Implementation of Integrated Management of Childhood Illness in Tanzania: Success and Challenges

Hildegalda Prosper, Janet Macha, Josephine Borghi

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This paper is an output of the Consortium for Research on Equitable Health Systems. The authors are based at the Ifakara Health Institute (IHI), Tanzania.

Ifakara Health Institute
Plot 463 Kiko Avenue
Mikocheni
PO Box 78373
Dar es Salaam
Tanzania

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For more information about CREHS please contact:

Consortium for Research on Equitable Health Systems (CREHS)
London School of Hygiene and Tropical Medicine,
Keppel Street,
London, UK
WC1E 7HT

Email: nicola.lord@lshtm.ac.uk
Website: www.crehs.lshtm.ac.uk

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AIDS	Acquired Immunodeficiency Syndrome
ADDO	Accredited Drug Dispensing Outlets
ALU	Artmether Lumefantrine
AMO	Assistant Medical Officer
ARI	Acute Respiratory Infections
CA	Clinical Assistant
CCHP	Comprehensive Council Health Plan
CDD	Control of Diarrhoeal Diseases
CEEMI	Centre for Enhancement of Effective Malaria Intervention
CEDHA	Centre for Educational Development in Health Arusha
CHF	Community Health Fund
CHMT	Council Health Management Team
CHSB	Council Health Service Board
c-IMCI	Community Integrated Management of Childhood Illnesses
CO	Clinical Officer
COIC	Clinical Officer in Charge
CSSC	Christian Social Service Commission
CREHS	Consortium for Research on Equitable Health Systems
DANIDA	Danish International Development Association
DAS	District Administrative Secretary
DC	District Council
DCCO	District Cold Chain Coordinator
DCEC	District Continuing Education Officer
DED	District Executive Director
DHEO	District Health Education Officer
DHS	District Health Survey
DLT	District Laboratory Technician
DTLC	District TB and Leprosy Coordinator
DMIFP	District Malaria IMCI Focal Person
DMO	District Medical Officer
DNO	District Nursing Officer
DOTs	Directly Observed Treatment
DPS	Department of Preventive Services
DTC	Diarrhoea Treatment Corner
ELCT	Evangelical Lutheran Church of Tanzania
EPI	Expanded Programme on Immunization
ETAT	Emergency Triage Assessment and Treatment
FBO	Faith-based organization
f-IMCI	facility IMCI

GTZ	Gessellschaft für Technische Zusammenarbeit (German Technical Support)
HC	Health centre
HF	Health facility
HFC	Health Facility Committee
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSR	Health sector reform
HW	Health worker
IHI	Ifakara Health Institute
IHRDC	Ifakara Health Research and Development Centre
IMCI	Integrated Management of Childhood Illness
IPD	Inpatient Department
KEMRI	Kenya Medical Research Institute
MA	Medical Attendant
MCE	Multi-Country Evaluation (of IMCI)
MCH	Maternal and child health
MCHA	Maternal and Child Health Attendant
MDGs	Millennium Development Goals
MEMS	Mission for Essential Medical Supplies
MFP	Malaria Focal Person
MO	Medical Officer
MoH	Ministry of Health
MoHSW	Ministry of Health and Social Welfare
MSD	Medical Stores Department
MTEF	Medium Term Expenditure Framework
NBS	National Bureau of Statistics
NETTS	National Expansion of TEHIP Tools and Strategies
NHIF	National Health Insurance Fund
NM	Nursing Midwife
NMCP	National Malaria Control Programme
NO	Nursing Officer
NORAD	Norwegian Agency for International Development
OJT	On-the-job training
OPD	Outpatient Department
ORS	Oral rehydration salts
PAR	Parastatal
PHNB	Public Health Nurse B
PM	Prime Minister
PMO	Prime Minister's Office
RALG	Regional Autonomy and Local Governance

RAS	Regional Administrative Secretary
RC	Regional Commissioner
RCH	Reproductive and child health
RHMT	Regional Health Management Team
RMO	Regional Medical Officer
RS	Regional Secretariat
SES	Socio-economic status
SWAP	Sector-wide approach
TB	Tuberculosis
TEHIP	Tanzania Essential Health Intervention Programme
TN	Trained nurse (cadre)
ToTs	Trainer of Trainers
URT	United Republic of Tanzania
UNICEF	United Nations International Education Children Fund
USAID	United States Agency for International Development
VA	Voluntary agency
WHO	World Health Organization

Tanzania is one of the countries implementing the Integrated Management of Childhood Illness (IMCI). IMCI was developed by the World Health Organisation (WHO) and the United Nations International Children's Fund (UNICEF) to improve the management of child health at the primary care level in order to reduce the number of children dying in low and middle income countries. In health facilities, health workers are trained for 11 days in a structured IMCI case management course. Ideally IMCI case management training is intended for official "prescribers", i.e. clinicians. In the Tanzanian context these include the cadres from clinical assistants (CAs), clinical officers (COs), assistant medical officers (AMOs), medical officers (MOs), and medical specialists. IMCI has a second component which advocates the strengthening of the health system to facilitate practice of the skills acquired by health workers. Since most childhood illnesses and deaths in poor countries occur at home, the strategy has a third component which calls for improvement of household and community practices related to child health.

Tanzania played a large role in endorsing IMCI as it was included in the WHO coordinated Multi-Country Evaluation (MCE) of IMCI which involved studies of the effectiveness, cost, and impact of the IMCI strategy in Bangladesh, Brazil, Peru, Tanzania, and Uganda. Results from intervention sites in Tanzania demonstrated that IMCI improved the quality of care provided by health workers, lowered under-five mortality by 13%, and is cost-effective. IMCI has been named a national child health policy since 1995. However, since national roll out in 1998, research has started to point out implementation challenges [1] but no study to our best knowledge has investigated IMCI implementation using a policy analysis approach.

Methods

In this study, a policy analysis case study approach was employed to examine the implementation of IMCI as experienced by key actors at different levels of the health system. Two districts in North-Western Tanzania, Bunda and Tarime, in Mara region, were picked to examine the issues around introduction, planning and implementation by district health managers and at facility levels. As an initial step, both published and unpublished documents were reviewed to examine the available evidence regarding IMCI implementation. This was followed by in-depth interviews with stakeholders at the national level (6), the regional level (6); with the Council Health Management Team (CHMT) members (18); health workers (60); and health facility committee members (18). These were supplemented with informal interviews with stakeholders at all levels (above) and observations carried out in six facilities.

Results

In 2006, around 44% of Bunda's health workers are trained in IMCI case management as a result of five training sessions since 2002. All the CHMT members were trained. Bunda also carried out a training of facilitators. In Tarime, only 5% of health workers are trained, from only one training session which happened in 2003. Various factors seem to favour Bunda compared to Tarime and explain the relatively higher training coverage. Bunda had earlier access to the basket fund (2001) compared to Tarime (2003), early sensitization of key stakeholders, and training of the CHMT, had local facilitators, strong external ties and support which served to prioritize IMCI. Tarime had a much lower health budget per capita (almost half that of Bunda), and was generally worse off in terms of health indicators, despite having a relatively lower level of poverty. Tarime also suffered from a lack of continuity in terms of District Medical Officer (DMO) leadership and none of the CHMT members are currently trained. Tarime was further inflicted by ethnic divisions and conflict which contributed to a climate of insecurity.

However, although Bunda fairs better than Tarime in terms of training coverage, the overall coverage levels still remain below the WHO target of 60%. Alternative methods of training such as on-the job training and pre-service training that were introduced to enable faster expansion of training coverage are not functioning properly, due mainly to insufficient guidance from the national level, poor motivation of health workers, a lack of incentives for peer learning and insufficient job aids.

The high cost of IMCI case management training was an issue in both districts. Training one health worker in IMCI case management would cost about US$ 1000 per capita, which was seen as straining the limited basket fund. Tight rules attached to the use of district funds, with budget ceilings for training set by the central level, also means that it is difficult for districts to finance more than one session of case management training per year. The long duration of training, combined with its residential nature and a high facilitator to participant ratio also push up costs. Failure to achieve high coverage of case management training, and the slow process of roll out in districts, in turn affects district managers' perceptions of the sustainability of the strategy and can affect motivation. Even in Bunda, there are already concerns about the future of IMCI, especially in the face of competing health priorities. Staff attrition in Bunda leaves behind an additional burden of training newly hired health workers.

Overall, there was not much difference in terms of health workers' adherence to the IMCI protocol between the districts, although Bunda had a supervisory check-list and seemed overall to perform better than Tarime. Poor compliance to IMCI was found to be related to a variety of health system weaknesses, including the short supply of IMCI job aids and drugs, the length of the protocol, staff shortage and rotation in health facilities, lack of motivation, insufficient/lack of supervision (both follow-up and routine) and the difficulty of monitoring IMCI. One of the observed implications of the health worker shortage was a reduction in consultation time for under-fives, limiting capacity to follow the IMCI protocol. The nature of the strategy makes it difficult to monitor implementation, which appears to demotivate health workers and managers. Poor transparency surrounding the process of selecting health workers to attend IMCI training brings not only tensions between trained and untrained health workers, but also discourages teaming up/cooperation which is otherwise important.

IMCI training entails a change in health worker behaviour including prescription and dispensing practices and referral care. Due to the lack of implementation of c-IMCI at the time of the study, health workers were subject to community pressures in terms of drug prescription and resistance to referral, limiting compliance, partly because they live in the same community. Further, health workers sometimes felt disempowered by referral guidelines, often feeling they could manage cases themselves. In both districts, compliance with exemptions, or the provision of free care to under-fives, was found to be limited, with the existence of formal charges in some facilities.

Decentralization by devolution aimed to enable districts leaders to prioritize local needs and have power over what they decide is most important in the local context in all matters including health. However, in practice the central level seems to have retained some control when it comes to implementation of policies like IMCI. Restrictive guidelines on how district funds should be used were named as an important barrier to achieving higher coverage of IMCI case management training. Decentralization has also affected the relations between regions and districts, with the former seeing the latter as empowered and thus feeling less capable of enforcing implementation of IMCI and other health interventions. The tensions are partly related to material circumstances where regions feel like they cannot effectively supervise districts, as they have relatively less funds and have no clear line of resources

compared to districts. Planning for IMCI is also limited by competing priorities from expansion of IMCI itself and demand from other new interventions like HIV/AIDS.

IMCI suffers from poor visibility and challenges of monitoring impact compared to vertical programmes, reducing the potential for attracting donor investment. Although Tanzania succeeded in creating an IMCI unit and national coordinator, there appears to be a reduction in funding available for IMCI nationally. Unlike vertical programmes, IMCI does not have its own earmarked funds and reporting systems. It is slow to achieve outcomes due to financial constraints, and due to a reliance on a well-functioning health system which may not be adequate. Together, these factors undermine the role of IMCI as an umbrella to vertical child health interventions that are often much more heavily funded and politically powerful, undermining the objective of true integration that was the original rationale behind IMCI.

From the study we make recommendations on specific actions to support wider implementation of IMCI in the country.

Recommendations

Training

- Due to a serious shortage of health workers in Tanzania, IMCI should be opened up more to increase training coverage of non-prescribers in order to expand the number of health workers with IMCI skills.
- Promote greater transparency of methods of selecting candidates for case management training. This might reduce tensions between trained and untrained personnel and encourage cooperation in facilities.
- Map the current number and distribution of IMCI facilitators to make sure that they are effectively utilized and equitably distributed.
- Explore the potential for reducing the facilitator to participant ratio during the training as a mechanism for reducing cost.
- Explore the potential for on-site training, as this would reduce the costs of training.
- Find ways to improve pre-service IMCI as a complement to in-service training. Better pre-service training in IMCI may allow the duration of in-service training to reduce.
- Develop a reliable system for identifying those who have received IMCI pre-service training, to reduce the number of health workers who need in-service training.
- Harmonize pre-service training methods across institutions and offer a more complete pre-service training package inclusive of counselling as for in-service training.
- Providing incentives for knowledge sharing at the facilities can improve on-the-job training for IMCI and other interventions.

Resource management

- Improve availability of IMCI drugs and job aids for improving on-the-job training.
- Review guidelines for use of funds in districts and encourage flexibility on spending in favour of priority health interventions like IMCI.
- Arrangement of tasks and space use has the potential to improve IMCI implementation by trained health workers.

Supervision

- Provide supervision training to district stakeholders to facilitate their role as supervisors. Seek consensus on checklist for inclusion of IMCI in routine supervision to facilitate the process.

General implementation issues

- IMCI sustainability is a big issue in a context of increasing competition for resources. If IMCI is to remain the main strategy for child health, then actors' long-term commitment and interest in IMCI must be revived at all levels.
- Document the extent of practice of informal providers, and initiate a national strategy for dealing with this.
- Find effective ways of encouraging non-government facilities to spend on and practice IMCI.
- The health system needs to consider new means of documenting and monitoring performance of IMCI through objectively verifiable indicators by actors at every level. This can potentially motivate health workers to practice the skills and managers to (keep) budgeting for IMCI and to more closely monitor progress.
- Sharing knowledge on best practise is important and should be encouraged.
- Due to differences in terms of coverage, commitment to IMCI and funding levels between districts, conscious action needs to be taken to initiate and/or improve IMCI in the districts lagging behind.
- Involvement of district stakeholders at early stages of policy introduction is important to promote legitimacy of policies and ownership.
- The status of IMCI vs other health programmes at district and national levels needs to be enhanced. Key managers need to be equipped with better resources to monitor overall implementation. Soliciting additional funds for IMCI activities from within and outside districts can also be helpful.
- Strengthening of the health system remains a pillar for success of IMCI. Without required drugs, effective supervision, sufficient numbers of health workers with appropriate skill-mix and geographical distribution, it will be difficult to effectively deliver IMCI.
- Communities need to participate to enable them to know what to expect from facilities and their role in completing IMCI. This includes sharing specific information with them in relation to IMCI practice (e.g. rational use of drugs, importance of referral and follow-up visits), to improve caretaker's adherence to facility IMCI.

PART ONE: INTRODUCTION

Background

More than 11 million children die in low and middle income countries before their fifth birthday: 7 in every 10 of those deaths result from diarrhoea, pneumonia, measles, malaria or malnutrition; conditions which often occur in combination [2].

In response to this situation, the World Health Organization (WHO) and the United Nations International Children's Fund (UNICEF) in the 1990s developed the Integrated Management of Childhood Illness (IMCI) after a body of research showed that programmes focusing on specific diseases had limited impact on child morbidity and mortality. An integrated approach, which combines both curative and preventive methods, was therefore developed. IMCI requires improvements in: the skills of health care providers in managing childhood illnesses by providing them with locally adapted IMCI guidelines and promoting their use; the health system required for effective management of childhood illness; and household and community practices related to child health. IMCI, as a syndromic approach, was considered a rational strategy for low and middle income countries like Tanzania, where budgets for health services are limited and thus diagnostic supports such as radiology and laboratory equipment are scarce [3].

At the global level, IMCI started to be implemented in 1995 when a small number of countries expressed interest in 'taking up' the strategy. By December 2001, about 40 countries were at different stages of IMCI implementation [4].

Tanzania played an active role in developing the IMCI strategy. It was also one of the countries which took part in a Multi-Country Evaluation (MCE) study. Results from the MCE suggested that, if properly implemented, IMCI improves the quality of care, is cost-effective, and reduces morbidity and mortality rates for children under-five years of age. After dissemination of the MCE findings, IMCI was included in the list of Essential Health Interventions in Tanzania to be implemented throughout the country.

Rationale for Approach

Following the initial MCE study in Tanzania, there have been a few studies exploring IMCI implementation experiences (e.g.[1, 5]). However, these focused on implementation at the health facility level, using case reviews, observation and in-depth interviews with health workers in one case [1], and using a quantitative survey of the availability of drugs and equipment, and health worker practice in facilities in the others [5, 6]. However, there are no known studies which have examined the roles and experiences of the actors involved in the implementation process beyond the health facility level, from the district, regional and national levels. Little is known about who the key actors are in the implementation chain, their experiences of the policy and the impact of these experiences on implementation. From a policy analysis perspective, understanding actors' motives and experiences is central to explaining how policies are implemented [7].

The main aim of the study was, therefore, to: identify factors explaining the pattern of IMCI implementation in Tanzania by means of a case study approach, using data collected at national, regional, district and facility levels in two districts. The study will contribute to the

design of strategies that recognise the importance of the policy process and the role of key actors in ensuring effective policy implementation.

This report begins by outlining the background to IMCI at the global level and then in Tanzania. It then describes the study methods and follows with a description of the implementation process in two case study districts, and a further section seeking to explain the implementation patterns observed. Finally, a discussion of the results and recommendations are provided.

Background to IMCI at the Global Level

In order to support IMCI implementation in countries, a series of guidelines were developed. We shall review the IMCI guidelines for practice, the adaptation guide (to ensure guidelines are adapted to local conditions), and the planning guide to support the implementation process and roll out in countries.

IMCI guidelines were established by WHO (1997, 1999b) for treating the five childhood illnesses in the majority of developing countries [9, 11]. The guidelines recommend an 11-day case management training course to inform frontline health workers on "what needs to be done". The case management guidelines are built around a series of "simple questions" to be asked by the health worker to a child's caretaker to assess easily recognizable signs and symptoms. Training of health workers is based on a set of adapted algorithms involving assessment of signs and symptoms, classification of the illness on the basis of treatment needed, and provision of appropriate treatment and counselling to the child's caregiver [8]. After training, providers are given a chart booklet to guide practice in facilities, and a "mother's card" which shows the recommendation for feeding children.

WHO and UNICEF provide an IMCI Planning Guide [9] to help countries 'systematically' proceed according to three stages: introduction; early implementation; and expansion. In each stage, the guide recommends specific activities that should be undertaken based on experiences from studies in a limited number of countries. According to the guide, the central level should develop policies and guidelines and set minimum criteria for quality. The districts, in contrast, are expected to take a leading role in planning and implementation. It is also essential to build consensus between different programmes and institutions for maximum cooperation. IMCI indicators for monitoring and evaluation [10] were also provided to enable countries to know where they are in implementation of the strategy. The planning guide indicates that at the national level, the IMCI structure should include an IMCI working group, an IMCI working group coordinator and District Malaria & IMCI focal persons (DMIFP[1]). The working groups consists of representatives from programmes like acute respiratory infections (ARI), control of diarrhoeal diseases (CDD), maternal and child health (MCH), malaria control, nutrition, and representatives from academic and non-governmental organisations.

The planning guide recommends a number of improvements to the health system for effective implementation of IMCI. These include: ensuring the availability of pre-referral drugs at lower level health facilities and improving the drug procurement system; introduction of IMCI classifications into health information systems; introduction of IMCI into routine supervision by, for example, revising checklists to include aspects of IMCI case management; improving referral pathways by upgrading lower level facilities, improving care at referral facilities and

[1] The MoH introduced the post of DMIFP in 2004 with the aim of strengthening malaria and IMCI activities in the districts. The DMIFP are people drawn from within districts. They are trained for 12 weeks in areas such as: basic epidemiology and statistics; malaria and IMCI implementation; health information; management and research; managerial skills, planning, monitoring and evaluation; information, education and communication/behaviour change communication.

improving care-taker compliance to referral advice, and provision of guidelines for when referral is not possible; and documentation of early IMCI implementation experiences.

Countries are required to adapt the generic IMCI guidelines and training materials to specific local conditions through tool translation and modification of pictures and language following WHO's Adaptation Guide. The Adaptation Guide urges countries to consider other local factors, such as epidemiology and disease patterns, drugs, drug resistance history and culture, when deciding how to implement IMCI [11].

IMCI Implementation in Tanzania

Having reviewed the global structures that were developed to support the introduction of IMCI in countries, we will now consider how the policy was introduced in Tanzania. We begin by outlining the national health system context in which IMCI implementation took place. We then outline the chronology of events associated with IMCI introduction in the country. Finally, we summarize what is currently known about the impact of IMCI in Tanzania, based largely on the findings of the MCE study, and we identify the main knowledge gaps in respect to the implementation process.

Policy Implementation Context

In Tanzania, IMCI was implemented in the context of health sector reform. Therefore, in order to fully understand the process of IMCI implementation, it is important to first understand the health system configuration within which implementation took place. Decentralization aimed to let districts take the centre stage in resource allocation decisions in line with local health problems and priorities. This section provides an overview of the health system structure and financing systems that resulted from the decentralisation process.

Health System Structure

The structure of the health system in Tanzania follows the administrative structure of the country and is split into six levels: zones, regions, four to five districts per region, divisions, wards, and villages. Referral (tertiary) hospitals operate at the zonal level (one per zone); secondary hospitals at the regional level, district hospitals at the district level, health centres at the division level, dispensaries at the ward level and village health posts at the village level. Each level is reviewed in turn along with key stakeholders (Table 1).

National Level

As a result of local government reform and devolution, two national bodies have responsibility for the health sector: the Ministry of Health (now Ministry of Health and Social Welfare (MOHSW)) and the Prime Minister's Office for Regional Autonomy and Local Governance (PMO-RALG). The MOHSW defines policies, develops appropriate guidelines and also leads on health sector reform (HSR) within the HSR Secretariat. The PMO-RALG has responsibility for implementing health (and all other) policies and services at the district level and below.

The Medical Stores Department (MSD) is a department within the MOHSW which is responsible for the procurement of all drugs, medical supplies and equipment for the public health sector. The MSD has eight zonal stores and a headquarters and central warehouse in the capital. Previously, the procurement system involved each primary level facility receiving a monthly kit of drugs and medical supplies with standardized contents (the 'push' system). However, this often resulted in drug and supply shortages. Since 2003, the system has been gradually changed to the indent (or 'pull') system, with each primary level facility ordering according to need. Hospitals have always been on the indent system. Faith-based

organisation (FBO) hospitals can buy from the MSD, the Mission for Essential Medical Supplies (MEMS) and from private suppliers.

Table 1 Overview of the Health System Structure in Tanzania

Administrative levels	**Political/ administrative structure**	**Health system structure**		
	Key stakeholder	Service structure	Key stakeholder	Funding sources
National level	PM, ministers	Ministry of health Specialized/ consultant health services	PS, Medical superintended /Director	General taxation; Donor funds
Regional/Zonal level	RC, RAS	Regional hospital	RMO, RHMT	Funds through the RAS
District level	DC, DAS, DED	District Hospital	DMO, CHMT	CHF Basket fund User fees Block grant
Divisional level		Health centre	Asst. med. off./ clinical officer	
Ward level	Ward secretary	Dispensary	CO	
Village level	Village secretary	Village health post	Village health	
Household level	Head of the household	Family	Head of the household	Out-of-pocket payments; CHF contributions; NHIF contributions

Notes: PM, Prime Minister; RC, Regional Commissioner; RAS, Regional Administrative Secretary; RMO, Regional Medical Officer; RHMT, Regional Health Management Team; DC, District Commissioner; DAS, Districts Administrative Secretary; DED, District Executive Director; DMO, District Medical Officer; CHMT, Council Health Management Team (previously called District Health Management Team); CHF, Community Health Fund; NHIF, National Health Insurance Fund; CO, Clinical Officer.

Regional/ Zonal Level

At the regional level, the Regional Health Management Team (RHMT) is responsible for adapting national policies to regional contexts. Their role is also to provide supervision and support to the districts, particularly to the Council Health Management Team (CHMT), to ensure all essential interventions are budgeted for and supervision is happening at the facility level. A typical RHMT is made up of six to seven individuals, including a Regional Medical Officer (RMO), who is the head of the team, a Regional Nursing Officer and a Regional Health Secretariat. However, whilst the RMO is officially recognised by PMO-RALG, the RHMT is not. Consequently, the RAS funds the office costs of the RMO, but not the operational costs of RHMT activities. This means that the RHMTs have no funds for fuel and per diems to undertake visits to the districts, unless they are able to use vertical programme funds [12]. Prior to the reforms, RHMT operations were financed from the regional hospital budget.

District Level

The decentralization structures at district level include the district council (DC) as the highest political body in the district, composed of elected officials. The District Executive Director (DED) is its executive secretary. The Council Health Management Team (CHMT) has responsibility for public health. It has a decentralized budget and is responsible for paying salaries of health personnel at the district level. The CHMT is comprised essentially of medical staff. It is headed by the District Medical Officer (DMO). CHMT members receive training in planning and budgeting, Health Management Information Systems (HMIS), supervision and council health management.

The Comprehensive Council Health Plans (CCHPs) are prepared annually by the CHMT to plan and budget for local health services for all health providers regardless of ownership. Health problems requiring funding are sent by the In Charges of health facilities and Health Facility Committee (HFC) members to the CHMT, who rank them in order of priority for inclusion in the Comprehensive Council Health Plan (CCHP). Each health facility has its own HFC. Districts are supposed to include the essential national interventions in their plans and budgets.

Facility and Village Levels

Ward and village health committees discuss annual plans and budgets, problems and ways to solve them, as well as complaints of community members about the health facility and community education on health. HFCs are responsible for governing all health facilities below the hospital level. HFC members' major task is mobilizing people to join the community health fund (CHF) and pay the premium in Bunda. Other important tasks include mobilizing funds for construction or repair of facility buildings, receiving complaints from community members and submitting them to the HFC.

Financial Flows to and Within the Health System

Most of the large development assistance partners working in the health sector channel part or all of their financing through a pooled fund (known as the basket) which is disbursed: (i) against expenditures reflected in the MOH Medium Term Expenditure Framework (MTEF), the PMO-RALG MTEF, and (ii) as block grants to district councils against their comprehensive health plans and budgets. Many agencies have increasingly been channelling resources directly against the national budget (general budget support). District health services are financed through block grants provided by PMO-RALG and the basket funds.

There are quite stringent guidelines on how the basket fund and block grants are to be spent by Councils. Expenditure of the basket fund is restricted to the funding of recurrent costs. Allowances for supervision and training should not exceed 25% of the total amount. Training itself should not exceed 10% of the total amount. Transport costs should not exceed 20% of the total, with 10-20% going to repairs and maintenance. The purchase of drugs is only allowed when drug items are out of stock at the time of order.

Cost-sharing, in the form of user fees, was introduced in the public health sector in 1993, initially for hospital services only. An exemption policy was introduced in 2004 to ensure free access for all maternal and child health services, for children under five, adults over 60 years of age, students and disabled people, as well as for specified communicable and chronic diseases. Waivers are also in place to protect the poor from out-of-pocket payments. User fees in primary facilities are being introduced gradually, in parallel with the CHF which now covers 72 out of 92 rural districts [12].

The CHF operates as a voluntary pre-paid scheme for rural households, who pay between 5000-10,000 TSH per year and gain cover for health care in primary level facilities. Central government provides a matching grant for all membership contributions. Contributions are collected by the officer in charge of the facility and regularly deposited into a separate CHF account, held by the district council. The council reports on the amount collected to the PMO-RALG and the MOHSW, as well as back to the health facilities. In 2007, only 10% of rural households (range 4-40%) were covered in districts enrolled in the CHF [12].

The National Health Insurance Fund (NHIF), a parastatal organisation responsible to the Minister of Health, is a compulsory health insurance scheme for public servants, their spouse and a maximum of four dependents. It effectively started in July 2001. Member contribution is 3% of basic salary, matched with 3% by the government. On average this translates into 96,000 TSH per year for about 5-6 people, 10-20 times as much as the CHF contribution. Members have free choice of provider. All public health facilities were accredited at the start of the scheme. FBO and private facilities were accredited later against quality criteria. Benefits include both primary and hospital care.

Hospitals keep revenues in their own accounts and can use them at their own discretion, while health centres and dispensaries deposit the collected fees into an account held by the council.

Overall, we have seen that the health system structure in Tanzania has been evolving in line with the decentralisation process. The implementation of IMCI took place within the above health system configuration, and the next section reviews the chronology of events relating to IMCI introduction in the country.

Chronology of Events Relating to IMCI Introduction in Tanzania

According to the WHO Planning Guide, IMCI implementation in Tanzania followed the phases of Introduction, Implementation, and Expansion. The key events, dates and stakeholders involved in each phase are indicated in the following sections based on our review of policy documents and interviews with national stakeholders (Figure 1).

Phase I: Introduction of IMCI (1994-1996)

The following are the key steps/events in the introduction of IMCI in the country. Tanzania's Minister of Health was invited to attend a meeting in India in early 1995, where a technical advisor from WHO, Geneva (Sandy Gove) gave a presentation on IMCI as a new global strategy to overcome high morbidity and mortality rates in children under five years of age in low and middle income countries. The Minister of Health on his return convinced the Ministry of Health (MoH) that IMCI is a good strategy for child health. WHO and UNICEF country offices then held discussions with the MoH on introducing IMCI. Soon after, a letter was drafted by the Director of Preventive Services and signed by Tanzania's Minister of Health. This was sent to WHO headquarters in Geneva to show the country's commitment to implement IMCI. WHO and UNICEF were looking for a place to pre-test IMCI. Tanzania and Ethiopia were selected for this pre-testing. With support from WHO and UNICEF country offices, the MOH undertook stakeholder identification, discussion and consensus on accepting and introducing IMCI. The focus was on "technical people" such as directors of different departments, human resources management, hospital departments, director of preventive services, malaria programme manager, paediatricians, zonal programme officers of CDD and ARI, as recommended by the IMCI Planning Guide [9]. **Figure 1 Overview of Implementation Process for IMCI in Tanzania**

1995
-Tanzanian Minister of Health meets Sandy Gove and first discusses IMCI
- Commitment letter signed and sent to WHO
- Stakeholder identification
- The in-charge of the Epidemiology Department and the Coordinator for Control of Diarrhoeal Diseases (CDD) and Acute Respiratory Infections (ARI) in the MOH headquarters appointed as responsible for introducing IMCI in the country
- Field testing of IMCI materials
- Training front-line health workers for 3 weeks
- Establishment of first IMCI national plan
- Identification of 7 early use districts

1996
- Used WHO seed money for translation and printing of training tools; training of 16 master trainers
- IMCI training of front-line health workers in Mpwapwa and Magu districts

1997
- Training of front-line health workers in the 5 remaining early-use districts
- 1997 IMCI was introduced as a 2 week "block" course in the curriculum of 2 pre-service training schools

1998
- Desk review of performance
- 2 year implementation plan for roll out
- Creation of IMCI unit within the Reproductive and Child Health (RCH) section in the Department of Preventive Services (DPS)
- A full-time national IMCI coordinator appointed to oversee overall national implementation
- A five-member working group put in place
- National roll out
- Introduction of c-IMCI in 7 learning districts

1999/2000
- IMCI introduced into refugee camps and Zanzibar
- IMCI introduced into curriculum of training medical schools

2001
- Districts required to finance IMCI from basket fund
- Guidelines for management of children born to HIV-positive mothers
- Pre-referral drugs introduced in primary health care facilities

2003
- IMCI introduced in ADDOs

2004
- Appointment of IMCI/Malaria Focal Person

In February of the same year, the in-charge of the Epidemiology Department and the Coordinator for Control of Diarrhoeal Diseases (CDD) and Acute Respiratory Infections (ARI) in the MOH headquarters in Dar es Salaam were given the task of introducing IMCI in the country. Their role was to make sure that whatever is planned for IMCI is implemented. They were also responsible for identifying a district for the piloting of IMCI materials. Arusha was selected because it was seen as accessible and convenient. Sandy Gove returned to Tanzania later in the year to hold several meetings with national stakeholders. In the middle of the year, she held a meeting in Arusha on the introduction of IMCI in Tanzania.

In June 1995, IMCI materials were field tested. This included training front-line health workers (HWs) for 3 weeks and following them up for 6 months to see how they implement IMCI and to measure impact.

An IMCI planning meeting was held in November 1995 which developed the first IMCI national plan of action and identified seven "early use districts": Morogoro, Rufiji, Muheza, Korogwe, Igunga, Mpwapwa and Magu. The criteria used for selecting the pilot districts was that they be accessible to the central level, have strong leadership (DMO), show the presence of supportive activities or programmes such as the control of diarrhoea diseases (CDD), and be funded by a donor willing to support IMCI. Need in terms of under-five mortality was not taken into consideration.

In September 1996, IMCI training began in Mpwapwa and Magu. The introduction of IMCI in the districts involved translation of the training materials into Kiswahili and printing as well as training of 16 master trainers initially (80 subsequently). They were trained in case management for 2 weeks, then trained for 1 week for facilitation. Front-line health workers were then trained. This was funded by WHO "seed money".

Phase II: Early Implementation Phase (October 1996 - June 1998)

The early implementation phase followed immediately after the introduction phase. Implementation efforts focused on the Ministry level and the seven pilot districts.
In early 1997, front-line health workers were trained in the remaining five early-use districts and followed up with centrally driven backup by both the MoH and development partners who were willing to support IMCI activities in their respective districts. WHO supported Mpwapwa district; UNICEF supported Magu; GTZ –Korogwe and Muheza; TEHIP – Morogoro Rural and Rufiji; DANIDA and the World Bank – Igunga.

In October 1997, IMCI was introduced as a two week "block" course in the curriculum of two pre-service training schools. Tanzania was the first country to explore the use of pre-service training and the purpose was to find ways to sustain IMCI implementation.

In May 1998, a "desk review" and planning meeting were carried out to review the "Early Implementation Phase" and to plan for roll out to the rest of the country. The review meeting came up with a five-year strategic plan (1998-2003) and a two-year plan, to guide the implementation process.

Phase III: Expansion (July 1998 to date)

In 1998, the IMCI unit was created within the Reproductive and Child Health (RCH) section in the Department of Preventive Services (DPS) of the MoH. A full-time national IMCI coordinator was also appointed to oversee overall national implementation. A five-member working group was put in place, as suggested in the IMCI planning guide. However, it is no longer functional partly because it had too many actors and partly due to problems of coordination.

In the same year, IMCI was rolled out nationally in different facilities, districts, regions and training schools. Expansion covered aspects of all three components of the strategy. According to national-level sources, the selection of roll-out districts was steered towards areas with donor presence rather than the level of marginalisation and need in terms of under-five mortality. For example, one of the districts with the highest rates of under-five mortality, Luangwa, only adopted IMCI in 2006. This finding was consistent with findings reported elsewhere that the only significant correlation with IMCI implementation in districts was proximity to Dar es Salaam [13]. However, there is no up-to-date national record of the level of IMCI training coverage and implementation by district.

In Tanzania, serious efforts to introduce community IMCI (c-IMCI) started in 1998 after the Santo Domingo meeting, which emphasized the third component of IMCI. A meeting was held in Morogoro to introduce c-IMCI. Seven learning districts were identified as Kibaha, Kilosa, Magu, Hai, Mbarali, Masasi and Mtwara Rural. In 1999, a baseline survey was conducted to establish the quality of care provided to children at household and community levels, and the results were disseminated at the national level. Seventeen key practices for child health were adopted to improve the quality of care provided at home.

IMCI was introduced in refugee camps and Zanzibar in 1999. Health workers in refugee camps were the first to be trained in Emergency Triage Assessment. During this period, UNICEF shifted attention gradually to c-IMCI, while WHO remained focused on facility-based IMCI (f-IMCI).

Also in 1999, the MoH started to look for a budget as case management training came to be considered as expensive by funding partners who were keen to pass the task to the government. In 2000-2001, the basket fund was introduced in a first wave of districts as a method of financing health care at the district level, and districts were required to finance IMCI from the basket. The basket was introduced in a second wave of districts in 2003-2004.

In June 2001, participants from 12 African countries met in Tanzania to revise IMCI guidelines to include management of children born to HIV-positive mothers [4]. In August 2001, c-IMCI training modules were revised to include policy changes such as exclusive breastfeeding up to 6 months and breastfeeding infants born to HIV-positive mothers. In the same year, pre-referral drugs were introduced in first-level health facilities (e.g. antibiotics and anti-malarials).

In April 2002, a "midterm review" was conducted to assess the progress of the early expansion phase and to develop another plan of action for the second and last term of the five-year strategic plan. Four months' later, the c-IMCI training guide and advocacy tools were developed and finalized. The training of community mobilisers and ward facilitators for c-IMCI started in seven learning districts – Mbarali, Magu, Kilosa, Hai, Kibaha, Masasi and Mtwara – in November and December 2003. These were districts where UNICEF was already running activities. By March 2004, all the c-IMCI learning districts had trained district trainers-of-trainers (TOTs) and ward facilitators. At least 21 districts are currently implementing c-IMCI (personal communication with a national level stakeholder).

In 2003, IMCI was introduced in the Accredited Drug Dispensing Outlets (ADDO). The IMCI ADDO package funded by the U.S. Agency for International Development (USAID) consists of a package of key interventions including: (1) training dispensers in the rational use of medicines for common childhood conditions (malaria, ARI and diarrhoea); (2) creating community demand through mobilization activities; and (3) supervision, together with monitoring and evaluation. The aim of integration of the child health component into the ADDO program was to support and contribute to the national child health strategy to accelerate the reduction of child mortality. As mentioned in the previous section, the indent system of drug procurement was also introduced in this year, to improve the drug supply to facilities.

In 2004, a review of pre-service IMCI was done and found that 17 clinical training schools and 10 nursing schools had introduced case management IMCI. In the same year, the Minister for Health recommended that IMCI should be included in the leaving certificates of graduates from nursing and clinical training schools. The objective was to identify those who had been

trained in IMCI during their pre-service training and who did not require case management training.

In 2004, the district malaria IMCI focal person (DMIFP) replaced the malaria focal persons (MFPs), although in some districts other people have been appointed to handle the post. The role of the DMIFP is to oversee all IMCI and malaria-related activities within the district. The training was conducted by the Centre for Enhancement of Effective Malaria Intervention (CEEMI); training materials were produced in collaboration between CEEMI, the National Malaria Control Programme (NMCP) and the Malaria Consortium, and funded by the Gates Foundation.

Since national roll out in 1998, figures from 2005 indicate that about 6646 health workers [14] out of a total of 48,500 [15], or 14%, have been trained in IMCI, which is well below the WHO target of 60%. Over 70% of the trained health workers have been followed up at least once [14]. However, as mentioned previously, there is no up-to-date information on the distribution of health worker training coverage across districts or the number of training sessions carried out per district.

Overall, experience from Tanzania shows that of the three aspects of IMCI implementation, the focus has been mostly on case management training. Some efforts were made to strengthen the health system, such as the inclusion of some IMCI classifications in the HMIS, making drugs available at dispensaries, and changing the procurement system. However, there has been little attention to improving referral care and supervision practices. For example, the integrated supervisory checklist recommended by the planning guide to support IMCI incorporation into routine supervision has not been issued by the Ministry of Health. Nevertheless, success has been recorded on what IMCI has achieved at the national level and this is presented next.

National Level Achievements

As mentioned previously, Tanzania was one of the countries which participated in the Multi-Country Evaluation of IMCI (MCE). The MCE study compared four geographically similar and neighbouring districts: two that began implementing IMCI in 1997 (Morogoro Rural and Rufiji Districts) and two that began implementing IMCI later in 2002 (Kilombero and Ulanga) as comparison districts [16].

Among other findings, the evaluation indicated that, when observed, trained health workers in the intervention districts seemed to provide better quality care to sick children in terms of thorough assessment of illness, correct classification of conditions and correct treatment provision as compared to workers in the comparison districts who had not been trained in IMCI case management. Trained health workers were also better in advising caretakers on how to handle a sick child at home, on administration of drugs and on the need for follow-up. Most importantly, the above intervention was associated with a 13% reduction in under-five mortality[17].

The Tanzanian MCE was uniquely a success. Mbuya et al. (2003) argue that this was mainly because, in the MCE districts, IMCI was linked to a lot of “intelligent thinking” behind the IMCI strategy; for example, the use of burden of disease information for planning, training of non-clinicians, rapid achievement of good IMCI coverage, and solving supervision problems through cascade supervision [16]. There was also a stable management team in the districts: the Council Health Management Team (CHMT).

There was no evidence that IMCI costs more than conventional care, and instead could even cost less [18, 19]. Cost analysis found that the cost for providing health care to under-fives was 44% lower at district level in the intervention sites compared with non-intervention districts. The lower costs were due to low hospitalization rates resulting from IMCI. However, even when hospital costs were excluded, the costs in IMCI districts were still lower by 6%. Even the out-of-pocket payments for under-fives seemed to be lower in intervention districts.

Since IMCI was introduced nationally, a national IMCI unit and coordinator were formed and a reliable source of funding identified at district level to finance IMCI case management training (the basket fund). To this extent, IMCI appears to have been well integrated within national and district level structures.

However, there has to date been no comprehensive qualitative evaluation of the process of implementation in districts. The next section describes the methods of the current study.

PART TWO: METHODOLOGY

This section describes the study design, the document review process, the method of study site selection, and the tools used for data collection and analysis.

Study Design

We employed a qualitative case study design, concerned with understanding the processes which underlie the implementation of IMCI in Tanzania. Attention was paid to implementation experiences as well as factors underlying those experiences. The case study was supplemented with a document review. The next section describes the methods used for obtaining relevant literature.

Document Review

Published and grey literature was compiled on IMCI globally and in Tanzania specifically. Literature on health sector reform in Tanzania was reviewed to understand the health system context for IMCI policy implementation. Google and Pubmed search engines assisted the search process. Search terms included (but were not limited to) “IMCI in Tanzania”, “IMCI and decentralization in Tanzania”, “MCE in Tanzania” , “MCE of IMCI in Tanzania”, “TEHIP, IMCI, Tanzania”, “History of IMCI in Tanzania”, “Health sector reforms in Tanzania”, “Health sector reforms, IMCI, Tanzania”, “Ministry of Health, Tanzania, IMCI, report”. The authors also benefited from personal communications with MCE researchers, Tanzania Essential Health Interventions Project (TEHIP) staff, and key informants from the Ministry of Health and international agencies. Informal interviews with these important actors helped in understating the evolution of IMCI in Tanzania and pointed us to important references in the grey literature. From within the study districts, Comprehensive Council Health Plans (CCHPs), supervision reports, and other material found to be relevant were reviewed for local information on IMCI implementation and the context for policy implementation.

Selection of the Study Districts

Two districts were purposively selected for the case study. The criteria used for selecting the districts were that they be based in the same region, a region of relatively low socio-economic status (SES); that one district should be of better performance and the other of poorer performance in terms of case management training coverage, based on the opinion of key informants at the national level; and that IMCI had been introduced at least three years previously with limited donor support.

The selected region for study was Mara region which is situated in Western Tanzania. The two districts selected for the analysis were Bunda, identified as being a high performing district, and Tarime identified as being a poor performing district.

Development of Data Collection Tools

In-depth interviews were used as the main method for data collection. Interview guides were prepared in collaboration with research partners in Kenya based at KEMRI/Wellcome Trust and with input from national stakeholders.

Respondents were selected purposively, focusing on those who were perceived as likely to have relevant information on policy implementation. The snowball technique was used whereby key informants helped in identifying subsequent respondents who have knowledge on the topic. At the national level, respondents were mainly policy stakeholders in the Ministry of Health and its departments, and in international organizations. A total of 6 in-depth interviews and 6 informal interviews were carried out with national-level stakeholders. At the regional level, 6 key informants were interviewed. At the district level, the Council Health Management Team was purposively selected for in-depth interviews. Nine members of the CHMT were interviewed in Bunda, 8 of whom were trained in IMCI case management[2]. Eight CHMT members in Tarime were interviewed, none of whom were trained in IMCI case management. In-depth interviews were also carried out with the Malaria-IMCI focal person from each of the districts. Discussions with other district stakeholders such as the District Director and District Planning Officers in each of the districts were held to obtain their understanding of the policy and explore their role in implementation in their respective districts.

For the national, regional and district level interviews, the focus was on their understanding of the policy, their role in the implementation chain versus other key stakeholders, their implementation experiences in relation to other health interventions, their perceptions of the policy, and any challenges experienced. We also examined what they thought about the policy and whether it is/should be a priority intervention in the country. Most of these issues were also raised in the interviews with front-line health workers (trained and untrained), especially those who are likely to see/treat children.

Interviews with HFC members from each facility were carried out to capture the degree of understanding of IMCI as a health policy as well as the role of 'community voice' in the functioning of the health facilities. Informal interviews with caretakers who happened to be at the facility, seeking care for their under-fives, were conducted to get their views on child health care services at the facility. In Tarime, health workers were selected for interview from all the seven facilities where at least one provider had been trained in IMCI case management

[2] Those interviewed included: the District Medical Officer (DMO); District Pharmacist (DPharm); District Cold Chain Coordinator (DCCO); District Health Education Coordinator (DHEO); District Laboratory Technician (DLT); District Malaria IMCI Focal Person (DMIFP); District Nursing Officer (DNO); District Reproductive and Child Health Coordinator (RCHCO); District TB and Leprosy Coordinator (DTLC).

(Table 2). In Bunda, almost all facilities had at least one provider who had been trained. Therefore, we selected a purposive sample of six facilities. Using district management views, we ranked facilities in terms of their relative success or failure in implementing IMCI and selected three facilities from each category. We also aimed to get some spread in terms of level of care and geographical location (see Table 1 above). No non-governmental facilities were visited because all trained providers had left the facilities.

In this study, the research team also carried out unstructured observations in a convenience sample of facilities. Attention was paid to such things as the presence of IMCI supplies like the chart booklet and wall charts, a working Diarrhoea Treatment Corner (DTC) and IMCI drugs. Not all indicators could be observed in each facility, so the observation sample size varies between indicators. We also measured the length of consultation time taken by health workers to manage one child under five years of age. Observations typically took place as health workers were doing their routine work and before the interviews. The morning hours were preferred since these are generally the busy times.

The guides for in-depth interviews were piloted in November 2006 in one district and revised before fieldwork began in early 2007. The fieldwork was conducted between February and June 2007 at the district and regional levels, and between September and December 2007 at the national level. The duration of interviews ranged between 30 minutes to 2.5 hours. Interview guides were used for every interview but the sessions were flexible enough to 'allow respondents to tell a story' for specific issues which happened to be of interest to the study. This strategy enriched the study findings by enabling the research team to incorporate some new relevant issues in the course of the fieldwork.

The interviews were conducted by a researcher with a Masters degree in Sociology, and a Masters degree in Gender and Development. She was assisted by two researchers, both with a Bachelors degree. The two research assistants were oriented on the research question and their performance assessed before the fieldwork. All interviews (formal and informal) and discussions were conducted in either Kiswahili or English, and the tools were available in both languages.

Some basic quantitative descriptive data were also gathered from each of the districts, such as the number of IMCI training courses by year, the cadre of those trained and the health facilities included in training.

Table 2 Overview of In-depth Interviews Carried Out at the District Level

	Bunda				**Tarime**			
	Dispensary	Health centre	District Hospital	Total	Dispensary	Health centre	District Hospitals	Total
Total no. facilities	3	2	1	6	1	4	2	7
Health workers	7	11	13	31	3	10	16	29
HFC members	5	2	-	7	2	9	0	11
CHMT				9				8
Total	12	13	13	38	6	19	16	40

Data Analysis

Interviews were tape recorded using a digital tape recorder. A verbatim transcription was made and then translated from Kiswahili to English where necessary. Translated data were then imported to NVivo version 7 for coding and processing. Observation data were also imported into NVivo. Information from interviews and observation was reviewed and coded for analysis before summarizing key themes. Codes were developed according to the main themes from the field data. Thematic content analysis was used to identify key themes. The codes were developed by the senior researcher and discussed with the research team, then the actual coding was done by the researcher and one research assistant. The codes were repeatedly reviewed for validation and reliability, and at the end they were compared to the initial data summaries.

The analysis was done in stages starting with Bunda, and then Tarime, following with the regional data, and finally the national-level data, to allow comparison of basic implementation experiences and also to examine how issues build on one another across different policy implementation levels. Triangulation of methods and data within and between districts was applied throughout the data analysis to allow for better explanation and conclusions for specific implementation experiences. To improve validity, we carried out a feedback meeting of preliminary findings with district stakeholders in Tarime and shared findings with two key district stakeholders in Bunda.

Ethical Approval

This study was approved by the Tanzanian National Institute for Medical Research. The study was also approved by the Ethical Review Board of Ifakara Health Research and Development Centre (IHRDC[3]). All respondents were given an information sheet in Kiswahili explaining their right to voluntary participation. They were informed of the research question and its importance, but were also clearly informed of their right to not participate in the study or to withhold any information they would not feel comfortable talking about, or even to terminate the session without any penalty.

[3] Now called Ifakara Health Institute (IHI).

PART THREE: STATE OF IMCI IMPLEMENTATION IN THE STUDY DISTRICTS

This section begins by describing the profile of the two study districts. It then explores the level of IMCI implementation in the two districts in terms of the process of introduction of IMCI in the districts, training coverage, health worker compliance, supervision practises and community compliance.

District Profiles: Bunda and Tarime

We begin by looking into the district locations and population size, then review key health indicators, and assess health system capacity and health care financing arrangements in each district.

Bunda and Tarime are among five district councils in Mara region. Bunda is situated in the north east of Tanzania near the Kenyan border and is located in the south west of the region. Tarime is bordered by Kenya to the north, Serengeti district to the east, Musoma to the west and Mara River to the south. The main economic activities in both districts are crop cultivation, animal husbandry and fishing. In Tarime there is also a gold mining industry in Kemambo, Matongo and Nyamwaga wards.

In 2002, Bunda had a population of 260,000, of which 52% were female and 48% male. Tarime had an estimated population of 492,798, almost double that of Bunda, of which 53% was female and 47% male [20]. The population of children under five years of age was 56,053 (22%) in Bunda and 107,386 (about 20%) in Tarime. The annual population growth rate in Bunda is 1.8 %, lower than that of Tarime which is about 2.9% (ibid). The literacy rate in Tarime is similar to Bunda at around 70%, however, the percentage of the population below the poverty line is almost half that of Bunda at 32% compared to 60% [21] (Table 3).

The main ethnic groups in Bunda are the Kurya, Sukuma, Jita, Kerewe, Taturu, Luo, Zanaki and Kizu[22]. While ethnic conflict is unheard of in Bunda, Tarime often experiences inter-clan conflicts between the Wanchari, Wakira, Twakira and Walinchoka [23]. The main reasons for the conflict are border competition, land, livestock theft, the use of marijuana, spiralling in revenge whenever it is discovered that one clan has done something wrong to another clan (ibid). The conflict has resulted in significant deaths and destruction of houses, especially by fire. On arrival, the research team was warned that the district is very unsafe. There was a perception that some people posted to work in the district would not turn up because of the “insecurity”. The clan conflict seems to feature in the discourse of everyday life in Tarime and the local media often report on violence.

In terms of health statistics, both districts are below the national average although, overall, Bunda generally fairs better than Tarime. Bunda district has an infant mortality rate of 102 per 1000 and an under-five mortality rate of 166 per 1000, compared to 123 and 191 per 1000 in Tarime, respectively [21]. Tarime district has a lower maternal mortality rate than Bunda at 257 per 100,000 live births compared to 310 in [24] (see Table 3). The HIV prevalence rate is higher in Tarime than in Bunda, at 17% compared to 8.5 % (ibid).

Table 3 Contextual Information for Selected Districts

Indicators	Tarime	Bunda	National average
Adult literacy rate[a]	71	75	71
% of households below basic needs poverty line[a]	32	68	36
Infant mortality rate[a]	123	102	68
Under-5 mortality rate[a]	207	166	112
Maternal mortality rate[b]	257	310	-
% of households using a piped or protected water source[a]	22	51	-
% of population under 5[c]	20	22	-
Total population [c]	492,798	260,000	-

[a] [21].
[b] [25] and [24]
[c] [20].

In terms of health system capacity, Bunda also fairs better than Tarime in most respects, with a higher number of health workers and facilities per head of population (Table 4). There are three hospitals in Bunda. The District Designated Hospital is owned by the Evangelical Lutheran Church of Tanzania (ELCT) and is located on the outskirts of the town centre. The district has three public health centres and 37 dispensaries[24]. According to district stakeholders, one of the health centres in Bunda, Manyamanyama health centre, is in the process of becoming a district hospital. Tarime has two hospitals (a public-owned district hospital and Shirati Hospital owned by the Mennonite church), 13 health centres and 46 dispensaries [25].

Table 4 Comparison of Bunda and Tarime Districts in terms of Health System Capacity

District characteristics	Bunda	Tarime
Health workers per 100,000 population	123	82
Hospitals per 100,000	0.8	0.4
Health centres/dispensaries per 100,000	16	11
Government facilities per 100,000	12.7	7.5
Private facilities per 100,000	1.9	1.01
VA facilities per 100,000	1.5	4.05
PAR facilities per 100,000	0	0.6

Source: [26].
Notes: VA, Voluntary Agency; PAR, Parastatal.

In summary, the health system capacity was lower in Tarime than Bunda and accordingly most health indicators were also worse. In contrast, the levels of poverty were higher in Bunda than Tarime, although the districts were fairly similar in terms of other demographic and social indicators.

In terms of health care financing in each of the districts, the basket fund budget per capita for child health was much lower in Tarime than in Bunda at Tsh 47 versus Tsh 158[4] (Table 5). Bunda has had the basket fund since 2000/2001 whereas in Tarime it was introduced in 2003/2004. The overall district-level health budget (from all sources) as reported in the Council Comprehensive Health Plans for 2006/2007 amounted to just over Tsh 10,400 per capita in Bunda, over twice that of Tarime at Tsh 5083 [24, 25].

Table 5 Child Health Budget per Capita for 2006/2007

Districts	Bunda	Tarime
Basket fund budget for child health per capita	158	47.2
Total budget for health per capita	10,418.5	5,083

Sources: [24, 25]

In Bunda, user fees are charged in primary and secondary level health facilities. In Tarime, health services are free for all people at the primary care level, with fees only being charged at the hospital level. Tarime has not yet introduced cost sharing at the primary care level, and there is no CHF. In Bunda the CHF is being implemented and covers costs at primary facilities for its members. CHF enrolment in Bunda remains low. Some respondents from the district level thought that the CHF and user fees do not contribute any substantial resources despite the associated administrative burden of fund collection and management. A district stakeholder from Bunda said in relation to user fees (cost sharing):

> *It is so difficult to implement and it doesn't bring any substantial amount of funds, it only scares patients to go to facilities... You tell village leaders to bring the list of people who are eligible for exemption, when the list comes a quarter of the village wants to be exempted, is that realistic? I wonder whether this cost sharing makes sense for the rural poor.*

The main factors that were seen by health workers and district managers to contribute to low enrolment to the CHF in Bunda include poor quality of services especially drugs, lack of trust on the use and management of funds, and poor accessibility to health facilities. At the hospital level, stakeholders argued that the premium is too little to cover even the minimum basic services required to care for one episode of serious illness.

District stakeholders in Bunda also felt that non-governmental facilities are not using the government subsidies as they should. There had been tensions between the district designated hospital, which is managed by the ELCT, and the CHMT over provision of free care to exempted groups, i.e. under-fives and pregnant women. According to a district informant it took time before they managed to convince the hospital management to provide free care to under-fives, and even after they agreed to that there have been problems with stocking drugs for under-fives. The hospital administration reportedly tended to limit the stock of IMCI drugs that should be provided for free.

In both districts the NHIF covers public sector workers at primary and secondary care facilities.

Overall, Bunda has a better health system capacity, a larger district budget for health and invests more on child health per capita than Tarime despite being relatively poorer. Other

[4] One US $ is Tshs. 1180 in 2006.

social indicators were similar between districts, although Tarime suffers from the problem of insecurity due to ethnic conflict. The next section examines the process of IMCI implementation in the two districts.

IMCI Training Coverage

Having described the context of each district, we now consider to what extent IMCI has been implemented in each district, beginning with an overview of IMCI training coverage. Three forms of IMCI training are identified. The standard in-service training for 11 days, pre-service training, and on-the-job training. This section reviews implementation experience for each type of training, starting with the 11 days in-service training.

The Standard Case Management Training

Since the introduction of IMCI, Bunda had five case management training courses and one training course for facilitation skills (Table 6). A total of 87 health workers and district stakeholders have been trained in IMCI case management since the start of training in 2002, an average of 22 per year. Ten out of 18 CHMT members were trained in IMCI case management. Between 2002 and 2006, 12 health workers left the district. Of those who left, 83% were clinical officers. Bunda currently has 186 health service providers, of whom 44% are trained in IMCI case management. From the first case management training, 6 potential candidates for facilitation skills were earmarked. These were trained by national trainers only two days after completing the first case management training. These facilitators do case management training within the district as well as in other districts in Tanzania. Apart from 2003, each of the training courses were funded using the basket fund. After the budget for IMCI is released from the basket fund, the District Continuing Education Coordinator, with the support of the DMO and the District Nursing Officer (DNO), appoints people to attend IMCI training from different facilities. Non-governmental facilities (voluntary agencies and private) are informed of the training and the number and cadres required for training, with the facility administration nominating candidates.

Table 6 Summary of IMCI Training in Bunda

Date for training	Type of training	Number of HWs trained	Funding source
June-July 2002	Case management	13	Basket fund
June-July 2002	Facilitation	6	WHO/Norad
June 2003	Case management	21	Basket fund
October 2003	Case management	18	WHO/Norad
November 2004	Case management	19	Basket fund
June-July 2006	Case management	16	Basket fund

In contrast, in Tarime there was only one case management training course which took place in 2003. Sixteen health workers were trained in IMCI case management in this training course. None of the CHMT was trained. One of these health workers left the district between 2003 and 2006. Of the current 320 health workers in the district, 4.7% are trained in IMCI. Tarime did earmark facilitators but they were not trained. Consequently, in order to carry out

training in their district, facilitators have to be bought in from other districts. The training was also funded by the basket fund.

The cadres trained in Bunda and Tarime districts are indicated in Tables 7 and 8, respectively. Staff from hospitals were given the first priority in the initial training in both districts. However, in subsequent trainings in Bunda, staff from health centres and dispensaries were also trained, promoting geographical equity. Overall, in Bunda a larger number of staff in dispensaries were trained. In Bunda, 45% of all the health workers trained were from dispensaries, 15% from health centres and 16% from the hospital facility. In Tarime, out of 16 health workers trained, almost half came from the hospital, 38% from health centres and only 6% from the dispensary. One of the trained health workers, a clinical officer from a non-governmental facility, left the district shortly after the training.

In both Bunda and Tarime, the priority in training was given to the official prescribers[5] and other cadres who were working in the children's wards. Lastly they covered the health officers. The training took place at the District Hospital in both districts. The DMIFPs were not trained in IMCI case management in either district.

Table 7 Overview of Training by Health Facility and by Cadre in Bunda

Cadre	Total number (%)	Hospital level	Health centre level	Dispensary level	DMOs office	Left the district
CO	49 (52.7)	4	6	29		10
CA	4 (4.3)	-	1	3	-	-
AMO	6 (6.5)	2	2	1	-	1
NO	6 (6.5)	3	3	-	-	-
NM	8 (8.6)	3	-	4	-	1
TN	5 (5.4)	3	2	-	-	-
PHNB	2 (2.2)	-	-	2	-	-
MA	2 (2.2)	-	-	2	-	-
MCHA	1 (1.1)	-	-	1	-	-
CHMT	10 (10.8)	-	-	-	10	-
Total	**93 (100%)**	**15 (16%)**	**14 (15%)**	**42 (45%)**	**10 (11%)**	**12 (13%)**

[5] According to national stakeholders, the official prescribers in the Tanzanian context include assistant clinical officers (CAs), clinical officers (COs), assistant medical officers (AMOs), medical officers (MOs) and medical specialists. No policy document could be found defining the official prescribers.

Table 8 IMCI Training by Health Facility and by Cadre in Tarime

Cadre	Total number (%)	Hospital level	Health centre level	Dispensary level	DMOs office	Left the district
CO	6 (38%)	2	3	1		1
MO	1 (6%)	1				-
AMO	1 (6%)	1				-
NO	3 (19%)	3				-
NM	1 (6%)		1			-
MCHA	2 (13%)		2			-
CHMT	0				0	-
Total	**16 (100%)**	**9 (56%)**	**6 (38%)**	**1 (6%)**	**0 (0%)**	**1 (1%)**

Pre-Service Training

Despite the fact that pre-service IMCI training was introduced in Tanzania over 10 years ago, there are still some challenges with implementation. Experiences from across Africa (including Tanzania) show that pre-service IMCI training faces constraints due to management structure, scarce documentation of practices, erroneous perceptions about IMCI, practical problems in teaching institutions such as shortage of tutors (compared to large numbers of students), limited funds from the central budget and other sources, shortage of training materials, difficulty of placing IMCI in an overloaded curricula, and students' limited exposure to important signs of illness during practical training [27, 28].

In facilities in both of our study districts, health workers perceived pre-service IMCI training to be limited. From the study districts we found that some health workers who had been trained in IMCI during their pre-service training were still participating in the 11 day in-service training. The implication was that participation in pre-service training did not serve the need it was intended for, i.e. to avoid the costs of the 11 day in-service training. During health worker interviews, few explicitly mentioned pre-service training when discussing IMCI training. When probed, IMCI pre-service training was referred to as *"vague"*, *"too short"*, *"just a brief introduction"*, *"I have forgotten"*, *"it was unclear"*, and health workers failed to relate it with mainstream medical training.

Despite the above-named weaknesses, there are indications that students in pre-service institutions like IMCI especially because of its training methodology which is different from conventional medical training. Research carried out by WHO across training institutions in African countries has shown that students were happy with the teaching methodology employed for IMCI pre-service training. They felt that the methodology brought them closer to patients and their tutors, and they wished that more of their medical training was like that [27, 28].

On-the-Job Training

Although not directly observed, perceptions from both districts indicated that on-the-job training is happening but to a very limited extent, and it was generally perceived as not being effective. Most trained providers said that they are only verbally advised to teach their colleagues about IMCI. Since they do not have any formal guidelines for that they only do a "briefing" once or twice, usually in the "clinical meeting". Such meetings are usually held in the morning before health workers disperse to different sections. The common practice is that

those returning from training spend half an hour to an hour giving feedback to the rest of the facility staff, and also take the opportunity to show some of the job aids obtained from the training like the chart booklet, the mother's card and the recording forms, where available. However, this happens inconsistently.

However, despite these general observations, in two facilities (one in Bunda and one in Tarime) we observed untrained providers practising IMCI as a result of successful on-the-job training. In the facility in Bunda, the acting facility in-charge did all that they could to practice IMCI having learned about IMCI two years prior from a trained colleague who now works at another facility. The provider in question tried to follow the algorithm, although there was neither chart booklet nor wall chart in the facility. The provider claimed to have memorized it. There was no working DTC and limited space. The provider had little support or supervision. The provider checked for general danger signs and classified and treated sick children. They also counselled the mothers on how to administer the medication at home and on conditions under which to bring their sick child back to the facility. Immunization and nutrition status were also checked. In all the 12 cases we observed, the first dose was administered in the facility. Although such practices may not be widespread, this serves as an indication that successful on-the-job training (OJT) does happen. It demonstrates that OJT can be effective, if there is the will and means of practising it.

Overall, we have seen that Bunda has had more sessions of IMCI case management training than Tarime. Unlike Tarime, most of the providers trained in Bunda are from the dispensary level. Generally, it seems that priority is primarily given to district and hospital level staff before health centres and dispensary providers are reached. Pre-service training has experienced problems with implementation with health workers perceiving it as limited. Likewise on-the-job training suffers from a lack of guidelines and limited knowledge sharing between providers. Nevertheless, the two good-practice cases, in Bunda and Tarime, indicate that on-the-job training is happening in some instances.

Health Worker Compliance

The section presents an overview of compliance in terms of classification, treatment and referral based on existing studies. It starts by providing an overview of the standard IMCI case management process, then examines health workers adherence to the protocol during case management processes in the study districts. We bring insights from previous studies in Tanzania then proceed to our own observations in the facilities visited during the fieldwork. This will pay attention to such issues as consultation time, availability and use of IMCI job aids and space management. After examining the extent of adherence to the IMCI protocol, the extent of compliance with under-five exemptions is presented briefly.

IMCI Case Management Process[6]

Upon their arrival, the clinician is supposed to welcome, greet the caretaker, and ask her to sit with the child. The health worker should then ask the caretaker about what the child's problems are and check the child for general danger signs[7]. The health worker should then

[6] Sources: 29. Ministry of Health and Social Welfare and WHO *Management of Childhood illness: Introduction: Training Module 2007 (edition)*. 2007a, Ministry of Health, United Republic of Tanzania, 30. Ministry of Health and Social Welfare and WHO *Identify Treatment and Treat the Child; Training Module*. 2007b, Ministry of Health, United Republic of Tanzania, Dar es salaam.

[7] A child is considered to have a general danger sign if it has any of the following signs: inability to drink or breastfeed, vomiting, has had convulsions during the course of the current illness, is lethargic or unconscious or has convulsions at present. As a general rule, a child with a danger sign urgently needs a pre-referral dose of treatment and urgent referral to hospital.

ask about four main symptoms: cough or difficult breathing, diarrhoea, fever and ear problems. Presence of one or more of these signs suggests a serious illness so the health worker should ask additional questions to help classify the illness correctly. The health worker should then check the child for malnutrition by looking and feeling if the child has oedema in both feet, has severe wasting and check the child's weight for age to see whether it has growth faltering. The child should also be checked for anaemia using a simple technique called "palmar pallor"[8]. Assessment for possible HIV infection should be undertaken[9] and vitamin A supplementation status checked. Health workers should also assess other problems that the caretaker has mentioned.

During this process, the health worker determines whether the child needs urgent referral. If that is needed, the health worker should identify appropriate pre-referral treatment, administer the first dose and refer the child. If the child's condition does not require referral, the health worker should be able to identify treatment, prescribe and give the first dose at the clinic, and counsel the mother on how to administer the rest of the medicine at home and on conditions under which to come back to the facility.

This study did not systematically observe health worker practices but previous research sheds light on the extent of health worker adherence to the IMCI protocol in Tanzania. Insights from these and our own findings from this study are presented next.

Health Worker Adherence to the IMCI Protocol

Three studies have been carried out to assess the extent of adherence to the IMCI protocol by means of data collection at the health facility level [1, 5, 6]. Each provides data in terms of compliance with diagnosis, treatment and referral.

Evidence on diagnosis practice is mixed. A study conducted in 2003 [6] in Tanzania to determine the quality of care for under-fives in 10 randomly selected districts[10] was relatively encouraging. It showed that about 73% of the children were assessed and classified correctly according to the IMCI protocol, with Bunda ranking highest (100%) in the integrated assessment index[11]. The survey also showed that unnecessary use of antibiotics was low, with 60.4% of children needing an antibiotic or antimalarial having been prescribed the drug correctly (70.7% for Bunda). However, the same study found that only 67.7% of all children with severe illness were treated correctly. Further, only 12.8% of all children needing immunization left the facility with all required vaccinations (Bunda 16.1%) [6].

A more recent study in 78 randomly selected facilities from four districts in Tanzania [5] showed a less promising picture of diagnosis practices, although drug prescribing followed a similar pattern to the 2003 survey. In this case, between 13-45% of children were checked for danger signs out of 419 case management observations. Between 9 and 30% of children had their weight checked against a growth chart.

[8] The HW compares the colour of the child's palm with that of the caretaker and other children. If the skin of the child's palm is pale, the child has palmar pallor. If the skin of the palm is very pale or pale so that it looks white, the child has severe palmar pallor.
[9] Signs such as repeated episodes of pneumonia, persistent diarrhoea, ear discharge, very low weight or growth, history of TB in the child or nuclei family, and enlarged lymph glands are considered important for examining possible HIV infection.
[10] These were Bunda, Kibondo, Manyoni, Mufindi, Newala, Kibaha, Kilosa, Misungwi, Muheza and Rombo.
[11] The index had 10 tasks, namely checking for at least three general danger signs among diarrhoea, cough, fever, palm pallor, vaccination status, child's weight and checking this against the growth chart.

The management of severe illness was found to be poor. A study on severe diseases [1] in children in four contiguous districts in Tanzania's Coastal region[12] found that in most cases, health workers, including those trained in IMCI, would diagnose children in terms of a single condition, such as "severe malaria" or "severe pneumonia", and prescribe accordingly (disease-specific diagnoses), instead of following the IMCI protocol. They rarely assessed or treated other conditions, as the IMCI protocol indicates. In 240 out of 502 cases of very severe febrile disease which were reviewed at 62 health facilities, none received all the recommended therapies. Choice of antibiotic was also found to be a problem; in most cases health workers avoided prescribing chloramphenical, which is recommended by the IMCI protocol, even though this drug was generally available.

Counselling of caretakers was widely practised, with 90.1% of caretakers being also advised on how to administer the medication (Bunda 100%) [6]. However, subsequent compliance was lower, with only 67% remembering how to give the drug (Bunda 64.3%), according to the exit interviews. The quality of the counselling was found to be generally poor, especially in feeding recommendations and follow-up care [6].

In terms of referral, the health facility survey of 2003 reported that only 38.7% of all children needing referral were referred [6]. The rate was found to be lower in the Coastal study with only 25% of the 478 children diagnosed with a severe illness and needing referral, actually being referred [1]. In the same study, children who were actually referred were more likely to die than those not refereed, suggesting that health workers were more likely to refer children when they were terminally ill.

Observations carried out as part of this study were largely consistent with the above. Although essentially qualitative, and not systematic, our findings revealed a variety of areas of non-compliance, as outlined below.

According to 51 cases observed in four facilities in Tarime, providers spent on average 4 minutes per under-five consultation. In Bunda, observations were carried out of 13 cases at one facility with an average consultation time of 3 minutes and 10 seconds. Consultation duration was found to be similar at the regional hospital where 12 cases were observed. The average duration of consultation is significantly less than the 8.2 minutes observed during the MCE in Tanzania. In one of the facilities in Bunda a trained health worker was observed bringing groups of four children at a time into the consultation room and spending an average of 1.7 minutes per case. Whilst there are no national level guidelines on how long it should take to follow the IMCI protocol, the short durations observed in the two districts suggest that health workers may not be following the complete protocol.

In Bunda, health workers administered the first dose in three facilities (two dispensaries and a health centre) out of the five facilities visited. In Tarime, no health worker was observed administering the first dose.

We also looked for the presence of IMCI materials such as chart booklets, wall chart and the like in examination rooms in some of the facilities. These materials were present in all five facilities observed in Bunda and in both facilities observed in Tarime. However, neither of the facilities in Tarime were using the materials and in Bunda only one was using them.

In addition, in both districts we checked for the presence of outpatient registers to record daily under-five cases attended to. In Bunda, for instance, two facilities were observed. In one facility the register was not found, while in the other facility an outpatient register for under-

[12] Kisarawe, Kibaha Urban, Kibaha Rural and South-west Bagamoyo.

fives was observed and was in use. In Tarime, two facilities were observed also and the register was not found in either.

According to IMCI guidelines, a child classified as having a severe illness needs to be given a first dose of treatment and to be referred immediately. However, facility respondents thought that referring a child was not always feasible, especially when the mothers are unlikely or unable to comply with referral.

The most encouraging IMCI-related practice found in the two districts was the routine weighing of sick children before consultation.

On the Diarrhoea Treatment Corners (DTCs), observations were carried out in three facilities in Tarime and three in Bunda. In all cases the DTCs were not in use. Space availability and use was more generally a problem in many facilities visited, affecting working conditions for providers. For example, in a facility in Tarime a dispensing room was also being used for administering injections, dressing wounds, dispensing, vaccination and family planning. With simple renovation the remaining four rooms, which were not in use, could ease tensions over space and provide room for more convenient services and privacy to patients. In some facilities, some rooms were used for residential purposes by health workers, further limiting space for health care services.

In terms of health worker perceptions, lower level cadres such as medical attendants were generally more positive than clinical officers about IMCI and appeared to be more consistent in applying the IMCI protocol. IMCI facilitators in Bunda explained that they do not have the "clinical bias" and they tend to "receive IMCI like small children", seeing it as a true source knowledge and power in the facility and before the eyes of their clients. This was said to be different for clinical officers and doctors in particular, who tended to see IMCI as an "auxiliary knowledge", which "anybody can be trained" in, compared to conventional clinical/medical training.

Although IMCI case management training targets formal providers, informal providers were found to be diagnosing and treating patients in some facilities in the current study. Although not a consequence of IMCI implementation, this situation affects the capacity for effective IMCI implementation in facilities. Observations in one facility in Bunda and four facilities in Tarime revealed that the service of informal providers was not uncommon. In all four facilities in Tarime, guards were providing services. In one facility, three girls who had completed form four were providing services. They had been "volunteering" in the facility for almost a year and were "looking for a job", as one of the interviewed providers said. They wished to go to nursing school if they could get someone to pay the fees. The 'hidden' workforce would often (if not always) register patients at the reception desk and fill the HMIS books, dress wounds, inject patients, immunize and weigh sick children and pregnant mothers, dispense drugs and also do consultations, an arrangement which seemed to have the support of "formal facility staff". The following observation notes describe the practice of a guard in a health facility in Tarime:

> *As the mothers waited on the bench one of the children, a four months old, vomited and her mother explained that she had not been able to breastfeed since the morning. She had arrived at 14.00 hrs when the in-charge was closing the consultation room, going to find something to eat. The guard entered the dispensing room and called the mothers with sick children one after another, and when they came out the treatment was already done. About an hour later two of the mothers had gone, leaving the one with the sick child behind crying. The guard had given a quinine*

injection (third line antimalarial drug) and asked the mother to wait for a second dose as it was too late, too far from the referral centre and the mother did not have money for transport.

These observations although not systematic, or generalisable, indicate that the use of informal providers does occur, and that they may be called upon to diagnose and treat children, despite their lack of medical or IMCI-specific training.

Overall, compliance to the official IMCI protocol was generally poor in terms of short consultation time, inconsistent use of job aids, and poor use of space and adherence to referral. However there is indication that good practices do exist, as demonstrated by the two cases we found where health workers tried to follow IMCI guidelines. Although not specifically related to IMCI, the use of informal providers also exists, which might potentially affect IMCI compliance. The next section focuses on health worker compliance with under-five exemptions.

Compliance with Exemptions

External to the IMCI protocol, under-five care should be free in both districts (due to the absence of user fees in Tarime, and to under-five exemptions in Bunda), promoting equity in access to IMCI, as seen in the Introduction. However, charges for under-fives did occur in facilities. These were generally formal charges, but it was unclear how the money was then used and whether or not it was recorded as official user fee revenue.

For example, in two facilities in Bunda and Tarime, mothers were asked to pay Tsh 500 each for a clinic card when they did not have the cards for their children. All patients in Bunda and Tarime were also required to purchase an exercise book which costs between Tsh 100 and 200.

In hospitals in Bunda, patients were also required to pay Tsh 1500 for admissions to the ward (including for child health services). Laboratory tests for children were also charged to parents at between Tsh 200-300 depending on the test. Due to drug shortages in facilities, patients often ended up paying for drugs at private facilities in both districts.

In Tarime, in a mission hospital, under-fives were found to pay Tsh 10,000 for blood and water transfusions and laboratory examinations. They also had to pay Tsh 500 for a file for their patient records. In a public health centre in Tarime, patients used to be charged Tsh 500 for blood transfusions, but the facility is no longer operating. There was no other evidence of charging under-fives at government facilities.

A further factor affecting equity is that in all the visited facilities in Tarime, health workers declared that they would give some privileges to NHIF members and their families. For example, NHIF members would not wait in the long queues, and would also get priority in drug dispensing. The research team was not sure whether this was a directive from higher levels or if it was a local decision by health workers. Such practices were not mentioned by health workers in Bunda.

Despite the intention to promote equity of access to under-five care through exemptions, it seems that exemptions are not generally being adhered to, and patients are still facing some charges. This is likely to affect the ability to reach the poor through IMCI, and limit the ability to promote equity in access, by adding to other access barriers.

The overall observation is that compliance to IMCI is poor. Further, health workers do not always comply with the exemption of under-fives from charges, which is important for proper utilization of services, especially by the poor. Lack of compliance can be partly explained by health system weaknesses and lack of supervision. The following section examines the implementation of supervision practices for IMCI.

Supervision Practices

There are two kinds of supervision: follow-up supervision, which is supposed to take place between 4-6 weeks after case management training, and the regular/routine supervision within which IMCI should feature. This section reviews the state of implementation in terms of both types of supervision.

Follow-Up Supervision

The aim of the follow-up visit is to reinforce the new skills obtained during the case management training and to help solve problems that health workers may be facing in attempts to practice these skills in the clinic. Ideally, follow-up visits should be conducted by an IMCI-trained supervisor and/or facilitator, and if that is not possible then others may be designated to do the follow up. These could be staff from the regional office or the MoH. The presence of local facilitators enabled Bunda to conduct follow-up supervision after case management training in three out of five cases.

However, the follow-up visit in Bunda did not happen in the standard recommended time. Health workers were followed up after one month while others would wait up to 6 months. In some facilities, the follow-up supervision also did not involve case management observation, according to health worker interviews. The supervisors relied on health workers reporting on what they did, rather than actual observation, as revealed by some trained health workers. One trained health worker in Bunda said that:

> *At my facility I think it was conducted about three months after the training. The facilitators came… when they came for supervision the first thing they did was to introduce themselves and then they asked us questions. They also looked into the register. They came late in the afternoon and hence they did not find patients in the facility… they tried to ask questions of that nature, that if you have a patient who is suffering from malaria… they ask you if the patient is coughing what will you do. They also took the register of the children and looked at the way we diagnose children, they looked if the charts are in use. They didn't follow us in treatment and watch us treating… Since they started with another health facility, when they arrived here they found that patients had left the facility for their homes. Therefore, they did not find small children.*

Tarime had one training course but did not manage to have any follow-up supervision visits.

Routine Supervision

In the CCHP of 2005/6 in Bunda, a total of 264 supportive supervision visits were carried out across all health facilities. This represents 92% of planned visits. In Tarime, data were only available for health centres and there had been a reported 9 supervision visits to health centres.

In interviews and discussions with facility staff in both districts it was argued that in routine supervision, supervisors tended not to ask specific questions about IMCI practices. According to facility staff, supervision visits mainly focused on issues related to cleanliness, drug availability, HMIS, immunization and discount vouchers. A health worker in Bunda not trained in IMCI said:

> *Those who visit the centre come to look at the record books, and when they realize that there is a problem they try to fix it, and they are seriously following the children's vaccine but not IMCI.*

Overall, Bunda seemed to have made some specific efforts to integrate IMCI into routine supervision. They had developed a simplified IMCI checklist to be used in routine supervision. However, the thoroughness of IMCI in general supervision still seemed to be a problem. Unlike Bunda, no IMCI checklist for use in general supervision was found in Tarime, perhaps because, apart from the DMO, no CHMT member had been trained.

Bunda had four cascade nodes to simplify supervision. The use of cascade nodes was named as one of the best practices for monitoring IMCI in the MCE sites and was recommended for IMCI in the rest of the country [16]. Supervision cascade nodes is a practice whereby, for example, four or five facilities, such as dispensaries, close together, come under one health centre and the in-charge of the health centre acts as supervisor for the dispensaries. Some health workers were critical, however, of the cascade nodes since it would be difficult for the CO in the health centre to supervise fellow COs in dispensaries as they felt that they are at the same level. Tarime had not introduced the cascade node supervision system at the time of the study.

After the completion of supervision, the supervisors are supposed to sit with facility in-charges and heads of sections to discuss general problems, give advice and/or congratulate where the facility has done well, but that is not always the case. There is a need to review how supportive supervision works in districts to make necessary improvements.

Supervision from Regional and National Levels

The region has a supervisory role over districts to make sure that IMCI and other health interventions are effectively implemented. The research team did not find records for supervision in the region for the previous 6 months. In the districts, there were no records of supervision visits from the regional and central levels. The Ministry of Health staff had reportedly visited Bunda once for supervision in 2004. However, no report was found on the details of that supervision.

Interviews with health workers and district stakeholders in Bunda and Tarime emphasised the need for supervision. They acknowledged that currently there are weaknesses in IMCI supervision at all levels. District stakeholders called for support from the upper health system levels to improve supervision. This will be developed further in Part Four.

Community Compliance

This section tackles health utilization issues. For IMCI implementation to have a measurable effect, utilization of public health facilities must be adequate. High and appropriate utilization is one of the pre-conditions which made IMCI look uniquely good in the MCE sites. Due to limited time, we did not manage to compile data on utilization specific to each of the study

districts. Instead, data from the Tanzanian Demographic and Health Survey [6] and extracts from interviews provide an insight into health utilization trends in the study area.

Overall in Mara region, utilization of health care by under-fives was lower than the national average. According to the Demographic and Health Survey, 37% of children with fever or cough or ARI sought care in a facility, compared to the national average of 57% [6]. However, self-reported illness levels were higher: 8% reported ARI symptoms and 37% fever, compared with 8% and 24% as national averages [6]. The sample sizes were too small to dissect district level statistics.

Both districts reported that utilization of health services by under-fives has increased since the introduction of IMCI. However, in the case of Bunda, it is difficult to attribute this purely to IMCI, as under-five exemptions may also have increased demand. Delays in health care seeking are reportedly still common, with care sometimes being sought only when complications set in. Health workers in both districts reported that most mothers fail to identity danger signs and thus children are brought when the condition is already severe. However, the situation is slowly changing, as indicated by the quote below:

> *But also, there is the issue of the willingness of people to use health facilities. (…) People are more willing to come to the facilities because they know that even if the medicines are not available, there is always a solution because the treatment is not only about giving the medicine.* (District stakeholder, Bunda)

Women still use traditional healing systems. Some health conditions which are normally taken to *mkungu* (old women known to have knowledge of local herbs) include ovulectomy, false/milk teeth extraction and even anaemia. According to health workers in both districts, conditions such as convulsion were previously thought to be unmanageable in modern health care facilities. Yet mothers now are increasingly aware that these are properly managed. While mothers were more likely to take their children to traditional healers or *mkungu*, this is slowly changing.

> *Through the word of mouth, mothers inform one another that convulsion is treatable in their local facility.* (Trained HW in Tarime)

Most mothers and caretakers also fail to bring children for a follow-up visit when the child's condition improves. Health workers in both Bunda and Tarime suggested that very few caretakers are complying with follow-up visits. They, in most cases, only come back to the facility if and when the child is sick again, as illustrated in the following quote:

> *Another area where we face a challenge with them is when you tell them to come back after a day or two, and so forth. Some of them never come back. There are only a few who really follow what you tell them. Most women just ignore the instructions that we give them when they come to the hospital for whatever reasons.* (Trained HW in Bunda)

Summary

Overall, in Part Three we have seen that the main difference between the districts is the level of achieved training coverage and associated supervision. Indeed, we have seen that large differentials exist between Bunda and Tarime in terms of the extent of case management training carried out. There also appears to be some difference in the level of IMCI integration into routine supervision, with Bunda having institutionalised an IMCI-specific checklist.

However, it also seems that IMCI implementation in terms of health system strengthening in the two districts has only been partial. In the facilities observed, space was a real issue, and facilities had not been upgraded to provide adequate referral care. Although both districts have made the necessary drugs available at the lower levels, there has been little if any improvement in the health system in either district for IMCI. This is an important factor affecting health worker compliance in both districts, and is at least partly responsible for the observed deviation from national standards, as will be discussed further in Part Four. Furthermore, both districts continue to suffer from limited community compliance which is probably due to the lack of c-IMCI implementation at the time of the study.

In the next section, we will seek to explain the reasons behind the difference in training coverage between the two districts and to explore further the nature and determinants of the implementation constraints faced by both districts.

PART FOUR: EXPLAINING THE IMCI IMPLEMENTATION PROCESS IN BUNDA AND TARIME

This section begins by considering the range of factors that explain the observed differences in implementation experience between the districts in terms of case management training: both contextual and financial factors. We then proceed to explore the generic health system constraints faced by both districts and how this affects compliance. Finally, we explore relations between IMCI and other programmes at the central level, to understand how these impact on IMCI implementation in the country as a whole.

Factors Affecting the Variation in Training Coverage in the Two Districts

The variation in training coverage is the result of a number of factors. A combination of motivating factors for Bunda compared to Tarime seemed to put Bunda in an advantaged position. Access to financing is also important. These issues will be tackled next.

A Combination of Motivating Factors for Bunda

A number of factors seem to influence the early and relatively successful implementation in Bunda as compared to Tarime, including early exposure to IMCI by the Bunda DMO, external influences on Bunda's performance, the image of being a good performer and greater sensitisation of the CHMT.

There was greater continuity between DMOs in Bunda compared to Tarime. Indeed, both DMOs in Bunda were involved in IMCI throughout the period of policy implementation. The first DMO worked from 1995 until 2005. He had more than 20 years of medical experience. He was trained in IMCI case management even before IMCI was introduced in his district. The DMO received a letter from the Ministry of Health requiring him to attend IMCI meeting in Magu in 1998. Magu, a district bordering Bunda, was one of the early implementation districts. This was sensitizing in itself, and even when the national sensitization of CHMTs reached Bunda the CHMT already had an idea about IMCI. In 2005, the Coordinator of Continuing Education (DCEC), who had previously been part of the CHMT, became acting DMO in the district. While he was the Coordinator of Continuing Education he was also responsible for overseeing the process of selecting health workers to attend IMCI case management training. In his capacity as DCEC, the current DMO in Bunda might, therefore, have been more informed about the need for IMCI training, costs and other requirements for IMCI training. This might have cultivated a willingness to prioritise and budget for IMCI activities as well as providing a good foundation for policy continuity.

Tarime did not have the same continuity of policy leadership after the initial training. Compared to Bunda it seems that Tarime lacked policy advocacy at the district level in the early introduction stages. When IMCI was introduced in the district, the DMO did not receive IMCI case management training. Shortly after IMCI was introduced he left the district for studies. Upon his return he was involved in a scandal and left the district. From the first training up to June 2006 there was nobody in the CHMT who had been trained until the new acting DMO came in. He was formerly a medical officer in-charge of the district hospital who happened to be trained in IMCI in 2003. Prior to becoming acting DMO he was abroad for one year (July 2005-June 2006). By the time the research team was concluding the fieldwork, the acting DMO was planning to leave the district, and indeed he left only a few weeks after the fieldwork (June 2007). This stripped the district leadership of the only person trained in IMCI case management. The impression during the field trip was that there was "not much" going on related to IMCI after 2003. During interviews with trained providers in Tarime, they said

that they had “forgotten” about IMCI because when they were trained they were told that others would be trained as well and they would be followed up, but nothing happened so they thought that “it was just a passing wind”. Many of them had problems remembering the year they were trained, and often gave a wrong answer.

There was also a perception among district stakeholders that the feeling of insecurity due to the ethnic conflict could be discouraging people from staying in Tarime, particularly “those who are not raised in the area”. A district stakeholder claimed that he would not be surprised if the acting DMO was leaving since not many people can tolerate the insecurity, which affects people’s ability to do their job and is likely to affect motivation.

Bunda and Tarime also fair differently in terms of external ties. Both the previous and current DMOs in Bunda were trained in facilitation skills immediately after the first case management training in 2002, and are national facilitators for IMCI. Bunda has close ties with national stakeholders and with national facilitators, making the DMOs (both the previous and current) more likely to be informed and updated on IMCI issues. This could be attributed to their role as national facilitators, their “interest in IMCI” and their being from a “successful district”. The current DMO was also a student of one of the national stakeholders, and their relationship continues to the present time. Tarime did not seem to have close external ties and connections related to IMCI.

Stakeholders at all levels generally perceived Bunda as a successful district in terms of IMCI implementation. This might, in itself, have been a motivating factor for the Bunda CHMT to continue IMCI training, so that they live up to and maintain this reputation. Indeed, the image of Bunda as a “good performer” was internalized within the district, in other districts like Tarime, by the RHMT and also by national actors who had mentioned Bunda as a “good performing district” during the selection of the study sites. Early sensitization to IMCI, external support, and the resulting reputation of being “good managers” and “good IMCI facilitators” appear together to have been a major force behind the district’s capacity to mobilize funds from within or outside the district and to maintain IMCI in service training. Tarime was never perceived or referred to as a good performer.

Sensitization and actual training of district stakeholders in case management also appears to be key to the success of IMCI implementation. Indeed, this has been emphasized not only by the inventors of the policy [9], but was also acknowledged by national stakeholders in this study, who said:

> *The most important outcome of the IMCI case management training is the sensitization.*

As one national stakeholder explained, case management training provides the sensitization or advocacy which comes from learning how childhood illnesses can be managed efficiently. This was viewed as one of the most important outcomes of the training. As more training sessions were conducted in Bunda, resulting in a much higher proportion of the health workforce being trained, most interviewed health workers and district managers showed an understanding of IMCI and named the strategy as a good tool for child health. One can conclude that sensitization of CHMT and facility staff through training is important. Most of the CHMT members in Bunda (9 out of 17) were trained in IMCI case management and were willing to budget for IMCI activities (such as the in-service training and buying IMCI drugs from private suppliers).

The Bunda DMOs' commitment to the IMCI strategy, combined with external motivating factors, good continuity in policy leadership, and the image of a successful district, along with proper sensitization of the CHMT through training, served to encourage district stakeholders to allocate funds to IMCI and resulted in higher training coverage.

In summary, the experiences of the two districts suggest that continuity in policy leadership and external support is essential for take up and long-term implementation of interventions. Sensitization of district stakeholders, including case management training, is essential to mobilize internal support for implementation. Security is also important. In addition, access to funding and the willingness to prioritize IMCI also explain the difference in the level of training coverage achieved in the two districts, as developed further in the next section.

Financing IMCI in the Districts

Financing of IMCI activities has always been an issue of concern in Tanzania, as indicated by stakeholders at district and national level. Both Bunda and Tarime perceived IMCI as expensive. However, Bunda managed to rise above the cost barriers and was able to conduct at least one training almost every year. This was partly due to training cost savings from the availability of local facilitators, earlier access to the basket fund, and external funds, and willingness to allocate funds/budget for IMCI training.

Training one health worker in IMCI case management would cost about one million Tanzanian Shs (about US$ 900), which was seen as straining the limited basket fund according to district stakeholders in both districts. However, the presence of local facilitators made IMCI implementation relatively simple and more cost-effective in Bunda compared to Tarime. In Tarime, where there are no local facilitators, national facilitators have to be hired from outside the district, which inflates costs. Hiring from within the district reduces the cost of transport and facilitation fees. Reflecting on this, a district stakeholder in Bunda said:

> *This reduces the cost because we have local facilitators. We would have to pay facilitation allowances but now it is possible to pay twenty thousand shillings for each facilitator, since they are from this district. So we think that, in our case, IMCI is cost effective compared to other districts.*

Compared to Bunda, which was part of the first phase of basket fund allocation (2001), Tarime only had access to basket funds in 2003 (second phase), making it difficult for the latter to finance IMCI training prior to that time. Bunda utilized the opportunity of the basket fund to plan for regular training. Tarime planned for one training after receiving the first allocation of basket fund. After 2003, IMCI was often not budgeted for in the basket fund. Tarime also had a much smaller health budget per capita compared to Bunda, as indicated in the district profiles (Part Three).

Most interviewed CHMT members from both study districts thought that they needed external financial support to effectively implement IMCI, regardless of where it comes from (the MoH or donors). However, Bunda and Tarime differed in terms of the extent of external financial support received. Bunda secured support from WHO/NORAD for facilitation training in 2002, which earned them six facilitators, and a full case management training in 2003. As discussed previously, Bunda had closer ties with national stakeholders working in IMCI, which might have facilitated access to information on funding opportunities. A national stakeholder explained that WHO had funding available to support the districts, which demonstrated serious efforts to implement IMCI in terms of training.

District willingness to prioritize and budget for IMCI activities was named as an important factor affecting IMCI implementation by Ministry of Health policy documents [31], and was also emphasized by national and regional stakeholders:

> *I can't tell exactly what affects the training, but what I can say is that I think they have the basket fund every year, and if they want to do the training they can do it. So if they are not doing it… they are the ones to blame… The region can tell them to do the training, but they can simply say, we don't have funds… what can you do? If they see the importance of training, I think they could have done more training, maybe those responsible didn't think it is important… But I think it is a local initiative, if people want to plan their activities they can do it and they can implement them".* (Regional Stakeholder)

Bunda demonstrated more willingness to prioritize IMCI by financing case management training each year, whereas after the first training Tarime did not budget for IMCI training from the basket. The Tarime CHMT admitted that in some cases they would plan for IMCI training but when there is a "burst" (a term commonly used to mean over and above) in the basket fund ceiling in the training line item, IMCI training would be omitted. In Tarime, after 2003, it appears the CHMT was only willing to allocate the basket fund to the purchase of IMCI drugs [25].

The relative advantages in IMCI financing in Bunda seem to be linked to the motivation of the DMO and CHMT, greater and earlier availability of basket funds, sensitization and external ties discussed previously. These combined allowed Bunda to have a higher level of training coverage than Tarime and to conduct regular trainings. However, despite the relatively better performance of Bunda compared to Tarime, both districts still fall below the WHO standard of at least 60% of health workers trained in IMCI. A broad range of factors in both districts constrain the expansion of training coverage and health worker compliance, as examined next.

Constraints to IMCI Implementation in Both Districts

IMCI implementation in the two districts suffers from a general low level of training coverage, poor compliance to the IMCI protocol and exemption of under-fives. Broader health systems factors appear to influence these implementation problems. Each of these will be reviewed in turn, starting with the underlying factors for low training coverage.

Constraints to the Expansion of IMCI Training Coverage

The costs of IMCI case management training limited the capacity of districts to train more than a relatively small number of health workers per year, slowing down the roll out process. This is partly due to the duration of the training, as national policy makers were committed to retaining the eleven day schedule. Further, training is typically residential taking place at a facility with a high case load, and resulting in higher level per diem payments to participants and facilitators, than for in-house training. The facilitator to participant ratio is also very high relative to other trainings. The Bunda CCHP (2006) reported a facilitator to participant ratio of 1:1 for every training carried out during that year. Finally, a high turnover of trained staff also adds a burden of training in some districts. Unless high rates of training coverage are achieved nationally, attrition will continue to be costly and discouraging to districts trying hard to expand coverage.

Furthermore, mechanisms for financing IMCI also restrict district capacity to finance IMCI training. In Tanzania, districts have to not exceed the 10% budget ceiling for training costs, meaning that no more of 10% of basket fund expenditures can be earmarked for training purposes. Therefore, only a limited number of health workers can be trained each year (on average 22 in Bunda), slowing progress towards reaching the WHO goal of at least 60% of all health workers trained in IMCI case management. In both districts, stakeholders indicated that they feel 'tired' of having to wait a long time before measuring the impact of IMCI.

> *It is really discouraging …when you come to financing you find that there is a ceiling burst, this is the biggest impediment which prevented us from covering the area, it is because of the ceiling… but had it not been for the ceiling we could have covered in training even in the first year. We could have covered all health facilities at once.* (District Stakeholder in Bunda)

One of the factors which enabled IMCI to look uniquely productive in the MCE sites in Tanzania was the rapid achievement of IMCI training coverage. The rapid coverage was enabled by the presence of one extra dollar (a simulated basket fund) from TEHIP in the district budget with "no strings attached", which the district health managers could invest in whatever health intervention was thought important [32]. With that money they managed to conduct IMCI activities. Despite the fact that the availability of the basket fund in districts is an opportunity for districts to implement IMCI, district health managers find the regulation attached to basket fund spending to be too limiting for them to rapidly expand training coverage. This affects not only the current attitude of districts in planning for IMCI case management training but also their future attitudes, as the managers might see it as time wasting to budget for an expensive intervention that they cannot roll out fully in the foreseeable future.

In Part Three we also pointed out the weaknesses of pre-service training and on-the-job training as alternatives to in-service training. Both faced challenges which are explored further next.

Challenges of Implementing Pre-service IMCI Training

Introduction of IMCI in pre-service institutions was one of the early efforts to reduce the costs of in-service training as well as to ensure sustainability. However, we saw that in practice, those receiving pre-service training would often also receive in-service training. Indeed, district and national stakeholders told of the difficulty of knowing who had received pre-service training. In 2004, the Minister for Health had recommended that IMCI should be included in the leaving certificates of medical students but this has not been implemented consistently. A national level stakeholder also indicated that there are problems with consistency of teaching IMCI in pre-service institutions, with some institutions training students in the beginning of the medical school training while others train at the end. Some institutions train in one year and skip the next, due to expense, lack of facilitators or because it is hard to integrate into the medical curriculum.

A further problem is the financial incentive attached to in-service training, which may deter health workers from revealing that they have received pre-service training, as illustrated in the following quote:

> *When they reach the district they don't say that they have been trained in IMCI, so it becomes a resource wastage because most of them are retrained. Others would say I have forgotten… you know the eleven days per diem.* (National Stakeholder)

Some stakeholders felt that pre-service training was not sufficient and case management training was necessary as a means of advocating for IMCI and more effectively changing practises. The advocacy power and counselling component of case management training, which involves role play with trainees acting out the role of provider and patient is not included in pre-service training. The absence of the counselling component in pre-service training was felt by some to weaken the effectiveness of IMCI pre-service training.

> *In-service case management training is about advocacy and not just the skills that the health provider might get. Case management training changes the attitudes and this is something that you cannot find in pre service training…. For example the counselling which involves the patients and the health provider, this component is not included in the pre service training. National Stakeholder.*

According to the same national stakeholder there was resistance from tutors in medical schools to the teaching methodology used for IMCI which was perceived as "too friendly" to students. There was even a perception that IMCI might replace traditional paediatrics, or that students would end up "doing only IMCI" because of its simplicity.

It is clear that IMCI pre-service has a long way to go if the quality of training is to match that of in-service training and sustainability is to be ensured. Proper integration and implementation of pre-service IMCI thus awaits full commitment from those charged with overseeing the implementation of the strategy in teaching institutions. Finding ways of motivating institutions to introduce and keep IMCI training could also help. While a lot remains to be done in pre-service IMCI, on-the-job training also has its own challenges and we turn now to this.

On-the-Job Training

On the job training was conceived as another alternative cost-saving solution to reduce reliance on in-service training. In the study area, however, OJT was generally poorly implemented, although there were exceptions. Part of the reason for the low level of implementation of OJT was tension arising between health workers who had received IMCI case management training and those who had not. In these cases, the tension generally arose from the untrained staff wanting to attend the in-service training and benefit from the per diem which helps "to reduce life hardship". This was a view held by respondents (both trained and untrained) at facility and district levels. Some health workers even made a formula that they wanted "knowledge plus (financial) motivation". Some trained providers complained that when they made efforts to share IMCI knowledge with their colleagues in the facilities, they often got insufficient attention, if not a negative reaction.

In rare cases it was mentioned that when a provider comes back from the training, colleagues might surrender their tasks to them claiming that:

> *You are the one who was trained to treat children, so you treat sick children … I am not trained.* (A trained HW in Bunda)

The sharing of IMCI knowledge also depends on the willingness and capacity of the trained provider to disseminate. However, there is no supervision or peer support system in facilities to encourage this process:

> *If only some people get the training, their colleagues won't get it because there are no motivations or things that encourage people to give orientation to others, and for*

those not trained they don't have motivation to ask for orientation, or in other words, there are no sensitization campaigns. There are no follow ups to check if those who were trained are doing well enough to implement what was taught or if they shared the knowledge. (Untrained HW in Bunda)

Further, the availability of guidelines and job aids to support OJT at the facility level is limited. National stakeholders indicated that the MoH had planned to have guidelines for on-the-job training for trained health workers returning to their facilities but this has not yet been implemented. The chart booklet remains in the hands of the trained providers. No extra provisions are usually available to support OJT.

Lack of knowledge-sharing affects health worker compliance and understanding of IMCI, as illustrated in the quote below:

The in-charge is trained in IMCI but I am not and I didn't know that he was trained. The only thing I noticed was in the ways he treats small children e.g. I saw him prescribing Septrine…. The in-charge insisted on giving 3 times doses rather than two times as we used to prescribe. I didn't know this was because of IMCI, I associated these changes with his cadre with his senior knowledge as a CO and not IMCI guidelines. (Untrained Provider in Tarime)

In both districts most health workers expressed dissatisfaction with the lack of transparency in the selection of health workers to attend training. Low level cadres were more likely to make such complaints. District level stakeholders also showed awareness of mistrust between health workers on the process of selection for health worker training. District stakeholders, however, explained that they decide who goes to training by considering qualifications and need. Sometimes invitation letters are sent to districts directly from the Ministry of Health with a name or title of those to be trained.

Overall, we have seen that Bunda faired better than Tarime in terms of case management training, despite a shared concern over cost. Factors responsible for this include early sensitization and training of the CHMT, better continuity of policy leadership, earlier and greater availability of district-level health funds, and external support (both moral and financial). Bunda also has its own facilitators, which helps to cut costs for training. All these factors appear to have acted as an incentive for CHMT to plan and budget for annual IMCI case management training in Bunda. Tarime had no such advantages and further suffered from insecurity. In both districts the high cost of IMCI training was a result of the length of training, the residential nature of the training and the high facilitator to participant ratio. The high cost limited district capacity to expand training coverage, and slowed down the roll out process. The basket fund which was used to finance IMCI training, was limited due to the budget ceilings on training, which, meant that only a limited number of health workers could be trained in any one year. This also delays district capacity to show measurable effect.

Shortening the in-service training period, moving away from residential courses and/or reducing the number of facilitators are ways of reducing the cost of training. The practice of pre-service and on-job training for IMCI potentially provide the means to reduce the number of health workers that require case management training, allowing for the roll out of IMCI knowledge and skills to be done more quickly. However, pre-service training has been introduced inconsistently and omits the counselling component that is felt to advocate for IMCI and impact on subsequent practise. Lack of clarity over how to communicate the knowledge in OJT provides room for differences in interpretation and action by policy stakeholders at all levels. In addition to the problem of low training coverage, health workers'

compliance following training is also constrained by a number of underlying factors, which are discussed further in the next section.

Factors Underlying Poor Compliance

Apart from low training coverage, one of the major issues affecting IMCI implementation, identified in Part Three, was the lack of health worker compliance/ adherence to IMCI protocol, in terms of time spent with patients and consistent use of IMCI guidelines and procedures. Factors underlying this include health system weaknesses (such as lack of drugs and job aids, shortage of human resources for health, poor supervision) and demand-side factors such as community pressure or a lack of community compliance. We start by examining supply-side weakness and then turn to community compliance.

Health System Constraints to Health Worker Compliance

In this section, we consider two main components of the health system that affect health worker compliance: lack of supplies, health facility set up, and human resource shortages.

Limited Means to Document Case Management Process

One of the challenges to effective protocol implementation in both districts was the limited supply of IMCI materials for staff in facilities. An example of this is that, during the training, health workers use a separate recording form to record the entire case management process, including condition assessment, classification, treatment and counselling for each consultation. However, during routine practice in facilities, only one recording form is available and must be used as a reference. It cannot be filled as there is only one copy available. Due to cost constraints, health workers are not provided with individual recording forms for each patient. Having a separate recording form for each consultation is currently being tested as a method to encourage health workers to use IMCI classification methods [33].

The lack of recording forms could be one of the disincentives for trained providers to thoroughly practice IMCI. Although this was not bought up as an issue by respondents during the interviews, it is conceivable that it could be difficult for them to keep track of the recording process in their mind, limiting their capacity to produce a well-reasoned classification. Further, most trained providers said they found they had managed to understand IMCI during the case management training without much difficulty, partly because they were recording each stage of the case management theory and practical sessions. The lack of recording forms in actual practice at their facilities might leave health workers with an impression that their efforts are not counted anywhere and thus act as a disincentive to stay the course. This is compounded by the limited coverage of IMCI within the HMIS. The lack of opportunities to document IMCI practice in facilities might be a further disincentive for providers to classify and record according to IMCI classifications, knowing that it is difficult for their immediate supervisors to monitor what they actually do during consultations.

The more general lack of IMCI job aids was also shown to limit the capacity for OJT in the previous section. Many trained health workers in Tarime said they had tried to follow the IMCI algorithm in the early days after IMCI training, but as the days went on, their interest weaned. Like job aids, the availability of IMCI drugs is also important and we turn to this next.

Lack of IMCI Drugs

With the introduction of IMCI it was expected that drugs for under-fives would be prioritized in district budgets. It was also hoped that IMCI would lead to a more rational use of drugs, i.e. trained health providers would prescribe only necessary drugs to sick children and thus avoid duplication of drugs or "polypharmacy". This would improve treatment outcomes, and save costs for districts from buying unnecessary drugs. The CCHPs of both districts indicated that Bunda had allocated more money per health facility for IMCI drugs and supplies than Tarime at health centre and dispensary levels. Indeed, Bunda had budgeted an average of Tsh 213,433 per facility for drugs and supplies at health centre level compared to Tsh 188,808 in Tarime. The difference between districts was even more marked in the drug budget allocation to dispensaries, which was an average of Tsh 109,013 per dispensary in Bunda compared to Tsh 50,098 in Tarime. Although, the figure for Bunda was derived from the CCHP of 2006/2007 [24] and for Tarime from 2005/2006 [34], we do not expect the yearly pattern to have changed substantively. Data were not available for Tarime regarding the budget for IMCI drugs and supplies at the hospital level.

Despite the difference in budgeting for drugs for IMCI in both districts, they both complained of drug shortages due to weaknesses in the drug supply system for all age groups and for children under-five years in particular.

Regarding the drug supply in general, all respondents claimed that the drug supply system is very inefficient. The "indent system" (facilities order drugs according to their demand), which was supposed to improve the procurement system, has not solved the weaknesses of the "kit" system (facilities provided with a fixed quantity of drugs). According to respondents, the medical stores department does not seem to have enough capacity to cater for the needs of public health facilities. There was strong dissatisfaction with the frequent "out of stock" responses from the MSD without explanation for the shortage of important medical supplies.

The procurement system is such that the Ministry of Finance pays the MSD directly for drugs ordered by districts. Districts and facilities are supposed to collect medical supplies from the MSD. However, if it turns out that demanded supplies are "out of stock", there is no clear procedure for reclaiming the prepaid funds from the centrally controlled agency (MSD). This was seen as a big setback for accessing the funds allocated to districts and facilities from the central budget. The image of the MSD was that of a 'big fish' which cannot be questioned by district or facility. District stakeholders in both districts felt powerless to influence the MSD if the ordered drugs and equipment were not supplied. In trying to reduce the effect of the stock shortages, districts and some facilities opt to buy drugs from private suppliers who are approved by district tender boards – legal bodies formed under government regulation to approve all tenders for supplying public goods and services at the district level.

In contrast to our findings, a study in the Coastal Region found that health workers did not name drug availability as an obstacle to practising IMCI [1]. It is possible that proximity to Dar es Salaam facilitated access to drugs in this area. A study from Bunda district [22], which was conducted in the same year, showed that 52%, of 25 health workers interviewed, reported to have an inadequate drug supply. Fourteen (56%) said the drug kit does not target children under-five years of age. Septrin and amoxicillin were mentioned as the most needed drugs for under-fives and were in short supply. Whilst the availability of drugs for under-fives, especially those recommended for IMCI, might not be the only determinant of adherence to the protocol, these drugs clearly need to be there to enable health worker to comply effectively with IMCI treatment guidelines.

Drug shortages seem to impact on health worker behaviour in various general ways. In the study districts, due to "drug shortages" some health workers have invented their own ways of dealing with patients through the rationing of drugs. We look at this briefly.

Through observations and informal interviews with mothers of under-fives in facilities from both districts, the research team learned that health workers at the dispensing windows handle patients differently when deciding how to allocate scarce stocks. Sometimes they would ration the available stock according to their perception of the patient's ability to pay and their familiarity with the patient. If a health worker believes that a particular patient "is able to buy" the medicine, "doesn't really need it", or "the child's condition is not really serious", then the patient/mother is more likely to be referred to a private pharmacy or *duka la dawa.* Sometimes, the dispenser might decide which among the prescribed drugs is to be given and to reserve others so that "at least every patient gets something" from the facility. In facilities with an inpatient department, inpatients were given priority over outpatients. A mother with a sick child who has been admitted to the inpatient ward would be given medication (though not necessarily for free) while outpatients were more likely to walk away empty-handed. While these practices were initially thought of as limited to 'problems in the dispensing window', it was learned that it was more of a shared understanding among health worker staff than irrational practice by one provider. Overall, drug shortages in facilities result in HWs being less likely to administer the first dose before the sick child leaves the facility.

Health Facility Set-up

According to IMCI, after identifying treatment for a sick child and subsequent prescription, health workers are required to administer the first dose to the sick child. In the case of directly observed treatment (DOTs), observation is also required. However, in practice, this could be difficult. This is because the standard procedure in health facilities is for patients to get their drugs from the dispensing window. The prescribers are unlikely to have the drugs handy in the consultation room where the assessment, classification and identifying treatment occurs. This suggests that for IMCI to be completed appropriately, staff at the dispensing window must also be aware of the importance of compliance with the first dose that is associated with IMCI. Dispensing health workers are mostly low cadre staff (such as medical attendants) who are not aware of the process. They may also be busy attending long queues of patients, perhaps also poorly motivated due to low opportunities for training. Sensitization of all health workers who have contact with under-fives, including those dispensing drugs, is therefore crucial. This should be accompanied by necessary improvements in human resource supply and utilization.

Human Resource Shortages

One of the major additional challenges to IMCI implementation within facilities in both districts is the lack of human resources, due in part to the freeze on public sector workers and also to problems of health worker retention in rural districts. Both districts experienced the problem of understaffing at the health facility level. Whilst Bunda, overall, had a higher number of health workers per 1,000 population compared to Tarime (Part Three), they still faced staff shortages overall. In Bunda, for instance, total manpower required across all health facility levels is 515, according to the CCHP of 2006/2007. However, the total number of health staff available was only 408. Data from a cross-sectional study in Bunda showed a serious shortage of health workers in all public health facilities, especially amongst prescribers [22]. Dispensaries were the worst affected. As a result, health workers were very dissatisfied by the staffing levels, especially in dispensaries. Unfortunately, the research team were not able to get similar data for Tarime.

The two districts also experienced problems in retaining health workers. For instance, 12 IMCI-trained providers in Bunda left the district. As reported in Part Three, the shortage of health workers resulted in a variety of practises, including a reduction in the time spent on IMCI per client and the use of informal providers to treat patients. The impact of the human resource shortage on health worker practice is highlighted in the following quote by a trained health worker in Tarime:

> *I think this is a serious challenge because if you are in a situation where you are alone at the centre and you have, let us say, 50 children, under normal circumstances, you will have to work under pressure and the chances of observing or using the IMCI guidelines is almost nil if not minimal, and if you will try to apply it definitely you will have to skip many things or you will automatically forget some of the things that needed some emphasis or insisting*.

Staff rotation was also common in both districts and was more an issue at the hospital level. Rotation schedules varied. Sometimes a health worker would spend only the morning hours in the outpatient child clinic and spend the rest of their working hours in the general outpatient area. Another type of rotation is when some health workers spend two or three days in outpatient child clinic then rotate to other sections/departments in the hospital regardless of IMCI training status. Hospital managers justified staff rotation on health worker shortages. There was also a negative perception regarding work in the outpatient mother and child clinic as such places tend to be very crowded with more likelihood of patient dissatisfaction (particularly because of long queues) and higher chances of having to attend complicated illness cases, according to some HWs from both district hospitals.

A variety of different measures have been considered in efforts to solve the human resource shortages for IMCI. At the national level, two stakeholders proposed that efforts should be made to give IMCI training to all medically trained staff working in health facilities as a priority. Although in Bunda medical attendants were trained, this was in later years of implementation and in lower numbers than the clinical officers trained. In both districts, the primary focus for selecting health workers for training was facility in-charges who are mainly clinical officers. The explanation for this was that priority should be given to those who are prescribers, who can understand the modules better.

Another national stakeholder recognised the importance of informal providers, and went further in defining medical attendants as anybody who happens to be at the facilities attending patients irrespective of medical training.

> *In the facilities we don't have watchmen, cleaners and medical attendants but we have medical attendants because all provide health services*.

Although training lower level cadres generally appears to be important for successful IMCI implementation, higher level cadres equally need to be trained in order to be supportive. In cases where lower level cadres had been trained in a facility and not higher level cadres, this caused tension and limited the ability of the former to practice IMCI. For example, if a facility had no CO when the training opportunity came, a junior health worker might be trained. If a CO came there later and s/he was not trained, it became difficult for the trained junior to practice IMCI. There was also a general feeling that higher level cadres may feel threatened by lower level cadres' ability to practice IMCI even when the former have been trained. A trained health worker in Tarime put it this way:

Sometimes we try, but frankly speaking, the doctors do not like this… because they know they are the ones who can treat… they are the ones who know how to treat; our activity is to take care of patients… We are not doctors; when we start to treat they see it as if we are stepping into their work.

There could be several possible explanations for the attitude of clinicians towards more junior staff in relation to IMCI practice. From their clinical training and professional socialization, they might feel that they know what they are supposed to do to a sick child. They could also feel disempowered by IMCI training which their juniors can perform after 'just a few days training'. The training of junior staff could be perceived as a threat to the status attached to clinical knowledge. Professionals thus resist by offering little or only passive support to trained juniors, especially if they have not been trained themselves.

The experience from Tanzania is not unheard of in other parts of the world. In 2001, the Medical Officers association of Brazil protested and prevented the MoH from training nurses in IMCI, arguing that the latter are not allowed to prescribe drugs [35]. On the other hand, the experience from Tanzania's MCE sites shows that non-clinicians (such as medical attendants) have been trained successfully and perform even better than medical officers in following IMCI guidelines. District stakeholders generally claimed that non clinicians can be trained more successfully and usually try harder to practice IMCI because they do not have a clinical bias.

Human resource shortages and inadequate use of existing staff are likely to limit capacity to implement IMCI and lead to a reduction in consultation time, as seen in Part Three. We also recall from Part Three that IMCI supervision was not happening as effectively as it should. In the next section we explore the factors behind poor supervision in the districts.

IMCI Supervision

Supervision will make people love their jobs because they know that one day they will be followed up. If people are just left without any supervision, at first they might try to be serious but with time they will use the short cuts and leave an item after another. Therefore, I think lack of supervision has weakened IMCI, people need to be reminded that you are supposed to do this and this, why aren't you doing it accordingly? If you are being assigned to cultivate a farm, and for some time there is no supervision, then even your morale of doing that job will drop and at last you will be going just to show yourself. (Trained HW in Bunda)

Follow-up Supervision

One of the main reasons put forward for lack of or delayed follow-up supervision after case management training was the lack of facilitators and funding set aside for this in Tarime. Indeed, in Tarime no facilitators were trained after the first and only case management training in the district in 2003. Health workers with potential to become facilitators were earmarked but were not trained because of a "lack of funds" and of facilitators to conduct the training:

Sometimes we plan for IMCI training and you want to do it a certain month, but you find that it becomes really difficult to get the facilitators. When you ask them they would tell you that we are in Mtwara so postpone yours, it becomes really

discouraging, I think districts should have IMCI trainers instead of making it knowledge of the few, a status issue. (District Stakeholder in Tarime)

It was suggested that facilitators in Bunda were overstretched as they carry out health worker training in a variety of districts, and this was responsible for the delays in follow-up supervision reported in Part Three. Supporting this, a stakeholder from the regional level told that:

We appreciate the fact that the presence of local facilitators in Bunda has increased IMCI training coverage, but for the follow up component … we plan for it, but it usually comes very late… its implementation is difficult, because while we are considering follow up visits the facilitators are busy training health workers in other districts or have some other things to do, so follow up becomes really difficult… it is really difficult. However, at the end of the financial year we come to learn that there are unused funds, although it is very little funds, so you find that we have to do the follow up although it is already late and the standard six weeks period has gone, … you find that the facilitators are available after two, three months… but at least they can do it.

In interviews with national stakeholders, the shortage of IMCI training facilitators was named as a national problem. To a large extent this problem seems to be real, but the available facilitators could also be being underutilized. Although an isolated case, in Bunda, a former facilitator who claimed to have conducted several IMCI training courses and follow-up supervision in the past, had ceased to do so as health managers no longer invited them for training or supervision. The former facilitator explained this as a strategy to maintain the status quo by the "few" available facilitators who protect their status as national facilitators and also benefit from the training allowances.

IMCI was also a weak component in general supervision and we turn to this next.

Routine Supervision

Apart from IMCI follow-up supervision, the CHMT are also required to integrate IMCI into their routine supervision. District interviews revealed that IMCI content in routine supervision was generally weak, or absent, especially in Tarime.

The big problem here is that there are no regular supervisions. This makes the program unsuccessful and also since the trained staff do not get any further supervision, this does not encourage them to follow the training skills and also does not motivate the untrained staff to learn from them. (Trained HW in Tarime)

For the reasons outlined at the start of this section, Bunda had managed to create a checklist for IMCI in routine supervision, and therefore was better able to supervise IMCI routinely. However, there were still reports of difficulties with this practice, which were not dissimilar across districts.

One issue that was commonly raised by stakeholders in both districts was that IMCI was too complex and time consuming to effectively feature in routine supervision. The argument was that the strategy had too many elements to observe, such as drugs, equipment/job aids, as well as case management observation which is time consuming. The impression was that being trained in IMCI case management was not sufficient to equip CHMTs to do effective supervision, as indicated in the following quote:

I can't just leave from here and go for the IMCI supervision…because I do not understand how they do it and how to do the supervision, and when you are doing the supervision, you are supposed to know more than what he or she knows and this is not the case… If that person knows more than you then you better leave the supervision… Otherwise, you won't say anything. (District Stakeholder, Bunda)

It was also felt by district-level stakeholders that for IMCI supervision to be effective it should include case management observation, which takes time and overstretches their capacity to undertake supervision. A lack of reliable transport for supervision was also mentioned as a constraining factor. They thus felt that the IMCI supervision needs to be condensed to match the time frame of supervision of other activities. Given the general shortage of time for routine supervision, the CHMT might further feel discouraged to follow IMCI activities as there are no incentives for spending extra time on IMCI. The following quote shows how time and transport constraints serve to limit capacity for IMCI supervision:

We have a lot of tasks, many facilities, you can't say that today I am going to do IMCI supervision and then come back for another program. The working conditions are another challenge because we don't have reliable transport… (District stakeholder, Bunda)

However, the importance of supervision was recognized by stakeholders in both districts, as illustrated by the following quote:

Lack of regular follow ups means even the training is meaningless, because I will attend the training, get the money out of it and when I come to the centre I just do the treatment the way I think fits the situation or the case at hand. If there are regular follow ups, then staff will be updated too and get current knowledge on children's diseases. It even encourages or forces the staff to read those guidelines or practice IMCI because you are not sure when the inspectors will be around for the supervision. Therefore, what I can say generally is that there is a need of making the follow up of those who have been in training, to see if at all they are doing their activities according to the IMCI guidelines or the knowledge they acquired in the training. (Trained HW in Bunda)

A national-level stakeholder reported that there were plans to prepare an integrated supervisory checklist including IMCI in routine supervision, like Bunda has already instituted, but this has not been implemented yet. This appears to be due to the lack of agreement to date at the national level on which indicators to use. A similar discussion has been taking place with the HMIS on including more IMCI-specific classifications.

Weaknesses in supervision have implications for IMCI practice in general, but also knock on effects on other areas of service provision. For example, poor supervision and weak management at the regional level were felt to be the cause of the practice of informal providers.

The problems of routine supervision are not limited to IMCI; there are weaknesses with the entire supervision process. Part of the weakness in the supervision system stems from the decentralization process, which gives little power to regions, a level with official mandate to supervise districts.

Regional and National Level Supervision

The reasons behind the lack of regional involvement in supervision at the district level were multifold. It was claimed that under decentralization districts have more power than the regions since they have clearly defined sources of funds. Funds for running the district hospital and the RHMT go through the Regional Administrative Secretary (RAS), thus the mandate of allocating the funds lies with the latter, with the RHMT having little voice on how to spend the money. Emphasizing how this affects supervision, a regional stakeholder said:

> *In the past the money for supervision was directly sent to us… but now the money is going through the RAS's office and we don't have much power over it, sometimes we don't get it, maybe we cannot question it… It is up to the discretion of the RAS and his regional accountant… to sit and re-budget. Sometimes the regional hospital or the RHMT, they are quite unaware… They don't know how much money has been assigned to them.*

Regional stakeholders argued that, with the reforms, districts feel more accountable to the district directors (DED) than to the RHMT and this dis-empowers the latter. In the course of decentralization by devolution, regions have lost power and "do not know where to belong", but also lack money for supervision. The legal existence of the region and apparently its power as supervisor of the "technical sector" (i.e. implying the health sector) has been thwarted. This was associated with power tensions between the CHMTs and RHMTs, and between the RHMT and other regional authorities, such as the regional secretariat. This has left room for misinterpretation of roles, and invisibility of the RHMT and RMOs as effective supervisors, which has contributed to ineffective supervision of health interventions like IMCI from the regions. Further, in order to access IMCI training in the districts, the regions are dependent on the districts to plan for them and pay their allowances. In response, or perhaps as a form of resistance to this situation, RHMTs have ended up knowing little about what the districts do, having less or ineffective supervision and maintaining poor relations with the CHMTs.

The disempowerment of the regions has also led to their alienation and lack of knowledge on district-level structures introduced under the reforms, limiting their capacity to supervise, as illustrated by the following quotes:

> *We go down there…we don't know how the Health Management registers work, how do you guide them to calculate the indicators? …So you find few people are knowledgeable about the issues at the district level, how they are working… how the new system works, structures etc… So it's important to be really conversant with the issues down there… And we know for sure what we are going to do. Sometimes we don't have a checklist, we don't have guidance, we don't know exactly what to do there, we are not focused. Exactly down there, it's not our own fault but because of the introduction of the system…* (Regional Stakeholder)

> *The problem is not because of IMCI but because of PMO-RALG. ... The district has no better right to that money than the RMO. Technically the DMO is responsible to the Ministry and the RMO, but administratively the district is responsible to the DED. (National Stakeholder)*

Regional stakeholders blamed the reforms for causing confusion over roles. They urged the DMO and the CHMT to differentiate between their "technical role" and "administrative role". Technically CHMTs should be accountable to the RMO and RHMT, and administratively they should report to the DED. They accused CHMTs of failing to acknowledge this reality and

perhaps intentionally taking the opportunity of the reform confusion to consolidate power. However, they stated that regions have been empowered recently by increasing the number of RHMT members to seven and increasing funds, and this is expected to strengthen supervision. Furthermore, the MoH has recently taken the initiative to train Regional Medical Officers in IMCI in an effort to strengthen supervision and increase awareness of the strategy.

On their side, districts recognize the need for supervision both from the regions and the MoH. District stakeholders expressed the need for supervision from the national level, arguing that the latter should not only "make policies" but should also visit districts to see what is happening on the ground. This was emphasized by district stakeholders:

> *I think when you have invested something somewhere, you need to make the follow up, monitoring it closely rather than waiting for a report where sometimes it reaches you when the things have already got worse.* (District stakeholder from Tarime)

District stakeholders also suggested that the Ministry should clearly declare its short and long-term plans on health goals and interventions like IMCI, and effectively communicate them to stakeholders at lower levels, to ensure support and sustainability. During discussions with key stakeholders at district and facility levels, IMCI was seen as an "old language", implying an intervention of the past, compared to newer and more fashionable interventions such as those related to HIV/AIDS. The health system was perceived as introducing interventions according to the latest fashion, driven by rapidly changing priorities as determined by donors, rather than promoting consistent long-term strategies that reflect local needs. It was felt that IMCI was perceived as 'a passed wind' in Tarime, and therefore received less attention among healthcare priorities. This also affected stakeholders' commitment to long-term implementation.

District stakeholders generally perceived that it was the MoH that was responsible for addressing most of the weaknesses in IMCI, especially the health system problems and even the partial implementation, particularly the lack of community IMCI.

Community Compliance

Relations between providers and communities were also found to affect IMCI practices, especially with regard to drug prescription, dispensing and referral.

One of the objectives of IMCI is to use drugs rationally, thus avoiding prescribing unnecessary drugs. Health workers in both districts indicated that this does not seem to be understood or welcomed by most mothers/caretakers. For example, a mother who has brought a baby with a mild cough would prefer to get cough syrup. Mothers hesitate when they are advised to use tea with lemon or honey to treat their babies, as advocated in IMCI. Likewise, for babies with diarrhea mothers seem to be more comfortable with drugs like Flagyl than oral rehydration salts (ORS). Many of the health workers complained that "people were used to getting many drugs". IMCI means they end up getting "few drugs". This often resulted in them complaining that health workers have not been fair to them. Sometimes this leads to a loss of community trust in health workers. A health worker in Bunda who was trained in IMCI went as far as suggesting that:

> *Can you please tell the IMCI team to think of something like a placebo to give to coughing children, at least to satisfy the mothers that their children have been*

treated… they have lost faith in us, they think that we don't want to give medication or we are selling them elsewhere.

Although we do not know to what extent community pressure has actually affected health worker prescribing practice, it was raised as a concern in numerous interviews.

In addition to the rational prescription of drugs, IMCI recommends referral of all children classified with severe conditions. Health workers were sometimes resistant to refer cases according to the IMCI guidelines, as they believed they could manage the cases themselves. They felt the guidelines on referral to be disempowering, as indicated in the quote below from a health worker trained in IMCI (Bunda).

By following the IMCI guideline, as a health worker you are advised to refer the case after you have seen that the steps you are following during the diagnosis lead you at that stage… what this means is that they have taken away the power of a clinician and willingness to handle the case you could have managed.

Health workers were also concerned that by sticking to the guidelines, they might undermine their professional status in the eyes of the community, as illustrated in the quote below by a trained health worker in Tarime:

Today I gave a child the first dose and this was a child who was supposed to be referred according to the IMCI guideline, I decided to comply with IMCI. After they went home the child's condition started to improve. After they saw that the child is improving they didn't want to go to the referral centre, and decided to buy the second dose from a drug shop. In such cases, they would think that I am or we are not competent enough in the medical field. They would say that my performance is poor, and you know when you have the first case of this nature and the second. The mothers share information and they would think that the first mother did this and this, and I should do the same or she went to so and so and got help, therefore I should also go there. In the long run, they would no longer come here for treatment.

Furthermore, when severely sick children are referred, their mothers or caretakers sometimes face barriers to taking them for referral care because transport is unavailable or they cannot afford it when it is available. Poor infrastructure makes most roads impassable, especially during rainy seasons. Bunda has no single ambulance, while Tarime has one which is mostly busy with activities at the district hospital. According to respondents, hiring a car to reach the hospital could cost between 20,000 to 50,000 Tanzanian shillings, which most people cannot afford as they depend on subsistence farming. Therefore, the health workers do not necessarily follow the algorithm as it is. The following two quotes are from a health worker in Tarime and a health worker in Bunda, respectively, both trained in IMCI, expressing dissatisfaction with IMCI guidelines on referral.

There are also some referrals which are not important, and in this case I don't have to send a mother and spend not only her money but also waste her time while her financial position is weak. By referring her, it means she has to go to the referral centre, she will lose a lot of time on the way and at the same time she is expected to go back home and perform the domestic tasks. We therefore carefully examine each case to see if it is important and necessary to refer a case to… help these poor women. We have our own IMCI (practice) here.

We are forced to use the guidelines all the time… at the dispensary you are not allowed to stay with a patient for a long time. IMCI doesn't encourage you to handle the complicated cases even if you are capable in terms of experience and the skills one has.

Distance was also seen to be a barrier to access to referral facilities. Some facilities are more than 60 km from the district hospital. A cross-sectional study in Bunda reported that on average residents spend about one hour to reach the nearest heath facility [22]. Nafuba, Machwela, Namuguma, Lwiga, and Buyanza, which are small islands in Lake Victoria, and part of Bunda district, were inaccessible throughout the year for lack of reliable transport.

Some of the interviewed health workers in this study claimed poorer women are busy working and it may be more difficult for them to seek care for their children. The following was quoted from a health worker trained in IMCI in Tarime:

The way I see it in this area, without going to the farms, weeding and roofing, women won't get anything, even the cooking oil, the milk, when they go for these casual works, they hardly get anything and just be stranded at homes with nothing… And because of this, they delay coming for the treatment due to the nature of the works they are doing.

Apart from high costs for transport, mothers/caretakers tend to worry about not knowing anyone at the referral centre. Further community concerns included being unable to pay charges, where to get food as the facilities do not offer food to patients or relatives, and being far from the family in case the child's condition becomes more severe. At the household level, women also lack power to take decisions to go to referral facilities, and have to wait for the husband to give money and/or permission to go to the district hospital. This affects the entire referral process and delays care seeking.

Providers and clients share most aspects of daily life but are also divided by the lay-professional worldview which health workers and communities are socialized to. At times, health workers might feel compelled to adhere to standards due to pressure from their supervisors, but this depends on the degree to which they can negotiate the trust and understanding from communities. Sustaining a good relationship with communities, maintaining confidence and trust, also seem to be important for their professional status and act as social capital due to the high level of interdependence of rural life.

Failure to comply with IMCI then could also be a rational middle way taken by providers to cope with their daily circumstances. In other words, health workers could use their understanding of the local context and practicalities of rural life, and their ability to alter actions, to re(de)fine policy in ways that make sense to them and their surrounding community. Although patients have power to influence the practice of providers to the extent mentioned above, providers can exploit the asymmetry of information between themselves and their patients, and the relative lack of community knowledge of health conditions and treatment options or costs. Such exploitation can manifest itself, for example, in the charging of fees for services that should officially be free. Efforts to improve adherence to IMCI therefore needs to be accompanied by health worker incentives, reduction of poverty, increasing community awareness of the intervention, improvement of infrastructure as well as health system strengthening.

Implementation of c-IMCI should increase community awareness, compliance with drugs, health seeking behaviour, rational use of drugs and referral, yet this is also facing challenges.

Stakeholders in the two districts, as well as regional and national respondents, acknowledged that the lack of the community component in IMCI limits the success of facility-based IMCI. Some of the challenges to implementing case management together with c-IMCI that national stakeholders pointed out include the timing of implementation, with c-IMCI coming later than facility-IMCI. Further, there have been problems with stakeholder consensus mainly because of the multi-sector cooperation demanded for c-IMCI. National stakeholders argued that it was difficult to bring people of different professions together in the health field, a field dominated primarily by medical professionals.

They also explained that from the introduction of the strategy, facility and community IMCI were not implemented together, each component having its own champion (WHO, facility) and (UNICEF, community). In the piloting stage, c-IMCI was implemented in districts different from those testing facility-IMCI mainly because donors were operating "territorially" or in districts where they had established themselves. When direct financial support for IMCI districts was reduced, facility-IMCI remained dominant because of WHO's technical support and closer affiliation with the Ministry of Health, while UNICEF's activities have been associated with child welfare in general and not specifically health. This sort of fragmentation within the policy itself has continued to dominate IMCI implementation efforts to date.

"Complications" of c-IMCI arise from its multi-dimensional nature, requiring consensus between "too many sectors" according to national stakeholders. This multi-sectoralism was met by resistance by some national-level actors and translated into poor multi-sectoral commitment and limiting funding allocated for c-IMCI at all levels, as indicated in the quote below:

> *Community IMCI brought people from many departments like the Ministry of Water, Ministry of Health, Ministry of Community and Social Welfare etc., thus was difficult to coordinate and agree*. (National stakeholder)

This in turn affected the delivery of IMCI as a complete package, thus minimizing impact. According to national stakeholders, only 37 districts have started to implement c-IMCI (compared to 105 with facility-IMCI). If such dichotomies are not addressed, the effectiveness of case management will continue to be affected by poor community compliance.

Overall we have seen that lack of "compliance" in facilities could also be a manifestation of poor compliance to the conditions necessary to deliver the policy. Policy analysts argue that systems tend to count on well-structured policies (the content), with little attention given to the process and actors who are expected to deliver the policy [7]. According to policy analysts, it is commonly assumed that well-designed health policies will deliver health to populations and efforts to improve implementation tend to focus on managing the actions of implementers, mainly through training and revising policy guidelines. Away from policy inventors and supervisors, with scarce supplies and high patient load, poor support from untrained peers and unaware communities, poor infrastructure and lack of space, contextual factors could combine as disincentives to practice IMCI by trained health workers. Given the top-down nature of most policies, what reads as unwillingness to comply or poor compliance by health workers could in some cases imply genuine efforts to cope with job demands in an unsupportive environment. In some facilities in the study districts, health workers rationed drugs and referrals according to their perception of genuine client need, the manageability of particular conditions, a shared understanding of the surrounding world with their clients (impassable roads, high transport costs, demands of cultivation season) and a patient's trust which they are keen to maintain. Combining these issues with concerns about professional

status and workplace socialization over what is possible to manage locally, an individual health worker may have little if any incentive to adhere to IMCI consistently.

The lack of the community component of IMCI also seems to be a barrier to effective implementation. Without proper participation of communities together with improvement of the health system, IMCI will keep facing challenges and health worker training will continue to have limited impact on health worker behaviour. The following section provides an understanding of the broader policy issues and the way this affects power relations and the pattern of IMCI implementation.

IMCI Implementation and Programmatic Politics

In official terms, IMCI is neither a vertical intervention nor a programme, it is an integrated or horizontal intervention. In this section, we review some of the challenges of an integrated approach to child survival such as IMCI, in terms of the difficulty of monitoring implementation and impact; time taken to achieve outcomes; reliance on a well-functioning health system; and tensions with vertical programmes which should fall under IMCI, yet have their separate lines of funding.

It was common to find stakeholders at all levels relating the weaknesses in IMCI implementation to the nature of the intervention itself, i.e. being an "integrated" or "horizontal" intervention or not being a programme. Comparing it with the vertical programmes, national stakeholders argued that programmes like malaria, EPI, HIV/AIDS, TB and leprosy are better funded and better monitored than IMCI. IMCI was also perceived as depending on the cooperation of too many actors and was thus seen as 'everybody's responsibility' but 'nobody is accountable' in the case of failure.

Indeed, "horizontal" interventions like IMCI are difficult to monitor due to the multitude of diseases which are covered, and the emphasis on process which is inherently difficult to monitor. The limited coverage of IMCI-specific indicators within the HMIS, as well as the lack of consensus on indicators for inclusion in an integrated supervisory checklist are indicative of this point. Integrating the various IMCI illness/symptomatic classifications in the registers was seen as problematic to a system which is already established around strict disease/diagnostic global standards. Research from Tanzania has shown that health workers classify and treat according to HMIS categories rather than IMCI classification, including those trained in IMCI case management [1]. Lack of data at country level that clearly tracks progress and documents impact has been named as a key challenge facing IMCI. Vertical programmes are inherently easier to monitor, with verifiable indicators (such as the number of children immunised), and in this sense are more transparent and visible.

Further, IMCI takes time to achieve outcomes, being reliant on a lengthy and costly training process which, due to financial constraints, must be staggered over a period of years. IMCI is a comprehensive long-term strategy, which is heavily dependent on strengthened health systems. In contrast, vertical programmes tend to have a limited timeframe and less interest in strengthening weak health systems. Indeed, vertical programmes like EPI have quickly and significantly achieved in weak health systems [36] partly due to the relative advantages in funding and very specific and simple monitoring mechanisms (e.g. immunisation coverage). One of the national stakeholders put it this way:

> *In principle, IMCI helps to bring all the other components together,.. to me it cuts across specificities of malaria, EPI etc….But what IMCI is not doing is making things*

available, IMCI is just treating or looking at a child in an integrated way while the program of malaria makes sure that all that is needed is available… because it has a lot of funds… EPI looks if the child have been immunized, …IMCI hasn't make provision for the vaccine …it will just look at the child and if the child hasn't been immunized then they will tell the caretaker to take the child to the immunization department…It is a check list program while the other programs they are supposed to bring that service there at the facility.

This implies that IMCI is seen as a quality assurance strategy which focuses on monitoring how the services are delivered rather than actually delivering services, which undermines it compared to its vertical counterparts.

In some sense this may have affected the willingness of donors to sustain funding commitments to IMCI compared to vertical programmes. Despite the rhetoric, vertical disease oriented programmes, which have easily verifiable goals and can achieve quick wins, may well be a more appealing investment opportunity for donors who are increasingly seeking to demonstrate value for money in their aid allocations.

It was argued that, compared to integrated interventions like IMCI, most successful vertical programmes have well funded offices, are provided with tangible supplies and well motivated managers. The following quotes illustrate the point:

EPI has been heavily funded by donors for quite sometime; it had its own structure, own system, somebody working 24 hrs for the program at all levels…. I tell you with a lot of finances, they have their own vehicles. National Stakeholder.

In the RHMT you will not hear about IMCI, but you will hear a lot about (…) TB and leprosy, many reports coming, (…) TB is a vertical programme. In the Ministry there are people specifically dealing with TB…they make sure they have given out drugs…. and make sure reports are received every month., They hold regular meetings to monitor the programme… supervisors from the ministry come down to facilities to see how things are going .. so you can't compare this with IMCI … being integrated brings the challenge of accountability .. Regional Stakeholder.

IMCI was supposed to be an umbrella intervention coordinating most if not all child health programmes/activities such as the control of diarrhoeal diseases, malaria, immunization, nutrition, and respiratory infections. The rationale for that was not only to pool resources (financial, human resource skills) but also to move attention from vertical/ programme/disease specific approaches, to integrated efforts seeking maximum child health gains.

IMCI has its specific actors at the national level (such as IMCI national coordinator and six full time officers). There is also a national IMCI secretariat which ceased to hold meetings about a year ago, and district level representatives (DMIFP). However, there have been many challenges in integrating well established and heavily funded programmes like EPI, malaria etc. within IMCI. Indeed, from the beginning, IMCI faced problems of acceptability by some vertical programmes which were supposed to be 'parented' by IMCI "seeing it as a threat" to their existence or as "complicating the system". This might explain the dissolution of the IMCI working group. Indeed, the IMCI working group used to meet regularly. Initially the members, who were from different departments within the MoH, used to meet every Wednesday. Now they no longer meet. National stakeholders indicated that there were too many departments,

that IMCI was “too multi-sectoral” resulting in difficulties reaching a consensus on some issues.

Some regional and national stakeholders suggested that IMCI would be more successful as a programme rather than keeping it as an integrated intervention depending on district willingness to allocate resources for implementation. The main argument for this was that it would attract direct funding like other programmatic activities and thus increase resource availability for implementation. This would allow the channelling of IMCI specific resources for cars (for supervision) to improve implementation, and was encouraged by CHMTs.

Overall, implementation of IMCI suffers from the challenges of monitoring impact compared to vertical programmes, reducing the potential for attracting investment. It is slow to achieve outcomes due to financial constraints, and due to a reliance on a well functioning health system which may not be adequate. Together, these factors undermine the role of IMCI as umbrella to vertical child health interventions, that are often more heavily funded and politically powerful, undermining the objective of true integration that was the original rationale underlying IMCI. Part Five provides a summary of the main findings and recommendations drawn from the study.

PART FIVE: SUMMARY OF THE MAIN FINDINGS

Tanzania was one of the countries which committed itself to implementation of IMCI, designed to strengthen health worker skills for managing childhood illness, improve the health system as well as household and community practices related to child health. After a decade after the introduction of IMCI, Tanzania has made a number of notable achievements in terms of IMCI implementation. This includes the establishment of an independent IMCI unit, headed by a National IMCI Coordinator, under the Reproductive and Child Health Division of the Ministry of Health, which is responsible for coordinating all implementation activities in the country. Due to the high level of decentralization in the country, districts also have a great degree of autonomy and decision making power, and they have a reliable source of funding for IMCI case management training through the basket fund.

However, our study indicates that despite these achievements IMCI implementation in Tanzania has focused on case management training, leaving much of the health system and community aspects unchanged. At the district level, implementation success is defined in terms of the extent of case management training coverage, which is what distinguished the performance of Bunda from that of Tarime.

A combination of motivating factors enabled Bunda to initiate IMCI training earlier and to keep the training ongoing. These include: availability of the basket fund, earlier sensitization of CHMT, training of the CHMT and local facilitators in the strategy, moral and financial support from external sources, policy leadership and relatively good continuity of actors in key positions after introduction of the policy. Tarime did not share these advantages. However, training coverage is still less than the WHO recommended 60% in both districts. The limited ability of districts to further expand training coverage is partly due to the duration of the training. Further, training is typically residential taking place at a facility with a high case load, and resulting in higher level per diems than would otherwise be necessary. The facilitator to participant ratio is also very high. Finally, a high turnover of trained staff also adds a burden of training in some districts. Unless high rates of training coverage are achieved nationally, attrition will continue to be costly and discouraging to districts trying hard to expand coverage. The lack of flexibility in allocation of the basket to different line items also constrains the expansion of training coverage at district level.

The alternative training modes (pre-service and on-the-job) which had the potential to reduce overall training costs have not worked well. The pre-service training is facing challenges due to lack of training harmonization, and the absence of the counselling component that appears integral to in-service training. In terms of OJT, the main challenges are a lack of job aids, of incentives for peer knowledge sharing in facilities, and of transparency on selection of in-service training candidates. Each of the three forms of IMCI training seem to bring their own challenges.

Health system weaknesses were also found to affect IMCI implementation in both districts. Such weaknesses can be summarised in terms of: a shortage of IMCI job aids (including drugs), human resource shortage and poor supervision practices.

While decentralization has empowered districts, there is a feeling of disempowerment by regions and this has harmed supervisory relations with the districts. With no clear line of funding and accountability, district and regional stakeholders operate in a climate of mutual suspicion, poor information sharing and counter blaming.

The IMCI implementation experience supports the policy analysis hypothesis that policies coming from the top (whether national or global) are not simply taken and implemented by health workers, district health managers or even national departments, or otherwise just refused by irresponsible managers and health workers, but are altered in ways that seem feasible, practical or suitable to the actors involved [7, 37, 38]. A few examples can be drawn from this study. Some district managers would plan and budget for the training, but not for supervision or c-IMCI even though the IMCI package requires this. Others would plan for training but relegate the costs to less reliable sources of funding, or ensure funds for IMCI drugs but not for training.

Health workers may decide to carry out some parts of the protocol and leave out others that they perceive as unmanageable, to resist the on-the-job IMCI training even as they acknowledge the importance of the strategy, or to process IMCI clients in ways they believe are sensible (e.g. through drug rationing, referring selectively, failing to administer DOTs etc.), thus effectively making and carrying out their own kind of IMCI. This resembles what Lipsky termed “street level bureaucracy” [38]. Information asymmetry between health workers and communities (typical of health systems), healthcare costs, practicalities of rural life, poor incentives for sticking to a long protocol, poor monitoring and supervision, shortage of supplies, few trained health workers, and the perceived opaque procedures for deciding who should be trained together leave health workers with little incentive to perform and share IMCI tasks in facilities. Seen in this way, implementation is more of a negotiated process.

While lack of compliance by health workers has often been the main problem, cooperation between the health system and communities affects the delivery of facility-IMCI.

At the national level, IMCI suffers from relatively low funding levels compared to vertical child health programmes, with donor funds to IMCI reducing over the last three years [39]. IMCI also suffers from poor visibility and the challenges of monitoring impact compared to vertical programmes, reducing the potential for attracting investment. IMCI can also be relatively slow to achieve outcomes, partly because of cost constraints, and partly due to its reliance on a well functioning health system which may not be adequate. Together, these factors undermine the role of IMCI as an umbrella to vertical child health interventions, that are often more heavily funded and politically powerful, undermining the objective of true integration that was the original rationale behind IMCI.

The IMCI strategy was meant to benefit all children under five years of age in low and middle income countries. Although it doesn’t specifically target the poorest children, it is important to consider to what extent the poor may have benefited from IMCI. No child is officially excluded from accessing IMCI services, but children from poor households and communities are less likely to access under five care due to distance, lack of transport, financial barriers and inability to purchase drugs especially due to frequent stock outs. The poorest households are also more affected by the lack of compliance with exemptions.

Furthermore, the path of IMCI implementation, which focuses first on training hospital staff and only later rolling out to dispensaries, has equity implications, as the rural poor are often

more reliant on care at the dispensary or lower levels. So children living in hard-to-reach, remote areas, where diagnostic services and skilled human resources are also very scarce, were the last to benefit from the strategy. The national roll out of IMCI also did not focus on the poorest districts; instead it depended on the willingness of districts to include it in their plans (especially the "attitude" of the DMO). Information from national stakeholders indicates that at the district level, the attitude of the respective DMO determines whether IMCI will be taken up, and equity has not been a concern [6, 13, 14, 31, 40]. Further, Victora et al. conclude that the districts closer to Dar es Salaam started to implement the strategy earlier than others [13]. In this study, some of the districts with the poorest child health indicators and or socioeconomic status did not implement IMCI until recently, when funds and trainers were sent directly from the Ministry. The current focus of the MoH on the districts which really need IMCI will serve to promote equity, but measures must also be taken to sustain implementation.

We have seen that effective implementation of IMCI is reliant on a well-functioning health system. Poor countries and regions are generally more likely to have poorly functioning health systems and therefore be less able to successfully implement IMCI, further affecting equity. Due to high turnover of staff in peripheral districts, innovative ways to retain health workers in these places is important for improving capacity to successfully implement IMCI. This suggests that efforts to improve IMCI should also prioritize the strengthening of poorly functioning health systems.

Study Limitations

Unfortunately, due to a lack of time and resources we were unable to capture the community voice, and the views obtained regarding community barriers to IMCI reflect largely those of providers and district managers. Furthermore, the lack of data at the national level prevented us from analyzing the implementation of IMCI across districts by number of training sessions and total health workers trained, to see assess differences between districts (e.g. training coverage by facility type and distribution of trained providers). Data available at the national level only show the dates of first training conducted in districts. Another limitation is the observation in facilities, which was not done uniformly for all facilities and thus it is difficult to compare every indicator.

The study draws the following recommendations to improve IMCI and provides prospective lessons for the implementation of other interventions.

Recommendations

Health Worker Training

The main barrier to expanding training coverage is cost. If the training course reduced to 6 the costs of the course as a whole would almost half, allowing for almost twice as many staff to be trained for the same budget allocation. In our study there appeared to be a fair amount of resistance to this at national level, with stakeholders fearing a reduction in the quality of the training provided. However, results of evaluation of training from different countries show no strong link between reducing the number of days and the quality of training [41].

Other alternatives, which may be more acceptable to stakeholders, would be the move to non-residential training, which would reduce the amount of per diems paid out to participants. For example, using the district accounts data for Bunda district in Tanzania for 2006, where 12 health workers were trained during the year, we estimated that by shifting to a non-

residential course, the district could have increased the number of participants by 41%, for the same budget allocation. Similarly, if the participant to facilitator ratio was increased, this would similarly have a dramatic effect on the cost of training. If multiple strategies were adopted together (moving to non-residential course, increasing participant to facilitator ratio, reducing the duration of training), many more health workers could be trained in a year and training coverage could expand rapidly within the district.

OJT and pre-service training are both alternatives to case management training which have the potential to reduce cost and facilitate faster roll out of IMCI. To make on the job training more widespread, supervision systems need to be improved and more IMCI materials need to be provided to facilities to encourage this process and incentivize those trained to share their knowledge.

In terms of pre-service training there is a need to make it easier to identify those who have been trained to avoid retraining. Harmonisation of training methods across institutions and accreditation and provision of certificates for graduates can be an important step towards this. The missing elements in pre-service training such as counseling of the mother which is important for improving compliance needs to be included.

IMCI guidelines have historically focused on the training of clinicians who are the official prescribers. However, in practice, our findings indicate that the lower level cadres often have a more positive attitude towards IMCI, and are more often present to deliver the strategy, although they do not officially have the power to prescribe [16, 42]. Training of these cadres could substantially increase the number of health workers able to deliver IMCI. It is important to evaluate the role played by lower level cadres in the health system to enhance recognition of their contribution in health system, to give them more chances to train in skills they can effectively implement, to allow them space to practice the skills, and even to reward their efforts.

The procedures for selecting health workers for training need to be reviewed to ensure transparency and that all eligible providers are offered a pathway to training to avoid potential feelings of resentment. Whole site training or sensitisation would be an important first step. Lack of or poor health worker cooperation affects compliance to IMCI guidelines at the facility level and OJT. If OJT works well, it could reasonably reduce overall training costs as well as improve compliance.

Our findings indicate the use of informal providers to deliver services to under fives. It could be worth mapping out how prevalent the use of informal providers is as this could affect the implementation of IMCI in facilities. Measures should be taken to ensure effective utilization of the available human resources, through supervision and providing incentives. Some of the current volunteers in facilities, who are apparently interested in the field and have some relevant experience, could be effectively trained to join the workforce – for example, the case of three girls who had completed form four in a HC in Tarime.

We saw that in Tarime there was a shortage in the availability of facilitators, affecting capacity for and affordability of case management. Counting and locating the available facilitators at the national level could help the MoH to determine the actual facilitator shortage for the whole country and to plan strategies to increase their number.

Financing IMCI

Although Bunda has, to date, managed to finance IMCI training from their district level funds, there is concern about the longer term sustainability of funds for this intervention, especially as IMCI expands to incorporate additional components such as newborn IMCI and managing children with HIV/AIDS, and as new interventions are introduced that compete for district resources. There is a need to find alternative sources of funding to finance IMCI in the districts, to enable them to achieve wider training coverage and to improve supervision and the supply of job aids and drugs. In addition to exploring alternative training options, as discussed above, there is also a need to review the guidelines for basket fund allocation, which remain highly prescriptive, and limit district capacity to finance training. Giving districts more flexibility over spending basket funds, with little or "no strings attached" could potentially improve implementation of IMCI by allowing a faster roll out. This measure would also serve to strengthen the decentralization process by more fully empowering districts in their budget allocation decisions.

Tackling Health System Challenges

Health system improvement is an essential part of the IMCI strategy. However, from the case studies, we found that the health system faces a number of constraints which limit the achievements of IMCI: in terms of drug availability, IMCI job aids, lack of space, human resource availability, and effective supervision. Whilst many of these issues are broader national level challenges that go beyond IMCI, strategies are required to address them so that IMCI can be delivered effectively. Whilst there is a national shortage of health workers, if the available human resources were used more effectively, this would improve health care delivery to some extent. There is also a need to find ways of making sure that those trained in IMCI spend as much time as possible in sections where they treat small children, limiting rotation. These efforts should be coupled with providing incentives for health workers to work in remote districts.

In terms of IMCI drugs, the reluctance of managers (especially in the non-governmental facilities) to stock drugs for under-fives, as they are exempt from charges and do not generate revenue, could indicate that government subsidies to these facilities are insufficient. Further research is required to confirm this.

Furthermore, strategies are required to increase the space available for practicing IMCI in facilities; for example, by providing housing for health workers who are currently occupying rooms in facilities, and restoring the use of the DTCs, and making use of all other available space within the facility.

Improving Systems to Monitor Performance

At present, supervision of IMCI in general is not happening routinely or in a timely manner, in part due to the sense of disempowerment by the regions and also to the difficulty of incorporating IMCI supervision into general CHMT routine supervision. IMCI facilitators may be best placed for effectively supervising IMCI due to their specialist knowledge. It is also important to increase the pool of IMCI facilitators to increase district access to facilitators when they are needed for supervision. For districts that have an advantage in terms of local facilitators, like Bunda, care should be taken to balance training and supervision of trained health workers within and outside their districts.

There is also a need to review how supportive supervision works in districts to make any necessary improvements. Lessons might be learned from Bunda, which successfully developed an integrated supervisory checklist. Sharing information on best-practice districts for IMCI in the national arena, and also rewarding good practice, might potentially motivate districts lagging behind.

One particular challenge is the monitoring of performance through easily verifiable indicators at district and facility levels. This is partly because IMCI is an integrated package of interventions impacting on multiple diseases, but also because it seeks to improve the way services are delivered, and seeks to improve quality of care, which is inherently more difficult to monitor. Whilst WHO promotes the monitoring of IMCI training at the district level, the indicators of performance at health facility level are difficult to externally verify, as they involve the assessment of health worker skills, and the way the service is delivered. Furthermore, IMCI is not adequately reflected in the HMIS, which is structured to count disease episodes while IMCI uses a syndromic approach to classify illness conditions, thus making it difficult to track IMCI performance through the routine information system. In contrast, interventions such as EPI are much easier to monitor frequently in terms of immunization coverage levels (e.g. number of children immunized quarterly, annually etc). This serves to motivate providers and managers to improve performance as it promotes accountability. A more complete incorporation of IMCI into the HMIS could serve to motivate key stakeholders at all levels to improve performance. However, this would require a consensus on indicators to be reached at the national level. Likewise, improving the supply of daily monitoring tools, such as recording forms, in the facilities could also be helpful in making health workers feel that they have something to account for the way they manage sick children. Technology is also evolving and currently the use of PDA is being tested in Tanzania in various case management interventions, including IMCI case management[13]. It is worth finding out how effective, costly and sustainable the use of these potentially simple tools is. These might both improve proper and detailed reporting as well as encourage the practice by providers.

Strengthening the Capacity of Key Actors

The DMIFP has a potentially important role to play in terms of IMCI implementation in the districts. They currently have limited power and are often not been trained in IMCI (especially when non-clinician). However, they should be trained as this would empower them.

Early Involvement and Sensitization of Districts

From the experience of Bunda, we recommend that involvement of district stakeholders from the early stages of the policy roll out process is important for effective policy implementation. Bunda CHMT had been sensitized even before the policy was formally introduced in the district. It is understandable that there are constraints to an intervention being started in all districts at once. However, open communication between the Ministry of Health and districts from the early stages of policy introduction, and addressing any issues of adaptation, has the potential to enhance legitimacy, ownership and support for the policy at district level. This will reduce possible grievances over inconsideration of practicalities of daily life in rural/ peripheral areas of the country.

[13] The IMCI protocol is fed into the PDA and instead of using the paper based chart booklet, health workers will be using the PDA to follow exactly the same IMCI steps, but now programmed into a PDA. The assumption is that due to the programming of the PDA, health workers will not be able to skip some parts of the protocol as in the paper-based algorithm where they can decide easily to skip some steps. It is hypothesized that the use of PDA will, therefore, improve compliance.

Community Participation

To date, more efforts have been invested in facility-based IMCI despite the acknowledgement that without c-IMCI, community participation in IMCI continues to be limited. More and more districts are starting to implement c-IMCI, some of them using local resources. Our study shed light on certain issues that the community needs to know to in order to improve compliance to facility-IMCI. It seems that IMCI messages to communities must specify and emphasize the importance of referral care, the rational use of drugs (e.g. that not all conditions require antibiotics), and compliance to follow up.

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