

# Towards a Grand Convergence for child survival and health: *A strategic review of options for the future building on lessons learnt from IMCI*

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## **COUNTRY ASSESSMENT: BANGLADESH**

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## List of abbreviations

ANC	Antenatal Care
ARI	Acute Respiratory Infections
BDHS	Bangladesh Demographic and Health Survey
CBNC	Community Based Newborn Care
C-IMCI	Community-level component of IMCI strategy
DDS	Drug & Dietary Supply
EPI	Expanded Program on Immunization
GAVI	Global Vaccine Alliance
GoB	Government of Bangladesh
HMIS	Health Management Information System
HNPSP	Health Nutrition and Population Sector Program
HPNSDP	Health Population Nutrition Sector Development Program
IMCI	Integrated Management of Childhood Illnesses
IYCF	Infant and Young Child Feeding
KFP	Key Family Practices
KMC	Kangaroo Mother Care
KPI	Key Performance Indicators
MCH	Maternal and Child Health
MDGs	Millennium Development Goals
MNCS	Maternal Neonatal Child Survival
MNCH	Maternal Neonatal Child Health
MNC&AH	Maternal Neonatal Child & Adolescent Health
NGO	Non-Governmental Organization
NICU	Newborn intensive Care Units
OPD	Outpatient Department
ORS	Oral Rehydration Salts
RMNCAH	Reproductive Maternal Newborn Child and Adolescent Health
SACMO	Sub-Assistant Community Medical Officer
SMPP	Safe Motherhood Promotion Project
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WASH	Water, sanitation and hygiene
WHO	World Health Organization

## **I. Introduction**

Integrated Management of Childhood Illness (IMCI) was introduced in Bangladesh as the main child health strategy for reducing child mortality and morbidity. Overall, the causes of under-five mortality in the country are similar to the global causes and therefore IMCI is viewed as the most relevant strategy adopted by the country for improving child survival. Under-five mortality rate (U5MR) in Bangladesh came down to 46/1000 live births in 2014 from 133/1000 live births in 1993 (1), with an average annual rate of 5.4 reduction in U5MR from 1993-2014 (2), exceeding the MDG 4 target for the country. Infant mortality rate (IMR) came down to 38/1000 from 87/1000 during the same period (1). However, neonatal mortality continues to stagger at 28/1000 live births (1)(Annexure 1- Dashboard).

**Table 1. Summary statistics on child health in Bangladesh**

<b>Indicator</b>	<b>Value</b>	<b>Source (Year)</b>
Total population	160,996,000	UNICEF/WHO, 2015 <sup>2</sup>
Total under-five population	15331000	UNICEF/WHO, 2015 <sup>2</sup>
Annual births	3134000	UNICEF/WHO, 2015 <sup>2</sup>
Neonatal mortality rate (per 1000 live births)	28/1000 live births	BDHS, 2014 <sup>1</sup>
Annual neonatal deaths	74,378	UNICEF/WHO, 2015 <sup>2</sup>
Average annual rate of U5MR reduction, 1990-2015	5.4	UNICEF/WHO, 2015 <sup>2</sup>
Under-5 mortality rate (per 1000 live births)	46/1000 live births	BDHS, 2014 <sup>1</sup>
Annual child deaths	119000	UNICEF/WHO, 2015 <sup>2</sup>

Implementation of Integrated Management of Childhood Illness (IMCI) and improvements in delivery of child health services is viewed as one of the significant reasons for the reduction in under-five mortality in Bangladesh. In addition, several non-health factors and other health interventions taking place during the same time also seem to have collectively brought this reduction in under-five mortality.

In this report, we seek to understand the role of IMCI strategy in the improvements in child health described above, as well as strengths/ facilitatory factors and weaknesses/ barriers in the implementation of IMCI and other child health strategies, and additional ways of improving access, quality, coverage and utilization of child health services. This country assessment takes place under the aegis of the Strategic Review, which aims to take stock of IMCI implementation in Bangladesh and the latest evidence on expanding coverage of high-quality case management and care for sick children, to identify options in order to increase access to and utilization of child health services at country and global levels.

### **Two main methods were used for this country assessment:**

1. An extensive desk review, drawing on published and unpublished reports, evaluations and articles in the programmatic and scholarly literature, as well as statistical data, completed in early to mid- May 2016;

2. In-country data collection in the form of key informant interviews at national, district and facility levels in Dhaka, district Narsingdi and Upazilla Savar (N= 14), completed over 8 days in late May 2016.

The details of key informant interviews are as follows (Table 2).

<b>Level</b>	<b>No. of Interviews</b>	<b>Type of interview</b>	<b>Key informant/s</b>	<b>Dates of Interview</b>
<b>National</b>	1	Group interview	Program managers, Academicians, Representatives from Professional bodies, WHO, UNICEF, Save the Children, Saving Newborn Lives Program, ICDDR,B, NGOs	17 <sup>th</sup> May 2016
	10	Individual Interviews	Program managers (3), UNICEF, Faculty from Medical Schools (2), Save the Children, Saving Newborn Lives Program, ICDDR,B (2)	19 - 22 <sup>nd</sup> . May, 2016
<b>District</b>	1	Group interview	Civil Surgeon, Paediatrician, RMO, Medical Officers, Nurses (including nurses working in IMCI corner in District Hospital, Narsingdi)	18 <sup>th</sup> May 2016
<b>Facility</b>	1	Group interview	Paediatrician and Medical officer working in IMCI corner in Upazilla Hospital, Savar	19 <sup>th</sup> May 2016
	1	Individual Interviews	Nurse working in IMCI corner in Upazilla Hospital, Savar	19 <sup>th</sup> May 2016
<b>Total Interviews</b>			<b>14</b>	

**Data analysis took place iteratively between national and international consultants using the following methods:** systematic extraction of key themes from interviews using an Excel spreadsheet, triangulation between written sources and interviews and amongst key informants, and debriefing of preliminary results with Ministry of Health personnel and in-country stakeholders on the last day of data collection.

## **II. IMCI organization and management**

### **II.A. Definition of IMCI in Bangladesh:**

In Bangladesh, IMCI is defined in a way that matches the generic definition “*Integrated approach to child health focusing on (a) improving case management skills of health workers, (b) improving health systems and (c) improving family and community practices.* But ownership of the program and dedication to promote child health in Bangladesh has prompted several health care providers to say , “ *IMCI is a divine gift for child which has unique referral system and helps in early detection of sickness in a child (B0518a)*”. Technically IMCI is described by some informants as “ *a robust strategy and a good quality framework with structured guidance for system readiness, processes and mechanisms to ensure quality of services (B0521a)*”.

Considering their experience with the implementation, scaling up and visibility of different components of the strategy, responses of the key informants indicated a wide spectrum of perceptions about IMCI. Some of the statements made by key informants were :

*“IMCI is not only a comprehensive approach to managing common childhood illnesses but it is also a 'gateway' for screening and detecting early malnutrition (B0521a)”*

*“ IMCI brought all stakeholders under one umbrella (B0522c)”*

*“If IMCI is implemented properly, it is a breakthrough in the management of sick children right from assessment to giving appropriate drugs and referral (B0517b)”*

One of the informants said *“ IMCI is not only about prescribing drugs but more than giving medicines. Many things can be done with IMCI like immunization, weight recording, counselling, deworming (B0519c)”*

## **II.B. Brief history of IMCI strategy**

IMCI was introduced in Bangladesh in 1998 as a strategy for reducing child mortality and morbidity , with a focus on improving management of sick children under five years of age. The **main activities** included are prevention and treatment of acute respiratory infections (ARI), diarrhoea, malaria, malnutrition and measles and also checking the status of immunization. **Introduction of IMCI** in Bangladesh was relatively smooth because policy environment in the government was very conducive and partnership with other stakeholders like professional bodies (Association of Paediatrics and Neonatologists), and WHO & UNICEF was good in supporting and implementing the policy. The experience gained in participating in Multi Country Evaluation of IMCI and the technical support of ICDDR, a reputable research organization in Bangladesh, created a favorable ground for IMCI implementation.

IMCI was adapted by the country with necessary adaptations in the training material made by the Ministry of Health with the help of professionals. IMCI piloting was done in 2000 with technical support from WHO. Initial capacity building of program managers was critical for the implementation for which IMCI Planning Guide was used. Training of health care providers, being a major component of the strategy, a lot of effort was devoted to training them. Training for Follow up after IMCI training and follow up visits was also conducted. Monitoring and Supervision, and Health Management Information System (HMIS) was lacking initially but later on in 2003, a nationwide Skill Expansion Plan in high mortality areas was introduced. Concept of Community IMCI (C-IMCI) was in focus right from the beginning because of the experience gained in Multi Country Evaluation. Community case management package and IEC material was developed at an early stage of IMCI implementation.

## **II.C. Organization at National and District levels**

**Child Health and organogram of the MOH** : Child health is an important component of Ministry of Health (MoH) organogram (Annex.2)(3). Newborn health is combined with child health in the organogram. **Program Manager IMCI**, the focal person for IMCI and newborn health, functions under the Line Director Maternal, Neonatal, Child and Adolescent Health (MNC&AH) and Director Primary Health

Care (PHC) administratively controlled by Director General of Health Services (DGHS). **Program Manager Maternal and Neonatal Health (MNH)** is responsible for maternal and newborn health. Government of Bangladesh funds these positions. Similarly, under the Directorate General of Family Planning (DGFP), the Line Director Maternal and Child Health (MCH) services and Line Director MC& RAH oversee the implementation in upazillas.

**Coordinating mechanisms for IMCI Implementation:** The intricate web of health care network spread across the country comprises entities ranging from policy making bodies to health care facilities down to the community level. In addition to the public health departments of the Government, various NGOs and private institutions constitute a large proportion of this web. The Ministry of Health and Family Welfare (MOHFW) is the lead agency responsible for formulating national level policy, planning and decision-making in the provision of health care and education. The national level policies, plans and decisions are translated into actions by various implementing authorities and health care delivery systems across the country. The ministry and its relevant regulatory bodies also have indirect control over the health care provided by the NGOs and the private sector.

**National Steering Committee** : It is headed by the Secretary, Ministry of Health and Family Welfare. The function of the steering committee is to approve the documents and policies prepared or adapted by the core committee to implement these strategies.

**National Core Committee:** Under Ministry of Health & Family Welfare this core committee is headed by a joint secretary and it regulates the partnership between different sectors. **Program Manager IMCI** is the member secretary of the committee and other key members are WHO, UNICEF, Representatives from professional bodies, ICDDR,B and Save the Children .This committee endorses the policy based on recent global issues and strategies, prepares the guidelines and coordinates the work of all stakeholders.

**National working Group:** Under the Directorate General of Health Services this group played an important role in implementation of IMCI. Director General DGHS was the Chair and all partners were members of this group. This had an Annual Work plan as per the Scale-up plan of IMCI, reflecting contributions of all partners in implementation of IMCI.

**Technical Review Committee:** Headed by Director Primary Health Care, this committee approves all the publications before circulation and implementation.

**Financing:** All the programs related to child health are under the operational plan of the Line Director, Primary Health Care. Mainly Govt. of Bangladesh finances all the programs from its own budget (approx. >75%). For few other programs, there is a provision for support from development partners.

**Patient services:** There is budget allocation for IMCI but is not detailed out. The costing is as per the sector plan. All IMCI drugs are included in the Essential Drug list for sick children under 5 and available free of cost at out-patient outlets but sometimes patients have to buy the medicines out of pocket if supply is not available or inadequate. Patient consultations are free of cost but they have to pay Tk. 5-7 to buy ticket for out-patient consultation and Tk. 10-12 as admission fee.

**Health Policy and Systems :** Since 2003, the MoHFW, with the support of development partners, has designed a sector wide Health, Nutrition and Population Sector Program (HNPS) to strengthen the country's health sector. Although there is no well defined Child Health Strategy, IMCI provides adequate guidelines for the management of sick children at first level health facilities.

In the year 2010, and subsequently in 2014, Bangladesh adapted a review process "Short Program Review (SPR) for formulation of Child Health Strategic Directions" to know the country perspectives (4). A workshop was organized to review the child health programs. WHO generic worksheets were adapted according to Bangladesh child health perspective. Government professionals from different sectors, national and international NGOs and development partners attended the workshop. Recommendation was made to develop a National Child Health strategy framework along with an Action Plan.

**Health Population Nutrition Sector Development Program (HPNSDP):** There are 32 operational plans under HPNSDP headed by Minister, MOH. Among them one is Maternal Neonatal Child & Adolescent Health (MNC&AH). Many programs are running under MNC&AH and there is a program manager for each. Child health remains one of the priority areas of the Govt. of Bangladesh. Among others, IMCI is a very important strategy for management of sick child. This strategy has been implemented all over the country and run by MNC&AH and MNC&RH.

**Health systems strengthening strategies to support implementation of newborn and child health**

**interventions:** In addition to IMCI, there are many programs and strategies that are related to newborn and child health. These are:

- i) National Neonatal Health Strategy (NNHS)
- ii) Extended Program of Immunization (EPI)
- iii) Infant and Young Child Feeding (IYCF)
- iv) Vitamin A plus campaign
- v) Early Childhood Development (ECD)
- vi) ETAT and Sick Newborn Care at facilities
- vii) Helping Babies Breathe (HBB) initiative
- viii) Quality Improvement (QI) initiatives
- ix) Kangaroo Mother Care (KMC)
- x) Emergency Obstetric Care (EOC)
- xi) Health Management Information System (HMIS)
- xii) Referral system (High quality system)

**II.D. Key Stakeholders**

A number of partners work hand in hand with Ministry of Health to support provision of treatment and care of sick children in Bangladesh. "Greatest strength of IMCI is strong partnership, particularly with professional bodies (B0517a)" as quoted by several key informants. Partnership includes Civil society [Bangladesh Paediatric Association (BPA), Bangladesh Neonatal Forum (BNF), Bangladesh Perinatal Society (BPS)], NGOs [NGO Health Service Delivery program (NHSDP), Save the Children, PLAN, Concern Bangladesh], Bilateral and multi-lateral agencies (WHO, UNICEF, USAID, World Bank, DFID, JAICA, Bill & Melinda Gates Foundation), and ICDDR. WHO and UNICEF have been particularly involved in implementation and scaling up of IMCI (Annexure 3- Stakeholder Mapping).

### **III. Implementation of IMCI and other child health strategies**

#### **III.A. Status of IMCI Implementation**

The Government of Bangladesh, after introducing the strategy in the country, undertook the national adaptation of generic IMCI module in 2000 and piloting of the strategy began in 3 upazillas in 2001 with implementation of IMCI through facility based provisions. In Bangladesh, facility based IMCI refers to the services being delivered at district level hospitals, upazilla health complexes and union level health and family welfare centers including NGOs and private sector hospitals and clinics. Since revitalization of Community Clinics in 2009, IMCI has been included in the training package of the Community Health Care Providers (CHCPs).

**Facility IMCI** has been implemented across the country. IMCI corners have been set up in 460 upazillas, 3500 union level facilities, in all district hospitals and medical college hospitals. Community based IMCI has also been introduced along with 'Helping Babies Breathe (HBB)' protocol, chlorhexidine, antibiotic regime etc. Kangaroo Mother Care (KMC) has been introduced through Sub-Assistant Community Medical Officers (SACMOs). IMCI is a government-owned program under Family Planning wing of Ministry of Health which oversees IMCI corners in facilities at union level. However, IMCI corners in upazillas are under DGHS and overall IMCI activities are also the responsibility of DGHS.

**Community IMCI (C-IMCI)** has been adapted in Bangladesh for management of childhood illness in the community. C-IMCI is an essential component of the IMCI strategy based upon the realization that a purely facility based strategy will not reach the significant portion of population that does not have access to or choose not to use a health facility. Therefore C-IMCI is an integrated approach that aims to improve the key care practices of families and communities that are likely to have the greatest impact on child survival, growth and development. MoHFW has several primary health care service facilities and outlets at community level, close to the door step of the community. These are EPI outreach sites for every 1000-1200 population, satellite clinics for 3000-4000 population and community clinics for 6000 population. A cadre of basic health workers (BHW), who are the govt. front line field workers (HA, FWA & FWV), run these facilities and outlets. In some areas NGOs run these facilities and outlets to provide primary health care services by trained cadre of health workers. A training package (Basic Health Workers Package) has



IMCI Corner in District Hospital, Narsingdi



Counselling mothers in IMCI Corner in Upazilla Hospital, Savar

been developed with technical assistance from WHO-UNICEF and a large number of BHWs have been trained using this package. Save the Children, as part of a global study which is being conducted by WHO, is implementing community case management in some districts of Barisal Division.

**Concept of Community Clinics (CC)** in every village is a highly rated intervention, with a strong commitment from the current Prime Minister. There is one trained Community Health Care Provider (CHCP) for each Community Clinic, for 6000 population. There are 13,500 community clinics open for 6 days a week regularly accessed by the community. Under each CC there is one community group and 3 support groups. In each group there are 15 people including 2 govt. workers and other people from the community. These community groups, constituted by the govt., are a potential resource to scale up community IMCI.

Introduction of IMCI in **pre-service medical education** is considered an essential component of IMCI implementation in Bangladesh. Training medical students on IMCI protocol before they actually start working in government or private facilities was envisaged to be the most effective approach for sustainability of IMCI. Senior teachers in Paediatrics championed the concept and IMCI has been introduced in undergraduate medical curriculum. Even though Paediatrics is not a separate subject for examination of M.B.B.S. students, the untiring efforts of eminent Paediatricians have been instrumental in assigning a separate table for assessment of medical students on IMCI during their examination. Teachers in Paediatrics, from professor level down to the registrar level, from 13 government medical colleges and 10 private medical colleges have been trained in Pre-service IMCI with the help of IMCI Student Manual and Teacher's Guide. Teachers' training is ongoing. IMCI has also been incorporated in to post graduate medical education and students are asked questions on IMCI during post graduate examination in Paediatrics.

**Evolution from adoption to scaling up** : As a part of multi-country evaluation, very initially a piloting was done at Matlab upazilla along with 2 other upazillas of Bangladesh



National adaptation was done based on generic module (when globally for the first time Newborn care has been adapted to begin from Day 1 instead of day 7 )



After adaptation, module was prepared for training



Training design was planned



11 days training was given to service provider (in-service)





After the completion of piloting at 3 upazillas, under the leadership of MOHFW, review of IMCI implementation was conducted in March 2003, with technical support from WHO. As per recommendation of the review, GoB has decided to implement IMCI all over the country. Accordingly a scale up plan has been formulated for phase wise expansion of the program.

### **III. B. Monitoring and Evaluation activities:**

A national coordinating mechanism, the National IMCI Coordination Team, guides the development and updating of national IMCI guidelines and implementation plans.

In order to assess system readiness to provide high-quality treatment and care for the sick child, data was collected from 1548 health facilities throughout Bangladesh (5). Information was gathered by SACMOs working under supervision of medical officer. They used facility based questionnaire and interviewed health care providers.

#### ***Key findings of facility services are:***

- Nearly all health facilities offer services of out-patient curative care for sick child.
- Basic diagnostic capacity in health facility is low.
- Essential medicines i.e. drug and dietary supply (DDS) kits such as Amoxicillin (syrup/tab), paracetamol (syrup/tab), cotrimoxazole (syrup/tab) is available in 80% of facilities. Vitamin A and Iron are available in 40% and 50% facilities respectively.
- 62% of physicians positions are filled at district and upazilla facilities where as less than 1/4<sup>th</sup> positions at urban level facilities are currently filled
- > 80% nurses position at district and upazilla public facilities and NGOs facilities are filled up

#### ***Key findings on child health services are:***

- Out-patient curative care for sick children is widely available in Bangladesh Health Facilities (93% of Facilities)
- 80% facilities provide vaccination services
- 62% provide growth monitoring (1/3<sup>rd</sup> under 5 child are stunted and underweight)
- 7 out of 10 facilities provide Vitamin A supplementation to children
- Only about half of the facilities that offer curative care have at least one staff member who had ever received training on IMCI and have IMCI guideline
- Among facilities that offer curative care- 8 in 10 have ORS, 1<sup>ST</sup> line antibiotic (Amoxicillin) and medicines for deworming
- Zinc and cotrimoxazole are less widely available
- 8 in 10 have Hemoglobin diagnostic capacity
- 9 in 10 providers of child health services received recent supervision and 1/3<sup>rd</sup> received in-service training within last 24 months

### **III.C. Evidence for impact**

Bangladesh participated in Multi Country Evaluation of IMCI and the preliminary findings from a cluster randomized evaluation conducted 2 years in to the assessment showed improvements in the quality of

care in health facilities, increase in use of facilities, and gains in the proportion of sick children taken to an appropriate health care providers (6,7).

Impact of IMCI in improving and sustaining quality of child health care through training and supervision has also been reported by another study which concluded that with good quality training and supportive supervision, adequate performance among IMCI trained service providers can be sustained (8). Effects of the IMCI strategy on childhood mortality and nutrition was assessed in a rural area in the country which revealed that the yearly rate of mortality reduction in children younger than 5 years was similar in IMCI and comparison areas. However, implementation of IMCI led to improved health workers skills, health system support and family and community practices, translating into increased care seeking for illness. In IMCI area, exclusive breast feeding was increased and stunting was decreased (9).

Most of the key informants do believe that IMCI has significantly contributed to reduction of under-five mortality but so many other non-health factors and health interventions have taken place during the same period. Per capita health expenditure has increased from US\$ 25 to US \$ 31 (10), economic improvement with 26% reduction of poverty from 2000 to 2010 (11), increase in female literacy from 25% to 50% (12), women empowerment (13), better roads, better connectivity with mobile phones and transport have been significant developments during the last decade. Other health interventions like Breastfeeding promotion, Maternal Neonatal Child Survival (MNCS), Maternal Neonatal Child Health (MNCH), Maternal Neonatal Health (MNH), Continuum of care and Safe Motherhood Promotion Project (SMPP) have also been successfully implemented. Therefore, so many things happening simultaneously seem to have collectively played a significant role in bringing down under-five mortality. Some of the perceptions about impact of IMCI on under-five mortality are:

*“Very difficult to say ‘how much’ it contributed. It was a combined effort. But the rate of reduction in under-five mortality suddenly jumped without much changes in other interventions after 2002 when IMCI was introduced. So one can assume a lot of credit goes to IMCI. It was mainly because referral of severe cases increased (B0522a)”*

*“Reduction in under-five mortality and achievement of MDG4 well before time can be considered an indirect evidence of its success (B0520a)”*

### **III. D. Adaptation of IMCI in Bangladesh**

Adaptations of generic IMCI was done through review of local and global evidence and consensus-building among representatives of professional associations, child health related programs and other stakeholders. In 2002, **National adaptation (for in-service training guidelines)** for sick young infant up to 2 months included first 7 days of life and newborn care began from day 1 instead of day 7 (as per generic modules). This change was need based and community based. Modules have been prepared to make them suitable for the training and to encourage self directed learning by participants. Adaptation was done later again in 2009 and 2014 (Table 3).

Table 3: Adaptations in IMCI Guidelines, 2009 & 2014	
Adaptation Year	Adaptations done
2009	<ul style="list-style-type: none"> <li>• Diarrhea: Treat the Child-For dysentery: First-line drug Ciprofloxacin for 3 days</li> <li>• Fever- Malaria:               <ol style="list-style-type: none"> <li>(i). According to national guidelines only 2 zones were described: High, low</li> <li>(ii).BSE (Blood slide examination)</li> <li>(iii).RDT (Rapid Diagnostic Test) in assessment</li> <li>(iv).ACT (Artemether Combination Therapy) in treatment of malaria</li> </ol> </li> </ul>
2014	<ul style="list-style-type: none"> <li>• General danger signs: Separate classification- Very severe disease</li> <li>• Chest indrawing in pneumonia box: Use of pulse oximetry in assessment. SPO<sub>2</sub> &lt;90% refer urgently to hospital</li> <li>• Fever- Malaria: Three malarial zones described: High, low, no</li> <li>• Use of WHO Weight for Height growth chart, Mid Upper Arm Circumference (MUAC) added in the classification (Change in classification based on generic 2014 change and country Malnutrition policy)</li> <li>• Follow up: Pneumonia, Dysentery, Fever - 3days</li> </ul>

Besides in-service training of health care providers on IMCI, GoB decided to adapt **Pre-service training at medical colleges**, as the in-service trainings are costly and time consuming. Accordingly adaptation of the student's Handbook has been done in 2004 with technical support from WHO. Since 2005 it is a part of the paediatric curriculum. The Handbook has been revised again in 2010 and a Teacher's Guide has been added as per the recommendations of the faculty members. An evaluation of the pre-service IMCI was conducted in 2013. In 2015 the package has been revised again as per the new Chart booklet of 2014. With appropriate training and supervision, using adapted version of IMCI guidelines has been observed to be safe and effective for management of severe pneumonia, especially if compliance with referral is difficult because of geographic, financial, or cultural barriers (14).

### **III. Other strategies to increase access and coverage of treatment interventions for childhood illness:**

One of the effective strategies which can directly complement the efforts of IMCI is 'Helping Babies Breathe (HBB) initiative". HBB is an evidence-based educational program to teach neonatal resuscitation techniques in resource-limited areas. It is an initiative of the American Academy of Paediatrics (AAP) in collaboration with the World Health Organization, US Agency for International Development (USAID), Save the Children, Saving Newborn Lives program, the National Institute of Child Health and Development (NICHD), and a number of other global health stakeholders. HBB initiative has so far trained more than 7,000 skilled birth attendants to provide newborn healthcare including neonatal resuscitation. It is currently funded by the Ministry of Health and Family Welfare, USAID, UNICEF and Laerdal Foundation (15). **Benefits of IMCI** implementation on other child health programs was also appreciated by some informants, particularly linkages with EPI



**Building linkages- IMCI - Nutrition Corner in Upazilla Hospital, Savar**

and nutrition programs. *“Missed opportunities of immunization can be taken care of when we use IMCI approach (B0517d, B0519c); “IMCI has positively influenced other child health programs (B0517a).”*

### **III. E. Stakeholder Opinions about IMCI Strengths and Weaknesses**

Informants summarized successful implementation of IMCI in the country as consisting of good access to care (given the large number of children being attended by IMCI corners), good quality of care at IMCI corners ( but with variable quality because some providers do not use the IMCI protocol properly depending upon their being trained or not trained and/or their motivation level).

**Strengths (Box 1) : Capacity building of health providers** was considered the greatest strength and the leading facilitatory factor for acceptance and implementation of IMCI. This perception was communicated with different expressions like *“We have created a trained workforce with updated knowledge (B0517d); “The beauty of IMCI is training health workers to quickly identify seriously ill children who need urgent attention and referral (B0519C).”*

**Influence of IMCI on health systems** was also acknowledged by many with their comments like *“IMCI supply is exclusively sent for IMCI and now supplies are ensured (B0519d); “It is a major point of contact with the health system, most utilized by the community. Logistics and procurement is good (B0521a); “Dispersable amoxycillin was made available in the facilities because of introduction of IMCI (B0519d); and “Because of IMCI suspension form of medicines was made available (B0519c).”*

**Improvement in care seeking behaviour** was also considered a strength, as quoted by some as *“Health care seeking behaviour has changed. Earlier mothers did not come to facility but now they are coming even for minor illnesses (B0519c); “Mothers say ‘nothing serious but just came to take your opinion and to learn something from you (B0519b).*

**Implementation of Pre-service IMCI** is yet to be scaled up but 23 medical colleges have already included IMCI in the curriculum of medical students. Paediatrics is not a separate examination subject for medical students in Bangladesh but despite the constraints of not holding a separate examination in Paediatrics and not examining students for IMCI during the professional examination, the champions of IMCI are upbeat, *“ We can not fight with the examination system but we have included IMCI in their curriculum (B0517a).”*Some teachers are quite excited with the inclusion of IMCI in teaching-learning of medical students *“Paediatrics is considered the best department by our students because we teach them holistic approach to assessment of a sick child. Our students like IMCI videos and because of this their attendance in classes has increased (B0522b).”; “Initially there was opposition by some teachers particularly for postgraduate training but with the experience gained from practising IMCI (triaging, assessment and integrated management), the attitude has changed (B0517a).”*

<b>Box 1: Strengths of IMCI implementation &amp; scaling up as reported by key informants</b>	
<ul style="list-style-type: none"> <li>• Strong political commitment</li> <li>• National leadership and commitment by Ministry of Health</li> <li>• Strategies in line with global strategies</li> <li>• Ownership of IMCI by national and regional managers</li> </ul>	<ul style="list-style-type: none"> <li>• High ORS use (77% ) &amp; increasing use of Zinc (34%) for treatment of diarrhea</li> <li>• Introduction of PCV vaccine</li> <li>• Exclusive breast feeding rates have risen to - 55%</li> </ul>

<p>and decision makers</p> <ul style="list-style-type: none"> <li>• Good partnership with professional bodies who work in harmony</li> <li>• Active engagement of child health champions</li> <li>• Government investment in health systems strengthening</li> <li>• IMCI has got integrated in to overall health system in the country</li> <li>• Exceptional capacity building of healthcare providers</li> <li>• One third of doctors working in facility level are trained and 100% of all health assistants are trained at least once.</li> <li>• A few of them have received refreshers training.</li> <li>• Unprecedented global commitment to maternal, newborn and child health</li> <li>• Inclusion of IMCI in pre-service teaching of undergraduate students is an achievement</li> <li>• IMCI expanded as a comprehensive package including community and facility, child and newborn</li> <li>• Health system has also been strengthened</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing awareness among people</li> <li>• Supportive mass media</li> <li>• MIS is strengthened and now it is online</li> <li>• Regional Training Centers for CMT are existing</li> <li>• Capacity building is the strongest and most visible component</li> <li>• Training of newly appointed service providers is an excellent approach towards capacity building</li> <li>• We struggled to scale up community IMCI as a part of community based life cycle approach</li> <li>• We have created a trained workforce with updated knowledge</li> <li>• Community clinics headed by community people</li> <li>• There is awareness and community participation</li> <li>• Missed opportunities of immunization can be taken care when we use IMCI approach</li> </ul>
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**Weaknesses (Box 2):** One of the major barriers as perceived by most of the key informants relates to **reluctance in using IMCI protocol in actual practice**. On one hand some informants felt that IMCI protocol fell short of several other common childhood problems in Bangladesh like perinatal asphyxia, congenital malformations, drowning etc. and on the other hand majority of informants considered the training to be lengthy to sustain on a regular basis. An elaborate protocol for assessment of a sick child was considered unrealistic by most of the key informants. Some of the common expressions included: *“Difficult to practice. Takes lot of time and number of patients are more (B0519c)”*; *“Number of patients are increasing and because of that doctors are overburdened (B0518a)”*; *“Too much time spent on each patient, becomes difficult because patients usually come between 10-12 peak morning time and there is a lot of rush (B0518a)”*; *“Assessment for other problems/feeding and even immunization appears wastage of time for the mothers if they come with a specific or urgent problem. They are not interested to go through the whole assessment chart (B0518a).”*

**Quality of services** is also considered a major weakness because of a lot of variability exists in the quality. A study conducted in one district of Bangladesh to assess quality of care for under-fives in first-level health facilities revealed that **few of the sick children seeking care at these facilities were fully assessed or correctly treated**, and almost **none of their caregivers were advised on how to continue the care of the child at home**. Over one-third of the sick children whose care was observed were managed by lower-level workers who were significantly more likely than higher-level workers to classify the sick child correctly and to provide correct information on home care to the caregiver. These results demonstrate an urgent need for interventions to improve the quality of care provided for sick children in first-level facilities in Bangladesh, and suggest that including lower-level workers as targets for

IMCI case-management training may be beneficial (16). Similar opinions were voiced by the key informants:

*“Quality of services provided by different IMCI corners is variable and widely depends upon local leadership in the health facility (B0517a)”; “ If expected level of care is not provided at the facility, people get disappointed and do not like to come again(B0517a)”.*

**Referral linkage** is believed to be the most weak area as quoted by some as *“ Referral norms are missing, acknowledgement of referral is not there, there are major lapses- care providers don’t screen meticulously before sending, don’t explain properly to the care giver why the child is being referred, transport problems, non-existent referral desk in emergency department , no preference given to referred patients (B0522c)”*

**Lack of supervision and monitoring** is another pitfall in the implementation as voiced by some informants as *“ Supervisors only check the records/ administrative monitoring, they don’t see how cases are assessed and managed (B0518a)”; “Supervisors should be trained in IMCI. They should know what they are supposed to supervise (B0517a)”.*

**Community IMCI** is a well acknowledged concept to take the health services to the door-step of the community but in reality its visibility is still far from what is desired, *“ Mostly managed by NGOs, not very much visible in Govt. system (B0517c)”; “ Community IMCI is existing, but not good momentum like facility IMCI (B0517b)”*. Some informants see a definite advantage of early diagnosis, referral and administration of pre-referral treatment with this approach but it does not appear to be sustainable because as of now NGOs are managing most of these centres and *“ NGO run programs have a disadvantage of running on donor funds (B0517c)”*.

Limitation of **popularising Pre-service IMCI** amongst teachers in medical schools is primarily related to their mindset and perception that IMCI approach is not meant to be followed by doctors, *“ Most teachers and healthcare providers (trained as well as not trained) know IMCI but everybody is not practising it (B0522a)”*. Some do have conceptual disagreements *“ There is a conceptual difference between IMCI and actual Paediatrics taught in medical schools. IMCI is just a sort of tool for primary health care, not a replacement for Paediatrics. That is why many teachers don’t support it ( B0517a).”* Some respondents aren’t comfortable using the term “classification” instead of “diagnosis”, a common term used in traditional teaching and case management. Implementation of pre-service IMCI also appears to be limited by the level of commitment of teachers to promote it, *“ Ownership of pre-service IMCI is limited. Everybody knows that it is a good strategy to prevent and manage childhood diseases, but when it comes to practice it they don’t adhere, they develop cold feet (B0517b).”* Other limiting factors are insufficient number of teachers in the department of Paediatrics in some medical schools, some teachers who have received training are transferred to another place where environment may not be conducive and the institution may not be supportive to practice and promote IMCI protocol.

<b>Box 2 : Weaknesses in IMCI implementation &amp; scaling up as reported by key informants</b>	
<ul style="list-style-type: none"> <li>• High turnover and rotation of trained staff within health facilities, coupled with limited human resources</li> <li>• Shortage of beds and space to accommodate sick patients in the hospital</li> <li>• Nurses are not sufficient in number and not all of them are trained.</li> <li>• All healthcare providers are not trained in IMCI</li> <li>• Supervisors for IMCI corners are not trained in IMCI</li> <li>• Refresher training is not taking place</li> <li>• Supervision and monitoring is lacking</li> <li>• Reservations in integrating IMCI in pre-service teaching of medical doctors</li> <li>• Most teachers and healthcare providers (trained as well as not trained) know IMCI but everybody is not practicing it</li> <li>• Quality of services provided by different IMCI corners is variable and widely depends up on local leadership in the health facility</li> <li>• Follow up after training and monitoring not happening</li> <li>• Quality monitoring at subnational level not happening</li> <li>• IMCI Training is meant for case management but there is no training for program managers for program management, management of logistics, HMIS etc.</li> </ul>	<ul style="list-style-type: none"> <li>• All doctors are not committed to practicing IMCI protocol</li> <li>• Harmonization within MoH &amp; FW (FP and DHGS) is necessary because the chain of command is different</li> <li>• Need for operational research to examine the present system and status</li> <li>• Need for continuous research to assess impact. Not only research but create evidence to disseminate and motivate</li> <li>• Implementation support at facility level is a big challenge because of which the benefits which IMCI could bring for child health could not be fully utilized</li> <li>• Feasibility of scaling up community IMCI is not there with our existing resources through from govt system because we don't have a structured set up.</li> <li>• Our front line health workers from the govt. visit the same villages after 1-2 months. They don't live in the same village. You need additional community worker or a volunteer to efficiently practice community IMCI</li> <li>• Trained persons do not want to go and serve in villages</li> <li>• Perception of quality is different from service provider point of view. Sustainability is questionable because of poor ownership by the community</li> <li>• Referral linkage is the most weak area.</li> </ul>

## **IV. Lessons learnt**

### **IV. A. Bottlenecks (Box 3) :**

The most common bottle neck as spelled out by a majority of informants is “ *High turnover of patients with limited staff (B0517a)*”. The other commonly expressed view is that some people even after getting trained in IMCI are not practising it. “ *There are gaps in following protocol. The time has come for ‘improving practice’ (B0517a)*” .

As far as overall perception of different stakeholders about IMCI is concerned, there is a huge gap between admiration for the conceptual aspects of the strategy and apprehensions about practical

issues related to implementation, *“If we can reduce the gap between conceptual superiority and realistic positioning of IMCI, it will be a revolution in reducing childhood morbidity and mortality (B0517b)”*; *“ For management of sick child IMCI strategy exists but the program is practically stand alone and training dependent (B0517a)”*.

As of now IMCI implementation is restricted to government health care system with very little influence on private sector. *“ In Bangladesh 65% of healthcare is met by out of pocket expenses by people and many patients go to private practitioners for primary health care services as well . Private sector also needs to recognise the importance of IMCI (B0517b)”*.

There seems to be a general agreement by most of the key informants that the position of IMCI in the Health Ministry is not strategically located for its effective implementation. On the contrary there is a dichotomy in its management because IMCI is administratively under DGHS but has only 1200 health facilities under it. *“ 63% IMCI facilities are under Family Planning. Funds are given to Family Planning who just spend it on conducting training without following IMCI protocol or monitoring IMCI activities (B0520a)”*

Ownership of IMCI at the highest level in the Ministry of Health has undoubtedly taken the implementation to greater heights but ownership should have also percolated down to mid level and lower level program managers. *“ It should be a program of district managers. They do feel ownership of EPI and nutrition programs, but not for IMCI (B0517c)”*.

Lack of motivation to support IMCI implementation, due to several personal or administrative reasons, is an important barrier to take interest in it. *“The commitment is less because of transfers. If a doctor knows that he will stay there for a long time, he will be more committed (B0517a).”*

Other perceptions include *“IMCI does not have separate funding or separate workers ( B0519c)”*; *“Govt. is giving more emphasis on training of staff, supply of equipment and drugs to community clinics but not giving much attention to proper implementation of IMCI corners ( B0519c).”*

Limited attempts at conducting Follow up after training as a part of scaling up, viewed as an important bottleneck, was explained by one of the informants by saying *“Follow up after training with the current resources is not realistic. Gathering so many program managers for training for 5 days is a big problem (B0517a)”*.

Demand based drug distribution has not been developed the way it should have been .” *Drugs are distributed without knowing the demand, and this results in excess & wastage somewhere and stockouts at other places (B0521a)”*.

One of the deterrents to promote **Pre- service IMCI** is that many senior teachers are not supporting IMCI guidelines particularly those from private medical colleges. It is a matter of concern because a large number of doctors are trained from these colleges. However, champions of pre-service IMCI are optimistic ,” *When teachers from govt. colleges retire and join private medical colleges, things would improve (B0522b)”*. Teachers who are practicing Paediatric Subspecialities have their own reasons to

oppose because they believe standard Paediatric teaching has been too simplified by IMCI. Some of them are not convinced with the guidelines of relying only on fast Breathing and lower chest indrawing. They expect the students to learn pathological diagnosis as well and therefore want IMCI guidelines to be changed, *“We were literally forced by Paediatric Pulmonologistst to include Bronchiolitis in the algorithm (B0522b)”*.

Focus on neonatal health within IMCI strategy has been an important concern right from the beginning. Even though 1-7 days were included in IMCI protocol during the first adaptation and day 1 of life was also included in later adaptation, high neonatal mortality staggering at 28/1000 live births is a matter of great concern to pediatricians, neonatologists and program managers. Of the critical events, resuscitation at birth is the most vulnerable period for a newborn baby. There are comments from some informants who believe that resuscitation at birth can not be provided at all levels, given the skills required, *“You need a separate set up to do it. Therefore it may not be possible to include resuscitation at birth in IMCI guidelines (B0517c)”* but others feel it is not impossible because health workers can be trained for this purpose, *“Training health workers under ‘Helping Babies Breathe initiative’ can prepare them to handle resuscitation of new born babies at community level (B0517b).”*

<b>Box 3 : Lessons learnt - Bottlenecks</b>	
<ul style="list-style-type: none"> <li>• High turnover /flow of patients by limited staff</li> <li>• There is no comprehensive child health strategy though guidelines for managing individual illnesses are there e.g. for SAM, MAM, malaria, tuberculosis etc</li> <li>• Follow up within 2 months (recommended) and supportive supervision is limited. Moreover, monitoring of the program is lacking because of health system constraints and insufficient investment.</li> <li>• Most of the IMCI Supervisors who are expected to supervise health care providers in IMCI corners are not trained in IMCI. Therefore a proper supervision is not possible.</li> <li>• In many instances only the health worker training component of IMCI was implemented, without complementary efforts to improve care seeking and other family practices designed to strengthen health system.</li> <li>• Most of the MCI corners do not have</li> </ul>	<ul style="list-style-type: none"> <li>• Syncing two wings of Ministry of Health is necessary because Health section can not independently do it . Most of the IMCI centers are under Family Planning wing and they have their own procurement and drug distribution system. Department of Health has its own. But there is no coordination.</li> <li>• Convergence and coordination difficult. Bifurcated, FP and DGHS, same ministry doing different work</li> <li>• Commitment for IMCI at the highest level (above the level of line director) of Ministry of Health is not there</li> <li>• Paediatrics is not a separate subject. Therefore passing in Paediatrics is not mandatory. Hence ensuring the students know and practice IMCI guidelines is difficult</li> <li>• If our medical students are not trained in IMCI during MBBS, they will face a lot of difficulty when they practice in the field because 60% of childhood illnesses they have to manage are covered by IMCI</li> <li>• The major bottleneck is commitment by care providers particularly doctors</li> </ul>

<p>proper infrastructure to handle patient load</p> <ul style="list-style-type: none"> <li>• Nurses are not sufficient and not trained. They are overburdened</li> <li>• Neonatal care is included in 0-2 months but logistics are required to properly treat newborns. Incubators and warmers not available everywhere</li> <li>• Perinatal asphyxia is a top cause of NMR in Bangladesh but management of birth asphyxia is not included in IMCI</li> <li>• Horizontal coordination at central level and among all departments is lacking. As for example health care is delivered by staff working both under MNC&amp;AH (DGHS) and MCH&amp;RH (DGFP). Sometimes central coordination and collaboration between two departments is lacking particularly on procurement and supply of drugs and logistics.</li> </ul>	<ul style="list-style-type: none"> <li>• For pre-service IMCI, since it is in the curriculum everybody knows about it. But they are not committed, particularly private medical colleges</li> <li>• There is opposition from Subspecialities like Pediatric Pulmonologists. They do not agree with the concept of classification and nomenclature used in IMCI guidelines</li> <li>• Implication of research by evidence</li> <li>• Harmonization within different sectors</li> <li>• Fixation of accountability. Some are performing well ,others are not</li> <li>• There has to be some means of appraisal</li> <li>• Focus on quality issues in lacking</li> <li>• Ownership of IMCI among FP is not as it should be</li> <li>• SACMO is under FP, not under DGHS which makes coordination and supervision difficult</li> <li>• More emphasis on administrative monitoring than clinical monitoring of case management and supervision</li> </ul>
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#### **IV. B. Lessons learnt about scale-up, monitoring and impact (Box 4):**

With a government supportive of a new child health strategy, a sound policy and supportive partnership IMCI implementation has got a great momentum in Bangladesh. Sensitising program managers before introducing IMCI in the country has proved to be a wise step .Involvement of professional bodies from the very beginning and a positive attitude towards donors and NGOs has helped in seeking necessary support for introducing and scaling up IMCI. However scaling up is a huge challenge which requires lot of money for training, takes a long time to scale up the facilities , lot of efforts for follow up after training and ensuring quality is difficult because number of staff is not enough (trained as well as untrained). Key informants had different perceptions regarding scaling and their expressed views included *“Basic learning is how to work within the system. Success is achieved by making necessary changes within the system and failure is inability to make desired changes (B0521a)”*; *“ Ensuring quality after scaling up is difficult because we don’t have enough trained people . There are lesser number of trained as well as untrained doctors and nurses (B0522a).”*

**A pragmatic approach to scaling up IMCI** in the country would necessitate availability of data to know how the health workers are using the skills acquired during training when they go back to their place of work, what are the practical problems faced by them , how those problems were handled.” *If we have access to information based on locally conducted research, it could help us in future planning*

(B0517b)". Since epidemiology of diseases is changing, research based data could also help in identifying local needs and health priorities in the country. *'New diseases are emerging, non-communicable diseases are likely to take the centre stage soon, new algorithms may be required. And for all this we need data (B0517b)'.*

**Partnership with the community** also appears to be a weak link. Community needs to be involved in healthcare, counselling , knowing about childhood illnesses and ways to prevent and manage them. There is a need to synchronise community awareness and improvement of services in the facility. *"Increasing demand without appropriately expanding the level and quality of services can be counter-productive (B0517a)."*

**Box 4: Lessons learnt about scale up**

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| <ul style="list-style-type: none"> <li>• Needs managers dedication. If that happens community will come forward to help</li> <li>• Insufficiency of budget</li> <li>• Untimely /late allocation of budget (At the end of financial year)</li> <li>• Supply chain management- procurement &amp; distribution of drugs is not constant</li> <li>• Lack of Inter departmental coordination</li> <li>• Supportive supervision- mostly absent</li> <li>• Monitoring and feedback is not reliable</li> <li>• Motivation, dedication , commitment and accountability is required at all levels</li> <li>• With some more focus on Neonatal health, IMCI is still useful as a viable child health strategy</li> <li>• Utilization of services for other health problems could improve with IMCI</li> <li>• Peak time of patient attendance is between 10- 12 in the morning and it is difficult to do complete assessment, especially counselling in such a short time</li> <li>• Even if assessment is done, filling a lengthy form requires time. Therefore, some times the health workers jump the steps, or fill the form later from whatever they can remember or even leave it blank.</li> </ul> | <ul style="list-style-type: none"> <li>• Empowerment of officers at upazilla level</li> <li>• Sustainability is a question unless continuous capacity development of service providers with refresher training</li> <li>• Performance indicators need to be developed</li> <li>• Quality indicators have to be identified and appraised. A new program may have to be developed to identify quality indicators</li> <li>• Performance appraisal system (PAS) is there but frequency of PAS has to be increased. You need to have some resources. For improving PAS improve accountability by Web based HMIS reporting system. The system is good but compliance is not up to the mark</li> <li>• Endeavour is needed to institutionalize the reporting system with good quality</li> <li>• Dashboard for IMCI (quality indicator)</li> <li>• Basic learning is how to work within the system. Success is achieved by making necessary changes within the system and failure is inability to make desired changes</li> <li>• Delegation at union level</li> <li>• Community support is required</li> <li>• Need motivated and trained human resource.</li> <li>• Clinical monitoring of case management and supervision should be given more emphasis than administrative monitoring</li> </ul> |
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### V. C. Innovations :

Concept of eIMCI and web based MIS for IMCI have been two major innovations introduced at the country level. eIMCI- guidelines have been digitalized and piloting is going on at Bhupur, Tangail and Chandpur districts. Some key informants were happy to express that IMCI showed them the way to improve HMIS. “ *Web based MIS was initially started for IMCI and is now used for everything (B0522a)*”. Nutrition being an important component of child health, IMCI has a potential benefit of complementing nutrition services as it could strengthen other child health programs, “*Nutrition program is not visible in Bangladesh. So we suggested that IMCI corner can be converted in to IMCI-Nutrition corner but the ownership is still not so good (B0522c).*”

### IV.D. Gaps in coverage:

Several key informants acknowledged the efforts made by the government in successfully implementing and scaling up IMCI in Bangladesh despite limited resources. Time to

time adaptations to address epidemiological profile of childhood illnesses and introduction of new evidence based treatment guidelines and equipment like pulse oximeter, has helped in improving the quality of care. However several issues related to management at top level and logistics have retarded the pace with which IMCI implementation should have moved forwards. Harmonization within Ministry of Health & Family Welfare (between Family Planning and DGHS) is an important issue which affects implementation. Even availability of ORS is at times an issue because of programmatic hiccups, “*Family Planning department does not provide ORS in DDS kit (B0521)*”; “*Supplies are purchased from district level also but there can be stock outs sometimes (B0517a)*”; “*Union level facilities are supposed to get ORS from health department but they don’t (B0522a).*”

Fragmented visualization of ground realities also becomes a barrier to optimize the gains of a new intervention as expressed by one of the respondents, “*New approaches and interventions have to be supported by appropriate logistics. Like pulse oximeters have been given to Health Workers to detect hypoxaemia but all of them don't have access to oxygen cylinders (B0521a).*” “*Sub optimum drug distribution system also results in excess supply leading to wastage of medicines in some and stock outs in other facilities*”.

There is a perceptible gap between research findings and awareness amongst program people as the findings are not shared.

Monthly IMCI Dataset						
Age group	0-28 Days(s)	29 Days- up to 2 Months	2 Months- up to 1 Year	1- up to 5 Year(s)	Total	Referred
<b>A. Child</b>						
1. Boy	52	111	1292	2129	3584	244
2. Girl	58	113	1101	2054	3276	207
<b>Total</b>	<b>110</b>	<b>224</b>	<b>2393</b>	<b>4183</b>	<b>6860</b>	
<b>B. Diseases</b>						
1. Very Severe Disease	34	57	53	50	194	150
2. Pneumonia			259	347	606	59
3. No Pneumonia (Cough or Cold)			999	1364	2363	
4. Diarrhoeal Diseases	22	65	443	772	1302	162
5. Febricidalia			0	0	0	0
6. Fever-no malaria			556	1104	1660	162
7. Fever-malaria Unlikely			67	118	185	19
8. Malaria	1	2	3	13	22	0
9. Ear problem			74	152	228	3
10. Drowning				3	3	0
11. Child Injury		4	14	65	73	5
12. Pus draining from Umbilicus	14				14	3
13. Other Diseases	52	111	515	955	1673	60
<b>C. Nutritional Information</b>						
1. Anemia (0- 5 years)					107	7
2. Low Birth Weight (within 72 hour of birth)					11	6
3. Breast Feed within 1 hour of birth (0-2 months)					591	
4. Exclusive breast feeding (0 - upto 6 months)					666	
5. Complementary Feeding (6-23 months)					672	
6. Underweight (0 - 5 years)					137	31
7. Stunting (0 - 5 years)					65	3
8. Wasting (0 - 5 years)					19	0
9. Severe Acute Malnutrition (SAM) (6 months to 5 years)					4	0
10. Moderate Acute Malnutrition (MAM) (6 months to 5 years)					82	
<b>D. Counseling</b>						
HYG, Vitamin-A, ICD, Anemia, MNP, etc.					2254	

**Web based MIS :Monthly IMCI Data base**

#### **IV.E. How to Improve district implementation**

Direct discussion with health care providers at district level (including health workers posted in IMCI corners) reflected a realistic picture of ground realities. Some of the suggestions from them and also from national level key informants included :

1. IMCI corners should be under DGHS control
2. Planning for the district and capacity building should be done at district level
3. District level managers should be empowered with resources and authority to manage
4. Improve referral pathways and build referral linkage
5. Incorporate perinatal asphyxia in to IMCI package
6. Home deliveries should be discouraged
7. Mothers should be encouraged to bring sick children to the facility because management of sick children can be done better in the facility
8. Identification of high risk pregnancies
9. Counselling component of IMCI should be strengthened
10. Video film on child care should be shown to mothers while they are waiting in the hospital.
11. Communicating with the community to know the reasons for non-utilisation of services
12. Community participation can be improved by creating awareness amongst people when to come to hospital utilising '*Uthen Baithak*' (traditional village courtyard meetings of neighbouring families in the evenings to share their ideas and experiences with each other - used by Family Planning program) for Health Education
13. Building Community Support Service ( community leaders, retired people, religious leaders, housewives, students and others) for health education and improving community practices
14. Regular supervision and monitoring is needed
15. Coordination is needed at national, district, facility and community levels
16. There should be a link between IMCI and other child health programs
17. Timely training of newly appointed doctors
18. Increased budget and timely allocation of funds
19. Regular procurement of drugs
20. Better coordination between departments/ sectors
21. Improvement of supportive supervision
22. Regular monitoring and feedback
23. Health education to all the people. Media should be used to create awareness.

#### **V. Perspectives for the future**

In this section, we lay out some additional recommendations specifically as they relate to IMCI and how these can be linked to the overall child health agenda in Bangladesh in future.

**Capacity building**, conceived as the most strong component of IMCI, is the first area which needs to be strengthened in future based on the lessons learnt from country experience. **Pre-service IMCI** and introduction of evidence based IMCI guidelines in the curriculum of doctors, nurses and paramedics is the only sustainable approach to build capacity of health care providers at a scale required to match the

needs of the country. There are clear voices from the informants, “ *Paediatrics should be a separate subject for MBBS examination and apart from Pre-service teaching the students should also be assessed for IMCI in the examination (B 0517a)*”, “ *Pre-service training in IMCI is a must for nurses and health workers (B0522b)*”. Complete integration of IMCI into the curricula will be necessary to maximize the positive impact of IMCI on health workers skills, mitigate issues of turnover and rotation, and also ensure sustainability of IMCI in country

Till the time pre-service IMCI completely takes over capacity building of future healthcare providers i.e. doctors, nurses, health workers, improving **in-service IMCI training** of these categories of healthcare providers needs to be taken up with more rigor and commitment. Duration of training has been an issue right from the beginning because relieving health personnel from their duty for more than a week to participate in IMCI training is not feasible, particularly in a set up already compromised with deficiency of human resource. While the duration of training is perceived to be too long, a common suggestion made by several respondents was to further strengthen neonatal component of IMCI: “*Many interventions and new technological components are being introduced by the neonatologist in the country. These things should be tagged on to IMCI (B0517a)*”; “*Need to add major interventions for neonatal health in future IMCI package (B0520a)*”

It was also expressed by several respondents that that **one time training alone was not enough to bring change in quality of services**. Apart from training newly appointed healthcare providers, refresher training, follow-up after training, performance review and mentoring is crucial to professional development of health workers, “***Continuous professional development is a must to keep up the skills and endorse appropriate practices of the healthcare providers (B0522c)***”; “ *Training and continuous updating of teachers including private medical colleges should be a priority (B0522b)*”.

**Health systems strengthening remains a key component** of any future version of IMCI or future child health strategy. A number of health systems strengthening activities are already included under the IMCI implementation plan but they need to be put in action. In response to the question of transfers of trained people and its fall out on training, monitoring and supervision it was explained by one of the informants that, “*Transfer of government employees is a normal phenomenon and can not be stopped or centralized. It is not possible to stop it from administrative point of view. Therefore we should make efforts to incorporate these things in the system so that the mid level managers in the districts are trained and they are asked to supervise, and this is done on a regular basis (B0517a)*”.

**Improving family and community practices**, the third component of IMCI, needs to be taken forwards with more clarity of purpose and functions. As of now MoHFW has several outlets to provide services close to the door step of the community through EPI outreach sites, satellite clinics and in some areas community case management services provided by NGOs. Basic Health Workers, front line field workers, who are trained in IMCI, run these facilities. In order to ensure access to the entire population, including those not served or difficult to reach, and maintain quality of care, massive efforts will be required to sustain these service outlets by the health department for training, monitoring and supervision. Community Clinics, intensely promoted and supported by the national government, are also expected to contribute in improving family and community practices for child health but the overall

mandate and level of health workers serving these clinics is a limitation. *“The health providers working in the community clinics are not adequately trained to give pre-referral injections and therefore face a problem in properly following IMCI protocol (B0521a)”*. Therefore, in order to have a functional and sustainable community IMCI in place it requires a lot of policy and programmatic decisions. Availability of health worker in the village is essential to foster good practices and to respond to the immediate needs of family and community, *“To promote those practices you need somebody to be there in the village 30 days a month to have regular contact with the mother and the family. BRAC did it but that cadre is not in govt. system. For scale up, we need village based volunteer /worker which is not there in the govt. system at present ( B0519d).”* Feasibility of scaling up community IMCI is not there with the existing resources within the govt. system because the front line health worker visit the same villages after 1-2 months. They don't live in the same village. Therefore there is a need for redesigning the structure of community IMCI and roping in additional community worker or a volunteer who is a local person and is willing to take up the role. Assessment of expectations of the community and their feedback about available services is also necessary to build a strong community based IMCI, *“We should not underestimate the knowledge and aspirations of people. They have their own reasons for not utilizing services. Therefore attempts should be made to understand their reservations (B0521a).”*

**Quality of service**, particularly after scaling up, remains a concern and ensuring a good quality of services was recommended by the informants as the most immediate task at hand. Quality of service and demand generation is closely linked because of the possible adverse effect of poor quality of service on the demand, *“Sometimes 'Backfire' issues - caretakers are persuaded to come to health facility, get disappointed if they don't get quality service, and therefore they decide not to come again (B0521a).”* In order to ensure quality of service, follow up training, training of supervisors, follow up visits, and supervision and monitoring are mandatory to ensure that the healthcare providers efficiently practice IMCI case management skills on a routine basis. It was very clearly emphasized that monitoring and follow-up should be institutionalized. Innovations in training methods and practicing IMCI guidelines with technologically better job aids will enhance the performance of healthcare providers: *“Mobile and information technologies could be useful in sustainably developing health workers skills (B0517a)”*: eIMCI, currently being piloted in the country, has several advantages apart from being a useful approach: *“ebased IMCI has built in accountability mechanism in it. The Health Worker cannot skip protocol. It is recorded, can be tracked and data is transmitted in HMIS. So no way for a short cut or escape (B0521a)”*.

**Referral pathways** need to be structured for efficient patient referral. *“The caregivers need to be counselled about the need and urgency of referral, provision of transport and some mechanism of immediate recognition and management by the facility where a patient is referred (B0522c)”*. As of now there is a structured referral system in place, *“In order to give preference to referred patients a 'red slip' is given to them but how much consideration is given to the slip by the hospital can not be ensured (B0517a).”* Therefore efforts need to be made to improve referral pathways.

**Linking IMCI with other child health programs** logically sounds a good proposition but practically difficult in view of the available resources and quantum of services expected to be delivered. In

response to linking IMCI with nutrition program, one of the key informants retorted , *“Already a challenging task to follow IMCI protocol with limited manpower and too many patients. For example if we want to screen children for stunting, we need to measure their length/ height and measuring it takes time. If we add this task to IMCI protocol the HW will get overwhelmed and might get demotivated even to follow routine IMCI work (B0521a)”*. Therefore, such situations need to be kept in mind before role and scope of IMCI is extended. *“Linking IMCI with health insurance and making it a part of Universal Health coverage (B0521a)”* was another suggestion for future.

## **VI. Actions Needed at country level**

As expressed by most of the respondents there seems to be a general acceptance of relevance and implementation of IMCI as the main child health strategy in Bangladesh. However, scaling it to the entire country using resources from health budget and ensuring quality of services after scaling up seems to be a challenging task. Considering the gains from implementation of IMCI, most of the key informants are optimistic and recommend following actions at country level:

1. Motivation and commitment at the highest level
2. Coordination between sectors and within health ministry
3. Engagement with private sector
4. Increasing child health budget with some proportion earmarked for IMCI
5. Regular monitoring of the activities and ensuring accountability
6. Further improvement in neonatal component of IMCI
7. The champions of IMCI need to interact with faculty members of other medical colleges, particularly private medical colleges, to clarify that IMCI is not a replacement for Paediatrics and there is a section ‘others’ in IMCI protocol to assess for other problems not covered in the algorithm. This might help in changing their mindset
8. Community motivation needs to be improved
9. Health seeking behavior needs to be changed
10. Continuous professional development should be considered a part of capacity building
11. Need more resources to address emerging challenges
12. Quality of care is a continuous process. Therefore there is a need for successful implantation of organizational culture of sense of quality

## **VII. Action needed at global level**

Senior level key informants acknowledged the assistance and financial support from WHO, UNICEF and other international organizations and global-level stakeholders . However, when encouraged to share their thoughts regarding global level resources and child health strategies in Bangladesh, following recommendations for improvement were forthcoming.

First and foremost, respondents said **partners need to align with the country priorities**, not just try to influence national health policy, *“The donors try to influence the policy without building their capacity to face the challenges coming out while implementing those policies (B0520a)”*. It was also suggested

that the government should be taking the driver's seat when it comes to implementing global health programmes, *"The National Governments should take the leadership and stewardship of running health programs in the country. They should not depend upon WHO or UNICEF or donors for doing this (B0520a)"*.

The other strong comments was that this type of **review should have been conducted much earlier** and periodically for course corrections. Reviewing a global strategy, which is expected to be implemented and scaled up across low and middle income countries should not have been continued for almost 25 years without reviewing the pros and cons related to its implementation, *"Want to ask global partners why evaluation of IMCI strategy is not done regularly and frequently, why after 15 years? (B0517a)"; "Every 3 years it should be updated because disease profile is changing (B0522b)"*

Funding for child health coming from various global partners is viewed as following their organizational agenda rather than a collective effort to improve child health, resulting in preferential funding for some vertical programs rather than strengthening integrated and comprehensive approach to child health, *"GAVI is giving a lot of money to EPI and not to IMCI, why? (B0517a)"*.

Suggestions were made for WHO and partners to **disseminate new knowledge through existing platforms** such as professional association meetings and continued proactive participation of WHO experts in technical working group meetings.

In response to the basic question about the **concept** of IMCI strategy, almost all the respondents believed that the concept is most relevant to the child health needs of a country like Bangladesh. The strong leadership and coordination between Ministry of Health, academics, professional bodies and development partners in Bangladesh has laid down a strong ground for improvement in IMCI implementation as well as strengthening other child health programs like EPI, nutrition, Helping Babies Breathe and other proposed programs and interventions in neonatal, child, adolescent, maternal health and continuum of care.

As far as the **components and contents of IMCI** are concerned, many key informants believed that IMCI is a robust strategy and there is no need to change any component of IMCI even though it should be open to necessary modifications as and when required, *"No alternative to IMCI. It will remain there, but new priorities will keep on coming. Like now we are thinking of adding newborn care. In future new challenges and new problems may emerge. May be we combine it with maternal health later on (B0522a)." However, some others believed that we do need to thoroughly and objectively examine all the components of IMCI strategy to know if we need to make any changes in future, "Examine the present system by operational research to know if we need to change anything (B0522C)"*.

**Long duration of training** has been a uniformly acknowledged limitation/ barrier of IMCI implementation and program managers see it more from logistics point of view particularly for in-service training. With limited manpower it is no doubt a management issue to take away many people off from their routine work and expect them to attend training for more than a week. It is even more difficult while scaling up. With new observations that *"IMCI training is associated with much the same quality of child care across different health worker categories, irrespective of the duration and level of preservice*

*training. Strategies for scaling up IMCI and other child-survival interventions might rely on health workers with shorter duration of preservice training being deployed in underserved areas (17)", there is an urgent need to relook at duration of training.*

IMCI was introduced as a new concept of integrated approach to common childhood illnesses rather than vertical child health programs. However, recent introduction of **Global Alliance for Prevention of Pneumonia and Diarrhea (GAPPD)** is viewed differently by key informants : “ *We have introduced GAPPD in one district. It is complementing IMCI (B0522a)*”; “*New initiative, complementary or new vertical global initiative? It could be better coordinated. It should be complementary. But in Bangladesh it came as a vertical global initiative (B0519d)*”; “*GAAPD can complement and strengthen IMCI. But it should not be implemented as a stand alone intervention (B0521a)*”; “*It seems to be competing rather than complementing IMCI. Therefore many people are not taking it seriously (B0521a)*.” These observations do raise questions whether IMCI should be supported and promoted as an integrated and holistic approach to child health with more enthusiasm and dedication than before or some interventions within IMCI protocol need to be focussed and prioritized for achieving better impact on under-five mortality.

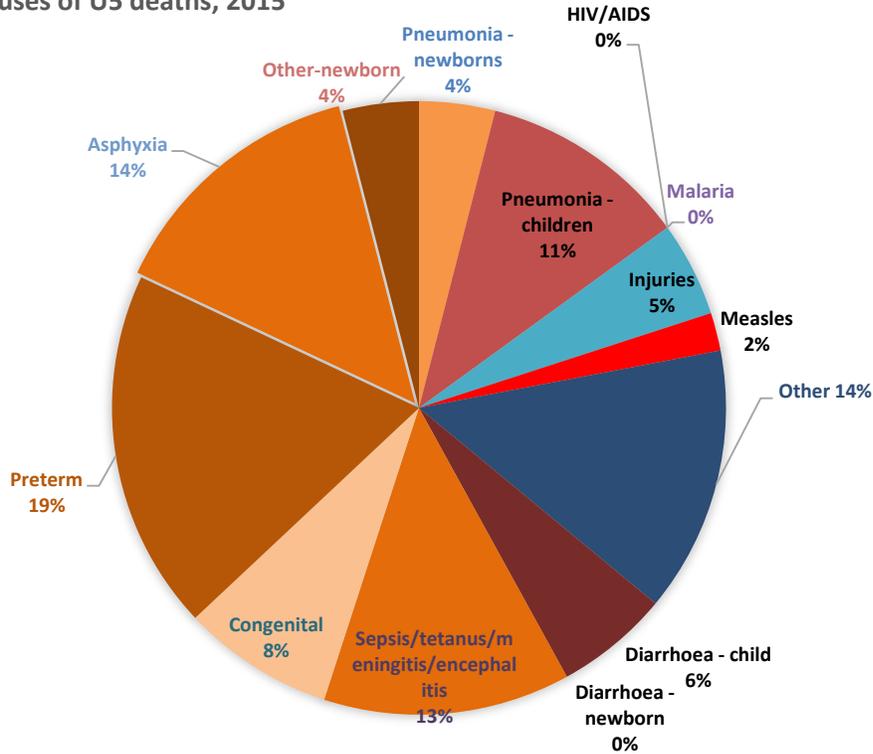
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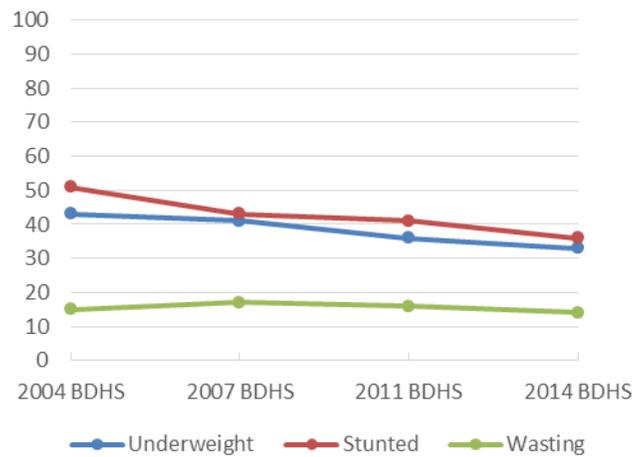
## Annexure I : DASHBOARD

### Causes of death, nutritional outcomes, coverage of selected interventions

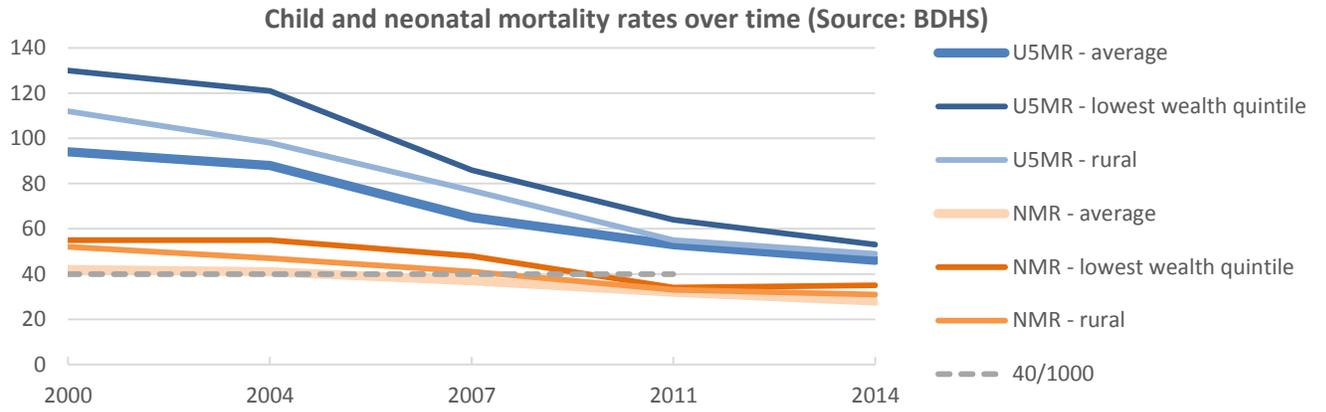
Causes of U5 deaths, 2015



Nutrition - % of children U5 with:



Source: A Decade of Tracking Progress for Maternal, Newborn and Child Survival - The 2015 Report



**ANNEXURE 2: Timeline of IMCI**

<b>Year</b>	<b>Policy event</b>	<b>Implementation milestone</b>
1998	Facilitators received training on IMCI in Nepa	
2000	First adaptation from generic module Preparation of module for training Formation of national working group	
2001	Training started for doctors	
2000 to 2002	Piloting in 3 upazilla for implementation	Piloting of IMCI
2003	Review of implementation . Decided to implement in 15 upazilla Translation of module in Bengali for paramedics	Review of implementation
2004	Orientation meeting with govt officials, academicians, professionals and policy makers to start pre service IMCI  Preparation of student hand book and teachers guide	
2006	Pre service IMCI started	Introduction of Pre-service IMCI
2002-2007	Multi country evaluation done (Bangladesh was one of them)  Evaluation done for implementation.  Scaling up and costing all detail	Multi country evaluation done
2009	Second IMCI adaptation  Pocket book revised	
2010-2011	Training for C- IMCI started  Pocket book for hospital management of sick child revised	
2014	3rd adaptation was done	
2014	Pocket book for hospital management of sick child revised	
2015	Pocket book revised	

### Annexure 3: Stakeholder mapping

Stakeholder	Specific actors	Role(s) in child health
Government	<ul style="list-style-type: none"> <li>- Line Director MNC&amp;AH and Director Primary Health Care, DGHS</li> <li>- Director MCH services Line Director MC&amp;RAH of DGFP</li> </ul>	<ul style="list-style-type: none"> <li>- Allocation of resources</li> <li>-Development of Project Implementation Plan (PIP)</li> <li>- Preparation of action plan</li> <li>-Implementation of Program and ensure service delivery and monitoring</li> <li>-Coordination with different implementing partners and DPs like UNICEF, WHO, Save the Children</li> </ul>
Civil society / NGOs	<ul style="list-style-type: none"> <li>- Civil society-i) Bangladesh Paediatric Association (BPA)</li> <li>ii) Bangladesh Neonatal Forum (BNF)</li> <li>iii) Perinatal Society</li> <li>- NGO:NHSDP (NGO Health Service Delivery Program), Save the children, PLAN, Concern Bangladesh</li> </ul>	<ul style="list-style-type: none"> <li>- Preparation of teaching &amp; training materials, curriculum, technical guideline, standard case management chart &amp; booklet</li> <li>- Implementation</li> <li>Monitoring &amp; Evaluation of the program</li> <li>Training of the staffs</li> <li>Advocacy</li> <li>-Support government in implementation of different Program in selected catchment area</li> </ul>
Bi- and multi-lateral agencies	<ul style="list-style-type: none"> <li>- WHO</li> <li>-UNICEF</li> <li>-USAID</li> <li>-World Bank</li> <li>-DFID</li> <li>- JAICA</li> <li>- Bill &amp; Melinda Gates Foundation</li> </ul>	<ul style="list-style-type: none"> <li>- Funding for training &amp; monitoring</li> <li>-Advocacy</li> <li>- Future plan</li> </ul>
Others	<ul style="list-style-type: none"> <li>- ICDDRB</li> </ul>	<ul style="list-style-type: none"> <li>- Training of the staffs</li> <li>- Monitoring &amp; evaluation of the program</li> <li>- Monitoring and Evaluation</li> <li>- Research</li> </ul>

**Annexure 4: Organogram Ministry of Health , Bangladesh**

