MOMENTUM
Country and Global Leadership

Desk Review Report

BARRIERS AND ENABLERS OF IMCI IMPLEMENTATION

BACKGROUND

Over the past 25 years, child mortality has decreased by more than half, yet globally millions of children still die each year before reaching their fifth birthday, mostly from preventable or treatable conditions.[1] In 1995, the Integrated Management of Childhood Illness (IMCI) strategy was introduced by the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) as an integrated whole-child approach that aims to reduce death, illness, and disability, and to promote improved growth and development among children under five years of age. IMCI includes three components: improving the case management skills of health care workers, improving overall health care systems, and improving family and community health practices.

IMCI is a standard of care for child health service delivery that aims to deliver interventions in an integrated manner. It has been implemented to various degrees in over 100 countries and is one of the cornerstones to addressing preventable child mortality. At the health facility level, IMCI is implemented as a case management algorithm whereby health care providers working in resource-poor settings can more easily diagnose, classify, and manage childhood illnesses. A simple set of questions guides health care workers to diagnose and triage symptoms, severity, and danger signs.[2] When implemented correctly, the guidelines have been shown to improve quality of care.[3] Implementing the IMCI strategy may reduce child mortality, and several studies have looked at whether mortality rates decrease with the implementation of IMCI.[4-6] A retrospective analysis in Egypt showed that IMCI implementation was associated with a doubling in the annual rate of under-five mortality reduction (3.3% vs. 6.3%).[4] In Pakistan, a randomized controlled trial (RCT) was conducted that did not show an impact of IMCI implementation on mortality in the first years of implementation, but demonstrated effect in the later years of implementation.[5] An RCT in India demonstrated impact of implementation of IMCI on decreasing both infant and neonatal mortality.[6]

Despite wide successes of IMCI in the last 25 years and the fact that most countries still consider IMCI an important and effective strategy to deliver lifesaving interventions, very few countries have achieved full expansion of IMCI implementation and coverage remains low.[7,8] A strategic review of the IMCI program conducted by the WHO, "Towards a Grand Convergence for Child Survival and Health: A strategic review of options for the future building on lessons learnt from IMNCI," reported that after 20 years, IMCI was suffering from waning interest and decreased funding, making it difficult to reach IMCI coverage at scale.[7] Unsurprisingly, implementation of IMCI has been the most challenging in countries with weak health systems,[9,10] and most successful in countries with a strong government and the political commitment to enable a systematic approach to planning and implementation. Health care workers often struggle to deliver IMCI services due to prioritization of a variety of vertical programs in child health programming. Examples of vertical programs include competing programs such as water/sanitation/hygiene (WASH), malaria, immunization, and nutrition, as well as pneumonia and diarrhea programs in some countries.

While IMCI has been widely accepted as a strategy, not enough attention has been placed on the complicated health system challenges that impede IMCI implementation, including complex factors such as human resources, supply chain, health information systems, governance, and financing. While these health system challenges are widespread across programs, IMCI programs specifically lack governance and leadership, making these issues more pronounced. Understanding the root causes of why IMCI is not functioning well—at national, district, and facility health systems levels—is important to maximize the great potential that IMCI has to further decrease newborn and child mortality and increase quality of life for children. The vast majority of reviews of the issues with IMCI implementation have focused on adherence to the IMCI protocol and challenges at the facility level. This desk review is unique in that it looks at IMCI implementation from a health systems perspective and explores challenges and facilitators at various levels of the health system, with a focus on governance and management.

METHODS

The focus of this desk review is to explore barriers and enablers of IMCI implementation, specifically looking at the health systems and health worker skills components of IMCI. Using a number of electronic databases (PubMed, Science Direct, Cochrane Library, Bulletin of WHO, and UNICEF Library) to search publications from 2015 onwards, the search criteria used was a combination of the following terms: IMCI AND Challenges in Implementation OR Barriers in Implementation OR Operationalization OR Enablers OR Facilitators, OR Drivers. References of articles identified through the search were often consulted as well, and a few important publications prior to 2015 were included. Furthermore, the following extensive IMCI review reports were also included in the review: IMCI evaluation reports (USAID ASSIST Project), WHO IMCI Strategic Review 2016, IMCI Global Survey Report 2017, and BMJ Supplement 2018 Survey Report and Supplement.

We used a health systems dynamic framework (Figure 1) developed by Pandya et al. to organize the information gleaned from our desk review of articles and reports as it succinctly lays out a framework detailing how various health system building blocks operate in the context of IMCI implementation.[11] Pandya et al. (2018) derived this framework specifically looking at IMCI implementation from WHO's more commonly known six health care system building blocks framework.[11,12] They used this framework to frame qualitative insights on health system factors affecting implementation of IMCI in South Africa. We will use this exact framework in this review to further expand on the collective experience of countries from the latest studies on the health system factors that both enable and challenge IMCI implementation.

FIGURE 1: HEALTH SYSTEMS DYNAMIC FRAMEWORK FOR IMCI. (DEVELOPED BY PANDYA ET. AL)
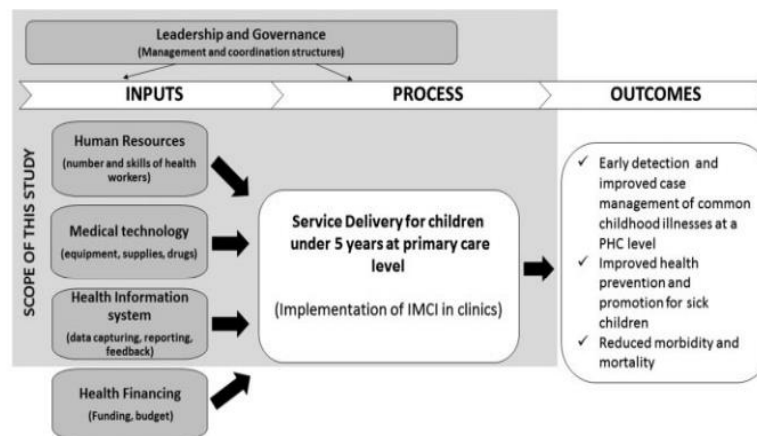
As interpreted by Pandya et al., the framework portrays IMCI package implementation at the facility level to be considered synonymous to "service delivery" as a process. Other building blocks act as inputs, which influence the process of service delivery, namely human resources, medical technology/supplies, health information systems, and health financing. Leadership and governance serves as an overarching block affecting both the inputs and process. If properly operationalized, these building blocks lead to improved implementation of IMCI and better child health outcomes. This review focuses on the inputs and process levels of the framework, excluding health financing.

RESULTS

Using the IMCI health systems dynamic framework outlined above, results are presented below by the health care systems building blocks, with common themes outlined from the review of articles and reports. While barriers are used to outline the sections under the various building blocks, enablers of implementation of IMCI are also discussed within those sections.

HUMAN RESOURCES

Training and maintaining sufficient numbers of competent health care workers in IMCI is critical to the success of implementing IMCI well. Program implementers globally have placed a lot of emphasis on training for IMCI, but history has shown that much more preparation must go into post-training human resource planning to ensure adequately skilled human resources are continuously available. During this review, several themes emerged around the barriers and enablers to human resources when it comes to IMCI implementation.

SHORTAGE OF TRAINED AND COMPETENT HEALTH CARE WORKERS

A global implementation survey of IMCI asked 95 participating countries about the major barriers to implementation of IMCI. The top answer from respondents holding positions at the regional/district level was staff turnover, with 84% of respondents giving that answer. The top answer from respondents at the facility level was staff retention, with 80% of respondents giving that answer.[10] Furthermore, our review of the literature found staff shortages as one of the most common problems thwarting progress with IMCI, particularly shortage of trained health care workers to ensure that at least one IMCI-trained health care worker is available at each health facility.[13-17] It is obvious that one of the most pressing issues with implementing IMCI well is maintaining the recommended number of trained staff.

Beyond shortage in IMCI trained staff, issues with trained health care worker IMCI adherence and competency also slow progress with IMCI. A study in Tanzania looking at adherence to IMCI guidelines among trained health care workers found a low level of adherence, with only 28.4% of relevant IMCI tasks actually being performed during the assessment.[13] Results of a complementary qualitative study found that the main reasons for weak adherence were a lack of capacity and a lack of motivation to follow the guidelines. [13] Another study looking at adherence in four countries (Namibia, Kenya, Tanzania, and Uganda) similarly found low adherence rates for correct usage of IMCI assessment guidelines,[18] though reasons are unknown as there was no qualitative piece to the study.

A recent analysis by the Sustaining Health Outcomes through the Private Sector (SHOPS) Plus project pooled IMCI adherence data obtained from the Service Provision Assessments of seven countries.[19] The analysis revealed, via observation, that there was universally low adherence by health care workers to IMCI guidelines in almost all of the areas health workers were meant to assess. Primary adherence gaps (< 10%) were in checking for danger signs, checking for edema, and checking for HIV infections. In addition, only 10–20% adherence was noted for checking dehydration and treating diarrhea correctly, checking vital signs,

weighing children, and checking pallor. Clearly, there is a need to further study why health worker adherence rates to IMCI guidelines are so low.

Despite the relatively common assumption that including IMCI training in pre-service training for nurses and other cadres will increase exposure and competency with IMCI practices, the reality is that very little evidence exists to bolster this idea.[15,16] A study done in Bangladesh compared two cadres of first-level government service providers with different levels of pre-service training, neither of which included IMCI.[20] After applying the intervention of both IMCI training and continued supervision to both groups, the quality of care provided by the lower cadre of service with less pre-service training (18 months) was the same as the quality of care provided by the cadre with more pre-service training (four years). This makes the case that good-quality IMCI training and supervision can lead to high-quality of care across cadres of providers with very different levels of pre-service training, suggesting that task shifting and high quality IMCI can be provided by service providers at lower levels of care.

POOR TRAINING QUALITY AND LACK OF REFRESHER TRAINING TO PROMOTE SKILLS RETENTION

Through our review of the literature, several studies pointed to the quality of IMCI training being an issue,[17] whereas other studies cited the inadequate time for practicing skills during the training.[7] Common contributors to low training quality are thought to be low numbers of skilled IMCI training facilitators and low numbers of trained IMCI supervisors.

IMCI refresher training is a promising solution to promote skills retention.[10,13,21] In a recent review survey of IMCI trained health care providers in Malawi, there was a statistically significant positive association between IMCI knowledge level and having received refresher training, thus indicating that a higher level of IMCI knowledge was correlated with having received recent IMCI refresher training.[22] This was particularly interesting as training alone, without refresher training, did not have a significantly significant association with IMCI knowledge.[22] Unfortunately, according to our review, refresher training is rarely done and therefore planning for it is critical to successful IMCI implementation.[10,13,16,17]

Training alone though, does not ensure adherence to IMCI. To remain competent, trained IMCI health workers need to regularly practice their skills. A common theme in this review was trained workers expressing that they were not allocated to an IMCI duty station after being trained in IMCI, and so they never had the opportunity to practice what they learned or by the time they were posted to an IMCI duty station they had forgotten many of the skills.[11]

POOR SUPERVISION AND SUPPORT FOR TRAINED WORKERS

In our review, minimal or complete lack of supervision post-training were among the weakest areas of IMCI implementation cited by most studies and reports.[11,15,23,24,] A global implementation survey of IMCI conducted in 2018 found that out of all the countries surveyed, only 15% (10/66 countries) reported that more than 75% of first-level health facilities had received at least one supervisory visit in the past six months.[10] This was on par with other studies that found very low rates of supervision of health care providers following IMCI training.[8,13]

As a result of lack of supervision and support, health care workers report losing motivation.[23] Health care workers often receive little or no recognition from their supervisors in day-to-day practices, as well as little feedback on the reports they regularly submit to the district administration.[14] Without motivation to submit good data reports, these often start to suffer which results in less robust data and therefore makes decision-making and use of data difficult.

A study conducted in the Philippines asked supervisors who were meant to do IMCI supervision why they did not conduct supervision.[14] They pointed to lack of time, lack of training on how to conduct supervision, and lack

of tools for IMCI-specific supervision. A study in Tanzania reported that since there is no budgetary allocation for IMCI supervision, IMCI follow-up was combined with often inconsistent follow-up for other programs.[17]

MEDICAL TECHNOLOGIES/SUPPLIES

Not having the proper IMCI drugs and equipment available impacts health care workers' abilities to adequately perform IMCI assessments and treat appropriately. Our review of the literature showed that temporary stock-outs and inadequacy of IMCI supplies is quite common. There was however mixed feedback as to whether temporary stock-outs are seen as one of the biggest barriers to successful implementation of IMCI.[11,22]

STOCK-OUTS OF IMCI DRUGS AND SUPPLIES ARE COMMON

Temporary stock-outs and inadequacy of IMCI supplies are widely reported. Stock-outs are common of even some of the most essential IMCI drugs, such as drugs to treat pneumonia, malaria, and diarrhea.22 Our review showed that stock-outs are also common of respiratory rate timers, growth monitoring equipment, deworming drugs, and vitamin A.11 In studies conducted in the Philippines and South Africa, respondents described situations where the procurement systems take so long and require so much documentation that when drugs are not available, the burden falls on caretakers to go and buy the drug elsewhere.14,16 They described how caretakers often lack the necessary funds to buy medicine, and children are thus untreated or unable to complete a full course of medication as recommended.

LACK OF SKILLS AND LEADERSHIP TO PROPERLY FORECAST AND PROCURE IMCI SUPPLIES

District health planning for IMCI often focuses on initial training, ignoring logistics for implementing the IMCI strategy, such as forecasting and procurement logistics.[10,17] Built into overall IMCI training plans should be ways to increase capacity of leaders at all levels to forecast and procure IMCI supplies. These procurement systems should be embedded in country systems to ensure sustainability.

HEALTH INFORMATION SYSTEMS

The overwhelming majority of papers and reports looking at health information systems included in this review pointed to widespread difficulty in capturing quality IMCI-relevant data. When quality data is lacking, it is extremely difficult to track progress and needs for IMCI implementation. During this review, we found that the following barriers to health information systems come up frequently.

UNAVAILABILITY OF STANDARDIZED IMCI DATA RECORDING FORMS

Many countries implementing IMCI are not using specific and standardized IMCI recording forms and registers.[14] Without consistent and quality data, it is therefore difficult to track IMCI progress and gaps. To collect better data on sick child consultations, countries should use a sick child register and recording form that have all IMCI data points included. In a South African study, the mandatory completion of IMCI forms at every sick child consultation promoted compliance with the IMCI clinical process since it required the health workers to document classifications and appropriate management.[11]

QUALITY OF CARE DATA NOT BEING RECORDED AND/OR UTILIZED FOR DECISION-MAKING

Quality of care is a good predictor of child mortality, and thus every program should aim to collect and use not only process data on IMCI, but also quality of care data. Quality of care data for IMCI looks beyond tracking number of cases of sick children to focus on areas such as adherence to proper case management, saturation of trained IMCI health care providers per facility, total number of supervisions completed with a supervision checklist, etc. Quality of care can be assessed through regular data audits and observation of IMCI case management by supervisors. At the very least, the WHO recommends that a health facility survey

providing detailed information on quality of care and health workers' adherence to IMCI be collected once every five years at the national level and once every two years at the provincial level.[3]

A study in South Africa determined that the failure to collect and meaningfully synthesize IMCI data, particularly related to the quality of its delivery, contributed to limited understanding of the strategy's successes or failures.[11] Improving data quality and use of that data should be an essential component of any IMCI care improvement activity.

IMCI DATA COLLECTED AT SERVICE DELIVERY AND SUBNATIONAL LEVELS NOT SHARED AND UTILIZED

A common theme in our review was that IMCI data collected at the facility and sub-district levels were not being used at district, provincial, and national levels for strategic planning, decision-making, and improving implementation.[10,21] Consistent periodic IMCI data review meetings conducted at the health center, district health offices, and even higher health office levels will help to ensure IMCI data is used at all levels of the health system for decision-making.

LEADERSHIP AND GOVERNANCE

Leadership and governance are strong determinants of whether IMCI implementation will be successful. The following themes emerged in our review of the literature around leadership and governance.

FRAGMENTED GOVERNANCE OF VERTICAL CHILD PROGRAMS THAT ARE PART OF IMCI

With attention so focused on specific child health areas (e.g. immunization, malaria, nutrition, etc.), IMCI and viewing child health holistically can often get lost in systems that focus on vertical program delivery.[7] One of the main reasons for IMCI introduction was as a strategy to minimize vertical delivery approaches to child health (Expanded Program on Immunization [EPI], HIV, malaria, etc.). However, vertical programs still dominate in under-resourced health systems, and often supervisors are visiting facilities to offer supervision for program specific components, while ignoring the IMCI aspects of those programs.[10] There is a great need to harmonize all child health programs so that implementation can be more efficient and effective.

LACK OF OWNERSHIP AND PLANNING AT PROVINCIAL AND DISTRICT HEALTH MANAGEMENT LEVELS

The WHO report, "Towards a Grand Convergence for Child Survival and Health: A strategic review of options for the future building on lessons learnt from IMNCI," showed that strong district-level management was a key factor for IMCI implementation success and significant improvements in quality of care.[7] Doherty et al. also recently outlined evidence looking at how the presence of a well-functioning district health system plays a critical role in establishing quality IMCI programs.[21] Much greater detail needs to be paid to operational details of IMCI at the district level.

Our review showed that while many countries have decentralized the management of health care services to the district level, district authorities have not always received the necessary training and authority to effectively prioritize, plan, implement, and monitor services.[11,16,21] This is particularly true for IMCI, which more often lacks the management and governance structures of vertical programs.

LACK OF IMCI STAKEHOLDER ROLES, RESPONSIBILITIES, AND COORDINATION

Confusion around IMCI roles and responsibilities is common, and coordination around the implementation of the IMCI strategy is severely lacking.[3,7,10,11] Key personnel at district and provincial levels are often unaware of their expected roles and responsibilities in the implementation process.[11,21] However, this role confusion

and lack of coordination seems to take place at all levels of the health system—global, national, provincial, district, and facility.

The WHO report, "Towards a Grand Convergence for Child Survival and Health: A strategic review of options for the future building on lessons learnt from IMNCI," detailed that fragmentation of support by global partners led to a loss of IMCI's built-in synergy, and insufficient focus on primary health care has resulted in shifting attention away from IMCI at times.[7] The pressure to achieve global child health and survival goals may have resulted in the many vertical health strategies that are seen, with programs thrust into districts without the necessary attention to management capacity, detailed planning, and adequate resources. This has likely led to district leaders not owning IMCI like they otherwise could have.

SERVICE DELIVERY

There are a number of reoccurring themes which emerged in this review as barriers seen in IMCI service delivery.

GUIDANCE ON OPERATIONALIZING IMCI IMPLEMENTATION IS SCARCE

For IMCI to be better implemented, it is widely thought that more policy guidance is needed on how to operationalize IMCI.[8,15,22S] A recent IMCI strategy developed in Zambia cited insufficient health systems to implement IMCI as one of the biggest weaknesses.[15] A study in Pakistan found that there was much uncertainty among district-level respondents in regards to their expected tasks for implementation of the IMCI strategy, and that emphasis had been too heavily placed on training while ignoring other aspects of implementing IMCI strategy.[8] Clearly more implementation guidance and policies would help to strengthen IMCI.

Tools are lacking for supporting operationalization of IMCI implementation at the facility level to increase provider proficiency and confidence. Several studies cited a common unavailability of IMCI wall charts and booklets, counseling cards, and recording and reporting tools.[14,17] Availability of IMCI facility tools was the most frequently cited category that interviewed health care workers in Mwanza, Tanzania thought could supportive more effective implementation.[17] Further research is warranted to more fully understand which tools are most supportive in increasing provider proficiency and confidence.

HEALTH CARE WORKERS LACKING TIME, CONFIDENCE, AND SUPPORT WITH IMCI ASSESSMENT

Time constraints and a high workload, as discussed in the above Human Resources section, also play a role in reducing adherence to IMCI guidelines.[13] Many health care workers feel that the IMCI protocol is too time consuming, resulting in long lines of patients and high patient waiting times.[13,14] To compensate, health care providers cited skipping activities such as nutritional status classification, immunization, feeding assessment, and counseling of caregivers. Some health care workers prefer to use their own knowledge to triage, as opposed to the time consuming IMCI algorithm.[11,13,14]

Our review found that health care workers feel demotivated because of overwhelming inadequacy in support systems for IMCI execution.[10] Health care workers struggle to keep up with the pace of the evolving health system, as there are many competing child health programs that make them unsure of what to prioritize.[23] Supportive supervision, as outlined above, was cited repeatedly throughout this review as being essential to helping these newly trained IMCI providers prioritize care and gain appreciation and ease with the IMCI triage protocol.[10,11,13]

LACK OF APPROPRIATE PHYSICAL SPACE FOR IMCI CONSULTATIONS

Service providers often do not have the adequate space to conduct IMCI consultations.[8,14] Several studies included in the review cited health care workers who expressed exhaustion and decreased motivation because of inadequate workspace.[10,23] A separate under-five clinic space is thought to promote IMCI implementation, as it gives the space for necessary observation and counseling areas (e.g., space for education and observation of first-dose treatment and rehydration corners with room for counseling on feeding).

DISCUSSION AND RECOMMENDATIONS

IMCI's success is likely to depend on the strength of key components of the health system building blocks, particularly in resource-constrained environments. Unfortunately, weak systems at all levels, from the health facility to the global level, have constrained IMCI implementation. To overcome these significant barriers, the following emerged in this literature review as the key recommendations for strengthening IMCI implementation.

HUMAN RESOURCES: CONCENTRATED FOCUS ON QUALITY REFRESHER TRAINING AND POST-TRAINING SUPPORTIVE SUPERVISION FOR HEALTH CARE WORKERS

While the benefits of training health care workers in IMCI have been documented, it is quite evident that access to quality initial training alone does not ensure health worker competency and adherence to IMCI. The majority of trained health care workers need post-training support and supervision to be successful. When conducted consistently and properly, supportive supervision is thought to reduce work-related stress, promote skills retention, and help identify underperforming health care workers who need additional support and training.[10,13] Resources should be devoted to ensuring IMCI supervision structures are in place, and that there are tools and resources for IMCI supervisors.

Our review showed that health care workers often did not feel like they had opportunities to practice their new IMCI skills.[13,24] To ensure trained health care workers remain competent, managers must also make sure they are allocated across duty stations to be able to have opportunities to practice skills and be mentored by other trained, more experienced IMCI providers in the same facility. In addition, refresher training is correlated with an increase in IMCI knowledge and should be carried out as well.[10,22]

MEDICAL TECHNOLOGIES/SUPPLIES: STRENGTHEN CAPACITY OF HEALTH OFFICIALS TO PROPERLY FORECAST AND PROCURE IMCI SUPPLIES

There is wide agreement that health officials often lack capacity to implement IMCI programs.[11,21] Of utmost importance is for health officials to better understand forecasting for medicine and supplies and supply chain management. Critical to successful supply chain management for IMCI is ensuring that IMCI drugs and equipment are embedded into national drug procurement processes.[10] Doing this will help to ensure that stock-outs are kept at a minimum and that the drugs and equipment needed for IMCI are available and prioritized in budgeting.

Beyond stock-outs, the ability to properly educate patients and caretakers on medication administration is often compromised by the fact that medications are usually dispensed only from a main pharmacy.[11] This makes it difficult for the health care provider to educate and oversee the patient getting their first dose of the necessary medication.[22,24] Countries and district health teams should examine drug dispensing protocols to make sure they are not compromising patient education. Creative solutions are needed, such as pharmacists counseling caregivers on first dose administration.

HEALTH INFORMATION SYSTEMS: INTEGRATE KEY IMCI DATA POINTS INTO ROUTINE CHILD HEALTH INFORMATION SYSTEMS AND STRENGTHEN USE OF DATA

Use of standardized sick child recording forms and registers, with mandatory completion of the information at every sick child consultation, is thought to increase adherence to IMCI and also increase the quality and quantity of IMCI data for decision-making.[7,13,16] It is essential that countries use sick child recording forms or registers that have all IMCI data points included. Using a standardized tool will also make data auditing processes easier, allowing for facility in-charges and supervisors to more easily review, correct, and track data. Such was the case in a South African study, which showed that the use of standardized forms led to a more thorough auditing processes, which in turn led to improvements in health care workers' adherence to IMCI.[11]

Ensuring that data is available will enable quality improvement processes to be established. Once quality IMCI data is available, consistent IMCI data review meetings conducted at the health center, district health offices, and higher health office levels will help to ensure opportunities for IMCI data to be used at all levels of the health system for decision-making.

LEADERSHIP AND GOVERNANCE: STRENGTHEN CAPACITY OF DISTRICT AND MUNICIPAL HEALTH OFFICIALS TO OPERATIONALIZE IMCI IMPLEMENTATION

IMCI implementation works best with a program structure that has strong leadership and governance, with staff specifically dedicated to IMCI program implementation at national, provincial, and district levels.[11] A key recommendation from the IMCI Strategic Review Report and other papers included in this review was for countries to appoint an IMCI point person at district and national health system levels who focuses solely on coordination of IMCI efforts and integrating IMCI into health planning.[18,21]

District health management teams are critical for implementation, and strong district management can drive significant improvements in quality of care.[7] A common recommendation coming up in this review was for the necessity of IMCI management training for district leaders, as well as planning for locally available IMCI facilitators and extending IMCI clinical training to senior managers.[10,11,21,25] Without proper training and authority, district leaders may wane in their motivation and not feel empowered to guide implementation. Management training for district leaders should focus on planning, implementation, supervision, and monitoring of IMCI. Ideally, management training should also include training in supervision tools to make tracking and decision making easier. While the role of district health management teams is crucial to successful implementation of IMCI, it should also be noted that effective IMCI planning can not happen without appropriate policy direction, strategic planning, and funding mechanisms at provincial and national levels.

Successful integration of different child health services and programs remains elusive, but more research is warranted to better understand how countries are integrating services and where successes in integration could lie. Governance structures are often fragmented since management and supervision often occurs through vertical programs, and frequently these supervisors are not trained or well-versed in IMCI.[11]

SERVICE DELIVERY: STRENGTHEN GUIDANCE FOR LEADERS AND FACILITIES ON OPERATIONALIZING IMCI IMPLEMENTATION

Implementation guidance, including policies and clinical implementation guidance, is needed to help leaders and facilities operationalize IMCI on the ground. This should be evidence-based guidance that outlines the specifics of implementation (e.g., guidance on what optimal refresher training includes, when refresher training should ideally be offered, who should be in charge of IMCI supervision, what supervision tools should be used, and the suggested frequency of supervision visits). Further implementation research studies are needed to help develop this guidance.

CONCLUSION

While there has been a near universal adoption of IMCI for target countries, countries are rarely able to scale up full implementation of IMCI.[7] To keep IMCI relevant after nearly three decades since inception, some key recommendations came out of this review that examined some of the barriers and enablers to the implementation of IMCI service provision and the health systems that surround it.

It is critical that donors, stakeholders, and ministry officials align and integrate child health strategies, supervision, and documentation in order to avoid health care workers having to constantly adapt and shift between various vertical programs. IMCI needs the same management and supervision commitment that is often tied to vertical programs. This commitment can be ignited by devoting more focus and funding to capacity building and implementation guidance for health officials, particularly at the district level. IMCI data monitoring points must be included into routine sick child health data collection systems in order to ensure that the data is available to guide program implementation. Lastly, it is critical that more resources go into post-training support (supervision, refresher training, etc.) for health care workers newly trained in IMCI.

To ensure that the IMCI program stays relevant, further implementation research is needed to understand what works and what does not at the implementation level. Embedded implementation research and district learning labs would enable progress in better understanding how to implement IMCI well and enable local implementation solutions to emerge.[11] Further research is warranted to more fully understand which tools are most supportive in increasing provider proficiency and confidence and how to implement and use these tools. IMCI inclusion into pre-service training is also a topic that deserves more research, as strengthening IMCI pre-service training has the potential to be a low-cost intervention that could result in increasing health provider awareness and confidence in IMCI. More research is also needed to look at ways to most optimally integrate child health programming and governance. Finally, further studies are needed to look at why health worker adherence to IMCI protocols is so universally low.[19] Study questions should include how to best support both health care workers and supervisors who may lack confidence or believe they lack the time to properly implement IMCI. Despite the multiple barriers to IMCI implementation presented in this review, full implementation of IMCI is worth the efforts as it would help ensure a shift to more holistic, integrated programming for child health globally, thereby potentially further reducing childhood death, illness, and disability.

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