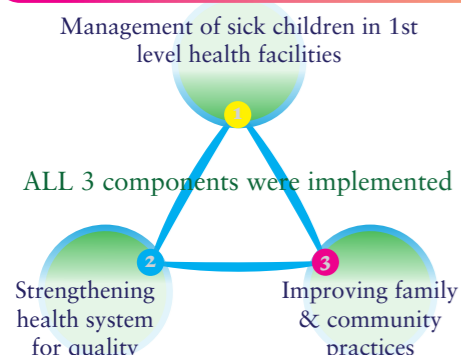
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Government is the primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million):	117
Under 5 Mortality Rate (per 1,000 live births):	48
Neonatal Mortality Rate (per 1,000 live births):	28
MDG 4 achievement:	NO

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓

No Data

of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Quality of Care

- Q Assessments of Quality of Paediatric Hospital Care
- Q No Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers are paid by incentive payments

CCM	care policy
diarrhoea	★ ★
pneumonia	★ ★
malaria	★ ★
SAM	★ ★
home visits newborn	★ ★
home visits child	★ ★
iCCM	★ ★

Guidelines

- IMCI guidelines include care of sick newborns in the first week of life
- National IMCI chartbooklet based on 2014 WHO IMCI chart booklet
- National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care
- Adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✗ Child Health Programme Management not introduced
- ✗ No Tools for bottleneck analysis & Strategic Planning

M&E

HMIS doesn't include IMCI monitoring indicators
2013 Last Child Health Programme Review conducted

India has focused on reducing childhood diseases since 1978, but IMCI was not launched in the country until 2003, and it was not until 2005 that it formed part of a plan to address the overall health of a child with interventions in homes, communities, and facilities for children under-five. At this time, IMCI was incorporated into its National Rural Health Mission (NRHM) as a premier strategy under its Reproductive and Child Health (RCHII) programme, and newborn care was incorporated and made a priority from the start (IMNCI). Since its inception, IMNCI has been managed by the Child Health division under the Ministry of Health and Family Welfare (MoHFW); no separate focal point existed for IMNCI.

Between 2005 and 2011, IMNCI was implemented, focusing especially on newborn care as this was the most critical period affecting India's child mortality rate. To give more attention to the neonatal component, 50% of the duration of training (4 days) was dedicated to newborns. In addition, given the large numbers of babies delivered/cared at home, home visits were considered as an integral part of IMNCI.

By December 2011, 74% of the districts (338 out of 455) were implementing IMNCI in the country. The majority of them were either in the early implementation or expansion phase. Close to 65% of frontline workers were trained, and a large percentage of these were Anganwadi workers¹ (AWW) s (47%). IMNCI was the largest pre-service training package at this time and had expanded to 70 medical colleges in the country.

However, following 2011, support

for IMNCI was merged into the country's larger health agenda. Funding for AWWs, the frontline workers who formed an important core of IMNCI, was halted and AWWs were gradually withdrawn from training, as they were associated with another department. Little communication or information was passed down to the grassroots level and this led to confusion.

The piecemeal implementation and fading out of IMNCI are largely attributed to the fact that the government had no ownership or active involvement in the strategy, which was seen as a donor-driven initiative. Thus competing programs and interests made coordination difficult. A key informant said that not enough advocacy was done at national level, and that since health systems strengthening was addressed by other strategies, IMNCI was seen merely as a training programme. Yet IMNCI was not part of the teaching curriculum for doctors, which stakeholders said was due to insufficient advocacy or support.

In 2013, IMNCI was revived with MoHFW's Reproductive, Maternal, Newborn, Child health and Adolescent programme (RMNCH+A), with the plan of extending its scope, ultimately aiming for reduced maternal, neonatal, infant and under-five mortality and increased wellbeing for children aged 5-9.

Informants said that, since 2013, the country recognizes IMNCI as the current core child health strategy at all levels of care, and now it is being implemented in 575 districts across states in the country.

Recent efforts to harmonize child health programmes, reducing duplication and the training burden, are positive.

In fact, the country is assessing the past in order to make improvements and learn from former mistakes. With this aim, a 2014 assessment shows that IMNCI started strong and waned. Areas for improvement pointed to: the lack of a mechanism to monitor implementation and progress; poor planning and information about IMNCI; no dissemination of results; lack of supportive supervision and logistics provision; the fact that AWWs were the backbone of the program but were then withdrawn and Accredited Social Health Activists (ASHAs) were introduced but with different training.

Respondents agree that IMNCI was a very good training program and has influenced other training programs. In fact, respondents said that the effects and benefits of training still linger, with large numbers of trained frontline workers, supervisors and doctors in all districts.

In addition to government commitment, support, and planning, future efforts to strengthen IMCI must take into account India's large private sector, and its under-served poor rural and urban populations.

"We were given forms and medicines in adequate quantities after the training but were never replenished. (...) However, we have preserved the IMNCI chart booklet and use it whenever we have to assess a sick child."

Frontline Health Worker

¹ Anganwadi worker : community nutrition worker employed by the Ministry of Women and Child development and based in anganwadi centers in villages and urban slums.

KAZAKHSTAN

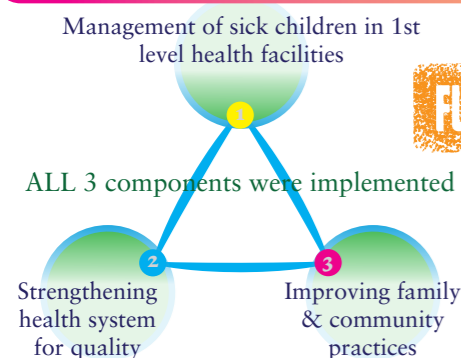
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Government is the primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million):	2
Under 5 Mortality Rate (per 1,000 live births):	14
Neonatal Mortality Rate (per 1,000 live births):	7
MDG 4 achievement:	YES

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓

25 to 49%

of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Quality of Care

- Q Assessments of Quality of Paediatric Hospital Care
- Q Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers payment



Guidelines

- IMCI guidelines include care of sick newborns in the first week of life
- National IMCI chartbooklet based on 2014 WHO IMCI chart booklet
- National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care
- Adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✗ Child Health Programme Management Training not introduced
- ✗ No Tools for bottleneck analysis & Strategic Planning

M&E

- ✓ HMIS includes IMCI monitoring indicators
- 2015 Last Child Health Programme Review conducted

“Now, we can definitely say that IMCI strategy implementation is irreversible.”

Regional IMCI Coordinator

IMCI - along with Making Pregnancy Safer

- is Kazakhstan's main strategy to improve neonatal and child health and reduce mortality and it is fully integrated into the health system. Interviewed informants agree that IMCI is an efficient intervention to address better quality of health services and satisfaction of users. At present, it is the only strategy in paediatrics to improve primary and secondary health care for children and enhance knowledge and skills of families and communities in young child care.

Kazakhstan was the first country among the former Soviet republics in the Commonwealth of Independent States that started IMCI implementation in 1999 and its adaptations have served as role models for other neighboring countries. Over 16 years, the country has gone from piloting IMCI to its wide dissemination across the country thanks to significant political support from the government and technical assistance from WHO, UNICEF and USAID. Newborn care during the first week of life was added to IMCI guidelines in 2008 and modules and checklists were modified accordingly. Kazakhstan is one of the full implementer countries that achieved MDG4.

IMCI implementation has undergone three systematic, well-planned phases: introduction and pilot implementation (1999-2002); expansion to oblast

(province) level and strengthening of the health system (2003-2009); expansion of activities and geographic coverage (2010-2016). There is a national IMCI Coordinator, who is an employee of the National Research Centre for

Mother and Child Health and who coordinates IMCI and the Making Pregnancy Safer strategy. There are also sub-national coordinators.

In fact, in Kazakhstan, 16 regional training centres were created with a coordinator and team of trainers. In-service training of health workers is carried out in all regions and is fully funded from the public budget. Primary health care paediatricians, general practitioners, medical assistants and nurses, as well as paediatricians and nurses from hospitals and ambulance service, undergo IMCI training. By 2015, slightly more than 2/3 of healthcare professionals had been trained in basic IMCI courses and percentages of trained staff increased every year from IMCI's inception until recently, when this decreased due to the growing outflow of healthcare professionals from the health system.

Interviewed informants stated that IMCI has contributed to improvements in health indicators and has helped address problems of the health sector. Respondents said that IMCI in-service training courses enabled the country to significantly upgrade knowledge, confidence and skills of primary health care workers. Successes of implementation are said to be due to government's clear commitment and leadership, public financing, consistent and clear priorities, and organized planning and execution. Thanks to positive disseminated

regional results from South-Kazakhstan oblast, the government began nation-wide implementation of the strategy funded from the governmental budget.

Two successful innovations are ICATT, that trainers say assists teaching and reduces costs, and the introduction of social workers and increased home visiting nurses starting in 2011. This universal-progressive approach to early child care is currently being piloted in 3 oblasts of the country.

Areas for further improvement identified by key informants include: the loss of human resources from the health system; the absence of training for managers of healthcare facilities; the quality of services and of pre-service training; and inadequate supervision and mentoring. As there is no government funding for follow-up visits of trained healthcare professionals, this coverage is low (25%).

In addition, the third IMCI component - improving family and community practices - is the least developed in Kazakhstan and is the country's main area of focus. The main causes include insufficient financing; the lack of interested international and national NGOs; and inadequate skills of national specialists. It is recognized that Kazakhstan needs to work on retaining personnel, capacity building and enlisting the help of NGOs to strengthen this third area. Other priorities for the future include strengthening pre-service training, management information and management skills and supportive supervision. Finally, better, increased motivation for health workers is deemed critical. Recently, a new national system of incentives is helping in this direction.

MYANMAR

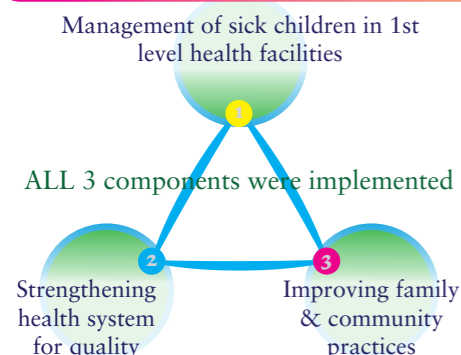
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Bilateral / Multilateral agencies are the primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million):	4
Under 5 Mortality Rate (per 1,000 live births):	50
Neonatal Mortality Rate (per 1,000 live births):	26
MDG 4 achievement:	NO

IMPLEMENTATION



Guidelines

- IMCI guidelines include care of sick newborns in the first week of life
- National IMCI chartbooklet based on 2014 WHO IMCI chart booklet
- National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care
- No adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✓ Child Health Programme Management Training introduced
- ✓ Tools for Bottleneck Analysis & Strategic Planning

M&E

- ✓ HMIS includes IMCI monitoring indicators
- 2013 Last Child Health Programme Review conducted

Training

IMCI was included in pre-service education ✓

No Data of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Quality of Care

- Q Assessments of Quality of Paediatric Hospital Care
- Q Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers receive no incentive nor salary

CCM		care policy
diarrhoea	★	★
pneumonia	★	★
malaria	★	★
SAM	★	★
home visits newborn	★	★
home visits child	★	★
iCCM	★	★

Maternal newborn and child health is high on Myanmar's health agenda, as the new government and the Ministry of Health have expressed the need for rapid progress. IMCI (now IMNCI) clearly fits into the newborn and child health strategy, and is the key strategy for management of common childhood illness, complemented by early essential newborn care, care for small babies, neonatal resuscitation and management of sick newborn, all integrated under the National Strategic Plan for Newborn and Child Health, 2015-2018. IMNCI has been implemented at three levels of health system such as facility based, primary health care level and community levels.

IMNCI is implemented under the Child Health and Development Division in the Ministry of Health and Sports. Until 2011, key stakeholders supporting the government in implementing IMCI were almost exclusively WHO and UNICEF. Currently, and now with multiple partners, IMNCI is a key strategy under the maternal child health component of the 3MDG Fund, a consortium of donors. Scaling up is also supported by the World Bank budget through the government system, as well as by other partners including Malaria Consortium, John Snow Institute, etc.

IMNCI was originally introduced in Myanmar in 1998, and various adaptations have been made to the strategy. IMCI was adopted as a eleven-day training course for basic health staff. Between 1998 and 2001, over 13,000 basic health workers and 1,000 hospital-based doctors and nurses were trained in IMMCI, and by 2001, it had expanded to cover one third of the country. In 2005, the materials

were reformatted to IMNCI and from 2005-2015, 11-day IMNCI trainings for basic health staff were conducted in more than two thirds of the country. Since 2009, IMNCI was incorporated into midwifery curriculum and facility based IMNCI has been included in the medical curriculum. Health staffs at the referral facilities were trained on facility based IMNCI and WHO Pocket Book was used as a reference.

Community case management (CCM) is implemented in selected districts (townships) and targets community health volunteers. From 2011 onwards, CCM of pneumonia and diarrhea was piloted in five townships, and is now being expanded to 37 townships. In the five pilot townships, training has been expanded as iCCM, and malaria and under-nutrition have been included.

While IMNCI's main strength in Myanmar is government commitment, the biggest current challenges are staff shortages and the issue of time consuming for examining the patients with IMNCI approach. To tackle staff shortages, the new government has quickly stepped in and has said that would recruit additional doctors and nurses/midwives into the health system by the end of 2016. Stakeholders acknowledge the existing challenges, and plans are underway to strengthen the Regional/State level with the appointment of a coordinator focusing on maternal and child health. Capacity building in planning and management – along with a strengthened health information system - is also needed.

"I felt more confident in giving advice to mothers"

Health Worker trained in IMCI

Respondents also underline the importance of implementing all three components of IMNCI. Training alone is not enough to bring change in quality of services and must include practice and follow-up supervision or post training evaluation and mentoring. The community component was the last to be adopted and still reaches relatively few townships. Better linkages and coordination with malaria and nutrition programmes are being planned, and require increased attention in order to move forward with roll-out of an integrated package (iCCM) in the future.

Finally, although results of the Health Facility Assessment conducted in 2014 were encouraging regarding progress in IMNCI implementation, there is a need of a system to monitor quality of training and services. The new DHIS II electronic data system will help improve planning and management, and should be extended. The contribution of technology to scaling up should also be considered and assessed. Myanmar should have a specific dedicated national budget line for newborn and child health, showing clear priorities and focus. Lastly, because of the private sector's important presence in Myanmar, it is essential to involve it in the programme/training along with social marketing of the strategy.

NEPAL

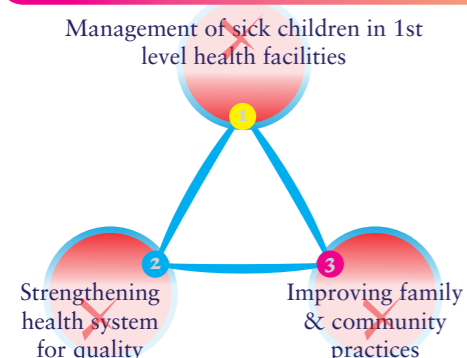
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Government is the primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

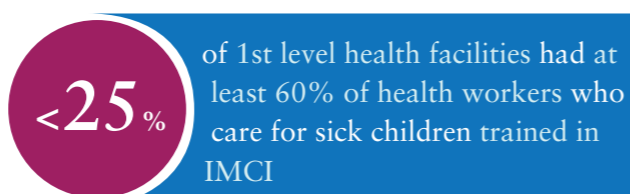
Under 5 Population (million):	3
Under 5 Mortality Rate (per 1,000 live births):	36
Neonatal Mortality Rate (per 1,000 live births):	22
MDG 4 achievement:	YES

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓



Quality of Care

Q Assessments of Quality of Paediatric Hospital Care

Q Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health No data

Community

Community Health Workers are paid by salary

CCM	care policy
diarrhoea	★ ★
pneumonia	★ ★
malaria	★ ★
SAM	★ ★
home visits newborn	★ ★
home visits child	★ ★
iCCM	★ ★

Guidelines

IMCI guidelines include care of sick newborns in the first week of life

No data National IMCI chartbooklet based on 2014 WHO IMCI chart booklet

National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care

Adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✓ Child Health Programme Management Training introduced
- ✓ Tools for Bottleneck Analysis & Strategic Planning

M&E

- ✓ HMIS includes IMCI monitoring indicators
- No Child Health Programme Review conducted

IMCI (referred to in Nepal as community-based IMNCI) is a priority child health program for Nepal. It has a strong newborn care component, and includes immunization and nutrition programmes as well. The country has a national health sector long-term plan which is a guiding framework, and its safe motherhood and newborn health plans are developed in line with this plan.

Uncommonly, IMCI began in Nepal in 1998 as a community-based initiative focusing on two illnesses: acute respiratory infection (ARI) and control of diarrheal diseases (CDD). Piloted in one district, it consisted of extending information and services on ARI and CDD to community level. By 1999, this included nutrition and immunization, and was called CB-IMCI. By 2010, IMCI was being implemented in all 75 districts. In 2012, it was further adapted to the local context and to include new areas.

Great progress was made in reducing child mortality in Nepal between 1998 and 2005 but neonatal mortality reduction was slow. In 2015, the ministry of health merged the "Community-based newborn care program (CB-NCP)", launched in 2009 and covering 70% of the population by 2014, and IMCI into CB-IMNCI in 2015.

IMNCI is implemented by the government in coordination with partners through the ministry's child health division. The national level coordinates the program and makes training arrangements. There is an IMCI section chief within the child health division, fully funded by the government of Nepal, in charge of conducting annual work planning, holding stakeholder meetings, and

supervising IMCI implementation, monitoring and evaluation. Districts have full responsibility for program implementation of CB-IMNCI. There is also NGO and civil society involvement, as well as the private sector.

Progress has not been fully assessed, but stakeholders believe that CB-IMCI, along with other newborn-focused initiatives, are responsible for improvements in mortality and morbidity by encouraging better newborn practices around diarrhea and ARI, immunization, vitamin A supplementation and overall care.

Female Community Health Volunteers (FCHV) are the front line care providers, and from the beginning of IMCI, the focus was on these volunteers to refer sick patients, teach about newborn care and handle or refer newborn complications. These workers also handle post-natal care to mothers in outreach clinics. Recently, as training of health workers has extended to health facility level, the focus of FCHVs is on health promotion as opposed to curative care.

Respondents said that implementation of IMNCI is successful because of the country's national vision, commitment, and leadership. Its investment in the health sector has increased, and it is supported by partners and others. Although it started with and strengthens community level, it has been extended to facility level, where key informants said it is improving the health system. IMNCI is now included in pre-service training throughout the country. Its innovations include the training of FCHVs, and the development of a 2-day management training

package for proper implementation, management, and evaluation of IMNCI, both of which led to improved family and community practices, successful implementation of the strategy, and a feedback loop for making improvements, key informants said.

Nonetheless, Nepal has complicated geographical and terrain issues, limiting access to health care for many. There is also political instability. There is still large inequity in service delivery and utilization and a quick roll-out has led to uneven quality of IMNCI.

Steps to improve IMNCI implementation include the appointment of district level focal points and quicker government budgetary disbursements (limited disbursement periods hamper effective implementation). Overall, next steps by the government should include a clear focus on a slow and steady scaling up, emphasizing quality training (rather than incentive), and delaying expansion until appropriate results are seen. Refresher training needs to be emphasized, along with feedback, monitoring, proper supervision and evaluation. At the same time, the health facility needs adequate drugs and supplies in order for the referral system to work, and pre-service training needs to be made mandatory, which is not currently the case. Finally, although the central level shows commitment and leadership, improved communication and coordination strategies are necessary.

NIGERIA

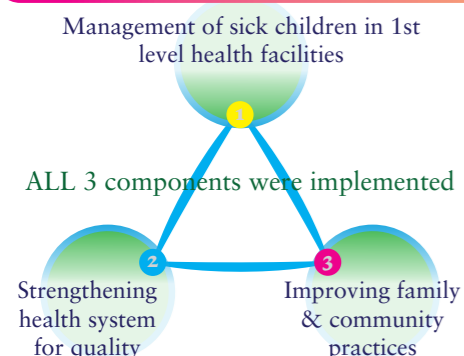
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Government is the primary funder for IMCI at facility level & Bilateral / Multilateral agencies at community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million)	31
Under 5 Mortality Rate (per 1,000 live births):	109
Neonatal Mortality Rate (per 1,000 live births):	34
MDG 4 achievement:	NO

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓

<25% of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Quality of Care

- Q Assessments of Quality of Paediatric Hospital Care
- Q Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers are paid by non-monetary incentives

	CCM	care policy
diarrhoea	★	★
pneumonia	★	★
malaria	★	★
SAM	★	★
home visits newborn	★	★
home visits child	★	★
iCCM	★	★

Guidelines

- IMCI guidelines include care of sick newborns in the first week of life
- National IMCI chartbooklet based on 2014 WHO IMCI chart booklet
- National treatment guidelines for children based on 2013 WHO Pocket Book for Hospital Care
- Adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

- ✓ Child Health Programme Management Training introduced
- ✓ Tools for Bottleneck Analysis & Strategic Planning

M&E

- ✓ HMIS includes IMCI monitoring indicators
- 2010 Last Child Health Programme Review conducted

Currently, the main strategy being used in Nigeria to address child survival and health is the Integrated Maternal Newborn and Child Health Strategy from 2007, along with plans to revitalize primary health care (PHC Under One Roof, 2013) and a number of programmes and strategies, including IMCI, with more or less limited implementation.

IMCI was first introduced in 1997 in Nigeria, but implementation slowed from an initial wave to more scattershot efforts continuing up to the present. The focus was initially on improving health worker skills through the standard 11-day and later 6-day training, but the pace of training has slowed in recent years, and never reached a “critical mass”. Today, less than 25% of first level facilities have trained at least 60% of health workers who care for sick children in IMCI. The second component, health systems strengthening, has not been implemented in an organized way, although some attention has been paid to essential medicines and a tool for assessment of quality of care at secondary health facilities was developed in the mid-2000s. While quality of care interventions have been piloted in Nigeria with good results, these have not been implemented at scale. The third component, community IMCI, was rolled out in the early 2000s, but only in a handful of local government areas, and without a supportive referral context.

Since its inception, IMCI has been managed at national level by an IMCI focal point in the Child Health Division of the Federal Ministry of Health, and all state ministries of health also have an IMCI focal person. While responsibility for IMCI clearly lies with these

focal points, there is no national coordinating mechanism and there is confusion about responsibility for implementation. Thus, poor coordination and fragmentation exists. As there is no centralized database of trainings or other activities, it is not possible to definitely say how far IMCI has been implemented.

The main challenge to IMCI implementation is the overall disarray and dysfunction of Nigeria's primary health care system. Thus, utilization of services was found to be extremely low. This is coupled with problems of inadequate and poorly motivated staff and lack of essential medicines and supplies. These problems stem from a lack of

“IMCI was killed because of weaknesses of health system”

Child health official, UN agency

showing ownership to child health programming accompanied by appropriate budgeting. It is hoped that the PHC Under One Roof initiative will integrate programmes and improve fragmentation. With leadership from the top, government agencies should enforce policy implementation, harmonize strategies and show commitment to revitalizing the broken primary health care system. Since late 2015, there has been progress regarding a national coordinating mechanism through the creation of a National Child Health Technical working group. Also in 2015, The Federal Ministry of Health stressed the importance of revitalizing primary health care, saying that it would make operational 10,000 facilities,

and training health workers in IMCI. Donors and other partners can help by providing a unified vision.

A focus needs to be made on organizational and management issues affecting scale-up and sustainability, such as monitoring progress and improving accountability.

leadership and funding for IMCI and other strategies. Although there is appreciation for IMCI at the central level, after an initial burst of interest, attention quickly shifted to other programmes. Programmes are not coordinated or integrated, and multiple donors have contributed to the existence of separate vertical child health initiatives. Thus IMCI remains a donor-driven program with no budget line in the ministry and no comprehensive implementation strategy.

Most critically, stakeholders said that the government needs to lead by prioritizing child health, making a clear commitment and

At the same time, in-service training should be replaced by a rigorous pre-service training and continuous professional development via improved supervision on-the-job. Also, the critical and important private sector in Nigeria must be comprehensively addressed. Finally, much work remains to be done with respect to community education, which cannot be pushed forward without a functioning primary health care system.

YEMEN

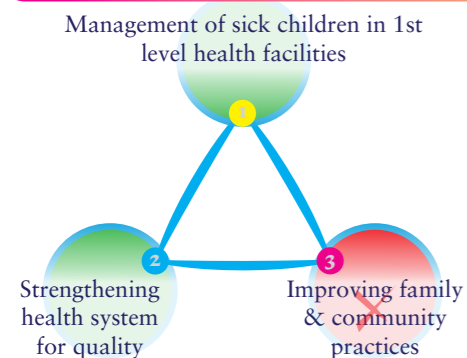
GENERAL OVERVIEW

- ✓ National Child Health Strategy to reduce Child Mortality
- ✓ IMCI part of the National Child Health Strategy
- Government is the primary funder for IMCI at facility & community level

EPIDEMIOLOGICAL PROFILE 2015

Under 5 Population (million):	5
Under 5 Mortality Rate* (per 1,000 live births):	42
Neonatal Mortality Rate* (per 1,000 live births):	22
MDG 4 achievement:	YES

IMPLEMENTATION



Training

IMCI was included in pre-service education ✓

25 to 49%

of 1st level health facilities had at least 60% of health workers who care for sick children trained in IMCI

Quality of Care

Q No assessments of Quality of Paediatric Hospital Care

Q Paediatric Quality of care Improvement Program for the Health facilities in the Ministry of Health

Community

Community Health Workers receive no incentive nor salary

	CCM	care policy
diarrhoea	★	★
pneumonia	★	★
malaria	★	★
SAM	★	★
home visits newborn	★	★
home visits child	★	★
iCCM	★	★

Guidelines

IMCI guidelines include care of sick newborns in the first week of life

No data National IMCI chartbooklet based on 2014 WHO IMCI chart booklet

National treatment guidelines for children not based on 2013 WHO Pocket Book for Hospital Care

No adaptation of the WHO Pocket Book for Hospital Care for children in referral facilities

Management

✗ Child Health Programme Management Training not introduced

✗ No Tools for bottleneck analysis & Strategic Planning

M&E

✓ HMIS includes IMCI monitoring indicators

2007 Last Child Health Programme Review conducted

In 1998, IMCI was incorporated into Health Sector Reform Program's "Basic Benefit Package", and in 2000 IMCI was formally endorsed by the Ministry of Public Health and Population (MoPHP) to replace vertical programs, improve management of childhood illnesses and reduce mortality.

Beginning in 2000, a national focal point for IMCI was named, and early IMCI implementation began in two districts in 2002, targeting all primary health care centers and units providing health care for children. There are IMCI focal persons in each governorate who report to the national focal person of IMCI. IMCI expansion started in 2004, and initiatives were adopted to increase access to quality child health care services, such as integrated primary health care mobile teams and, in 2008, community health workers. At this time, the service package was expanded and IMCI was introduced into teaching programmes of a few teaching institutions. Aiming to increase service delivery, integrated outreach activities were introduced in 2008 to deliver service in inaccessible areas, deemed very important due to Yemen's scattered population.

IMCI was included in the National Children and Youth Strategy 2005-2015, a plan to guide sectoral policies and programmes to help Yemen achieve the Millennium Development Goals. Integrated outreach activities started in 2008 in 64 districts and were expanded to 276 districts by 2015 (out of a total of 333 districts). At the same time, 1440 local community communicators were trained in 86 districts. By the end of 2015, the ministry, supported by WHO and other donors, scaled

up IMCI services in 308 districts (90%) in all 22 Governorates of Yemen. Strengthened pre-service education was brought to 10 midwifery schools with a focus on competency and skills based educational approaches. The health facilities that provide IMCI services expanded to 3441 (88%) of the total health facilities in the country. Training materials in Yemen have been adjusted and adapted four times, and newborn care has been integrated. A scale up plan for 2016- 2017 has been developed which includes the collection of periodic data from health facilities, outreaches and mobile teams through the use of volunteer focus points.

Respondents said that the reduction of neonatal mortality has been attributed in large part to IMCI, thanks to appropriate newborn assessments and encouraged breastfeeding. IMCI innovations include an electronic system for calculating medicine need and mobile teams in emergency settings. In addition, as regular electricity is a problem, sending messages through social media to mobile phones has proved an effective alternative.

Although Yemen has adopted IMCI country-wide and its implementation has quickly expanded, IMCI is highly dependent on external funds, lacking a government budgetary line for medicines or supervision.

The country is undergoing severe civil unrest and is unstable, and the population is scattered, which is linked to a low utilization of health facilities. There is a high

staff turnover at all levels, and many health facilities are non-functioning. In those that are functioning, there are often limited drugs and supplies as well as inadequate support from the health system. Trained health care providers were found to have not received sufficient follow up in order to solve problems and ensure good quality of IMCI implementation. Supervisory visits were reported to be only sporadic.

To aid progress on IMCI implementation, stakeholders said Yemen needs to establish a clear child health strategy. Plans were laid for a 2016 IMCI task force. Increased funding for IMCI is needed, along with the development of a national coverage plan, which would include collecting and using data, improving the provision of drugs and supplies, and motivating health workers and strengthening facilities. Referrals are a weak part of the health system and need reinforcing, although IMCI has strengthened some of its components, such as referral guidelines, and the provision of pre-referral medicines. Identifying a focal point for IMCI at district level would be helpful, along with the provision of guidelines and support in management, periodic supervision, and semi-annual or annual coordination meetings. At community level, local leadership needs to be galvanized to raise awareness.

"IMCI was useful in detecting the diseases early, malnutrition cases finding and referral children with danger signs"

Health worker

* Data used by the UN IGME to derive the country's 2015 mortality estimates include: DHS 2013, MICS 2006, Census 2004, and PAPFAM Family Health Survey 2003 (http://www.childmortality.org/index.php?r=site/graph#ID=YEM_Yemen). The country has been in crises for the last five years or so, however deaths caused by humanitarian crises are difficult to capture in household surveys or censuses. The broad impact of these crises on health systems may have led to a greater number of child deaths than is currently estimated. The UN IGME is revising its estimates of child mortality for the next estimation round.

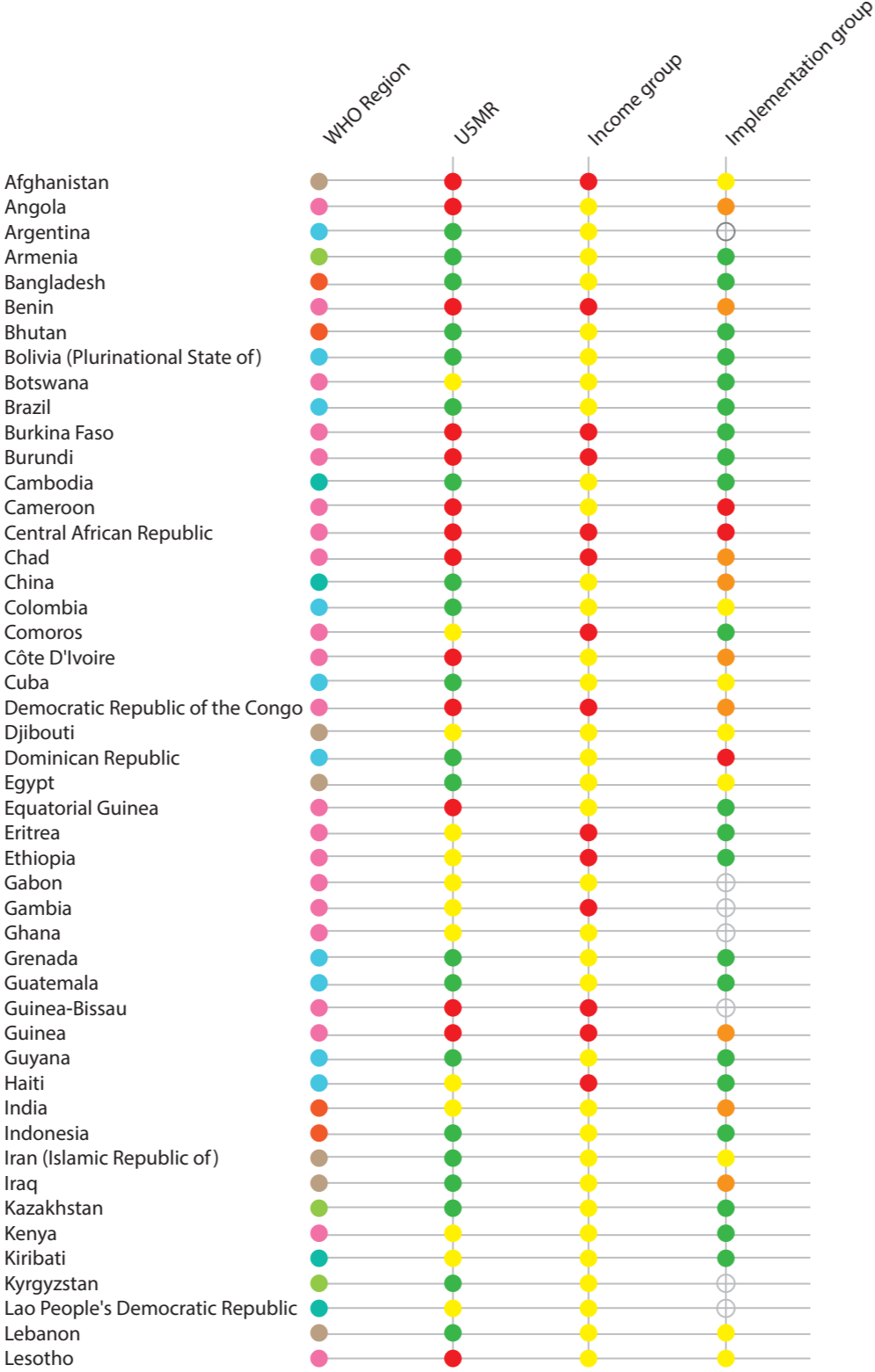


Annexes

ANNEX 1

Classification of countries

Fig. A1. Classification of countries by WHO region, under-five mortality rate, income and level of IMCI implementation



WHO regions

- African Region
- Eastern Mediterranean Region
- South-East Asia Region
- Region of the Americas
- European Region
- Western Pacific Region

U5MR

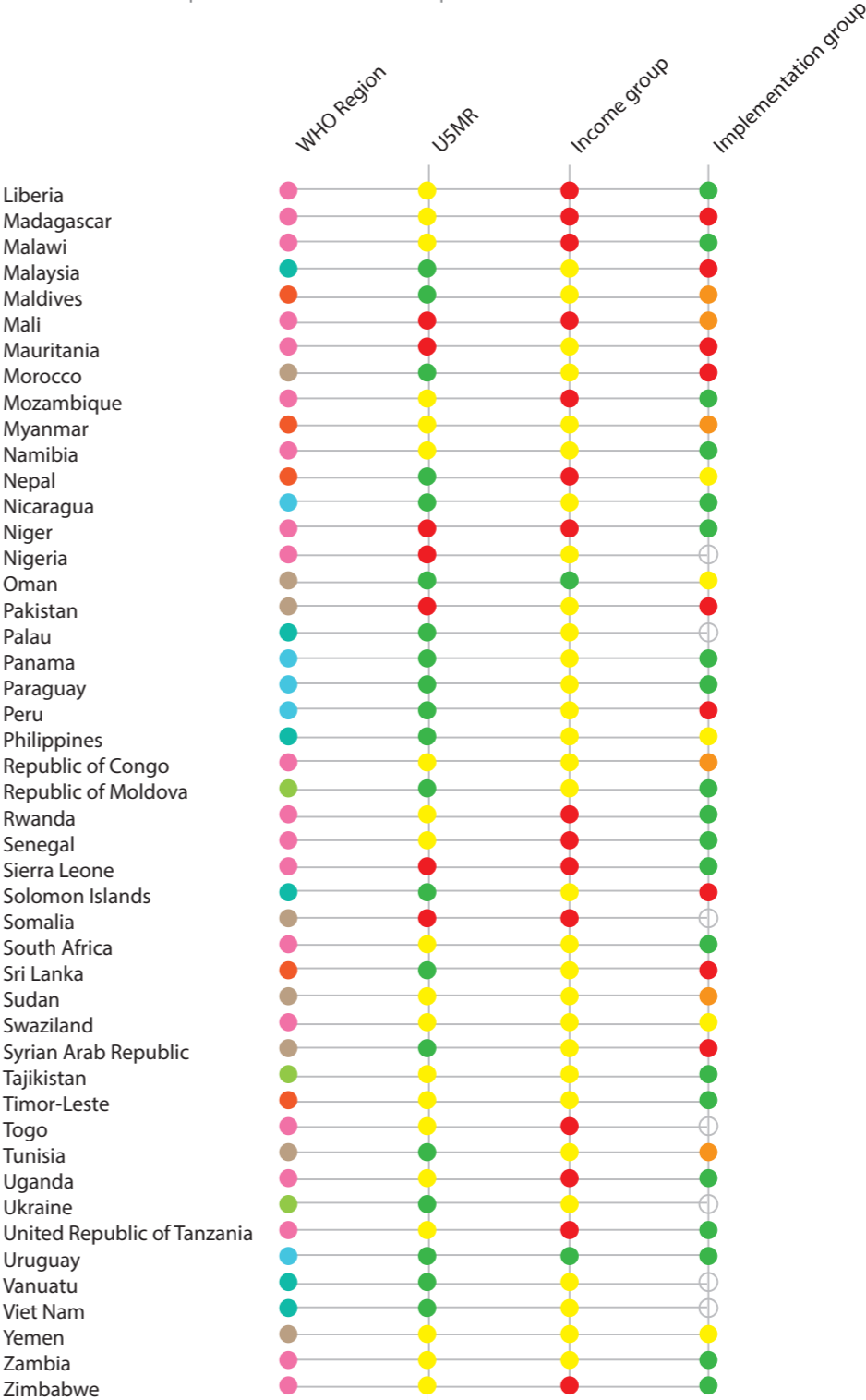
- <40
- >80
- 40-80

Income group

- High
- Low
- Middle

Implementation group

- Full
- >90
- No data
- 50-90
- <50



ANNEXE 2

Tables

Table A2.1. National strategy/plan for child health/survival

Proportion of countries reporting presence of a national child health strategy/plan to reduce child mortality; national child health strategy/plan costed; and national child health strategy/plan active in 2016 by under-five mortality rate, WHO region, and income groups

Countries reporting / countries responding (%)

Background characteristics	National child survival / health strategy / plan to reduce child mortality developed	National child survival / health strategy / plan to reduce child mortality costed	National child survival / health strategy / plan to reduce child mortality active in 2016
Under-5 mortality rate			
≤40	37/40 (92.5)	16/37 (43.2)	24/37 (64.9)
40–80	31/33 (93.9)	23/33 (69.7)	20/33 (60.6)
>80	20/21 (95.2)	13/21 (61.9)	10/18 (55.6)
WHO Region			
African Region	39/41 (95.1)	28/41 (68.3)	21/39 (53.8)
Region of the Americas	14/14 (100)	5/13 (38.5)	10/12 (83.3)
South-East Asia Region	9/9 (100)	5/9 (55.6)	7/9 (77.8)
European Region	5/6 (83.3)	3/6 (50)	4/6 (66.7)
Eastern Mediterranean Region	13/14 (92.9)	7/14 (50)	8/12 (66.7)
Western Pacific Region	8/10 (80)	4/8 (50)	4/10 (40)
Income group			
Low	26/29 (89.7)	19/29 (65.5)	12/27 (44.4)
Medium	60/63 (95.2)	32/60 (53.3)	41/59 (69.5)
High	2/2 (100)	1/2 (50)	1/2 (50)
All countries	88/94 (93.6)	52/91 (57.1)	54/88 (61.4)

Table A2.2. IMCI organization

Proportion of countries reporting IMCI as part of the national child health/survival strategy; presence of a focal point at national, district/regional and national and district levels; and presence of a focal point for community IMCI at national level by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation

Countries reporting / countries responding (%)

Background characteristics	IMCI part of the national child health / survival strategy / plan	Presence of a focal point for IMCI at the national level	Presence of focal points for IMCI at district / regional level	Presence of focal points for IMCI at national and district / regional level	Presence of a focal point for community IMCI at the national level
Under-5 mortality rate					
≤40	35/37 (94.6)	33/41 (83.7)	28/39 (71.8)	26/39 (66.7)	19/37 (51.4)
40–80	31/31 (100)	32/33 (97.1)	26/33 (78.8)	25/33 (75.8)	23/33 (69.7)
>80	20/20 (100)	17/20 (87.5)	8/19 (42.1)	8/19 (42.1)	16/20 (80)
WHO Region					
African Region	39/39 (100)	38/40 (95.3)	23/39 (59)	23/39 (59)	31/40 (77.5)
Region of the Americas	13/14 (92.9)	12/15 (83.3)	11/15 (73.3)	10/15 (66.7)	10/15 (66.7)
South-East Asia Region	9/9 (100)	8/9 (90)	7/9 (77.8)	6/9 (66.7)	5/8 (62.5)
European Region	4/5 (80)	4/6 (75)	3/5 (60)	2/5 (40)	1/5 (20)
Eastern Mediterranean Region	13/13 (100)	12/14 (87.5)	10/13 (76.9)	10/13 (76.9)	6/14 (42.9)
Western Pacific Region	8/8 (100)	8/10 (83.3)	8/10 (80)	8/10 (80)	5/8 (62.5)
Income group					
Low	26/26 (100)	27/29 (93.5)	17/28 (60.7)	17/28 (60.7)	24/29 (82.8)
Medium	58/60 (96.7)	53/63 (86.5)	44/61 (72.1)	41/61 (67.2)	32/59 (54.2)
High	2/2 (100)	2/2 (100)	1/2 (50)	1/2 (50)	2/2 (100)
IMCI implementation					
<50% districts	13/13 (100)	12/13 (92.9)	9/13 (69.2)	9/13 (69.2)	8/12 (66.7)
50–90% districts	14/14 (100)	11/14 (82.4)	5/13 (38.5)	5/13 (38.5)	8/14 (57.1)
>90% districts	53/53 (100)	49/53 (93.1)	40/52 (76.9)	38/52 (73.1)	35/51 (68.6)
Unknown	6/8 (75)	10/14 (77.8)	8/13 (61.5)	7/13 (53.8)	7/13 (53.8)
All countries	86/88 (97.7)	82/94 (88.8)	62/91 (68.1)	59/91 (64.8)	58/90 (64.4)

Table A2.3. Government funding for child health

Proportion of countries reporting internal government percentage of funding for child health by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics					
	<25%	25-50%	50-74%	75% or more	Other / unknown*
Under-5 mortality rate					
≤40	<div></div> 4/41 (9.8)	<div></div> 3/41 (7.3)	<div></div> 10/41 (24.4)	<div></div> 20/41 (48.8)	<div></div> 4/41 (9.8)
40–80	<div></div> 11/30 (36.7)	<div></div> 5/30 (16.7)	<div></div> 7/30 (23.3)	<div></div> 4/30 (13.3)	<div></div> 3/30 (10.0)
>80	<div></div> 10/20 (50.0)	<div></div> 7/20 (35.0)	<div></div> 0/20	<div></div> 1/20 (5.0)	<div></div> 2/20 (10.0)
WHO Region					
African Region	<div></div> 17/38 (44.7)	<div></div> 11/38 (28.9)	<div></div> 4/38 (10.5)	<div></div> 3/38 (7.9)	<div></div> 3/38 (7.9)
Region of the Americas	<div></div> 2/15 (13.3)	<div></div> 1/15 (6.7)	<div></div> 4/15 (26.7)	<div></div> 8/15 (53.3)	<div></div> 0/15
South-East Asia Region	<div></div> 0/9	<div></div> 0/9	<div></div> 3/9 (33.3)	<div></div> 5/9 (55.5)	<div></div> 1/9 (11.1)
European Region	<div></div> 0/6	<div></div> 0/6	<div></div> 1/6 (16.7)	<div></div> 4/6 (66.7)	<div></div> 1/6 (16.7)
Eastern Mediterranean Region	<div></div> 2/14 (14.3)	<div></div> 2/14 (14.3)	<div></div> 4/14 (28.6)	<div></div> 3/14 (21.4)	<div></div> 3/14 (21.4)
Western Pacific Region	<div></div> 0/6	<div></div> 0/6	<div></div> 1/6 (16.7)	<div></div> 4/6 (66.7)	<div></div> 1/6 (16.7)
Income group					
Low	<div></div> 13/27 (48.1)	<div></div> 7/27 (25.9)	<div></div> 4/27 (14.8)	<div></div> 3/27 (11.1)	<div></div> 3/27 (11.1)
Medium	<div></div> 12/62 (19.4)	<div></div> 8/62 (12.9)	<div></div> 13/62 (21.03)	<div></div> 23/62 (37.1)	<div></div> 6/62 (9.7)
High	<div></div> 0/2	<div></div> 0/2	<div></div> 0/2	<div></div> 2/2 (100)	<div></div> 0/2
IMCI implementation					
<50% districts	<div></div> 2/12 (16.7)	<div></div> 2/12 (16.7)	<div></div> 2/12 (16.7)	<div></div> 5/12 (41.7)	<div></div> 1/12 (8.3)
50–90% districts	<div></div> 4/15 (26.7)	<div></div> 5/15 (33.3)	<div></div> 2/15 (13.3)	<div></div> 1/15 (6.7)	<div></div> 3/15 (20.0)
>90% districts	<div></div> 14/50 (28.0)	<div></div> 7/50 (14.0)	<div></div> 12/50 (24.0)	<div></div> 17/50 (34.0)	<div></div> 0/50
Unknown	<div></div> 5/14 (35.7)	<div></div> 1/14 (7.1)	<div></div> 1/14 (7.1)	<div></div> 2/14 (14.3)	<div></div> 5/14 (35.7)
All countries	<div></div> 25/91 (27.5)	<div></div> 15/91 (16.5)	<div></div> 17/91 (18.7)	<div></div> 25/91 (27.5)	<div></div> 9/91 (9.9)

*Merged in the questionnaire.

Table A2.4. Implementation of IMCI components and additional elements / activities

Proportion of countries reporting implementation of the three components of IMCI and of two additional elements/activities by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	IMCI components				Additional elements / activities	
	Improving management of sick children in first level health facilities	Strengthening the health system for quality child care services	Improving family and community practices for child health	All 3 components	Treating sick children in the community	Improving management of sick children in referral facilities
Under-5 mortality rate						
≤40	<div></div> 38/40 (95)	<div></div> 38/40 (95)	<div></div> 30/40 (75)	<div></div> 28/40 (70)	<div></div> 29/40 (72.5)	<div></div> 29/40 (72.5)
40–80	<div></div> 33/33 (100)	<div></div> 33/33 (100)	<div></div> 30/33 (90.9)	<div></div> 30/33 (90.9)	<div></div> 23/33 (69.7)	<div></div> 28/33 (84.8)
>80	<div></div> 21/21 (100)	<div></div> 18/21 (85.7)	<div></div> 18/21 (85.7)	<div></div> 18/21 (85.7)	<div></div> 16/21 (76.2)	<div></div> 18/21 (85.7)
WHO Region						
African Region	<div></div> 41/41 (100)	<div></div> 39/41 (95.1)	<div></div> 37/41 (90.2)	<div></div> 37/41 (90.2)	<div></div> 28/41 (68.3)	<div></div> 34/41 (82.9)
Region of the Americas	<div></div> 14/15 (93.3)	<div></div> 15/15 (100)	<div></div> 14/15 (93.3)	<div></div> 13/15 (86.7)	<div></div> 13/15 (86.7)	<div></div> 12/15 (80)
South-East Asia Region	<div></div> 8/9 (88.9)	<div></div> 8/9 (88.9)	<div></div> 7/9 (77.8)	<div></div> 7/9 (77.8)	<div></div> 7/9 (77.8)	<div></div> 8/9 (88.9)
European Region	<div></div> 6/6 (100)	<div></div> 6/6 (100)	<div></div> 5/6 (83.3)	<div></div> 5/6 (83.3)	<div></div> 4/6 (66.7)	<div></div> 4/6 (66.7)
Eastern Mediterranean Region	<div></div> 13/13 (100)	<div></div> 12/13 (92.3)	<div></div> 6/13 (46.2)	<div></div> 6/13 (46.2)	<div></div> 8/13 (61.5)	<div></div> 9/13 (69.2)
Western Pacific Region	<div></div> 10/10 (100)	<div></div> 9/10 (90)	<div></div> 9/10 (90)	<div></div> 8/10 (80)	<div></div> 8/10 (80)	<div></div> 8/10 (80)
Income group						
Low	<div></div> 28/29 (96.6)	<div></div> 26/29 (89.7)	<div></div> 26/29 (89.7)	<div></div> 26/29 (89.7)	<div></div> 21/29 (72.4)	<div></div> 23/29 (79.3)
Medium	<div></div> 62/63 (98.4)	<div></div> 61/63 (96.8)	<div></div> 51/63 (81)	<div></div> 49/63 (77.8)	<div></div> 45/63 (71.4)	<div></div> 50/63 (79.4)
High	<div></div> 2/2 (100)	<div></div> 2/2 (100)	<div></div> 1/2 (50)	<div></div> 1/2 (50)	<div></div> 2/2 (100)	<div></div> 2/2 (100)
IMCI implementation						
<50% districts	<div></div> 13/13 (100)	<div></div> 12/13 (92.3)	<div></div> 9/13 (69.2)	<div></div> 9/13 (69.2)	<div></div> 8/13 (61.5)	<div></div> 10/13 (76.9)
50–90% districts	<div></div> 13/13 (100)	<div></div> 13/13 (100)	<div></div> 11/13 (84.6)	<div></div> 11/13 (84.6)	<div></div> 10/13 (76.9)	<div></div> 13/13 (100)
>90% districts	<div></div> 52/54 (96.3)	<div></div> 51/54 (94.4)	<div></div> 46/54 (85.2)	<div></div> 44/54 (81.5)	<div></div> 41/54 (75.9)	<div></div> 45/54 (83.3)
Unknown	<div></div> 14/14 (100)	<div></div> 13/14 (92.9)	<div></div> 12/14 (85.7)	<div></div> 12/14 (85.7)	<div></div> 9/14 (64.3)	<div></div> 7/14 (50)
All countries	<div></div> 92/94 (97.9)	<div></div> 89/94 (94.7)	<div></div> 78/94 (83)	<div></div> 76/94 (80.9)	<div></div> 68/94 (72.3)	<div></div> 75/94 (79.8)

Table A2.5. Level of IMCI implementation

Number of countries reporting different levels of IMCI implementation; proportion of countries reporting more than 90% of districts implementing IMCI and proportion of countries reporting full implementation * of IMCI by under-five mortality rate, WHO region, and income group
Countries reporting / countries responding (%)

Background characteristics	Number of countries reporting district implementation					Countries reporting / countries responding (%)	
	<50%	50-90%	>90%	No data	Total	Countries reporting IMCI in >90%	Full implementers *
Under-5 mortality rate							
≤40	8	3	24	6	41	24/35 (68.6)	17/34 (50.0)
40–80	1	4	23	5	33	23/28 (82.1)	21/28 (75.0)
>80	4	7	7	3	21	7/18 (38.9)	6/18 (33.3)
WHO Region							
African Region	4	8	23	6	41	23/35 (65.7)	21/35 (60.0)
Region of the Americas	2	0	12	1	15	12/14 (85.7)	10/14 (71.4)
South-East Asia Region	2	2	5	0	9	5/9 (55.6)	4/9 (44.4)
European Region	0	0	4	2	6	4/4 (100)	4/4 (100.0)
Eastern Mediterranean Region	3	3	7	1	14	7/13 (53.8)	3/12 (25.0)
Western Pacific Region	2	1	3	4	10	3/6 (50)	2/6 (33.3)
Income group							
Low	2	5	18	4	29	18/25 (72)	15/24 (62.5)
Medium	11	9	34	10	64	34/54 (63)	28/54 (51.9)
High	0	0	2	0	2	2/2 (100)	1/2 (50)
All countries	13	14	54	14	95	54/81 (66.7)	44/80 (55.0)

* IMCI implemented in >90% districts AND all components implemented in the country

Table A2.6. Government as primary funder

Proportion of countries reporting government as primary funder of different expenditures of IMCI in first level health facility by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


















Background characteristics		Training and per diems	Medicines and equipment	Health worker salaries	Monitoring and supervision	General programme support (infrastructure, transport)
Under-5 mortality rate						
≤40		21/41 (51.2)	38/40 (95)	40/40 (100)	32/40 (80)	35/41 (85.4)
40–80		6/33 (18.2)	21/33 (63.6)	33/33 (100)	17/32 (53.1)	25/32 (78.1)
>80		3/20 (15)	11/20 (55)	17/20 (85)	8/19 (42.1)	11/20 (55)
WHO Region						
African Region		7/40 (17.5)	26/40 (65)	39/40 (97.5)	19/38 (50)	28/39 (71.8)
Region of the Americas		8/15 (53.3)	14/15 (93.3)	15/15 (100)	13/15 (86.7)	13/15 (86.7)
South-East Asia Region		7/9 (77.8)	8/9 (88.9)	9/9 (100)	7/9 (77.8)	8/9 (88.9)
European Region		3/6 (50)	3/5 (60)	6/6 (100)	2/5 (40)	5/6 (83.3)
Eastern Mediterranean Region		2/14 (14.3)	9/14 (64.3)	12/14 (85.7)	9/14 (64.3)	10/14 (71.4)
Western Pacific Region		3/10 (30)	10/10 (100)	9/9 (100)	7/10 (70)	7/10 (70)
Income group						
Low		3/29 (10.3)	14/29 (48.3)	27/29 (93.1)	10/27 (37)	19/28 (67.9)
Medium		25/63 (39.7)	54/62 (87.1)	61/62 (98.4)	45/62 (72.6)	50/63 (79.4)
High		2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)
IMCI implementation						
<50% districts		4/13 (30.8)	11/13 (84.6)	12/13 (92.3)	8/13 (61.5)	6/13 (46.2)
50–90% districts		3/14 (21.4)	9/14 (64.3)	14/14 (100)	6/13 (46.2)	9/14 (64.3)
>90% districts		21/53 (39.6)	40/53 (75.5)	51/52 (98.1)	37/52 (71.2)	47/53 (88.7)
Unknown		2/14 (14.3)	10/13 (76.9)	13/14 (92.9)	6/13 (46.2)	9/13 (69.2)
All countries		30/94 (31.9)	70/93 (75.3)	90/93 (96.8)	57/91 (62.6)	71/93 (76.3)

Table A2.7. Training

Proportion of countries reporting presence of IMCI pre-service education; at least 75% of nursing/midwifery, medical, medical officer, and all training institutions having introduced IMCI in pre-service training; at least 75% of districts having initiated IMCI training for first level health workers; at least 75% of first level health facilities with at least two health workers who care for under-five sick children trained in IMCI; and at least 75% of first level health facilities with at least 60% of health workers who care for under-five sick children trained in IMCI by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation

Countries reporting / countries responding (%)

Background characteristics	Pre-service training					In-service training		
	IMCI introduced in pre-service education	At least 75% of nursing / midwifery training institutions introduced IMCI in pre-service training	At least 75% of medical training institutions introduced IMCI in pre-service training	At least 75% of medical officer training institutions introduced IMCI in pre-service training	At least 75% of training institutions (nursing / midwifery or medical officer or medical) introduced IMCI in pre-service training	At least 75% of districts having initiated IMCI training for first level health workers	At least 75% of first-level health facilities with at least two health workers who care for under 5 sick children trained in IMCI	At least 75% of first-level health facilities with at least 60% of health workers who care for under 5 sick children trained in IMCI
Under-5 mortality rate								
≤40	27/40 (67.5)	9/21 (42.9)	12/19 (63.2)	9/18 (50)	14/24 (58.3)	19/38 (50)	20/35 (57.1)	16/31 (51.6)
40–80	26/33 (78.8)	15/24 (62.5)	14/23 (60.9)	9/19 (47.4)	19/25 (76)	21/31 (67.7)	7/27 (25.9)	4/26 (15.4)
>80	14/20 (70)	4/14 (28.6)	3/13 (23.1)	1/9 (11.1)	4/14 (28.6)	6/20 (30)	3/17 (17.6)	2/17 (11.8)
WHO Region								
African Region	30/40 (75)	16/30 (53.3)	12/28 (42.9)	10/22 (45.5)	18/30 (60)	22/38 (57.9)	9/34 (26.5)	6/34 (17.6)
Region of the Americas	11/15 (73.3)	4/7 (57.1)	4/7 (57.1)	3/6 (50)	5/9 (55.6)	10/15 (66.7)	8/12 (66.7)	7/11 (63.6)
South-East Asia Region	6/9 (66.7)	2/5 (40)	4/5 (80)	2/4 (50)	4/5 (80)	3/8 (37.5)	4/7 (57.1)	3/5 (60)
European Region	5/6 (83.3)	1/4 (25)	4/5 (80)	2/5 (40)	4/5 (80)	3/5 (60)	2/5 (40)	1/5 (20)
Eastern Mediterranean Region	9/14 (64.3)	3/8 (37.5)	4/8 (50)	2/6 (33.3)	4/8 (50)	6/14 (42.9)	5/12 (41.7)	4/11 (36.4)
Western Pacific Region	6/9 (66.7)	2/5 (40)	1/2 (50)	0/3 (0)	2/6 (33.3)	2/9 (22.2)	2/9 (22.2)	1/8 (12.5)
Income group								
Low	20/29 (69)	11/19 (57.9)	10/19 (52.6)	9/15 (60)	13/20 (65)	17/28 (60.7)	6/25 (24)	5/24 (20.8)
Medium	45/62 (72.6)	15/38 (39.5)	17/34 (50)	8/29 (27.6)	22/41 (53.7)	27/59 (45.8)	23/52 (44.2)	16/48 (33.3)
High	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	1/2 (50)	1/2 (50)
IMCI implementation								
<50% districts	6/13 (46.2)	2/6 (33.3)	1/5 (20)	0/2 (0)	2/6 (33.3)	1/13 (7.7)	1/9 (11.1)	1/7 (14.3)
50–90% districts	11/14 (78.6)	4/9 (44.4)	4/9 (44.4)	0/7 (0)	4/10 (40)	5/14 (35.7)	2/11 (18.2)	1/11 (9.1)
>90% districts	43/53 (81.1)	20/39 (51.3)	21/35 (60)	17/31 (54.8)	28/41 (68.3)	38/51 (74.5)	26/49 (53.1)	19/47 (40.4)
Unknown	7/13 (53.8)	2/5 (40)	3/6 (50)	2/6 (33.3)	3/6 (50)	2/11 (18.2)	1/10 (10)	1/9 (11.1)
All countries	67/93 (72)	28/59 (47.5)	29/55 (52.7)	17/43 (39.5)	37/63 (58.7)	46/89 (51.7)	30/79 (38)	22/74 (29.7)

Table A2.8. Guidelines

Proportion of countries reporting guidelines include care of sick newborn in the first week of life, updated IMCI chart booklet based on the 2014 WHO generic IMCI chart booklet, updated national treatment guidelines based on the 2013 edition of the WHO's Pocket Book for Hospital Care for Children, and adaptation of WHO's Pocket Book for Hospital Care for Children guidelines in referral health facilities by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation

Countries reporting / countries responding (%)

Background characteristics	IMCI guidelines include care of sick newborns in the first week of life	Updated IMCI chart booklet based on the 2014 WHO generic IMCI chart booklet	Updated national treatment guidelines based on the 2013 edition of the WHO's Pocket Book for hospital care for children	Adaptation of WHO Pocket Book for Hospital Care for children guidelines in referral health facilities	All four items
Under-5 mortality rate					
≤40	38/40 (95)	27/35 (77.1)	14/37 (37.8)	15/37 (40.5)	7/31 (22.6)
40–80	32/33 (97)	28/32 (87.5)	18/30 (60)	16/32 (50)	10/29 (34.5)
>80	19/21 (90.5)	14/18 (77.8)	16/20 (80)	8/19 (42.1)	5/17 (29.4)
WHO Region					
African Region	39/41 (95.1)	32/37 (86.5)	26/38 (68.4)	17/39 (43.6)	11/34 (32.4)
Region of the Americas	13/15 (86.7)	10/14 (71.4)	3/14 (21.4)	3/13 (23.1)	2/13 (15.4)
South-East Asia Region	9/9 (100)	6/7 (85.7)	6/9 (66.7)	6/9 (66.7)	3/7 (42.9)
European Region	6/6 (100)	2/4 (50)	4/6 (66.7)	5/6 (83.3)	2/4 (50)
Eastern Mediterranean Region	13/14 (92.9)	13/14 (92.9)	4/12 (33.3)	3/13 (23.1)	1/12 (8.3)
Western Pacific Region	9/9 (100)	6/9 (66.7)	5/8 (62.5)	5/8 (62.5)	3/7 (42.9)
Income group					
Low	27/29 (93.1)	22/26 (84.6)	20/28 (71.4)	12/28 (42.9)	8/26 (30.8)
Medium	60/63 (95.2)	46/57 (80.7)	28/57 (49.1)	25/58 (43.1)	14/49 (28.6)
High	2/2 (100)	1/2 (50)	0/2 (0)	2/2 (100)	0/2 (0)
IMCI implementation					
<50% districts	12/13 (92.3)	9/12 (75)	5/13 (38.5)	2/13 (15.4)	2/12 (16.7)
50–90% districts	13/14 (92.9)	11/12 (91.7)	9/11 (81.8)	7/13 (53.8)	4/10 (40)
>90% districts	53/54 (98.1)	42/51 (82.4)	28/50 (56)	24/48 (50)	14/45 (31.1)
Unknown	11/13 (84.6)	7/10 (70)	6/13 (46.2)	6/14 (42.9)	2/10 (20)
All countries	89/94 (94.7)	69/85 (81.2)	48/87 (55.2)	39/88 (44.3)	22/77 (28.6)

Table A2.9. Conditions added in the national adaptation of the generic IMCI guidelines

Proportion of countries reporting addition of dengue, tuberculosis, HIV, skin conditions, sore throat, jaundice, and other conditions in their national adaptation of the generic IMCI guidelines by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)














Background characteristics		Dengue	Tuberculosis	HIV	Skin conditions	Sore Throat	Jaundice	Others	Unknown/ not applicable
Under-5 mortality rate									
≤40		19/39 (48.7)	12/39 (30.8)	16/39 (41)	16/39 (41)	29/39 (74.4)	30/39 (76.9)	19/39 (48.7)	4/39 (10.3)
40–80		4/33 (12.1)	16/33 (48.5)	27/33 (81.8)	19/33 (57.6)	19/33 (57.6)	28/33 (84.8)	13/33 (39.4)	0/33 (0)
>80		2/21 (9.5)	6/21 (28.6)	16/21 (76.2)	6/21 (28.6)	7/21 (33.3)	14/21 (66.7)	8/21 (38.1)	2/21 (9.5)
WHO Region									
African Region		1/41 (2.4)	18/41 (43.9)	38/41 (92.7)	19/41 (46.3)	16/41 (39)	30/41 (73.2)	16/41 (39)	1/41 (2.4)
Region of the Americas		11/15 (73.3)	7/15 (46.7)	10/15 (66.7)	7/15 (46.7)	11/15 (73.3)	11/15 (73.3)	11/15 (73.3)	0/15 (0)
South-East Asia Region		6/9 (66.7)	4/9 (44.4)	4/9 (44.4)	6/9 (66.7)	5/9 (55.6)	7/9 (77.8)	5/9 (55.6)	1/9 (11.1)
European Region		0/6 (0)	0/6 (0)	2/6 (33.3)	0/6 (0)	6/6 (100)	5/6 (83.3)	2/6 (33.3)	0/6 (0)
Eastern Mediterranean Region		2/13 (15.4)	2/13 (15.4)	2/13 (15.4)	3/13 (23.1)	10/13 (76.9)	12/13 (92.3)	4/13 (30.8)	2/13 (15.4)
Western Pacific Region		5/9 (55.6)	3/9 (33.3)	3/9 (33.3)	6/9 (66.7)	7/9 (77.8)	7/9 (77.8)	2/9 (22.2)	2/9 (22.2)
Income group									
Low		0/29 (0)	9/29 (31)	25/29 (86.2)	12/29 (41.4)	11/29 (37.9)	20/29 (69)	10/29 (34.5)	1/29 (3.4)
Medium		25/62 (40.3)	25/62 (40.3)	34/62 (54.8)	29/62 (46.8)	42/62 (67.7)	50/62 (80.6)	29/62 (46.8)	5/62 (8.1)
High		0/2 (0)	0/2 (0)	0/2 (0)	0/2 (0)	2/2 (100)	2/2 (100)	1/2 (50)	0/2 (0)
IMCI implementation									
<50% districts		5/12 (41.7)	3/12 (25)	6/12 (50)	4/12 (33.3)	5/12 (41.7)	9/12 (75)	5/12 (41.7)	0/12 (0)
50–90% districts		1/13 (7.7)	2/13 (15.4)	9/13 (69.2)	4/13 (30.8)	5/13 (38.5)	9/13 (69.2)	6/13 (46.2)	1/13 (7.7)
>90% districts		15/54 (27.8)	26/54 (48.1)	36/54 (66.7)	28/54 (51.9)	36/54 (66.7)	46/54 (85.2)	25/54 (46.3)	4/54 (7.4)
Unknown		4/14 (28.6)	3/14 (21.4)	8/14 (57.1)	5/14 (35.7)	9/14 (64.3)	8/14 (57.1)	4/14 (28.6)	1/14 (7.1)
All countries		25/93 (26.9)	34/93 (36.6)	59/93 (63.4)	41/93 (44.1)	55/93 (59.1)	72/93 (77.4)	40/103 (38.8)	6/63 (9.5)

Table A2.10. Supervisory visit in the last 6 months

Number of countries reporting the proportion of first level health facilities that have had at least one supervisory visit in the last six months by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


















Background characteristics		<25%	25-49%	50-74%	75% or more	No data	Countries reporting 75% or more
Under-5 mortality rate							
≤40		16	4	3	4	14	4/27 (14.8)
40–80		5	8	5	5	10	5/23 (21.7)
>80		12	3	0	1	5	1/16 (6.3)
WHO Region							
African Region		12	6	4	6	13	6/28 (21.4)
Region of the Americas		5	0	1	3	6	3/9 (33.3)
South-East Asia Region		1	2	0	1	5	1/4 (25)
European Region		3	1	1	0	1	0/5 (0)
Eastern Mediterranean Region		7	4	2	0	1	0/13 (0)
Western Pacific Region		5	2	0	0	3	0/7 (0)
Income group							
Low		11	4	3	4	7	4/22 (18.2)
Medium		22	11	4	6	21	6/43 (14)
High		0	0	1	0	1	0/1 (0)
IMCI implementation							
<50% districts		5	1	0	0	7	0/6 (0)
50–90% districts		8	3	0	0	3	0/11 (0)
>90% districts		13	11	8	9	13	9/41 (22)
Unknown		7	0	0	1	6	1/8 (12.5)
All countries		33	15	8	10	29	10/66 (15.2)

Table A2.11. Child Health Programmes, Monitoring and Evaluation, and Health Facility Survey

Proportion of countries reporting on child health programme reviews conducted since 2014, introduction of child health programme management training, inclusion of IMCI monitoring indicators in national HMIS, presence of a comprehensive monitoring and evaluation plan for IMCI, and conduction of IMCI Health Facility Survey in the last 5 years (2011-2016) by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


















Background characteristics	Child health programmes		Monitoring and Evaluation		Health Facility Survey
	Child health programme review conducted since 2014	Child health programme management training introduced	National HMIS includes monitoring indicators for IMCI	Comprehensive Monitoring and Evaluation plan for IMCI	IMCI Health Facility Survey conducted in last 5 Years (2011-16)
Under-5 mortality rate					
≤40	 15/41 (36.6)	17/37 (45.9)	25/41 (61)	14/40 (35)	8/41 (19.5)
40–80	 11/33 (33.3)	15/32 (46.9)	25/33 (75.8)	13/31 (41.9)	13/33 (39.4)
>80	 9/21 (42.9)	10/19 (52.6)	16/20 (80)	3/20 (15)	11/21 (52.4)
WHO Region					
African Region	 16/41 (39)	20/38 (52.6)	31/40 (77.5)	12/39 (30.8)	21/41 (51.2)
Region of the Americas	 2/15 (13.3)	7/13 (53.8)	7/15 (46.7)	3/15 (20)	1/15 (6.7)
South-East Asia Region	 2/9 (22.2)	4/9 (44.4)	5/9 (55.6)	2/8 (25)	2/9 (22.2)
European Region	 5/6 (83.3)	1/6 (16.7)	3/6 (50)	3/6 (50)	2/6 (33.3)
Eastern Mediterranean Region	 5/14 (35.7)	5/14 (35.7)	13/14 (92.9)	6/14 (42.9)	4/14 (28.6)
Western Pacific Region	 5/10 (50)	5/8 (62.5)	7/10 (70)	4/9 (44.4)	2/10 (20)
Income group					
Low	 11/29 (37.9)	15/27 (55.6)	22/29 (75.9)	9/28 (32.1)	15/29 (51.7)
Medium	 22/64 (34.4)	25/59 (42.4)	42/63 (66.7)	20/61 (32.8)	16/64 (25)
High	 2/2 (100)	2/2 (100)	2/2 (100)	1/2 (50)	1/2 (50)
IMCI implementation					
<50% districts	 3/13 (23.1)	7/12 (58.3)	9/13 (69.2)	4/13 (30.8)	4/13 (30.8)
50–90% districts	 4/14 (28.6)	6/14 (42.9)	10/14 (71.4)	3/13 (23.1)	8/14 (57.1)
>90% districts	 24/54 (44.4)	23/49 (46.9)	40/53 (75.5)	21/52 (40.4)	15/54 (27.8)
Unknown	 4/14 (28.6)	6/13 (46.2)	7/14 (50)	2/13 (15.4)	5/14 (35.7)
All countries	 35/95 (36.8)	42/88 (47.7)	66/94 (70.2)	30/91 (33)	32/95 (33.7)

Table A2.12. Bottleneck analysis and Strategic planning

Proportion of countries reporting introduction of general bottleneck analysis and strategic planning tools, OneHealth tool, Marginal Budgeting for Bottleneck (MBB) analysis, DIVA and EQUIST by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


















Background characteristics	Tools for bottleneck analysis and strategic planning introduced	One Health introduced	Marginal Budgeting for Bottlenecks introduced	DIVA introduced	EQUIST introduced
Under-5 mortality rate					
≤40	 11/32 (34.4)	6/11 (54.5)	8/11	2/11 (18.2)	1/11 (9.1)
40–80	 16/29 (55.2)	10/16 (62.5)	10/16	5/16 (31.3)	0/16 (0)
>80	 6/18 (33.3)	4/5 (80)	4/5	1/5 (20)	0/5 (0)
WHO Region					
African Region	 15/35 (42.9)	10/14 (71.4)	10/14	4/14 (28.6)	0/14 (0)
Region of the Americas	 2/12 (16.7)	1/2 (50)	2/2	1/2 (50)	1/2 (50)
South-East Asia Region	 4/7 (57.1)	3/4 (75)	4/4	0/4 (0)	0/4 (0)
European Region	 1/4 (25)	1/1 (100)	0/1	0/1 (0)	0/1 (0)
Eastern Mediterranean Region	 5/13 (38.5)	3/5 (60)	2/5	2/5 (40)	0/5 (0)
Western Pacific Region	 6/8 (75)	2/6 (33.3)	4/6	1/6 (16.7)	0/6 (0)
Income group					
Low	 12/25 (48)	8/11 (72.7)	9/11	2/11 (18.2)	0/11 (0)
Medium	 20/52 (38.5)	11/20 (55)	13/20	6/20 (30)	1/20 (5)
High	 1/2 (50)	1/1 (100)	0/1	0/1 (0)	0/1 (0)
IMCI implementation					
<50% districts	 5/10 (50)	3/5 (60)	3/5 (60)	0/5 (0)	0/5 (0)
50–90% districts	 6/12 (50)	5/5 (100)	3/5 (60)	2/5 (40)	0/5 (0)
>90% districts	 17/47 (36.2)	11/17 (64.7)	12/17 (70.6)	5/17 (29.4)	1/17 (5.9)
Unknown	 5/10 (50)	1/5 (20)	4/5 (80)	1/5 (20)	0/5 (0)
All countries	 33/79 (41.8)	20/32 (62.5)	22/32 (68.8)	8/32 (25)	1/32 (3.1)

Table A2.13a. Medicines for use in children <5years

Proportion of countries reporting inclusion of specific medicines from the Essential List of Medicines in the national list of medicines by WHO region
Countries reporting / countries responding (%)

Background characteristics	African Region	Region of the Americas	South-East Asia Region	European Region	Eastern Mediterranean Region	Western Pacific Region	All countries
Medicine list							
Amoxicillin	40/40 (100)	14/14 (100)	8/8 (100)	6/6 (100)	14/14 (100)	10/10 (100)	92/92 (100)
Ampicillin (injectable)	35/40 (87.5)	10/14 (71.4)	7/8 (87.5)	5/6 (83.3)	12/14 (85.7)	10/10 (100)	79/92 (85.9)
Benzyl penicillin	38/40 (95)	13/14 (92.9)	7/8 (87.5)	6/6 (100)	13/14 (92.9)	9/10 (90)	86/92 (93.5)
Ceftriaxone	33/40 (82.5)	9/14 (64.3)	7/8 (87.5)	4/6 (66.7)	9/14 (64.3)	9/10 (90)	71/92 (77.2)
Ciprofloxacin	38/40 (95)	8/14 (57.1)	7/8 (87.5)	5/6 (83.3)	9/14 (64.3)	8/10 (80)	75/92 (81.5)
Cotrimoxazole	39/40 (97.5)	13/14 (92.9)	8/8 (100)	5/6 (83.3)	12/14 (85.7)	10/10 (100)	87/92 (94.6)
Gentamycin	40/40 (100)	12/14 (85.7)	8/8 (100)	5/6 (83.3)	12/14 (85.7)	8/10 (80)	85/92 (92.4)
Low osmolarity ORS	38/40 (95)	14/14 (100)	7/8 (87.5)	4/6 (66.7)	14/14 (100)	8/10 (80)	85/92 (92.4)
Salbutamol inhaler	33/40 (82.5)	12/14 (85.7)	6/8 (75)	6/6 (100)	13/14 (92.9)	10/10 (100)	80/92 (87)
Zinc tablets	38/40 (95)	9/14 (64.3)	8/8 (100)	3/6 (50)	9/14 (64.3)	7/10 (70)	74/92 (80.4)
Anti-malarial drugs							
Artemisinin combination therapy	36/40 (90)	2/11 (18.2)	3/7 (42.9)	0/1 (0)	6/11 (54.5)	4/8 (50)	51/78 (65.4)
Artesunate (parenteral)	31/40 (77.5)	2/11 (18.2)	4/7 (57.1)	0/1 (0)	3/11 (27.3)	4/8 (50)	44/78 (56.4)
Rectal artesunate	19/40 (47.5)	0/11 (0)	1/7 (14.3)	0/1 (0)	1/11 (9.1)	4/8 (50)	25/78 (32.1)

Table A2.13b. Medicines for use in children <5years

Proportion of countries reporting inclusion of all 10 non anti-malarial medicines and proportion of malaria endemic countries including all 13 medicines from the Essential List of Medicines in the national list of medicines by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


















Background characteristics	10 medicines (all countries)	13 medicines (malaria endemic countries)
Under-5 mortality rate		
≤40	 15/40 (37.5)	28/38 (73.7)
40–80	 16/32 (50)	29/33 (87.9)
>80	 12/20 (60)	18/20 (90)
WHO Region		
African Region	 21/40 (52.5)	11/40 (27.5)
Region of the Americas	 4/14 (28.6)	0/11 (0)
South-East Asia Region	 6/8 (75)	1/7 (14.3)
European Region	 2/6 (33.3)	0/1 (0)
Eastern Mediterranean Region	 6/14 (42.9)	0/11 (0)
Western Pacific Region	 4/10 (40)	1/8 (12.5)
Income group		
Low	 15/29 (51.7)	8/29 (27.6)
Medium	 27/61 (44.3)	5/48 (10.4)
High	 1/2 (50)	0/1 (0)
IMCI implementation		
<50% districts	 5/13 (38.5)	0/11 (0)
50–90% districts	 7/14 (50)	2/13 (15.4)
>90% districts	 27/51 (52.9)	9/42 (21.4)
Unknown	 4/14 (28.6)	2/12 (16.7)
All countries	 53/91 (58.2)	13/78 (16.7)

Table A2.14. Quality of care

Proportion of countries reporting assessment of quality of paediatric hospital care and of quality of care to improve management of childhood illnesses in referral hospitals, and existence of a paediatric quality of care improvement programme for the health facilities in the Ministry of Health by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	Assessments of quality of paediatric hospital care conducted	Assessment of quality of care to improve management of childhood illnesses conducted in referral hospitals	The ministry of heealth has a paediatric quality of care improvement program for the health facilities
Under-5 mortality rate			
≤40	<div><div></div>17/40 (42.5)</div>	19/38 (50.0)	21/40 (52.5)
40–80	<div><div></div>13/32 (40.6)</div>	17/33 (51.5)	20/33 (60.6)
>80	<div><div></div>9/20 (45)</div>	8/21 (38.1)	12/19 (63.2)
WHO Region			
African Region	<div><div></div>16/40 (40)</div>	19/41 (46.3)	24/40 (60)
Region of the Americas	<div><div></div>6/14 (42.9)</div>	7/14 (50)	8/15 (53.3)
South-East Asia Region	<div><div></div>6/8 (75)</div>	6/9 (66.7)	4/9 (44.4)
European Region	<div><div></div>6/6 (100)</div>	6/6 (100)	4/6 (66.7)
Eastern Mediterranean Region	<div><div></div>2/14 (14.3)</div>	2/13 (15.4)	8/12 (66.7)
Western Pacific Region	<div><div></div>3/10 (30)</div>	4/9 (44.4)	5/10 (50)
Income group			
Low	<div><div></div>12/29 (41.4)</div>	15/29 (51.7)	16/29 (55.2)
Medium	<div><div></div>25/61 (41)</div>	27/61 (44.3)	35/61 (57.4)
High	<div><div></div>2/2 (100)</div>	2/2 (100)	2/2 (100)
IMCI implementation			
<50% districts	<div><div></div>1/13 (7.7)</div>	0/12 (0)	6/12 (50)
50–90% districts	<div><div></div>9/14 (64.3)</div>	9/14 (64.3)	11/13 (84.6)
>90% districts	<div><div></div>25/51 (49)</div>	29/53 (54.7)	32/53 (60.4)
Unknown	<div><div></div>4/14 (28.6)</div>	6/13 (46.2)	4/14 (28.6)
All countries	<div><div></div>39/92 (42.4)</div>	44/92 (47.8)	53/92 (57.6)


















Table A2.15. Community health workers : level of education

Proportion of countries reporting on minimum required level of education for CHWs providing care for newborns and children under-five by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	Countries reporting / countries responding (%)	Minimum literacy and numeracy	Primary school	Secondary / high school	Other
Under-5 mortality rate					
≤40	<div><div></div>1/32 (3.1)</div>	6/32 (18.8)	3/32 (9.4)	17/32 (53.1)	5/32 (15.6)
40–80	<div><div></div>0/33</div>	5/33 (15.2)	10/33 (30.3)	16/33 (48.5)	2/33 (6.1)
>80	<div><div></div>4/20 (20.0)</div>	6/20 (30.0)	8/20 (40.0)	2/20 (10.0)	0/20
WHO Region					
African Region	<div><div></div>3/40 (7.5)</div>	9/40 (22.5)	16/40 (40.0)	11/40 (27.5)	1/40 (2.5)
Region of the Americas	<div><div></div>0/12</div>	2/12 (16.7)	3/12 (25.0)	5/12 (41.7)	2/12 (16.7)
South-East Asia Region	<div><div></div>0/9</div>	2/9 (22.2)	0/9	6/9 (66.7)	1/9 (11.1)
European Region	<div><div></div>0/5</div>	0/5	0/5	2/5 (40.0)	3/5 (60.0)
Eastern Mediterranean Region	<div><div></div>2/11 (18.2)</div>	2/11 (18.2)	2/11 (18.2)	5/11 (45.5)	0/11
Western Pacific Region	<div><div></div>0/8</div>	2/8 (25.0)	0/8	6/8 (75.0)	0/8
Income group					
Low	<div><div></div>3/29 (10.3)</div>	8/29 (27.6)	10/29 (34.5)	8/29 (27.6)	10/29 (34.5)
Medium	<div><div></div>2/55 (3.6)</div>	9/55 (16.4)	11/55 (20.0)	26/55 (47.3)	7/55 (12.7)
High	<div><div></div>0/1</div>	0/1	0/1	1/1 (100)	0/1
IMCI implementation					
<50% districts	<div><div></div>0/10</div>	1/10 (10.0)	3/10 (30.0)	6/10 (60.0)	0/10
50–90% districts	<div><div></div>2/12 (16.7)</div>	1/12 (8.3)	6/12 (50.0)	2/12 (16.7)	1/12 (8.3)
>90% districts	<div><div></div>2/49 (4.1)</div>	12/49 (24.5)	10/49 (20.4)	21/49 (42.9)	4/49 (8.2)
Unknown	<div><div></div>1/14 (7.1)</div>	3/14 (21.4)	2/14 (14.3)	6/14 (42.9)	2/14 (14.3)
All countries	<div><div></div>5/85 (5.9)</div>	17/85 (20.0)	21/85 (24.7)	35/85 (41.2)	7/85 (8.2)

Table A2.16. Community health workers : pre-service training

Proportion of countries reporting on length of pre-service training for CHWs providing care for newborns and children under-five by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics		<1month	1-3 months	3-6 months	>6 months	Other / Unknown**
Under-5 mortality rate						
≤40		4/35 (11.4)	4/35 (11.4)	2/35 (5.7)	5/35 (14.3)	20/35 (57.1)
40–80		10/32 (31.3)	7/32 (21.9)	5/32 (15.6)	6/32 (18.8)	4/32 (12.5)
>80		10/20 (50.0)	2/20 (10.0)	2/20 (10.0)	3/20 (15.0)	3/20 (15.0)
WHO Region						
African Region		18/39 (46.2)	6/39 (15.4)	5/39 (12.8)	5/39 (12.8)	5/39 (12.8)
Region of the Americas		3/14 (21.4)	2/14 (14.3)	2/14 (14.3)	2/14 (14.3)	5/14 (35.7)
South-East Asia Region		1/8 (12.5)	1/8 (12.5)	0/8	3/8 (37.5)	3/8 (37.5)
European Region		0/5	1/5 (20.0)	0/5	1/5 (20.0)	3/5 (60.0)
Eastern Mediterranean Region		2/11 (18.2)	1/11 (9.1)	0/11	2/11 (18.2)	6/11 (54.5)
Western Pacific Region		0/10	2/10 (20.0)	2/10 (20.0)	1/10 (10.0)	5/10 (50.0)
Income group						
Low		13/29 (44.8)	5/29 (17.2)	5/29 (17.2)	3/29 (10.3)	3/29 (10.3)
Medium		11/57 (19.3)	8/57 (14.0)	4/57 (7.0)	11/57 (19.3)	23/57 (40.4)
High		0/1	0/1	0/1	1/1 (100)	0/1
IMCI implementation						
<50% districts		3/11 (27.3)	0/11	1/11 (9.1)	3/11 (27.3)	4/11 (36.4)
50–90% districts		5/12 (41.7)	1/12 (8.3)	0/12	3/12 (25.0)	3/12 (25.0)
>90% districts		14/50 (28.0)	9/50 (18.0)	6/50 (12.0)	8/50 (16.0)	13/50 (26.0)
Unknown		2/14 (14.3)	3/14 (21.4)	2/14 (14.3)	0/14	7/14 (50.0)
All countries		24/87 (27.6)	13/87 (14.9)	9/87 (10.3)	14/87 (16.1)	27/87 (31.0)

Under-5 Mortality based on 2015 estimates. N: total number in each category **Merged in the questionnaire

Table A2.17. Community health workers : coverage, incentives and payment

Proportion of countries reporting on CHW's population coverage, and on types of incentives and payments of CHWs by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


















Background characteristics	Coverage	Coverage and payment						
	Coverage by one CHWs of at most 1000 children	Non monetary incentives for CHWs	Any type of remuneration for CHWs	Remuneration of CHWs by user fees for service	Remuneration of CHWs by commission on sale of medicines / commodities supplied	Remuneration of CHWs by salary	Remuneration of CHWs by incentive payments	No incentives nor remuneration of CHWs
Under-5 mortality rate								
≤40		11/19 (57.9)	5/32 (15.6)	22/32 (68.8)	1/32 (3.1)	0/33	17/32 (53.1)	4/32 (12.5)
40–80		19/27 (70.4)	8/32 (25.0)	19/32 (59.4)	0/32	0/32	9/32 (28.1)	10/32 (31.3)
>80		15/17 (88.2)	6/20 (30.0)	10/20 (50.0)	2/20 (10.0)	2/20 (10.05)	5/20 (25.0)	1/20 (5.0)
WHO Region								
African Region		27/34 (79.4)	13/39 (33.3)	21/39 (53.8)	2/39 (5.1)	2/39 (5.1)	9/39 (23.1)	8/39 (20.5)
Region of the Americas		7/9 (77.8)	3/14 (21.4)	9/14 (64.3)	1/14 (7.1)	0/14	8/14 (57.1)	0/14
South-East Asia Region		4/7 (57.1)	1/9 (11.1)	7/9 (77.8)	0/9	0/9	5/9 (55.6)	2/9 (22.2)
European Region		1/2 (50.0)	0/2	2/2 (33.3)	0/2	0/2	2/2 (33.3)	0/2
Eastern Mediterranean Region		4/8 (50.0)	1/10 (10.0)	5/10 (50.0)	0/10	0/10	3/10 (30.0)	2/10 (20.0)
Western Pacific Region		2/3 (66.7)	1/10 (10.0)	7/10 (70.0)	0/10	0/10	4/10 (40.0)	3/10 (30.0)
Income group								
Low		20/26 (76.9)	11/29 (37.9)	13/29 (44.8)	1/29 (3.4)	1/29 (3.4)	6/29 (20.7)	5/29 (17.2)
Medium		25/37 (67.6)	8/54 (14.8)	37/54 (68.5)	2/54 (3.7)	1/54 (1.9)	24/54 (44.4)	10/54 (18.5)
High			0/1	1/1 (100)	0/1	0/1	1/1 (100)	0/1
IMCI implementation								
<50% districts		3/7 (42.9)	2/11 (18.2)	7/11 (63.6)	1/11 (9.1)	1/11 (9.1)	4/11 (36.4)	1/11 (9.1)
50–90% districts		9/10 (90.0)	3/12 (25.0)	5/12 (41.7)	0/12	0/12	3/12 (25.0)	2/12 (16.7)
>90% districts		27/40 (67.5)	10/50 (20.0)	35/50 (70.0)	2/50 (4.0)	1/50 (2.0)	21/50 (42.0)	11/50 (22.0)
Unknown		6/6 (100)	4/11 (36.4)	4/11 (36.4)	0/11	0/11	3/11 (27.3)	1/11 (9.1)
All countries		45/63 (71.4)	19/84 (22.6)	51/84 (60.7)	3/84 (3.6)	2/84 (2.4)	31/84 (36.9)	15/84 (17.9)

Table A2.18. Community health workers : supervision

Proportion of countries reporting on types of supervision received by CHWs by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	Supervision by IMCI trained supervisors	Supervision by Non IMCI-trained supervisors	Supervision by peer support	Supervision by mentorship in health facilities
Under-5 mortality rate				
≤40	17/41 (41.4)	8/41 (19.5)	6/41 (14.6)	15/41 (36.6)
40–80	28/31 (90.3)	13/31 (41.9)	6/31 (19.4)	19/31 (61.3)
>80	13/20 (65.0)	4/20 (20.0)	2/20 (10.0)	7/20 (35.0)
WHO Region				
African Region	31/38 (81.6)	12/38 (31.6)	6/38 (15.8)	21/38 (55.3)
Region of the Americas	7/15 (46.7)	0/15	5/15 (33.3)	10/15 (66.6)
South-East Asia Region	5/9 (55.5)	3/9 (33.3)	1/9 (11.1)	2/9 (22.2)
European Region	2/6 (33.3)	1/6 (16.7)	0/6	0/6
Eastern Mediterranean Region	7/14 (50.0)	5/14 (35.7)	0/14	3/14 (21.4)
Western Pacific Region	6/10 (60.0)	4/10 (40.0)	2/10 (20.0)	5/10 (50.0)
Income group				
Low	19/28 (67.9)	7/28 (25.0)	4/28 (14.3)	15/28 (53.6)
Medium	38/62 (61.3)	18/62 (29.0)	10/62 (16.1)	26/62 (41.9)
High	1/2 (50.0)	0/2	0/2	0/2
IMCI implementation				
<50% districts	7/12 (58.3)	3/12 (25.0)	1/12 (8.3)	8/12 (66.7)
50–90% districts	11/15 (73.3)	4/15 (26.7)	1/15 (6.7)	3/15 (20.0)
>90% districts	33/52 (63.5)	12/52 (23.1)	11/52 (21.2)	26/52 (50.0)
Unknown	7/13 (53.8)	6/13 (46.2)	1/13 (7.7)	4/13 (30.8)
All countries	58/92 (63.0)	25/92 (27.2)	14/92 (15.2)	41/92 (44.6)

Table A2.19. Community health workers referral mechanisms

Proportion of countries reporting on referral mechanisms used by CHWs by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	Referral note	Phone communication with referral centre	Arranging transport	Other	None
Under-5 mortality rate					
≤40	26/41 (63.4)	17/41 (41.5)	16/41 (39.0)	8/41 (19.5)	2/41 (4.9)
40–80	26/33 (78.8)	18/33 (54.5)	19/33 (57.6)	8/33 (24.2)	1/33 (3.0)
>80	15/20 (75.0)	8/20 (40.0)	8/20 (40.0)	5/20 (25.0)	2/20 (10.0)
WHO Region					
African Region	33/40 (82.5)	22/40 (55.0)	20/40 (50.0)	8/40 (20.0)	3/40 (7.5)
Region of the Americas	13/15 (86.7)	7/15 (46.7)	7/15 (46.7)	4/15 (26.7)	0/15
South-East Asia Region	6/9 (66.7)	2/9 (22.2)	4/9 (44.4)	3/9 (33.3)	1/9 (11.1)
European Region	3/6 (50.0)	3/6 (50.0)	2/6 (33.3)	1/6 (16.7)	0/6
Eastern Mediterranean Region	6/14 (42.9)	1/14 (7.1)	2/14 (14.3)	3/14 (21.4)	1/14 (7.1)
Western Pacific Region	6/10 (60.0)	8/10 (80.0)	8/10 (80.0)	2/10 (20.0)	0/10
Income group					
Low	23/29 (79.3)	15/29 (51.7)	12/29 (41.4)	4/29 (13.8)	1/29 (3.4)
Medium	44/63 (69.8)	28/63 (44.4)	31/63 (49.2)	17/63 (27.0)	2/63 (3.2)
High	0/2	0/2	0/2	0/2	1/2 (50.0)
IMCI implementation					
<50% districts	10/12 (83.3)	4/12 (33.3)	4/12 (33.3)	2/12 (16.7)	2/12 (16.7)
50–90% districts	9/15 (60.0)	8/15 (53.3)	7/15 (46.7)	2/15 (13.3)	1/15 (6.7)
>90% districts	40/53 (75.5)	23/53 (43.4)	24/53 (45.3)	13/53 (24.5)	1/53 (1.9)
Unknown	8/14 (57.1)	8/14 (57.1)	8/14 (57.1)	4/14 (28.6)	1/14 (7.1)
All countries	67/94 (71.3)	43/94 (45.7)	43/94 (45.7)	21/94 (22.3)	5/94 (5.3)

Table A2.20. Delivery mechanisms of key family practices for child health

Proportion of countries reporting on delivery mechanisms used to promote key family practices and community for child health by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	Home visits during pregnancy	Home visits in the postnatal period	Home visits for counselling on key family practices	Community groups	Child Health days	Mass media	Social Mobilization	Other
Under-5 mortality rate								
≤40	20/34 (58.8)	22/34 (64.7)	23/34 (67.6)	22/34 (64.7)	13/34 (38.2)	13/34 (38.2)	18/34 (52.9)	9/34 (26.5)
40–80	21/29 (72.4)	21/29 (72.4)	23/29 (79.3)	21/29 (72.4)	21/29 (72.4)	21/29 (72.4)	18/29 (62.1)	9/29 (31)
>80	13/19 (68.4)	14/19 (73.7)	18/19 (94.7)	11/19 (57.9)	8/19 (42.1)	8/19 (42.1)	12/19 (63.2)	3/19 (15.8)
WHO Region								
African Region	26/36 (72.2)	27/36 (75)	32/36 (88.9)	23/36 (63.9)	22/36 (61.1)	22/36 (61.1)	23/36 (63.9)	8/36 (22.2)
Region of the Americas	12/15 (80)	12/15 (80)	13/15 (86.7)	14/15 (93.3)	8/15 (53.3)	8/15 (53.3)	9/15 (60)	3/15 (20)
South-East Asia Region	6/8 (75)	6/8 (75)	7/8 (87.5)	5/8 (62.5)	3/8 (37.5)	3/8 (37.5)	4/8 (50)	2/8 (25)
European Region	3/4 (75)	4/4 (100)	4/4 (100)	1/4 (25)	3/4 (75)	3/4 (75)	3/4 (75)	0/4 (0)
Eastern Mediterranean Region	4/10 (40)	3/10 (30)	5/10 (50)	7/10 (70)	3/10 (30)	3/10 (30)	3/10 (30)	6/10 (60)
Western Pacific Region	3/9 (33.3)	5/9 (55.6)	3/9 (33.3)	4/9 (44.4)	3/9 (33.3)	3/9 (33.3)	6/9 (66.7)	2/9 (22.2)
Income group								
Low	17/27 (63)	18/27 (66.7)	23/27 (85.2)	19/27 (70.4)	16/27 (59.3)	16/27 (59.3)	19/27 (70.4)	7/27 (25.9)
Medium	35/53 (66)	38/53 (71.7)	39/53 (73.6)	33/53 (62.3)	24/53 (45.3)	24/53 (45.3)	28/53 (52.8)	14/53 (26.4)
High	2/2 (100)	1/2 (50)	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	1/2 (50)	0/2 (0)
IMCI implementation								
<50% districts	5/12 (41.7)	5/12 (41.7)	8/12 (66.7)	7/12 (58.3)	4/12 (33.3)	4/12 (33.3)	5/12 (41.7)	5/12 (41.7)
50–90% districts	7/12 (58.3)	8/12 (66.7)	10/12 (83.3)	7/12 (58.3)	8/12 (66.7)	8/12 (66.7)	9/12 (75)	1/12 (8.3)
>90% districts	36/49 (73.5)	36/49 (73.5)	40/49 (81.6)	33/49 (67.3)	26/49 (53.1)	26/49 (53.1)	28/49 (57.1)	14/49 (28.6)
Unknown	6/9 (66.7)	8/9 (88.9)	6/9 (66.7)	7/9 (77.8)	4/9 (44.4)	4/9 (44.4)	6/9 (66.7)	1/9 (11.1)
All countries								
	54/82 (65.9)	57/82 (69.5)	64/82 (78)	54/82 (65.9)	42/82 (51.2)	42/82 (51.2)	48/82 (58.5)	21/82 (25.6)

Table A2.21. Policies for community case management of childhood illnesses

Proportion of countries reporting existence of written national policies for CCM of diarrhoea, pneumonia, malaria, severe acute malnutrition, for all four conditions combined, and for home visits for newborn babies and beyond the newborn period by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	Written national policy for community management of diarrhoea	Written national policy for community management of pneumonia with antibiotics by CHWs	Written national policy for community management of malaria*	Written national policy for community management of SAM	Written national policy for community management of diarrhoea, pneumonia, malaria* & SAM	Written national policy for home visits for children beyond the newborn period	Written national policy for home visits for newborn health in the postnatal period
Under-5 mortality rate							
≤40	19/40 (47.50)	16/40 (40.0)	16/28 (55.2)	16/40 (40.0)	14/28 (48.3)	14/40 (35.0)	15/40 (37.5)
40–80	24/32 (75.0)	21/32 (65.6)	22/30 (68.8)	21/32 (65.6)	18/30 (56.3)	19/32 (59.4)	20/32 (62.5)
>80	16/20 (80.0)	13/20 (65.0)	15/19 (78.9)	12/20 (60.0)	12/19 (63.2)	12/20 (60.0)	15/20 (78.9)
WHO Region							
African Region	31/40 (77.5)	26/40 (65.0)	31/39 (79.5)	26/40 (65.0)	25/39 (64.1)	23/40 (57.5)	28/40 (70.0)
Region of the Americas	8/14 (57.1)	7/14 (50.0)	7/11 (63.6)	7/14 (50.0)	6/11 (54.5)	7/14 (50.0)	7/14 (50.0)
South-East Asia Region	7/9 (77.8)	5/9 (55.6)	5/8 (62.5)	5/9 (55.6)	5/8 (62.5)	6/9 (66.7)	6/9 (66.7)
European Region	2/6 (33.3)	2/6 (33.3)	0/1	2/6 (33.3)	0/1	2/6 (33.3)	2/6 (33.3)
Eastern Mediterranean Region	6/14 (42.9)	5/14 (35.7)	6/11 (54.5)	4/14 (28.6)	4/11 (36.4)	4/14 (28.6)	3/14 (21.4)
Western Pacific Region	5/9 (55.6)	5/9 (55.6)	4/7 (57.1)	5/9 (55.6)	4/7 (57.1)	3/9 (33.3)	4/9 (44.4)
Income group							
Low	24/28 (85.7)	21/28 (75.0)	25/28 (89.3)	21/28 (75.0)	20/28 (71.4)	18/28 (64.3)	21/28 (75.0)
Medium	35/62 (56.5)	29/62 (46.8)	28/48 (58.3)	28/62 (45.2)	24/48 (50.0)	27/62 (43.5)	29/62 (46.8)
High	0/2	0/2	0/1	0/2	0/1	0/2	0/2
IMCI implementation							
<50% districts	6/12 (50.0)	4/12 (33.3)	5/11 (45.5)	3/12 (25.0)	3/11 (27.3)	5/12 (41.7)	5/12 (41.7)
50–90% districts	9/14 (64.3)	8/14 (57.1)	8/12 (66.7)	8/14 (57.1)	8/12 (66.7)	8/14 (57.1)	8/14 (57.1)
>90% districts	35/52 (67.3)	29/52 (55.8)	31/42 (73.81)	29/52 (55.8)	24/42 (57.1)	27/52 (51.9)	30/52 (56.6)
Unknown	9/14 (64.3)	9/14 (64.3)	9/12 (75.0)	9/14 (64.3)	9/12 (75.0)	5/14 (35.7)	7/14 (57.7)
All countries							
	59/92 (64.1)	50/92 (54.3)	53/77 (68.8)**	49/92 (53.3)	44/77 (57.1)**	45/92 (48.9)	50/92 (54.3)

*CCM for fever in malaria endemic contries assimilated to CCM for malaria **among malaria endemic countries

Table A2.22. Community health workers : care for children under-5

Proportion of countries reporting on CHWs providing care for children under-five; and for countries where CHWs do provide care for children under-five, proportion of countries reporting CCM for diarrhoea, pneumonia, fever in malaria endemic countries; proportion of countries reporting iCCM for diarrhoea, pneumonia and fever in non-malaria and malaria endemic countries; proportion of countries reporting home visits for children beyond the newborn period; and proportion of countries reporting on CHWs providing care for newborn babies, and for countries where CHWs do provide care for newborn babies, proportion of countries reporting home visits for newborn babies by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation.

Countries reporting / countries responding (%)

Background characteristics		If CHWs provide care for children								If CHWs provide care for newborns and babies
		CHWs provide care for children	IF CHWs provide care for children: community care for diarrhoea	IF CHWs provide care for children: community care for pneumonia	IF CHWs provide care for children: community care for fever in malaria endemic countries	CHWs provide care for children and report iCCM for diarrhoea, pneumonia, and fever (non-malaria endemic)	CHWs provide care for children and report iCCM for diarrhoea, pneumonia, and fever (malaria endemic)	IF CHWs provide care for children: home visits for children beyond the newborn period	CHWs provide care for newborn	Home visits for newborn health in the postnatal period
Under-5 mortality rate										
≤40	<div></div>	24/39 (61.5)	23/24 (95.8)	18/24 (75.0)	19/20 (95.0)	3/4 (75.0)	14/20 (70.0)	20/24 (83.3)	23/41 (56.1)	20/23 (87.0)
40–80	<div></div>	31/33 (93.9)	27/31 (87.1)	20/31 (64.5)	23/29 (79.3)	1/2 (50.0)	19/29 (65.5)	21/31 (67.7)	26/32 (81.3)	24/26 (92.3)
>80	<div></div>	17/20 (85.0)	17/17 (100)	15/17 (88.2)	17/17 (100)	0/0	15/17 (88.2)	14/17 (82.4)	16/20 (80.0)	15/16 (93.8)
WHO Region										
African Region	<div></div>	37/40 (92.5)	34/37 (91.9)	26/37 (70.3)	31/37 (83.8)	0/0	26/37 (70.3)	26/37 (70.3)	32/39 (82.1)	29/32 (90.6)
Region of the Americas	<div></div>	12/15 (80.0)	12/12 (100)	9/12 (75.0)	10/10 (100)	2/2 (100)	7/10 (70.0)	11/12 (91.7)	10/15 (66.7)	10/10 (100)
South-East Asia Region	<div></div>	8/9 (88.9)	8/8 (100)	7/8 (87.5)	7/8 (87.5)	0/0	6/8 (75.0)	7/8 (87.5)	8/9 (88.9)	7/8 (87.5)
European Region	<div></div>	3/6 (50.0)	3/3 (100)	3/3 (100)	0/3	2/3 (66.7)	0/0	3/3 (100)	3/6 (50.0)	3/3 (100)
Eastern Mediterranean Region	<div></div>	6/14 (42.9)	5/6 (83.3)	5/6 (83.3)	6/6 (100)	0/0	5/6 (83.3)	3/6 (50.0)	5/15 (35.7)	4/5 (80.0)
Western Pacific Region	<div></div>	6/8 (75.0)	5/6 (83.3)	3/6 (50.0)	5/5 (100)	0/1	4/5 (80.0)	5/6 (83.3)	7/10 (70.0)	6/7 (85.7)
Income group										
Low	<div></div>	27/29 (93.1)	26/27 (96.3)	22/27 (81.5)	27/27 (100)	0/0	23/27 (85.2)	19/27 (70.4)	23/29 (79.3)	20/23 (87.0)
Medium	<div></div>	45/61 (73.8)	41/45 (91.1)	31/45 (68.9)	32/39 (82.1)	4/6 (66.7)	25/39 (64.1)	36/45 (80.0)	42/62 (67.7)	39/42 (92.9)
High	<div></div>	0/2							0/2	
IMCI implementation										
<50% districts	<div></div>	8/12 (66.7)	8/8 (100)	5/8 (62.5)	7/8 (87.5)	0/0	4/8 (50.0)	7/8 (87.5)	7/12 (58.3)	7/7 (100)
50–90% districts	<div></div>	11/15 (73.3)	10/11 (90.9)	9/11 (81.8)	10/11 (90.9)	0/0	9/11 (81.8)	9/11 (81.8)	8/14 (57.1)	7/8 (87.5)
>90% districts	<div></div>	45/52 (86.5)	41/45 (91.1)	32/45 (71.1)	34/39 (87.2)	4/6 (66.7)	28/39 (71.8)	34/45 (75.6)	42/53 (79.2)	38/42 (90.5)
Unknown	<div></div>	8/13 (61.5)	8/8 (100)	7/8 (87.5)	8/8 (100)	0/0	7/8 (87.5)	5/8 (62.5)	8/14 (57.1)	7/8 (87.5)
Corresponding policy										
Yes	<div></div>	58/59 (98.3)	53/56 (94.6)	43/48 (89.6)	49/51 (96.1)	3/3 (100)	42/48 (87.5)	39/44 (88.6)	–	46/47 (97.9)
No	<div></div>	13/31 (38.7)	13/15 (86.7)	10/23 (43.5)	9/14 (64.3)	1/3 (33.3)	6/16 (37.5)	15/27 (55.6)	–	12/17 (70.6)
Unknown	<div></div>	1/2 (50.0)	1/1 (100)	0/1	1/1 (100)	0/0	0/2	1/1 (100)	–	1/1 (100)
All countries										
	<div></div>	72/92 (78.2)	67/72 (93.1)	53/72 (73.6)	59/66 (89.4)	4/6 (66.7)	48/66 (72.5)	55/72 (76.4)	65/93 (69.9)	59/65 (90.8)

Table A2.23. IMCI major strengths

Proportion of countries reporting different IMCI strengths by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation

Countries reporting / countries responding (%)

Background characteristics	Quality of health services	Efficiency in programming	Efficiency in service provision	Cost-savings	Rational use of medicines	Holistic approach to child	Equity in access and coverage of interventions	Others
Under-5 mortality rate								
≤40	<div></div>	34/40 (85)	25/40 (62.5)	30/40 (75)	29/40 (72.5)	37/40 (92.5)	26/40 (65)	5/40 (12.5)
40–80	<div></div>	29/33 (87.9)	26/33 (78.8)	29/33 (87.9)	27/33 (81.8)	30/33 (90.9)	31/33 (93.9)	2/33 (6.1)
>80	<div></div>	18/20 (90)	14/20 (70)	15/20 (75)	15/20 (75)	16/20 (80)	17/20 (85)	1/20 (5)
WHO Region								
African Region	<div></div>	36/40 (90)	32/40 (80)	35/40 (87.5)	32/40 (80)	36/40 (90)	37/40 (92.5)	34/40 (85)
Region of the Americas	<div></div>	11/14 (78.6)	8/14 (57.1)	11/14 (78.6)	9/14 (64.3)	13/14 (92.9)	14/14 (100)	12/14 (85.7)
South-East Asia Region	<div></div>	6/9 (66.7)	5/9 (55.6)	4/9 (44.4)	5/9 (55.6)	7/9 (77.8)	6/9 (66.7)	5/9 (55.6)
European Region	<div></div>	6/6 (100)	2/6 (33.3)	6/6 (100)	6/6 (100)	6/6 (100)	4/6 (66.7)	5/6 (83.3)
Eastern Mediterranean Region	<div></div>	13/14 (92.9)	10/14 (71.4)	10/14 (71.4)	12/14 (85.7)	12/14 (85.7)	14/14 (100)	10/14 (71.4)
Western Pacific Region	<div></div>	9/10 (90)	8/10 (80)	8/10 (80)	7/10 (70)	9/10 (90)	9/10 (90)	5/10 (50)
Income group								
Low	<div></div>	25/29 (86.2)	23/29 (79.3)	24/29 (82.8)	22/29 (75.9)	24/29 (82.8)	26/29 (89.7)	24/29 (82.8)
Medium	<div></div>	54/62 (87.1)	40/62 (64.5)	48/62 (77.4)	47/62 (75.8)	57/62 (91.9)	56/62 (90.3)	45/62 (72.6)
High	<div></div>	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)	2/2 (100)
IMCI implementation								
<50% districts	<div></div>	12/13 (92.3)	9/13 (69.2)	9/13 (69.2)	10/13 (76.9)	13/13 (100)	12/13 (92.3)	9/13 (69.2)
50–90% districts	<div></div>	12/14 (85.7)	11/14 (78.6)	13/14 (92.9)	9/14 (64.3)	12/14 (85.7)	13/14 (92.9)	10/14 (71.4)
>90% districts	<div></div>	46/52 (88.5)	38/52 (73.1)	41/52 (78.8)	41/52 (78.8)	47/52 (90.4)	47/52 (90.4)	43/52 (82.7)
Unknown	<div></div>	11/14 (78.6)	7/14 (50)	11/14 (78.6)	11/14 (78.6)	11/14 (78.6)	12/14 (85.7)	9/14 (64.3)
All countries								
	<div></div>	81/93 (87.1)	65/93 (69.9)	74/93 (79.6)	71/93 (76.3)	83/93 (89.2)	84/93 (90.3)	71/93 (76.3)

Table A2.24. Barriers to IMCI implementation at national level

Proportion of countries reporting different types of barriers to IMCI implementation at national level by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


















Background characteristics		Strategic planning	Programme management	Budget for training	Medecine procurement and supply chain management	Mentorship and supervision	Political support and ownership	Availability of dedicated budget line in health sector plan	Cost of program / sustainability		Adaptation to new guidelines	Scaling up in-service training	Coordination and collaboration with other child health related programs	Others
Under-5 mortality rate														
≤40		14/39 (35.9)	17/39 (43.6)	28/39 (71.8)	13/39 (33.3)	28/39 (71.8)	17/39 (43.6)	19/39 (48.7)	21/39 (53.8)		10/39 (25.6)	21/39 (53.8)	16/39 (41)	6/39 (15.4)
40–80		7/33 (21.2)	10/33 (30.3)	30/33 (90.9)	20/33 (60.6)	26/33 (78.8)	12/33 (36.4)	23/33 (69.7)	22/33 (66.7)		4/33 (12.1)	18/33 (54.5)	15/33 (45.5)	3/33 (9.1)
>80		10/20 (50)	9/20 (45)	20/20 (100)	12/20 (60)	14/20 (70)	9/20 (45)	13/20 (65)	15/20 (75)		3/20 (15)	11/20 (55)	6/20 (30)	2/20 (10)
WHO Region														
African Region		12/40 (30)	11/40 (27.5)	39/40 (97.5)	21/40 (52.5)	29/40 (72.5)	15/40 (37.5)	27/40 (67.5)	26/40 (65)		4/40 (10)	23/40 (57.5)	14/40 (35)	3/40 (7.5)
Region of the Americas		5/13 (38.5)	7/13 (53.8)	11/13 (84.6)	4/13 (30.8)	8/13 (61.5)	7/13 (53.8)	7/13 (53.8)	5/13 (38.5)		3/13 (23.1)	7/13 (53.8)	6/13 (46.2)	1/13 (7.7)
South-East Asia Region		3/9 (33.3)	5/9 (55.6)	4/9 (44.4)	5/9 (55.6)	8/9 (88.9)	2/9 (22.2)	2/9 (22.2)	5/9 (55.6)		2/9 (22.2)	4/9 (44.4)	4/9 (44.4)	3/9 (33.3)
European Region		2/6 (33.3)	3/6 (50)	4/6 (66.7)	2/6 (33.3)	5/6 (83.3)	3/6 (50)	3/6 (50)	3/6 (50)		2/6 (33.3)	2/6 (33.3)	4/6 (66.7)	0/6 (0)
Eastern Mediterranean Region		6/14 (42.9)	6/14 (42.9)	10/14 (71.4)	9/14 (64.3)	12/14 (85.7)	6/14 (42.9)	9/14 (64.3)	11/14 (78.6)		2/14 (14.3)	8/14 (57.1)	4/14 (28.6)	3/14 (21.4)
Western Pacific Region		3/10 (30)	4/10 (40)	10/10 (100)	4/10 (40)	6/10 (60)	5/10 (50)	7/10 (70)	8/10 (80)		4/10 (40)	6/10 (60)	5/10 (50)	1/10 (10)
Income group														
Low		10/29 (34.5)	11/29 (37.9)	28/29 (96.6)	18/29 (62.1)	23/29 (79.3)	11/29 (37.9)	18/29 (62.1)	20/29 (69)		4/29 (13.8)	14/29 (48.3)	10/29 (34.5)	2/29 (6.9)
Medium		20/61 (32.8)	24/61 (39.3)	49/61 (80.3)	26/61 (42.6)	44/61 (72.1)	27/61 (44.3)	36/61 (59)	38/61 (62.3)		13/61 (21.3)	36/61 (59)	27/61 (44.3)	9/61 (14.8)
High		1/2 (50)	1/2 (50)	1/2 (50)	1/2 (50)	1/2 (50)	0/2 (0)	1/2 (50)	0/2 (0)		0/2 (0)	0/2 (0)	0/2 (0)	0/2 (0)
IMCI implementation														
<50% districts		4/13 (30.8)	6/13 (46.2)	9/13 (69.2)	7/13 (53.8)	9/13 (69.2)	7/13 (53.8)	7/13 (53.8)	11/13 (84.6)		3/13 (23.1)	8/13 (61.5)	7/13 (53.8)	2/13 (15.4)
50–90% districts		4/14 (28.6)	6/14 (42.9)	13/14 (92.9)	4/14 (28.6)	9/14 (64.3)	6/14 (42.9)	7/14 (50)	7/14 (50)		2/14 (14.3)	7/14 (50)	4/14 (28.6)	2/14 (14.3)
>90% districts		16/51 (31.4)	18/51 (35.3)	42/51 (82.4)	28/51 (54.9)	42/51 (82.4)	16/51 (31.4)	27/51 (52.9)	30/51 (58.8)		7/51 (13.7)	26/51 (51)	19/51 (37.3)	5/51 (9.8)
Unknown		7/14 (50)	6/14 (42.9)	14/14 (100)	6/14 (42.9)	8/14 (57.1)	9/14 (64.3)	14/14 (100)	10/14 (71.4)		5/14 (35.7)	9/14 (64.3)	7/14 (50)	2/14 (14.3)
All countries		31/92 (33.7)	36/92 (39.1)	78/92 (84.8)	45/92 (48.9)	68/92 (73.9)	38/92 (41.3)	55/92 (59.8)	58/92 (63)		17/92 (18.5)	50/92 (54.3)	37/92 (40.2)	11/92 (12)

Table A2.25. Barriers to IMCI implementation at district / regional level

Proportion of countries reporting different types of barriers to IMCI implementation at district/regional level by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)


































Background characteristics		Programme management	Budget for training	Medicine procurement and supply chain management	Mentorship and supervision	Staff turn over	Cost of program	Others
Under-5 mortality rate								
≤40		25/38 (65.8)	28/38 (73.7)	11/38 (28.9)	27/38 (71.1)	29/38 (76.3)	16/38 (42.1)	3/38 (7.9)
40–80		17/33 (51.5)	29/33 (87.9)	18/33 (54.5)	25/33 (75.8)	31/33 (93.9)	19/33 (57.6)	1/33 (3)
>80		11/20 (55)	18/20 (90)	12/20 (60)	15/20 (75)	16/20 (80)	15/20 (75)	3/20 (15)
WHO Region								
African Region		19/40 (47.5)	37/40 (92.5)	20/40 (50)	29/40 (72.5)	36/40 (90)	25/40 (62.5)	3/40 (7.5)
Region of the Americas		8/12 (66.7)	11/12 (91.7)	5/12 (41.7)	8/12 (66.7)	7/12 (58.3)	4/12 (33.3)	0/12 (0)
South-East Asia Region		6/9 (66.7)	4/9 (44.4)	2/9 (22.2)	7/9 (77.8)	7/9 (77.8)	3/9 (33.3)	1/9 (11.1)
European Region		4/6 (66.7)	4/6 (66.7)	1/6 (16.7)	5/6 (83.3)	5/6 (83.3)	3/6 (50)	0/6 (0)
Eastern Mediterranean Region		7/14 (50)	10/14 (71.4)	9/14 (64.3)	11/14 (78.6)	13/14 (92.9)	8/14 (57.1)	2/14 (14.3)
Western Pacific Region		9/10 (90)	9/10 (90)	4/10 (40)	7/10 (70)	8/10 (80)	7/10 (70)	1/10 (10)
Income group								
Low		15/29 (51.7)	25/29 (86.2)	16/29 (55.2)	20/29 (69)	25/29 (86.2)	18/29 (62.1)	1/29 (3.4)
Medium		37/60 (61.7)	49/60 (81.7)	24/60 (40)	46/60 (76.7)	50/60 (83.3)	32/60 (53.3)	6/60 (10)
High		1/2 (50)	1/2 (50)	1/2 (50)	1/2 (50)	1/2 (50)	0/2 (0)	0/2 (0)
IMCI implementation								
<50% districts		9/13 (69.2)	11/13 (84.6)	6/13 (46.2)	10/13 (76.9)	10/13 (76.9)	8/13 (61.5)	2/13 (15.4)
50–90% districts		7/14 (50)	13/14 (92.9)	4/14 (28.6)	9/14 (64.3)	12/14 (85.7)	8/14 (57.1)	2/14 (14.3)
>90% districts		27/50 (54)	37/50 (74)	25/50 (50)	38/50 (76)	43/50 (86)	22/50 (44)	1/50 (2)
Unknown		10/14 (71.4)	14/14 (100)	6/14 (42.9)	10/14 (71.4)	11/14 (78.6)	12/14 (85.7)	2/14 (14.3)
All countries		53/91 (58.2)	75/91 (82.4)	41/91 (45.1)	67/91 (73.6)	76/91 (83.5)	50/91 (54.9)	7/91 (7.7)

Table A2.26. Barriers to IMCI implementation at health facility level

Proportion of countries reporting different types of barriers to IMCI implementation at facility level by under-five mortality rate, WHO region, income group, and reported level of IMCI implementation
Countries reporting / countries responding (%)

Background characteristics	Training	Mentorship and supervision	Referral links	Supply chain management	Quality of care	Staff motivation	Staff retention	Remuneration and incentives for health workers	Lack of guidelines	Lack of adherence to IMCI guidelines	Lack of enforcement of implementation of IMCI guidelines and job aids	Others
Under-5 mortality rate												
≤40	 22/38 (57.9)	28/38 (73.7)	15/38 (39.5)	14/38 (36.8)	22/38 (57.9)	30/38 (78.9)	27/38 (71.1)	22/38 (57.9)	14/38 (36.8)	19/38 (50)	27/38 (71.1)	3/38 (7.9)
40–80	 23/33 (69.7)	27/33 (81.8)	15/33 (45.5)	18/33 (54.5)	16/33 (48.5)	20/33 (60.6)	27/33 (81.8)	13/33 (39.4)	5/33 (15.2)	22/33 (66.7)	20/33 (60.6)	2/33 (6.1)
>80	 16/20 (80)	17/20 (85)	9/20 (45)	9/20 (45)	9/20 (45)	17/20 (85)	19/20 (95)	11/20 (55)	3/20 (15)	10/20 (50)	16/20 (80)	2/20 (10)
WHO Region												
African Region	 30/40 (75)	33/40 (82.5)	16/40 (40)	16/40 (40)	18/40 (45)	28/40 (70)	35/40 (87.5)	15/40 (37.5)	5/40 (12.5)	24/40 (60)	25/40 (62.5)	4/40 (10)
Region of the Americas	 6/12 (50)	10/12 (83.3)	6/12 (50)	5/12 (41.7)	6/12 (50)	11/12 (91.7)	5/12 (41.7)	7/12 (58.3)	7/12 (58.3)	6/12 (50)	10/12 (83.3)	0/12 (0)
South-East Asia Region	 7/9 (77.8)	7/9 (77.8)	3/9 (33.3)	4/9 (44.4)	5/9 (55.6)	7/9 (77.8)	6/9 (66.7)	5/9 (55.6)	2/9 (22.2)	7/9 (77.8)	7/9 (77.8)	1/9 (11.1)
European Region	 2/6 (33.3)	4/6 (66.7)	0/6 (0)	1/6 (16.7)	3/6 (50)	4/6 (66.7)	5/6 (83.3)	4/6 (66.7)	2/6 (33.3)	1/6 (16.7)	4/6 (66.7)	0/6 (0)
Eastern Mediterranean Region	 7/14 (50)	10/14 (71.4)	10/14 (71.4)	9/14 (64.3)	8/14 (57.1)	11/14 (78.6)	13/14 (92.9)	9/14 (64.3)	2/14 (14.3)	9/14 (64.3)	11/14 (78.6)	2/14 (14.3)
Western Pacific Region	 9/10 (90)	8/10 (80)	4/10 (40)	6/10 (60)	7/10 (70)	6/10 (60)	9/10 (90)	6/10 (60)	4/10 (40)	4/10 (40)	6/10 (60)	0/10 (0)
Income group												
Low	 20/29 (69)	23/29 (79.3)	15/29 (51.7)	14/29 (48.3)	13/29 (44.8)	24/29 (82.8)	22/29 (75.9)	14/29 (48.3)	4/29 (13.8)	18/29 (62.1)	20/29 (69)	1/29 (3.4)
Medium	 40/60 (66.7)	48/60 (80)	24/60 (40)	27/60 (45)	33/60 (55)	41/60 (68.3)	50/60 (83.3)	32/60 (53.3)	18/60 (30)	33/60 (55)	43/60 (71.7)	6/60 (10)
High	 1/2 (50)	1/2 (50)	0/2 (0)	0/2 (0)	1/2 (50)	2/2 (100)	1/2 (50)	0/2 (0)	0/2 (0)	0/2 (0)	0/2 (0)	0/2 (0)
IMCI implementation												
<50% districts	 4/13 (30.8)	6/13 (46.2)	9/13 (69.2)	7/13 (53.8)	9/13 (69.2)	7/13 (53.8)	7/13 (53.8)	11/13 (84.6)	4/13 (30.8)	8/13 (61.5)	10/13 (76.9)	3/13 (23.1)
50–90% districts	 4/14 (28.6)	6/14 (42.9)	13/14 (92.9)	4/14 (28.6)	9/14 (64.3)	6/14 (42.9)	7/14 (50)	7/14 (50)	0/14 (0)	7/14 (50)	9/14 (64.3)	1/14 (7.1)
>90% districts	 16/51 (31.4)	18/51 (35.3)	42/51 (82.4)	28/51 (54.9)	42/51 (82.4)	16/51 (31.4)	27/51 (52.9)	30/51 (58.8)	11/50 (22)	28/50 (56)	32/50 (64)	1/50 (2)
Unknown	 7/14 (50)	6/14 (42.9)	14/14 (100)	6/14 (42.9)	8/14 (57.1)	9/14 (64.3)	14/14 (100)	10/14 (71.4)	7/14 (50)	8/14 (57.1)	12/14 (85.7)	2/14 (14.3)
All countries	61/91 (67)	72/91 (79.1)	39/91 (42.9)	41/91 (45.1)	47/91 (51.6)	67/91 (73.6)	73/91 (80.2)	46/91 (50.5)	22/91 (24.2)	51/91 (56)	63/91 (69.2)	7/91 (7.7)

ANNEX 3

Questionnaire

IMCI Strategic Review: Survey on Global Implementation

Instructions: After two decades of implementation, there is recognition that the Integrated Management of Childhood Illness (IMCI) strategy requires review and repositioning. WHO and partners are conducting a global assessment to provide strategic directions on its recommendations for treating the sick child, to contribute to the goal of ending preventable newborn and child mortality by 2030.

Responses from this survey will provide an overview of global implementation to assess gaps and help refine and reposition IMCI at facility and community levels. There are 4 worksheets in this questionnaire, which we estimate will take 45 minutes to complete, ideally in a team setting including focal points for for IMCI and CCM in UNICEF and WHO Country Offices and the Ministry of Health.

Identification

1 Country

2 Lead respondent to this questionnaire

- a Name
- b Title / position
- c Telephone
- d Email

3 Date of completion

Policy and Guidelines

101 Has the country developed/adopted a national child survival/ health strategy/plan to reduce child mortality?

- Yes
- No
- Unknown

102 If yes, what is the start date? Enter the year
what is the end date? Enter the year

103 Is IMCI part of this national child health/survival strategy?

- Yes
- No
- Unknown

104 If Yes, in how many districts is IMCI currently implemented?

Enter the number of districts

105 How many districts are there in the country? Enter the number of districts

106 What does IMCI implementation* encompass in your country?

IMCI is said to be implemented if:

- 1) IMCI is included in national and district work plans and budgets,
- 2) District health facilities use the IMCI strategy to provide care for the sick child (with or without c-IMCI)
- 3) Providers are trained in IMCI to care for the sick child at national and district levels.

- a. Improving management of sick children in first level health facilities
- b. Treating sick children in the community
- c. Improving management of sick children in referral facilities
- d. Strengthening the health system for quality child care services
- e. Improving family and community practices for child health

107 Are there any strategies other than IMCI used for the management of common childhood conditions? If yes, specify

Yes
No
Unknown

108 If Yes in Question 107, specify other strategies

109 Has the national child health/survival strategy to reduce child mortality been costed?

Yes
No
Unknown

110 Is there a national health insurance scheme covering children under 5?

Yes
No
Unknown

111 If Yes, is provision of IMCI a criterion for reimbursement?

Yes
No
Unknown

112 Are consultations free for sick children under 5?

Yes
No
Unknown

113 Are medicines free for sick children under 5?

Yes
No
Unknown

NATIONAL IMCI GUIDELINES FOR FIRST LEVEL HEALTH FACILITIES

114 Do IMCI guidelines include care of sick newborns in the first week of life?

Yes
No
Unknown

115 In addition to the generic IMCI guidelines, which conditions have been added in your national adaptation (Check all that apply):

- a. Dengue
- b. Tuberculosis
- c. HIV
- d. Skin conditions
- e. Sore throat
- f. Jaundice
- g. Other (Specify) _____
- h. Unknown/ not applicable

116 When was the last update of the IMCI chart booklet completed? Enter the year

117 If in 2014, was the update based on the 2014 WHO Generic IMCI chart booklet?

Yes
No
Unknown

118 If yes, which conditions have been updated?

Cough or difficult breathing
Diarrhoea
Fever
HIV
Malnutrition
Anemia

NATIONAL IMCI GUIDELINES FOR REFERRAL LEVEL HEALTH FACILITIES

119 Has the country conducted an assessment of quality of care to improve management of childhood illnesses in referral hospitals?

Yes
No
Unknown

120 Has the country updated national treatment guidelines based on the 2013 edition of the WHO's Pocket book for hospital care for children?

Yes
No
Unknown

NATIONAL IMCI GUIDELINES FOR IMPROVING KEY FAMILY PRACTICES

121 Are activities to promote key family practices for child health being implemented?

Yes
No
Unknown

122 If yes Q121, have counselling cards on key family practices been developed?

Yes
No
Unknown

123 If yes Q121, what are the delivery mechanisms used?

Home visits during pregnancy
Home visits in the postnatal period
Home visits for counselling on key family practices
Community groups
Child health days
Mass media
Social mobilization
Other

NATIONAL GUIDELINES FOR CARING FOR NEWBORNS AND CHILDREN IN THE COMMUNITY

124 Do community health workers (CHWs) provide care for newborns and babies in your country?

Yes
No
Unknown

125 If yes in Q124, check all that apply

Community management of diarrhoea
Community management of pneumonia with antibiotics
Community management of fever
Community management of severe malnutrition
Integrated community case management of diarrhoea, pneumonia, fever, and malnutrition
Home visits for newborn health in the postnatal period
Home visits for children beyond the newborn period
Not permitted

126 Do community health workers (CHWs) provide care for children in your country?

Yes
No
Unknown

127 If yes in Q126, check all that apply

Community management of diarrhoea
Community management of pneumonia with antibiotics
Community management of fever
Community management of severe malnutrition
Integrated community case management of diarrhoea, pneumonia, fever, and malnutrition
Home visits for newborn health in the postnatal period
Home visits for children beyond the newborn period
Not permitted

128 Is there a written national policy for community-based care?

Yes
No
Unknown

129 If yes Q128, check all that apply

Community management of diarrhoea
Community management of pneumonia with antibiotics by CHWs
Community management of fever
Community management of severe malnutrition
Integrated community case management of diarrhoea, pneumonia, fever, and malnutrition
Home visits for newborn health in the postnatal period
Home visits for children beyond the newborn period

130 Which cadres of health workers provide care for sick children either at home (through home visits) or in the community (at health posts or at the CHW's home)? (Check all that apply)

Unpaid community volunteer
Paid community health worker
Traditional birth attendant
Nurse
Physicians' assistant
Other

131 What is the minimal level of education required for CHWs providing care for newborns and children in the community?

None
Minimal literacy and numeracy
Primary school
Secondary/high school
Other
Unknown

132 Is there pre-service training for CHWs who care for newborns and/ or children in the community?

<1 month
1-3 months
3 – 6 months
>6 months
Other/unknown

133 Do CHWs receive any incentives or remuneration?

Non-monetary incentives (e.g. rainboots, raincoat, phone credit, bicycle, etc)
User fees for service
A small commission on sale of medicines and other commodities supplied that CHWs can take as remuneration
Salary
Incentive payments (e.g. results/performance based stipend, per diem)
No incentives nor remunerations

134 What size population is each CHW caring for newborns and children at home or in the community expected to provide care for?

< 1000 pop.
1000 pop.
> 1000 pop.
> 5000 pop.
Unknown / not defined

Implementation

QUALITY OF CARE IN FIRST LEVEL HEALTH FACILITIES

- 201 What year approximately did the first national IMCI training take place?
Report the year
- 202 Proportion of districts having initiated IMCI training for first-level health workers
<25%
25 to 49%
50 to 74%
75% or more
Unknown
- 203 Proportion of first-level health facilities with at least two health workers who care for sick children under five trained in IMCI
<25%
25 to 49%
50 to 74%
75% or more
Unknown
- 204 Proportion of first-level health facilities with at least 60% of health workers who care for sick children under five trained in IMCI
<25%
25 to 49%
50 to 74%
75% or more
Unknown
- 205a What is the average duration of IMCI in-service training for doctors ?
< 5 days
5 – 7 days
7 – 10
11 days
Other
- 205b What is the average duration of IMCI in-service training for nurses and other paramedics?
< 5 days
5 – 7 days
7 – 10
11 days
Other
- 206 What is the proportion of time spent on clinical practice during in-service training?
< 25%
25 – 40%
40 – 60%
Other

- 207 Which types of in-service IMCI training courses are currently used for training first level health workers?

Standard 11-day IMCI course
Short abridged IMCI course
IMCI-Distance learning course
ICATT (computer-based course) - classroom mode
ICATT distance learning
Other

- 208 Has IMCI been introduced in pre-service education?

Yes
No
Unknown

If yes,

- 209 What proportion of Nursing/midwifery training institutions have introduced IMCI in pre-service teaching?

<25%
25 to 49%
50 to 74%
75% or more
Unknown

- 210 What proportion of medical training institutions have introduced IMCI in pre-service teaching?

<25%
25 to 49%
50 to 74%
75% or more
Unknown

- 211 What proportion of medical officers /clinical officers training institutions have introduced IMCI in pre-service teaching?

<25%
25 to 49%
50 to 74%
75% or more

- 212 Proportion of first-level health facilities that have received at least one supervisory visit in the last six months

<25%
25 to 49%
50 to 74%
75% or more

QUALITY OF CARE IN REFERRAL LEVEL HEALTH FACILITIES

- 213 Has the country adapted the Pocket Book for Hospital care for children guidelines in referral health facilities?

Yes
No
Unknown

- 214 When was the last update of the national paediatric guidelines? Report the year
- 215 What proportion of hospitals have introduced emergency triage assessment and treatment (ETAT)?
- <25%
 - 25 to 49%
 - 50 to 74%
 - 75% or more
- 216 Has the country conducted assessments of quality of paediatric hospital care?
- Yes
 - No
 - Unknown
- 217 If yes, when was the last time it was done? Report the year
- 218 Does the ministry of health have a paediatric quality of care improvement program for the health facilities?
- Yes
 - No
 - Unknown

QUALITY OF CARE IN COMMUNITY SERVICES

- 219 Proportion of districts implementing integrated community case management of childhood illness
- <25%
 - 25 to 49%
 - 50 to 74%
 - 75% or more
 - Unknown
 - Not applicable
- 220 Proportion of districts implementing home visits for newborn health
- <25%
 - 25 to 49%
 - 50 to 74%
 - 75% or more
 - Unknown
 - Not applicable
- 221 Proportion of communities with a CHW trained to provide community case management of childhood illness
- <25%
 - 25 to 49%
 - 50 to 74%
 - 75% or more
 - Unknown
 - Not applicable

- 222 Proportion of communities with a CHW trained to conduct home visits for newborn health
- <25%
 - 25 to 49%
 - 50 to 74%
 - 75% or more
 - Unknown
 - Not applicable
- 223 Who provides supervision to CHWs? (Check all that apply)
- IMCI trained supervisors
 - Non-IMCI trained supervisors
 - Peer support
 - Mentorship in health facilities
- 225 How do CHWs facilitate referral? (Check all that apply)
- Referral note
 - Phone communication with referral centre
 - Arranging transport
 - Other
 - None of the above

HEALTH SYSTEM STRENGTHENING

- 226 Does the national Health Management Information System (HMIS) include monitoring indicators for IMCI?
- Yes
 - No
 - Unknown
- 227 If yes, at what levels are these indicators regularly collected?
- Referral level
 - Primary health care level
 - Community level
 - None
 - Unknown
- 228 Is there a comprehensive monitoring and evaluation plan for IMCI?
- Yes
 - No
 - Unknown
- 229 When was the most recent IMCI Health Facility Survey (HFS) conducted? Report the year
- 230 When was the most recent Child health Programme Review conducted? Report the year
- 231 Has Child Health Programme Management training been introduced?
- Yes
 - No
 - Unknown

- 232 If yes, how many programme managers at all levels have been trained?
Number _____
Unknown
- 233 If yes, is the methodology used for annual review and planning at district level?
Yes
No
Unknown
- 234 Have tools for bottleneck analysis and strategic planning been introduced?
Yes
No
Unknown
- 235 If yes in Q234 specify the tools (check all that apply)

One Health
Marginal Budgeting for Bottlenecks
DIVA (Diagnose, Intervene, Verify and Approach)
EQUIST (Equitable Impact Sensitive Tool)
- 236 Does the national Essential Medicines list include the following medicines for use in children <5years? (Check all that apply)

Amoxicillin
Ampicillin (Injectable)
Artemisinin combination therapy
Artesunate (Parental)
Benzyl penicillin
Ceftriaxone
Ciprofloxacin
Cotrimoxazole
Gentamycin
New standard/Low osmolarity ORS
Rectal artesunate
Salbutamol inhaler
Zinc tablets

INNOVATIONS

- 237 Have technological (mHealth, eHealth, ICT) innovations been implemented with respect to:

A) Behaviour change communication (BCC)
None
Exploration
Partial scale-up
Nationwide scale-up
If implemented, specify which technology

B) Data collection and reporting
None
Exploration
Partial scale-up
Nationwide scale-up
If implemented, specify which technology

- C) Electronic decision support (protocols, algorithms, checklists)
None
Exploration
Partial scale-up
Nationwide scale-up
If implemented, specify which technology

D) Provider training and education
None
Exploration
Partial scale-up
Nationwide scale-up
If implemented, specify which technology

E) Supply chain management
None
Exploration
Partial scale-up
Nationwide scale-up
If implemented, specify which technology

F) Financial transactions and incentives
None
Exploration
Partial scale-up
Nationwide scale-up
If implemented, specify which technology

VALUE OF INTEGRATED CASE MANAGEMENT OF CHILDHOOD ILLNESS

- 238 What are the major strengths IMCI has brought to child health programming? Check all that apply

Quality of health services
Efficiency in programmin
Efficiency in service provision
Cost-savings
Rational use of medicines
Holistic approach to the child
Equity in access and coverage of interventions
Other (specify) _____

BARRIERS TO IMPLEMENTATION

- 239 What are some barriers to implementation of IMCI at national level ? (Check all that apply)

Strategic planning
Programme management
Budget for training
Medicine procurement and supply chain management
Mentorship and supervision
Political support and ownership
Availability of dedicated budget line in health sector plan
Cost of program / sustainability
Adaptation to new guidelines
Scaling up in-service training
Coordination and collaboration with other child health related programmes
Other (specify)_____

240 What are some barriers to implementation of IMCI at regional/district level ? (Check all that apply)

Programme management
Budget for training
Medicine procurement and supply chain management
Mentorship and supervision
Staff turnover
Cost of program
Other (specify) _____

241 What are some barriers to implementation of IMCI at health facility level? (Check all that apply)

Training
Mentorship and supervision
Referral links
Supply chain management
Quality of care
Staff motivation
Staff retention
Remuneration and incentives for health workers
Lack of guidelines
Lack of adherence to IMCI guidelines
Lack of enforcement of implementation of IMCI guidelines and job aids
Other (specify) _____

242 What are some barriers to implementation of IMCI at the community level? (Check all that apply)

Training
Mentorship and supervision
Referral links
Supply chain management
Quality of care
Staff motivation
Staff retention
Remuneration and incentives for health workers
Lack of guidelines
Other (specify) _____

Organization and Financing

301 Which unit or department is responsible for IMCI in the Ministry of Health?

Family and reproductive health
Maternal and child health
Child health
Community health
CDD/ARI
IMCI department / programme
Other (specify)
Not applicable

302 Is the same unit responsible for community health services? (if applicable)

Yes
No
Unknown

303 Is there a focal point for IMCI at the national level?

Yes
No
Unknown

304 Is there a focal point for community IMCI at the national level?

Yes
No
Unknown

305 Are there focal points for IMCI at district/regional level?

Yes
No
Unknown

306 For IMCI implementation at first-level facilities, who is the primary funder of:

A) Training and per diems:
Government
Bi-lateral/multi-lateral agency
Other

Bi-lateral agency: a government agency or non-profit organization based in a single country while the agency provides aid, including medical aid or disaster relief, for people in other countries. Examples: USAID, GIZ, JICA, the Gates Foundation, Save the Children, etc."

Multi-lateral agency: International institutions with 3 or more governmental members which conduct activities in favour of development in aid recipient countries. Examples: Unicef, the World Bank, WHO.

B) Medicines and equipment:
Government
Bi-lateral/multi-lateral agency
Other

C) Health worker salaries
Government
Bi-lateral/multi-lateral agency
Other

D) Monitoring and supervision
Government
Bi-lateral/multi-lateral agency
Other

E) General programme support (infrastructure, transport)
Government
Bi-lateral/multi-lateral agency
Other

307 For community health services who is the primary funder of:

A) Training and per diems:
Government
Bi-lateral/multi-lateral agency
Other

B) Medicines and equipment:
Government
Bi-lateral/multi-lateral agency
Other

C) Health worker salaries
Government
Bi-lateral/multi-lateral agency
Other

D) Monitoring and supervision
Government
Bi-lateral/multi-lateral agency
Other

E) General programme support (infrastructure, transport)
Government
Bi-lateral/multi-lateral agency
Other

308 Overall, what % of funding for child health would you estimate comes from internal government sources?

<25%
25-50%
50-75%
>75%
Other / unknown

FINAL THOUGHTS

309 What would make access, quality and coverage of child health services stronger in your country? Please specify ...

310 "Have any initiatives been implemented in your country to improve the access, quality and coverage of child health services that have not yet been referred to. Please specify ...

311 How could tools available to implement the IMCI strategy be improved? Please specify

312 If you were asked to improve IMCI and make it more relevant to today's needs, what would you suggest? Please specify

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