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Health Workers's Perspective on Health System Barriers to Effective IMNCI Implementation among Health Workers in Chongwe and Lusaka Districts, Zambia

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Abstract

Since the introduction of the IMNCI strategy in 1995 in Zambia, the Country has achieved good progress in reducing under-five mortality. In spite of its introduction, implementation of IMNCI has not been at its best, the 2018 Zambia's health facility assessment found that only 45% of health facilities had at least 60% IMNCI trained health workers attending to sick children whereas only 32% of health facilities received at least one supervisory visit during the survey period. Despite IMNCI being a critical strategy for Zambia, very limited evidence exists on health workers' perspective on key health system barriers for effective implementation of IMNCI. Most of the available evidence has focused on application of IMNCI skills. The study explored health workers perspective on Key health system barriers for implementation of the IMNCI strategy in Chongwe and Lusaka districts. *The study employed a descriptive exploratory mixed method design and sequentially collected quantitative and qualitative data. Data was collected from health workers, National and District IMNCI Coordinators and Health facility assessment. The study revealed key health systems factors such as inadequate support, Lack of Budgetary allocation for IMNCI, Poor documentation and recording and Poor leadership and governance as barriers to implementation of IMNCI. This study therefore proposes a focus all Health system building blocks rather than just focusing on service delivery and work force related efforts as an approach that will promote responsive and resilient health systems capable of promoting quality and equitable Universal child health care services and consequently improved wellbeing of children.*

Keywords: *Health Facility, IMNCI Assessment, Resources, Under-five Children, WHO's Health System Building Blocks*

Introduction

Despite the remarkable that have been made in reducing child mortality globally by 52% since 2000. IGME 2024 reports that an estimated 4.8 million children died before the age of five, including 2.3 million newborns in 2023. These deaths are not inevitable. Most of the common condition responsible for these deaths are related to the first 28 days of life such as preterm birth, complications at birth and congenital anomalies, and infectious diseases such as pneumonia, malaria and diarrhoea [1, 2].

Most under-five children that seek Primary health care services, especially in the low and middle-income countries, often present with multiple conditions, and requires diagnostics services such as laboratory and radiological services for them to effectively handle such

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cases. However, on the ground the situation is different as most primary health centres have limited or non -existent diagnostic services which places health care workers in a difficult situation for them to meaningfully examine and provide the required care to these sick children [3]. To mitigate this challenge, and improve the quality of care given to new-borns and children under five in Primary health care setting. In 1995, WHO and UNICEF designed the Integrated Management of Childhood Illnesses (IMCI) strategy. Which sought to improve health workers skills, health system, and family and community practices [3]. The strategy has since been adopted in over 100 countries primarily in Asia, Africa and Latin Africa, and the strategy has been implemented, either in part or all of its three components [3, 4]. According to available evidence IMCI if implemented fully contributes to a reduction in child mortality [5] found that the strategy was associated with a 15% reduction in child mortality when implemented at scale in Primary health care facilities and at community level [3].

In Zambia, IMNCI was introduced as one of the key child Survival strategies in 1995 to help reduce under-five morbidity and mortality and tackle five major conditions that were responsible for more than two third of childhood deaths namely, respiratory tract infections, malaria, diarrhoea, malnutrition and measles [6]. This was at the backdrop when illnesses were managed through vertical programmes that were inappropriate to manage sick children presenting with signs and symptoms of more than one condition [6]. Over the years, Zambia has continued to make steady progress in improving child health and in reducing under five mortality from 197 death per 1000 live births (1996) to 42 deaths per 1000 live births (2024). Despite this improvement, under five mortality rate continues to be very high [7] beyond the Sustainable Development Goal of reducing child mortality to at least 25 or less deaths per 1000 live birth by 2030. Despite widespread successes of IMCI over last 25 years and the fact that most countries including Zambia still considers IMCI a key Child survival strategy for delivering lifesaving interventions, only a handful of countries have achieved full saturation of IMCI implementation and coverage remains low [8, 9].

Statement of the Problem

In Zambia, under five mortality rate at 61 deaths per 1,000 live deaths continues to be unacceptably high despite the successes that have been achieved from the time the IMNCI was adopted. IMNCI as one of the key child survival strategies adopted to address this problem has not been optimally implemented despite the strategy having been rolled out to all the 116 districts of Zambia. Only 45% of health facilities had at least 60% IMNCI trained health workers attending to sick children and whereas only 32% of health facilities received at least one supervisory visit during the survey period [10]. Implementation of IMNCI has been hampered by shortage of health workers particularly at health facility level, and has also not been ideal in health facilities which a relatively good number of staffing levels. Several challenges persists that affects the effective implementation of neonatal and child health programmes including IMNCI and these include; Inadequate human resources; Inadequate equipment, child friendly drugs and other commodities; Inadequacies in infrastructure normally without dedicated space for implementation of child health related services and Health system challenges including inadequate transport for effective referral systems; outreach services [11].Under-five mortality rate in Lusaka province, which includes Chongwe and Lusaka, has significantly decreased from 197 death per 1,000 live births (1996) to 64 death per 1,000 live births (2024), despite this improvement under five mortality rate is still unacceptably high in spite of this progress.

Rationale for the Study

Studies done globally and in Zambia have focused mainly on assessing the application of the IMNCI strategy among health workers, and health facilities through health workers and health facility assessment. Limited evidence exists on health system barriers for effective implementation of IMNCI especially from the perspective of IMNCI trained health workers. Therefore, it will be good to understand health systems barriers or factors that impedes frontline health workers from adhering to IMNCI guidelines during the assessment of children from their perspective. Understanding and resolving these barriers could significantly help Zambia's efforts in further reducing under five morbidity and mortality, and consequently help the Country in its quest of reaching the SDG's target of 25 deaths per 1,000 population by 2030, and the Ministry of Health's National Health Strategic 2022 to 2026 goals of reducing under five mortality rate from 61 to 25 deaths per 1,000 by the end of the strategy period in 2026.

Health workers' perspectives on health systems factors that hinders the implementation of the IMNCI strategy have not fully been investigated in Zambia. It is on this basis that this study will help address this gap in knowledge, and generate knowledge that will help Programme managers and policy makers to design context specific health system strengthening strategies that will fully support health facilities and health workers to implement the IMNCI strategy with fidelity.

Literature Review

In 2023 alone, 4.8 million children died before reaching their fifth birthday, mostly from preventable causes. This translates to 13,100 children under the age of 5 dying every day in 2023. That included 2.3 million deaths in the neonatal period (aged 0–27 days) and 2.5 million deaths among children aged 1–59 months. Globally, infectious diseases, including pneumonia, diarrhoea and malaria, remain a leading cause of under-five deaths, along with preterm birth and intrapartum-related complications these deaths are not inevitable. They are the result of unequal access to health care, nutrition, and protection, especially in the most fragile and underserved settings [9].

Despite this high mortality, the world has made remarkable progress in reducing child mortality. Since 2000, the global under-five mortality rate has fallen by 52 per cent, reflecting decades of investment and collaboration by governments, communities and partners. Millions of children have survived and gone on to thrive thanks to proven, life-saving interventions [2].

While the overall decline in under-five mortality is encouraging, progress has not been uniform across all age groups. Since 2000, deaths among children aged 1–59 months have fallen by 58 per cent, compared to a 44 per cent decline in neonatal deaths. Nearly half of all under-five deaths in 2023 occurred within the first 28 days of life, underscoring the heightened vulnerability of newborns and the need for greater investment in targeted interventions during this critical period [2]. Even as global averages improve, the reality for many children is shaped by where they are born and the conditions into which they are born. A child born in sub-Saharan Africa is, on average, 18 times more likely to die before the age of 5 than one born in Australia and New Zealand. The risk of under-five death in the highest-mortality country is 80 times greater than in the lowest. Children living in rural areas, from the poorest households, or born to mothers with the least education face significantly higher mortality risks [2].

Childhood Morbidity and Mortality in Zambia

Zambia's situation also conforms to the global picture; notable progress has been recorded in reduction of under-five mortality from 197 death per 1,000 live births (1996) to

42 death per 1,000 live births (2024)) [7]. However, notwithstanding this improvement, Under-five mortality rates still remain disturbingly high far beyond the Sustainable Development Goal target of at least 25 or less deaths per 1000 live birth by 2030.

Zambia adopted the IMNCI strategy in 1995 as a key child survival strategy for addressing high morbidity and mortality among under-five children as a result of preventative illness such as respiratory tract infections, malaria, diarrhoea, malnutrition and measles, and notable improvements have been achievement. Even with its introduction, IMNCI has not been implemented optimally as was shown from the 2018 Zambia's health facility survey. In order to fully understand health system factors that are responsible for non-adherence to IMNCI protocols by health workers, factors were analysed at according to Key Health systems building blocks in relation to IMNCI namely; Health Information, financing and Leadership and Governance

Conceptual framework on Key Health system factors influencing IMNCI implementation

As show below, the independent variable for this study is effective IMNCI implementation which is influenced by the dependent variables namely Budget allocation, documentation and record keeping, and Leadership and Governance see figure 1 below. The dependent variables have a direct effect on independent variables-effective Implementation of IMNCI.

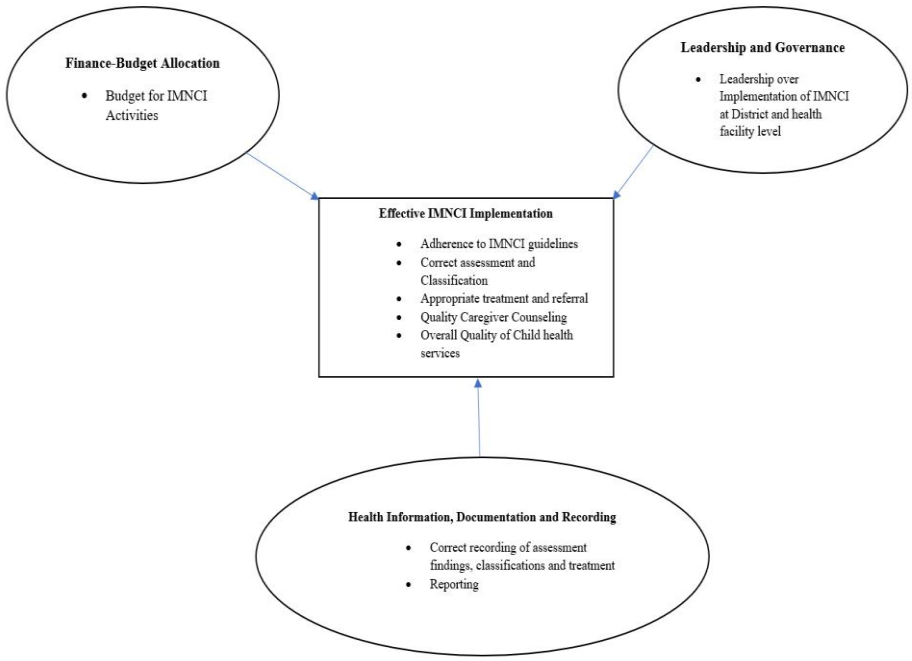

Figure 1. Conceptual framework on Key Health system factors that influence effective IMNCI Implementation

Source: Author 2025

1. Leadership and Governance

i. **Lack of intergration and Poor Coordination of IMNCI Programme:** Integration of IMCI into existing health programs has emerged as a barrier to implementation of IMNCI as it has caused fragmentation of governance structures that influence the IMCI program and other child health programs. Other vertical programs such as Expanded Program on Immunization (EPI) and nutrition were often prioritized and not synchronized to the IMCI program. Moreover, the coordinators managing these vertical programs were not trained in IMCI,

creating a lack of awareness of the IMCI aspects and also prompting them to focus on their specific programmes [12-14]. Poor coordination of IMNCI at district level and not having someone fully dedicated and accountable for the IMNCI Programme at affected the implementation of IMNCI at health facility level. There are also ambiguities in roles on IMNCI among District management cadres which resulted in poor coordination and communication [8]. Supervisors who were meant to do IMCI supervision were not able to, because of lack of time, lack of training on how to conduct supervision, and lack of tools for IMCI-specific supervision [15].

ii. **Lack of ownership and planning at provincial and district health levels:** Despite the fact that many countries had decentralized the administration of health care services to the district level, district authorities weren't always given the skills and power they needed to efficiently organize, plan, carry out, and monitor services [12]. This was particularly true for IMCI, which more often lacked the management and governance structures of vertical programs [16].

2. **Inadequate Budgetary allocation for IMNCI**

Lack of budgetary allocation to support routine follow -ups and on-site mentorship among IMNCI trained primary health workers, this situation had prompted District health management teams to combine routine follow up visits with other follow-ups. This practice has great potential to reduce the quality of follow up on IMNCI as their scope are broaden to include other thematic areas, and the situation may become worse if people involved in the provision of supervision have are not been trained in IMNCI [13, 17].

3. **Documentation and Record Keeping**

Poor documentation and recording are major barriers to the effective implementation of Integrated Management of Neonatal and Childhood Illness (IMNCI) guidelines among healthcare workers. Some of the common documentation and recording issues affecting IMNCI implementation that have been cited from various studies include: Missing or Incomplete Records**:** Health workers frequently fail to record essential assessment data, such as general danger signs, nutritional status, and immunization history, and Inaccurate Case Classification: Poor recording often leads to incorrect classification of illnesses, which in turn results in incorrect treatment [12, 15, 17]

Research Objective

To explore health workers' perspectives on health systems barriers to effective implementation of the IMNCI strategy at health facility level in Chongwe and Lusaka.

Specific Objectives

1. To explore health workers' experiences on Key health system barriers to implementation of IMNCI guidelines at health facility level.
2. To assess whether leadership and governance systems are in place and in use at District Health office and Health facility level that fosters fidelity implementation of IMNCI protocols at health facility level

Methodology and Design

A descriptive exploratory mixed methods design was employed. The study successively collected both quantitative and qualitative data on health facilities' s capacity to support IMNCI, and health workers perspective on barriers to effective implementation of IMNCI at health facility level respectively. A mixed method combined elements of qualitative and qualitative research in order to answer the study's research question in a single study or a program of inquiry. Mixed methods helped to gain a more complete picture of key health systems barriers to effective implementation of IMNCI at health facility level than a standalone method.

The study population were IMNCI trained health workers working in outpatient departments of selected health facilities of where referral to the next level was done for further management who were present on the day of data collection, the Chief IMNCI Officer and Maternal New born and Child health (MNCH) Coordinators in Lusaka and Chongwe districts. The two districts were purposively selected based on key characteristics such as population density and under-five attendance, and provided the researcher with both an urban and rural perspectives on Key Health systems barriers that hinder the full implementation of IMNCI strategy among health workers at health facility level.

The study was conducted in 15 IMNCI implementing health facilities in Lusaka and Chongwe districts. Convenience sampling was done to choose 5 IMNCI implementing facilities out of the 40 Primary health facilities in Chongwe and 10 IMNCI implementing facilities out of the 93 health facilities in Lusaka.

For qualitative (IDI), 10 health workers were purposively selected from the 10 health facilities (7 in Lusaka and 3 in Chongwe) out of 15 health facilities, and three Health managers were interviewed one at National level and 1 from each from the two District health offices while health assessment was done in all the 15 health facilities.

For Qualitative data, an in-depth interview guide was used to probe participants on key health systems barriers to implementation of IMNCI from their perspective at health facility level, to Managers at District health office and National level. The IDI was administered to 10 purposively sampled health workers from 10 health facilities and 2 MNCH Coordinators and 1 Chief IMNCI Officer. Quantitative data was collected Health facility assessment.

Qualitative data analysis was done through Thematic analysis of transcribed data, this involved familiarizing with data, creating initial codes, looking for themes, reviewing recurrent themes and defining and labeling theme. The recurring themes related to experiences of health workers on barriers to implementation of IMNCI were identified through this process. Quantitative data was analyzed using Stata version 17.0. Microsoft excel was used to generate tables and graphs and percentages for easy data interpretation.

Results

Socio-demographic Characteristics of the Study Population

A total of 10 health workers were interviewed during the study. Among the study population, males constituted the majority of respondents (60%). The research results showed that the majority of health workers (50%) were young professionals aged 20-34, with a higher proportion aged 45 years old (30%) or older. In terms of experience, results showed an almost equal distribution between those with fewer than 5 years (40%) and those with over 10 years (40%). **(Table 1)**

Table 1. Distribution (n, %) of Participants based on Selected Demographic Information

Background characteristics	Frequency (n)	Percent (%)
Age		
20-34	5	50%
35-44	2	20%
45 and above	3	30%
Sex		
Male	6	60%
Female	4	40%

Years of Practice		
Less than 5 years	4	40%
5-9 years	4	40%
10 Years and Above	2	20%
Total	**10**	**100.0**

The main themes and sub themes that emerged from analysis of In-depth interviews of health care workers, District Maternal New Born and Child health and Chief IMCI Officer are captured in Table 2 below.

Table.2. Themes and Sub Themes

Theme	**Sub theme**	
Theme 1. Health System barriers for effective implementation of IMNCI	Support for IMCI from DHO	Inadequate Support for IMNCI
	Budgetary Support for IMNCI	Lack of budgetary support
	Documentation and Recording	Poor documentation and Record keeping
Theme 2. Leadership and governance for IMNCI	Leadership and governance for IMNCI at health facility and District level	Leadership and Governance

Theme 1: Health System barriers for effective implementation of IMNCI

1.1 Support for IMCI from DHO

1.1.1 Inadequate support from District Health Offices: Participants felt that support from District Health Offices (DHOs) was inadequate and was responsible for limited application of the IMNCI skills, but on the other hand some felt that their health facility Centre in-charges tried their best to support them by ensuring that all drugs, equipment and supplies were available.

"Yes, in terms of supplies such as medicines and ORS and a few equipment, our Health facility in-charge tries to support us by all means, but the challenge has been with the District health office, who have been unable to provide us with the necessary Job aids for our screening rooms such as Chart booklets and wall charts to enable us refer to them as we assess children despite intense lobbying" (**Participant no.3**)

"Yes, the health facility in charge tries to support us, for example at one point they designated one room at this facility specifically for seeing sick children, but the room was later given to Voluntary Medical Male Circumcision (VMMC) because of limited rooms" (**Participant no.5**)

"For the District Health Office, it is tricky and it is very difficult to tell what kind of support they provide, like you have observed, we do not have IMCI chart booklets, timers and wall charts to help us as we assess sick children. When it comes to Technical supportive supervision specifically for IMCI, it has been a while since it took place, it is usually integrated in quarterly Performance Assessment, and usually during Performance Assessment, it merely ends at asking questions concerning assessment of sick children" (**Participant no.10**)

"We have not been helped much by the District in terms of IMCI, we have time and again highlighted some of the challenges that we face as health workers in the assessment of sick children during Quarterly Performance Assessments, but nothing much has changed". (**Participant no.3**)

Other participated felt supported to practice IMNCI

"Yes, we feel very much supported and encouraged to practice IMNCI because the health facility provides us an environment that supports management of children, for example, children we find dehydrated. There is an ORT corner where these children are managed. In addition, the health facility provides equipment such as thermometers, height boards and weighing scale which helps us to take all vitals such as weight, temperature and height" (**Participant no.7**)

The National IMNCI focal person on the other hand indicated that Districts and Health facilities were partially supported through provision of guidelines as well as conducting of technical support, supportive supervision and mentorship in selected provinces and districts.

"Districts, Health facilities and Health workers are partially supported in that the Ministry has providing guidelines for IMNCI as well as conducting technical support, supportive supervision and mentorship in selected provinces / districts". **Chief IMNCI Officer.**

1.2 Budgetary Support for IMNCI

1.2.1 Lack of Budgetary allocation for IMNCI: The study revealed that there was no budget allocation specifically for IMNCI at both District and Health facility level. Budgets were available to support integrated programmes based on the needs of the District and health facilities, and not specifically to support standalone programmes like IMNCI.

"*there is no budget specifically to support IMNCI at the health facility as the health facility allocation is not adequate*" **Participant no.15**

"*there is no allocation specifically for IMCI, may be this could due to IMCI being overlooked*" **Participant no.01**

"Yes, there is no budgetary allocation specifically for IMNCI and the funding that is received is shared among all Programme" **Maternal New Born and Child Health Coordinator no.2**

Lack of budgetary allocation for IMNCI at District and health facility level has significantly hindered the effective implementation of IMNCI and impacted various aspects of IMNCI, including training, supervision and provision of essential supplies.

1.3 Documentation and Record Keeping

1.3.1 Poor documentation and Record keeping: As shown in figure 2 below, a review of children's records for correctness of signs and symptoms, classifications and treatment during health facility assessment showed gaps in documentation of assessment of signs and symptoms, classifications and treatment as none of the health facility was able to score at least 95% on children's records sampled. This clearly shows gaps in skills and knowledge among health workers in IMNCI. According to participants this gap could be attributed to the non-configuration of the SMART CARE system according to IMNCI algorithm**. T**his made it difficult for health workers to assess under five children according the IMNCI algorithm.

"One of the obstacles is that the SMART care system we use for screening of all patients including children is not set up in conformity with IMNCI which makes it difficult for us to apply IMNCI guidelines during assessment of children" (**Participant no.10**).

"Our health facility has completely gone digital through the SMART care system, but one major problem that we have noticed is that the SMART care system has not been organised according to IMNCI assessment steps, which presents a challenge for us when it comes to assessing sick under-five children" (**Participant no.4**).

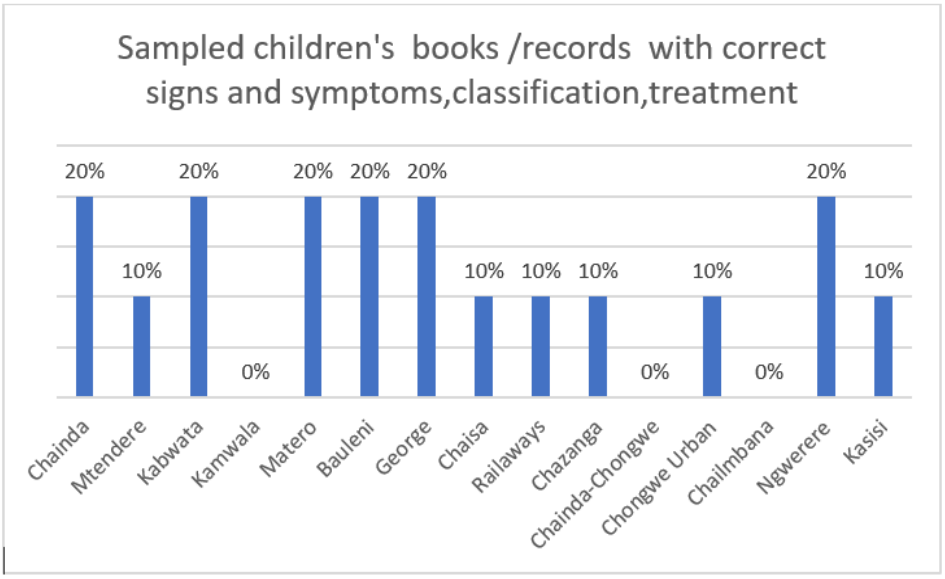

Figure 2. Percentage Distribution of Sampled Children's Books /Records with Correct Signs and Symptoms, Classification, Treatment

Theme 2: Leadership and governance for IMNCI

Leadership and governance for IMNCI at health facility and District level

Leadership over the implementation of IMNCI at health facility and District Level- Findings from IDI revealed that all 15 health facilities and the 2 District Health offices visited had no specifically designated IMNCI Champion at Health facility and District level to provide day to day support to fellow health workers on IMNCI and to health facilities respectively. Lack of a Champion at health facility and District level resulted in lack of Programme oversight and ownership of the IMNCI Programme at health facility and District level.

"No, the health facility has no one to provide oversight over the IMNCI programme thus it presents a challenge when it comes to coordination and programme oversight" **Participant no .1**

No, we do not have a Health facility Lead for IMNCI at this facility to supervise IMNCI activities and ensure guidelines are adhered to." **Participant no .7**

"*There is no IMNCI Health facility focal point person or Champion to oversee the IMNCI Programme at our facility"* **Participant no .5**

"We do not have a designated IMNCI focal person for the district but I am able to cover this role since I coordinate Maternal Newborn and Child health in the district''. **Maternal New Born and Child health Coordinator no. 2.**

At District level, in one districts IMNCI fell under the Maternal Newborn and Child Health (MNCH) Coordinator while in other District it fell under the Clinical Care Officer, but even then, these officers were charged with other responsibilities which often took precedence over IMNCI especially programmes that were well funded and easy to monitor such as Expanded Programme for Immunisation, HIV and TB. The supposedly IMNCI Champions were in some cases are not even trained and if trained, they were trained a long time ago such that it became difficult for them to successfully provide technical support to health facilities.

"Yes, I am trained in IMNCI but I was trained a long time ago in 2013 and I am not attended any refresher training from the time I was trained this it is difficult to provide

mentorship to recently trained staff" **Maternal New Born and Child health Coordinator no.1**

This presents a very difficult situation; how do District focal point person provide Technical support to those trained in recent new IMNCI guidelines.

In terms of coordination, results from the study indicated that there were no specific coordination platforms for IMNCI as IMNCI was integrated in other platforms such as District Integrated management meeting where it was discussed and reviewed together with other programmes. At national level, the situation was different as there was a coordination team that provided leadership over the implementation of IMNCI, this was done through Child Health and IMNCI Technical working groups meetings, and this coordination platform has helped in terms of ensuring coordination and support for IMNCI among various partners across the country.

"*At National level, we have a coordination team through Child Health and IMNCI Technical working groups which meet on a quarterly basis and this has helped in terms of ensuring coordination of various partners at national level in supporting IMNCI, However, inadequate funds continue to hamper efforts to improve the implementation of IMNCI".* **Chief IMNCI Officer**

Discussion

This study aimed to Identify Health systems barriers to implementation of the IMNCI strategy at health facility level from the perspectives of health workers and Health managers under specific objectives and emerging themes.

Theme 1: Health System barriers for effective implementation of IMNCI

Inadequate support from District Health Offices-Participants felt that health Centre in-charges tried their best to ensure all drugs, equipment and supplies were available, but the major challenge was with the District health offices who were unable to provide them with the necessary support such as technical support, on-going on mentorship including materials for use during the assessment process. In contrast, some participants felt supported and encouraged to practice IMNCI as health facilities provided them with an environment that supports management of children, for example, having functional ORT corners for management of children with diarrhoea, and also provision of equipment such as thermometers, height boards and weighing scale. This is consistent with findings from other studies [18, 16].

Poor documentation and record keeping: It is evident from this study that there are a lot of gaps in terms of documentation of assessment signs and symptoms, classifications and treatment as none of the health facility recorded a score of at least 95% of the records sampled. This situation could be attributed to health systems such as inadequate training of health workers in IMNCI, shortage of health workers thus making the few available health workers always rushing through the assessment process and not capturing the required information in their children's record books/cards. This presents a very difficult situation for assessment of quality of care provided to sick under five children as it is practically impossible to derive anything pertaining to IMNCI from Children's record books. The study also revealed the Non-configuration of the SMART care system with the IMNCI assessment algorithm as one of the barriers to practicing of IMNCI by health workers as the SMART care system was not configured according to the IMNCI algorithm, and this was compounded by the fact that most health facilities particularly in Lusaka had completely gone digital. This meant that health workers had to assess children according to the algorithm in the Smart care system and missed out important IMNCI assessment steps. Our

findings are similar to [19] which found Poor alignment between recording requirements of eIMCI and other clinic programmes increased participant's administrative workload, and also acted as a disincentive to eIMCI uptake, frequently leading participants to revert to paper IMCI which was quicker and where they felt more confident. In another study in Ethiopia, [20] found that the EMR was not comprehensive enough in that medical terminologies, diagnostic names and drug names were not found in the system, according to EMRs international standards.

Lack of Budgetary allocation for IMNCI- The study found that there were no budget allocations specifically for IMNCI at both District and Health facility level. Funding when available supported integrated District health programmes. When it came to funding, usually other programmes such as Maternal, New Born and Child health particularly immunizations and also essential operational were prioritized at the expense of IMNCI. At National level, funds were inadequate to enable MoH conduct trainings and orientation to health workers, conduct technical supportive supervision and mentorship. Lack of budgetary allocation for IMNCI at District level has significantly hindered the effective implementation of IMNCI and has impacted various aspects of IMNCI, including training, supervision and provision of essential supplies. Our findings are line with other similar studies done globally which found inadequate budget allocation as a barrier to successful implementation of IMNCI [12, 15, 21].

Theme 2. Leadership and governance for IMNCI

Leadership and Governance-There were no specifically designated IMNCI Champion at Health facility and District level to provide support on IMNCI. Lack of a designated IMNCI Champion resulted in lack of Programme oversight and ownership on IMNCI at health facility and District level. At District level, there were also disparities under which office IMNCI coordination fell, but even then, those assigned to manage IMNCI were charged with other responsibilities which often took precedence over IMNCI. In some cases, these officers were not even trained and if trained, they were trained a long time ago such that it became difficult for them to successfully provide technical support to health facilities. In terms of coordination, IMNCI was integrated in other platforms such as District Integrated management meeting while at national level, IMNCI was coordinated through the Child health and IMNCI Technical working groups, which helped in terms of ensuring coordination and support for IMNCI among various partners across the country. Our findings are supported by various studies which highlighted the problem of intergrating IMNCI into existing programmes, fragmentation of governance structures and donor shifts from IMNCI to ICCM [2, 13, 15, 21].

Limitations

This study employed a mixed methodology enabling the researcher to have a more detailed understanding of the research topic. However, the study, was limited to two districts namely Chongwe and Lusaka, and 15 facilities across the two districts and thus findings from this study could not be extrapolated to other districts of Zambia or beyond since the context could be different in the way health care services including IMNCI are provided. However, findings from this study could help Chongwe and Lusaka districts and Zambia as a whole to better understand key health systems barriers that impedes primary health care workers from adhering to the Integrated Management of New-Born and Child hood illnesses during the assessment of sick under five children.

The study has highlighted Health workers' perspectives on key Health system factors that impedes the implementation of IMNCI that could be common beyond the two districts. Furthermore, the study focused solely on health

system barriers to implementation of IMNCI and did not look at what motivates health workers to adopt and use IMNCI guidelines during the assessment of sick under five in Zambia, and also how community support and systems influences the use of IMNCI. There will be need to explore further the motivation for adoption and practice of IMNCI and community support and system required for effective implementation of IMNCI, it may be possible that the use of Key Informant Interviews might have influenced health workers to exaggerated their responses. However, this limitation may have been addressed by health facility assessment particularly the review of children's record books or cards to determine the application of IMNCI skills and Knowledge.

Conclusion and Recommendations

The purpose of this study was to explore key health system barriers from the perspective health workers to implementation of the IMNCI strategy for addressing under-five morbidity and mortality among at health facility level in Chongwe and Lusaka districts. From the study, it has been concluded that that non-adherence of health workers to IMNCI guidelines during assessment of Children under five in Lusaka and Chongwe, Zambia could be attributed to key health systems factors such as inadequate support and funding, Poor documentation and record Keeping, Poor leadership and Governance structures for IMNCI. In Zambia, currently there is limited evidence on health system barriers to adoption of IMNCI guidelines during assessment of under five children at Outpatient departments from the perspective of Health workers and managers, therefore this study provides insights and recommendations that this will enhance provision of health care for under five children in Zambia

This study proposes a focus on all Health system building blocks namely; Workforce, finance, Service delivery, Health Information system, access to medicines and Leadership and governance rather than just focusing on service delivery as this will promote responsive and resilient health systems capable of promoting quality and equitable Universal child health care services and consequently improved wellbeing of children. This quite important as past efforts have focused mainly on ensuring availability of trained staff, capacity building and improving access to medical supplies and equipment, but this has not helped much. Strengthening of leadership and governance structures especially at District and Health facility levels will be key as this is where the gap is greatest as this will help in providing oversight and support towards implementation of all components of the IMNCI strategy at health facility level. Making funding available to support implementation and strengthening documentation and reporting alongside other building blocks will surely help the country attain its target of reducing under-five mortality rate from 61/1000 live births to 25/1000 live births by 2030.

Data Availability

Data supporting the conclusions of this article are available on request to Baleke Ngambi. The raw data that support the findings of this study will be made available to researchers upon request from corresponding Author.

Conflict of Interest

The authors declare that they have no conflict of interest.

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Authors's Contribution

Baleke Ngambi wrote the research proposal, developed the questionnaire, collected data, analysed the data and wrote the paper and interpreting of the findings as well as

participating on the preparation of the manuscript. Pamela Mwansa reviewed and provided input towards the research proposal, supervised the data collection, contributed to the interpretation of the findings, reviewed the paper and participated on the preparation of the manuscript. All authors read and approved the final manuscript.

Ethical Approval

Ethical clearance was obtained from University of Zambia Biomedical Research Ethics Committee (UNZABREC) ethical approval no. 5794-2024. The study was also cleared by Lusaka and Chongwe District Health office. Participants were explained about the study and got their consent to participate in the study.

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