


**College of Medicine**

# Community-Suggested Approaches for Improving Immunisation Coverage and Equity among Under-five Children in Hard-to-Reach Areas and Under-Performing Facilities in Nkhata-Bay and Mchinji districts in Malawi

**By**

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## DECLARATION

I, **Arnold Kapachika,** hereby declare that this dissertation is my original work and has not been presented for any other awards at the University of Malawi or any other University.

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**ABSTRACT**

**Introduction**: In Malawi, immunisation coverage for all basic vaccinations for children age 12-23 months is 76%, below the WHO target of 80%. Some districts have been consistently under-performing (less than 80% in immunisation coverage) and have low-performing health facilities located in hard to reach areas. However, limited information exists on community-proposed strategies for improving immunisation coverage and equity.

**Objectives**: The study was aimed at identifying approaches suggested by the communities and care-givers for improving immunisation coverage and equity in under-five children in hard-to-reach areas and low-performing facilities in Mchinji and Nkhata-Bay districts. **Methods**: The study was a cross-sectional mixed methods design. Qualitative data was collected from 6 Focus Group Discussions (FGDs) and 32 In-depth Interviews (IDI) with primary care-givers, community health volunteers (CHVs), traditional leaders and members of Health Centre Advisory Committees (HCACs) and was analysed using thematic content analysis. Quantitative data was extracted from household survey done in March, 2019 and descriptive analysis was done using STATA version 13.

**Results**: Suggested approaches were; task-shifting of immunisation to CHVs, establishing more outreach clinics, male involvement, involving community health action groups (CHAG) in follow-ups on care-givers who missed immunisation, and ensuring consistent immunisation clinics. Immunisation challenges gathered were: long distance and competing priorities for care-givers, lack of transport for health workers and volunteers, and illicit charging for immunisation by health workers. Knowledge of care-givers of vaccines was low.

**Conclusion**: Immunisation programmes should consider task-shifting of administering vaccines to community health volunteers, introducing more outreach clinics, ensure no cancelation of immunisation clinics, and promote male involvement and community engagement in immunisation services.

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## Abbreviations and Acronyms

| Abbreviation | Full Name |
|---|---|
| BCG | Bacillus Calmette Guerin |
| CHAM | Christian Health Association of Malawi |
| CHV | Community Health Volunteer |
| COMREC | College of Medicine Research and Ethics Committee |
| DPT | Diphtheria-Pertussis-Tetanus |
| EPI | Expanded Program on Immunization |
| FGD | Focus Group Discussion |
| FVC | Fully Vaccinated Children |
| HSA | Health Surveillance Assistant |
| HCAC | Health Centre Advisory Committee |
| HTRA | Hard-to-Reach Areas |
| IDI | In-depth Interview |
| IEC | Information Education and Counselling |
| MoH | Ministry of Health |
| MR | Measles-Rubella |
| NGO | Non-governmental Organisation |
| UNICEF | United Nations Children's Fund |
| WHO | World Health Organization |

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# Chapter 1 Introduction and Objectives of the study

## 1.1 Background

Immunisation saves 2 to 3 million lives each year, translating to more than five lives every minute of every day[1]. Global immunisation coverage has remained at 85% with no significant changes over the years despite the uptake of new and under-used vaccines increasing over the past few years. At this coverage, 1.5 million deaths are occurring due to vaccine-preventable diseases[1]. In 2017 alone, 19.9 million infants did not receive the benefits of full immunisation[1].

Immunisation is a safe, cost-efficient and effective intervention that has decreased both morbidity and mortality of young children[2]. A vaccine typically comprise an agent that resembles a disease-causing microorganism, and is often made from weakened or killed forms of the microbe, its toxins or one of its surface proteins [3]. Immunisation also provides pre-exposure and post-exposure protection to individuals. Immunisation is critical in protecting from vaccine- preventable diseases like cervical cancer, hepatitis B, measles, mumps, pertussis, pneumonia, polio, rotavirus diarrhoea, rubella and tetanus[4].

According to Expanded Program on Immunization in Malawi (EPI), for a child to receive all basic vaccination, he or she must receive at least one dose of Bacillus Calmette Guerin (BCG), three doses of DPT-HepB-Hib, three doses of Polio and one dose of measles vaccine[5].The immunization services are being offered through static and outreach clinics. The government and partners have been very influential in funding the immunization program[6].

There is inequity in immunization coverage in Malawi. Equity is a measure of difference in outcomes or impacts due to a difference based on social and economic exposures like gender and wealth, location and education status [7]. There is variation in the regions of the country with northern region being highest and central region being the lowest in immunization coverage possibly due to lack of awareness of immunization among mothers and health service accessibility challenges in this region[8,9].

The Malawi Demographic and Health Survey indicates maternal education, residence and perceived distance from the nearest health facility as determinants of the inequity in immunization in Malawi[10]. Coverage increases with increase in maternal education. For example, 79% of children aged 12 to 23 months whose mothers have a secondary school education have received all basic vaccinations compared with 72% of children whose mothers have no education. Area of residence is another determinant shown by the survey. Children aged 12 to 23 months who reside in rural areas are more likely to receive all basic vaccinations as compared with children residing in urban areas. Communities with high percentage of women perceiving the distance from the nearest facility as a problem are less likely to complete immunisation [10].

A cross-sectional study done among mothers in 2013 by Donsa using the 2010 Malawi Demographic and Health Survey data showed a positive association between household wealth indexes and vaccination status. The middle level class had a statistically significant association with vaccination. . However, factors like education, religion, age of mother, ownership of a radio and a television had statistically insignificant associations[9].

### 1.2 Statement of the Problem

Malawi has made strides in immunisation services. The country has one of the successful Expanded Program on Immunization (EPI) in the African region [5]. . The country managed to attain the universal immunization goal of 80% within 10 years of establishment of EPI[5]. Although this significant progress has been made in the implementation of the immunization program, the 2015-2016 Demographic and Health Survey indicates the immunization coverage for all required basic vaccinations among children 12 to 23 months is at 76% [10], which is below the WHO recommended 80%[11]. This is a drop from the coverage level of 81% in 2010[10] and means that the 24% of children aged 12 to 23 months who did not receive all required basic vaccinations were prone to vaccine-preventable diseases and deaths.

EPI unit indicates the presence of hard-to-reach areas as a challenge in ensuring that all children are immunized in Malawi[6]. Hard-to-reach area has been described as one that is not easily accessible because of distance, mountains, reserved area or water bodies[10]. There is need to focus interventions on children in the hard-to-reach areas to ensure equity in immunization services.

In addition, Ministry of Health (MoH) EPI administrative data, there is a variation of immunisation coverage among districts in Malawi. There is a range of high-performing to low-performing districts. The high-performing are above the 90% national Diptheria-Pertusis-Tetanus (DPT 3) EPI target, while the least performing are below 80%. For example, the 2017 EPI data indicated immunization coverages for Mulanje and Dedza districts as 101% and 103% respectively. On the other hand, Dowa and Chitipa were below 80% at 71% and 74% immunisation coverage respectively. There is also variation in immunisation coverage among

health facilities within the districts. Even the low- performing districts have both facilities with low-immunisation and high-immunisation coverage. Addressing the challenges facing these under-performing facilities and hard-to-reach areas will ensure that the risk for contracting vaccine-preventable diseases for under-five children is reduced and that the district immunisation performance is improved.

### 1.3 Literature Review

This section details literature concerning the study topic.

#### 1.3.1 Immunisation Equity

Every child has a right to health, including immunisation, as part of an essential package of health services[12]. However, there is inequity in immunisation. Distribution of unimmunised children reflects gross inequalities[12].

Globally, there is inequity in the distribution of immunisation services. For example, 60% of the 19.5 million infants who did not receive basic vaccinations globally in 2016 were from 10 countries namely; Angola, Brazil, the Democratic Republic of Congo, Ethiopia, India, Indonesia, Iraq, Nigeria, Pakistan and South Africa[13]. This means that these countries are at high risk of vaccine-preventable diseases.

Studies show that child's immunisation status is strongly associated with the following factors; their household wealth, mother's education, gender and age of child, birth order, and place of birth and whether they live in an urban or a rural location. Immunisation coverage increased with household income, mother and father's education, child's age and birth order, health facility delivery [12,14–18]. Some studies showed higher immunisation coverage for those living in urban setting rather than rural. Other studies found contrary results [12,16]. Coverage was found to be higher in male child than in female child in other settings[19,20]. The strong association between vaccination coverage and household wealth and education implies that strategies to deal with such inequalities need to ensure that more structural determinants of inequities in health are addressed[12].

**Immunisation Coverage**

There is a list of factors leading to low immunisation coverage. These include distance, attitudes and behaviour of health staff, lack of resources or logistics and compromised access to immunisation services[21] In addition to these factors, conflicting priorities, staff shortage and health workers refusal to vaccinate a child due to false contraindication also contribute to low immunisation coverage[22].

Lack of parental knowledge concerning which children, when and where to get immunised, is one of the factors leading to low immunisation coverage[22]. From the systematic review conducted by Favin et al, parents knowledge of vaccine-preventable diseases, how vaccination works, and the vaccination schedule does not translate to children being vaccinated[22]. For example, a study conducted by Leach in the Gambia showed that 29% of urban and 48% of rural mothers could not correctly name any vaccine-preventable diseases yet reported national coverage was 90%[23]. What is essential is a positive attitude towards immunisation and their practical knowledge about services and that multiple visits are required for protection and when and where the child needs to go[22].

Distance is another factor contributing to low immunisation coverage. Studies indicate inaccessibility as an important cause of partial and under-vaccination[22]. A survey conducted by Babalola and Adewuyi in six-states in Nigeria showed that more than a third of mothers claimed distance or access as a problem to getting their children receive immunisations[24].The other factor is attitudes and behaviour of health staff. In the systematic review by Favin et al, studies cited that health staff reportedly screamed at mothers who forgot the child's card, missed a scheduled vaccination appointment, or had a dirty, poorly dressed, or malnourished child. Some

health workers also mistreated mothers by illicitly charging for vaccination, arriving late to start vaccination sessions, and ending sessions several hours early[22].

Lack of resources or logistics also affects immunisation coverage. Studies indicate that vaccine stock-outs and cold-chain problems cause unavailability of vaccinations[22]. Vaccine stock-outs are caused by lack of funding or storage capacity, or poor ordering and distribution skills and systems of vaccines[25]. Studies also indicate compromised access to immunisation services as one of the factors leading to low immunisation coverage. In a study conducted by Lifalaza in Namibia, outreach services had taken more than two months without being conducted especially in hard-to-reach areas. This study pointed out the need for functional outreach services through community points and house-to- house strategies that would enable all mothers to easily access immunisation services. In addition, the mothers reported to have visited the health facility more than once and being turned away, or the heath facility being closed for a week or more when all the nurses had to attend to unplanned workshops[26].

Conflicting priorities is another factor cited in studies as a contributing factor to low-immunisation coverage. A study conducted by Kashinka indicated work demands, funerals, mother's illness and taking care of other sick children as competing priorities for care-givers to come with their children to immunisation clinics. Mothers also testified about opting to go for prayers and church meetings than to bring their child for immunisation[27].

Staff shortage was one of the major barriers to uptake of immunisation. A study by Lifalaza in Namibia indicated shortage of staff as a challenge in immunisation. The mothers suggested the appointment of adequate staff that would be able to cater to immunisation services at the clinic and in outreach services. The adequate numbers of staff would ensure that immunisation services

were readily available on a daily basis, and would thus serve as a facilitating factor in the uptake of immunisation[26].

**Strategies for improving immunisation Coverage and Equity**

Immunisation programs need proven strategies and fresh approaches to reduce the incidence of vaccine-preventable diseases [28]. This section details some of the strategies outlined in the literature.

Several strategies have been put in place by the EPI unit at policy level for hard-to-reach areas in Malawi[6]. Some of them include provision of solar power to the health facility refrigerators for vaccines and houses to accommodate more health workers, provision of appropriate infrastructure such as health posts and under-five clinic shelters, provision of appropriate transport such as boats and motivation of staff working in these areas [6]. In addition, supplemental immunisation activities in form of mass vaccination have been implemented[5].

Ryman et al conducted a systematic review on studies on strategies to improve immunisation access[28] . The review detailed Kenya where school buildings were used as immunisation sites, with an educational component provided by school children who spread immunisation information within their communities. In addition, immunisation mobile teams were used to increase access. In Nigeria, access to immunisation services was improved through adding number of locations offering immunisations and adding mobile clinics in the evenings. The area in which this intervention was conducted saw an increase in fully vaccinated children (FVC) from 5% to 43% over a two-year period. In Mexico, trained community members conducted home visits during which immunisation education and vaccination were offered. The percentage of FVC for children

less than one year old increased from 21% to 77% in five months, compared with the control group where coverage increased only from 30% to 35% [28].

Deardorff et al conducted a systematic review on strategies that could improve immunisation coverage[29]. Strategies that were gathered included community-directed treatment distribution, distribution within kinship networks, distributor incentives and intensified information, education, and communication (IEC) activities. Conversion from door-to-door to fixed-point delivery , conversion from fixed-point to door-to-door delivery, integrated service distribution conversion from school- to community-based delivery, and management by a nongovernmental organization (NGO) rather than ministry of health were the other suggested strategies[29].

From this review, strategies that increased the community's role and ownership of distribution events were more effective in improving treatment coverage[29]. Strategies that resulted in highest absolute coverage achieved that by increasing access to services through door-to-door and community-based distribution. From the review, consideration of transitions in delivery strategy should be made where programs are not reaching targeted populations with services such as door-to-door delivery in addition to fixed point delivery in order to increase coverage was recommended. Where coverage is low because community members choose not to comply, strategies such as community-directed treatment or intensified IEC campaigns should be considered[29].

Contracting immunisation services to NGOs is another strategy. In selected districts in Cambodia, it increased coverage and improved equity. However, the cost of contracting out the services was high. It was found that the annual per capita cost of contracting out services was almost twice that of providing services through the Ministry of Health [28].

Justification of the study

Expanded Programme on immunisation administrative data shows that immunisation coverage for Malawi and districts has been on decline in the recent years amid implementing strategies outlined in the 2016-2020 EPI Multi-year plan (14). Between 2010 and 2015-16, the percentage of children 12-23 months in Malawi who have received all basic vaccinations dropped from 81% to 76%[10].This is posing unimmunized children at risk of vaccine-preventable diseases. Hence, it is essential to identify and utilize proven strategies for improving routine immunisation programs[28]. The strategies should address people and the communities and societies in which they live since barriers to immunisation uptake are context-related [30,31]. Little is known on community-suggested and acceptable strategies for improving immunisation coverage and equity in hard-to-reach areas and EPI under-performing facilities in Malawi. As the government is doing much on the supply side, there is need to do more on demand side other than providing information, education and communication (EIC). Therefore, this study will inform the EPI program on context-related community- suggested strategies from community health volunteers (CHVs), primary care-givers of children who missed immunisations, traditional leaders and members of health centre advisory committee (HCAC). The strategies will contribute to the immunisation program of Malawi on how to improve coverage and equity in hard-to-reach and EPI under-performing facilities.

## 1.5 Objectives 5

### 1.5.1 Broad Objectives of the study

To identify approaches suggested by the communities and care-givers for improving immunisation coverage and equity among under-five children in hard-to-reach areas and under-performing facilities in Mchinji and Nkhata-Bay districts in Malawi.

### 1.5.2 Primary Objectives

1. To identify factors leading to low immunisation coverage and equity for under-five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers, village headmen, HCAC members and community health volunteers.
2. To identify approaches for improving immunisation coverage for under-five children in hard-to-reach areas and low-performing facilities as proposed by primary care-givers, village headmen, HCAC members and community health volunteers.

### 1.5.3 Secondary Objectives

1. To determine proportion of primary care-givers from hard-to-reach or under-performing areas with correct knowledge of diseases prevented by vaccinations according to Malawi immunisation schedule in under- five children.
2. To determine proportion of primary care-givers from hard-to-reach or low performing areas with correct knowledge of current immunisation schedule (names of vaccines and age of receipt).

# Chapter 2 Methods

## 2.1 Type of research study

This was a mixed-methods cross-sectional study. Both qualitative and quantitative methods were used. Qualitative methods were used for primary data collected from FGDs and IDIs with primary care-givers, CHVs, traditional leaders and members of HCACs in Mchinji and Nkhata-Bay districts to address objectives 1 and 2. For specific objectives 1 and 2, quantitative methods were used to analyse secondary data from Vitamin A Supplementation (VAS) district-wide surveys done in March, 2018 in Nkhata-Bay and Mchinji districts by Kapito-Tembo et al with the aim of assessing knowledge, attitude and practices on immunisation. The main objective of the survey was to obtain estimates of community and facility level baseline Vitamin A Supplementation (VAS) and immunisation indicators not routinely collected within the health system for the pilot intervention of integrating VAS in routine immunisation services in 10 selected districts.

## 2.2 Study place

The primary data collection was done in EPI under-performing facilities and hard-to-reach areas of Nkhata-Bay and Mchinji districts. The household survey from where the quantitative data was obtained from was conducted in 10 districts in Malawi including Nkhata-Bay and Mchinji. The quantitative data used for the study was only from the two districts of Nkhatabay and Mchinji. The districts were purposively sampled for two reasons; firstly, Mchinji is among the under-performing districts in Malawi with DPT 3 coverage of less than 80%, at 74% (MOH routine EPI administrative data 2017) and Nkhata-Bay is among the well-performing districts at 81% but has most hard-to-reach areas and facilities with low coverage (MOH routine EPI administrative data 2017). Secondly, the study was conducted within an already existing project which is piloting integration of vitamin A supplementation in routine EPI services in these two districts.

Mchinji district is located in the central region of Malawi. According the National Statistics Office (NSO), it has a catchment population of 602,305 and under five population of 102, 392. The District Health Office (DHO) data shows that the district has 18 health facilities of which 15 are under Ministry of Health (MoH) and 3 are under Christian Health Association of Malawi (CHAM). According to 2017 MoH routine EPI administrative data, there were 13 EPI under-performing facilities. The study was done at Mkanda health centre and Velentino outreach clinics. In 2019, Mkanda health centre has a catchment population of 44,101 with an under-five population of 7, 494. There is a functional HCAC, 10 community health volunteers and 22 village headmen. Static clinics are done every day of the week and an average 60 of under-five children are attended to per clinic. On the other hand, Velentino outreach is conducted once every month and the clinic is about 7 km from the health centre and attends to about 60 children. There are 3 community health volunteers and 6 village headmen.

Nkhata-Bay is located in the northern region of Malawi. According to NSO, the total catchment population for the district is 306, 040 of which 52,072 are under-five children. The total number of health facilities is 21 of which 18 are under MoH and 3 are under CHAM. The total number of health facilities with 2017 Measles Rubella 1 (MR1) immunisation coverage of less than 80% was 17. Study sites for primary data collection were Chisala health centre and its outreach clinic of Mtoto. Chisala health centre has a catchment population of 11,300 and has a static clinic which runs 1 per every 3 weeks and attends to 50 under-five children per clinic. There are 6 community health volunteers, 20 village headmen, a functional HCAC. The outreach clinic is located 6 km from the health centre and is within 8 village headmen. It has 5 community health volunteers and attends to 40 under-five children per clinic day. The clinics are held once per month.

### 2.3 Study population

For the qualitative objectives, the study population included primary care-givers of under-five children, community health volunteers, village headmen, and members of HCACs from the facility or outreach clinic's catchment population. The primary care-givers referred to the parents or guardians providing care to a child below 5 years of age whose children have not received any immunisation or have not completed vaccination for age; Village headmen referred to community known chiefs of the villages that were within the facility's or clinic's catchment population; Community health volunteer referred to health volunteers who are involved in growth monitoring and immunisation; Representatives of HCAC referred to the institutionally and community-known members of HCAC; The study population for quantitative data analysis from the household survey data was primary care-givers of children 0 to 59 months old interviewed in the two districts.

### 2.4 Study period

Primary data collection for the study was done in June, 2019. Transcribing, theme generation and coding were done in July. Data collection for the household surveys was done in March, 2017. Data cleaning and analysis was done in June and July, 2019. A final report was written in August, 2019.

### 2.5 Sample size

Purposive sampling was used to select primary care-givers, village headmen, community health volunteers and HCAC members for participation in the study. For the primary data, 4 focus-group discussions (FGD) for primary care-givers, 2 FGDs for HCACs members, 12 in-depth interviews(IDIs) for primary care-givers, 12 in-depth interviews for the community health volunteers, and 8 in-depth interviews for village headmen were conducted.. With this sample size,

it was assumed that saturation would be reached. In addition, it is more than the 12 interviews that Guest et al recommends[32]. The sample size for the secondary data was 702 which included all the care-givers recruited in the survey in the two sampled districts.

### 2.6 Sampling of Study Participants

The health centres of each district were stratified into high and under-performing facilities using the EPI administrative data. The under-performing facilities were the ones with immunisation coverage of less than the WHO target of 80%[11]. A facility was purposively selected from the stratum of the poorly performing ones. After selecting the facility, an outreach clinic was also purposively sampled on the basis of having a clinic during the period of data collection.

Purposive sampling was used to select all the participants for qualitative research. Primary care-givers of under-five children who had missed immunisation clinics in the previous visits were sampled using the under-2 register. Community health volunteers (CHVs) for IDIs were selected from the list of CHVs kept at the facility or outreach clinic based on working in the catchment area of the clinic or facility. Traditional leaders were purposively sampled for IDIs from the list of headmen within the catchment area of the facility or outreach clinic and members of the HCAC for FGDs from the list of committee members.

Inclusion criteria entailed:

- Care-givers of under-five children, who had missed previous immunisation scheduled visits, residing in the outreach clinic or health facility catchment area.
- Community health volunteer who were working in the sampled facility or outreach clinic's catchment area.
- Traditional leaders who were village headmen of the catchment area of the sampled outreach clinic or facility.

- HCAC members who were known elected members of the health centre advisory committee of the sampled facility.

Exclusion criteria:

- Eligible care-givers, CHVs, traditional leaders and HCAC members who did not give consent to participate in the study.
- Care-givers who had come with sick child to a facility for medical attention.

Primary care-givers were chosen because they are the ones who are actively involved in the child care and are familiar with challenges that they face and therefore are in a good position to suggest the solutions. For the community health volunteers, there were chosen because they are members of the community who are directly involved in the immunisation service provision. The village headmen were chosen because they play a leadership role for the community and are aware of the health challenges of their communities. Representatives of the health advisory committees were chosen because they are aware of the health issues of the community and they a play a role in linking the community and the health facility staff on health issues.

The secondary data was initially in district clusters. District clusters of Mchinji and Nkhatabay were purposively sampled from the other clusters. The cluster data was stratified into care-givers and non-care-giver respondents. The caregiver stratum was selected for both districts and was further stratified into hard-to-reach and non-hard-to-reach area. Then, data for hard-to-reach areas was analysed.

### 1.7 Data Collection

Data for qualitative analysis was collected by four research assistants. They were trained in the data collection for the study for one-and-half days. The training entailed details on study overview and background, administering informed consent and data collection tools.

With the assistance of the research assistants, 1 FGD was conducted for HCACs members per each health centre using a designed interview guide (see Appendix 4) in both districts. The HCAC members were identified and called to the health facility for the interviews by the health centre in-charges in both districts.

One FGD with the primary care-givers was done at each health facility and outreach clinic using an interview guide (see Appendix 3). Health surveillance assistant supervisor responsible for facility or outreach clinic assisted in identifying and booking the willing and eligible care-givers who had missed immunisations according to their children schedule using under-2 register. The interviews were done at the facility.

Twelve in-depth interviews for primary care-givers were done at facility and outreach clinic in each district using a designated interview guide (see Appendix 6 & 7). The primary care-givers from facility and outreach catchment area were identified and booked using the under-2 register. Interviews were done at facility and outreach clinic site. In addition, 12 in-depth interviews for community health volunteers were also conducted with a designated interview guide (see Appendix 5). Participants were identified from the list of volunteers at facility or outreach clinic. The interviews were conducted at the facility and outreach clinic.

Four in-depth interviews were also done for village headmen per district. These included 2 village headmen per each health facility and each outreach clinic's catchment population. The interviews

were done at the facility and outreach sites respectively using a designated interview guide (see Appendix 8). For the secondary data from the household survey, it was available in Excel format.

### 2.8 Data management and Analysis

Qualitative data was analysed using thematic analysis approach. The qualitative data from the FGDs and the IDIs was in the form of field notes and audio recordings. Transcribing of the audio recorded interviews and discussion sessions into a typed word document was done. A random number was assigned to each participant in the FDGs and IDIs. Familiarisation with the data to identify themes from identified codes from every interview and discussion notes from the research assistants was done by the investigator. Table 3 (see Appendix 11) shows the themes and codes.

Data was stored in recorders, flash disks and laptop computers. Unique identification number was used for each interview guide and transcript to ensure confidentiality. The recordings were transcribed verbatim in English language. The recordings and transcripts were checked for errors. The interview guides and consent forms were filed separately and were kept in a cabinet accessible only to the researcher. The transcribed data was kept in soft copies in a laptop computer with a password.

The extracted secondary data set was cleaned in excel. Variables of interest were extracted from the data, leaving out variables that were not of interest. Then data was exported to STATA version 13 for analysis. The data variables were adjusted to meet the objectives of this research. Descriptive analysis was done to produce the proportion of primary caregivers from hard to reach areas or low performing areas with correct knowledge on disease prevented by vaccinations according to Malawi immunisation schedule in under 5 children and proportion of primary caregivers from the hard to reach areas or low performing areas with correct knowledge of current immunisation schedule (Names of vaccines and age of receipt).

### 2.9 Study limitations

The qualitative study focused on the demand side of the immunisation services. There was need to gather findings on the same research questions from the health workers. This would provide a more comprehensive data on supply side for decision-making. In addition, some of the participants might not have exhausted their answers during the FGDs and IDIs. Since some participants were interviewed while waiting to access immunisations and after getting immunisation, they could be rushing to attend to other duties on their day plan.

The study faced limitation from using secondary data from the survey. With the survey having a different objective, some of the variables like villages could not be found for analysis in this study. Villages specified to facilities in Nkhata-Bay district were missing, making analysing proportion of care-givers with accurate knowledge of immunisations in under-performing facilities difficult. Hence, it was only possible to analyse data in the hard-to-reach areas.

## 3.0 Ethical Considerations

The study sought support letters (see Appendix 9&10) from the two district health offices for proposal submission to College of Medicine Research and Ethics Committee (COMREC). Ethical approval of the study was obtained from COMREC (see Appendix 13). Informed consent was obtained for each interview using designed informed consent forms (see Appendix 1). Privacy for the interviews was observed by conducting the interviews in a separate room or at a site away from people doing other activities. Numbers instead of names were used to identify interview participants in order to ensure confidentiality. The recordings and transcribed data were kept in flash disks and laptops with passwords only accessible to the study team. There could have been possible harm to the primary care-givers resulting from fear, anxiety or fatigue during the interviews. There was no direct benefit to the participants apart from receiving a drink and a snack

at the time of interviews and focus group discussions. For the secondary data analysis de-identified data was used to ensure confidentiality. The main study had an ethical approval (see Appendix 11).

## Chapter 3 Results

This chapter covers results of the study according to the study objectives. The first part presents results for qualitative data while the second part is covering the quantitative data.

### 3.1 Qualitative Research

#### 3.1.1 Study Participants

A total of 84 participants were enrolled. Primary care-givers, community health volunteers, traditional leaders and members of health centre advisory committees were enrolled. The occupation of the participants ranged from farmers, hairdressers, traditional leaders and housewives. The age of primary care-givers ranged from 19 to 38 and community health volunteers from 22 to 45. The traditional leaders' age was between 41 and 60. HCAC members ranged between 24 to 48 years old.

**Table 1: Distribution of Participants Enrolled in the Research by Gender**

| **Category** | **Male** | **Female** | **Total** |
|---|---|---|---|
| Primary care-givers | 0 | 48 | 48 |
| Community health volunteers | 6 | 6 | 12 |
| Traditional leaders | 7 | 1 | 8 |
| HCAC members | 11 | 5 | 16 |
| Total | 24 | 60 | 84 |

#### 3.1.2 Factors Contributing to Low Immunisation Coverage and Equity

Themes that came out from the interviews include:

**Transport challenge for HSAs and CHVs**

Most of the community health volunteers (CHVs), health centre advisory committee (HCAC) members and traditional leaders indicated that lack of mode of transport for both HSAs and CHVs was a challenge in immunisation programs of the study areas. Some of them pointed out that the HSAs and CHVs travel long distances to get the vaccines and administer to the children.

> *We need transport to help the health workers so that the health workers should not be burden. I see a lot of volunteers who come to collect vaccines here walking on foot but if you ask them they will tell you they come from far distances.- HCAC member_Chisala_Nkhatabay.*

> *We lack of proper transport to enable us to go take the vaccines in good time. We always come late since we walk long distances. Consequently, we start the clinics late.- Community health volunteer_Mtoto_Nkhatabay.*

**Shortage of health care workers**

Some of the CHVs indicated that shortage of health workers is a contributing factor to having low immunisation coverage in the area. They pointed out that this gives a challenge when there is an outreach clinic. Care-givers coming at the facility sometimes do not access the immunisation services when the health workers are providing immunisation services at an outreach clinic.

> *Mkanda clinic has few health workers. This makes it difficult when there is an outreach program; people are not treated at the health centre since health workers are gone to outreach clinic-IDI_Community_Health Volunteer_Mkanda _Mchinji.*

**Misconceptions about immunisation**

Interviews with care-givers indicated that some misconceptions about immunisation exist. Some of them said that they did not know any misconceptions; others revealed that some people believe

that a child can grow normally without getting immunised. Others said that there are beliefs that a child can get sick due to receiving immunisation.

> *Some people believe that vaccines make a child to get sick and sometimes they just don't want their kid to get sick from those scenarios. - FGD_HCAC_ Mkanda_Mchinji.*
>
> *Most believe that in their clan no one gets immunized, every child grows without disease and there is no need for immunisation. - FGD_Primary Care-giver_Chisala_Nkhatabay.*

**Distance and weather**

Some care-givers indicated that they fail to make it to immunisation clinic when there are rains or when the day is cold. Other care-givers indicated long distance as a barrier to affording to get their children immunised. They indicated that they walk long distance to come to the immunisation clinic and this also makes them to arrive at their homes late.

> *Harsh conditions such as rains or cold can make one miss immunisation dates for the fear of the child or care giver getting sick.-IDI_Primary care-giver_2_ Chisala_Nkhatabay*
>
> *We travel long distances to get the vaccines and when we are getting back we arrive home late hours. Most of us live behind those mountains. When we come and not get our children here, we feel we are treated unfairly and we are discouraged to visit the clinics again.-FGD_Primary Care-giver_Chisala_Nkhatabay*

**Lack of Cold Chain and Power Back-up Equipment**

Equipment was also one of the themes that emerged during the interviews. CHVs, traditional leaders and members of HCAC mentioned interruption of electricity power supply for vaccine refrigerators as one of the factors hindering immunisation services. They reported that there is need to have solar power back-up. Some of them mentioned that there is lack of bigger fridge at their facility which made them store smaller quantities of the vaccine. Some said that the vaccine for outreach services is stored far from the service point, making transportation difficult.

*Electricity problem is another set back here. We need solar electricity that should make our fridge work throughout. Sometimes we are forced to go keep vaccines at kaigwazanga where they have solar electricity. As a result, we start clinics late- IDI_Community Health Volunteer_Mkanda_ Mchinji.*

*Lack of facilities or fridge to store the vaccines is a problem. Mostly the vaccines are stored at the district hospital and it poses a challenge when accessing the vaccines plus they end up getting small quantities of vaccines because of the space they have in their fridge at the facility is small.- FGD_HCAC_ Mkanda_Mchinji.*

**Fear and Laziness of Primary Care-givers**

Few of the participants indicated that some care-givers who have had more than one child within immunisation schedule, are shy to come to the clinic because of fear that their friends will laugh at them for poor family planning. Some indicated that other participants are shy to come to the clinic because of lack of clean clothes due to lack of soap. Most of the participants also indicated that some care-givers fail to get their children because of laziness to visit the clinic.

*Health workers should tell the community not to leave the young ones if they have delivered another baby while the previous one is still receiving vaccinations. It is too much here. For instance, we had a scenario whereby a woman had conceived after delivering in 3 months' time and fail to come to the hospital because of being shy that her friends will laugh at her. -FGD_ HCAC_Chisala_Nkhatabay.*

*Some women are just lazy so they usually come up with excuses, so the children miss out immunisation. Some even fake child's illness to miss out vaccines. -IDI_Traditional leader_Mkanda_Mchinji.*

*Because of poverty, I sometimes fail to have soap to wash my clothes and also wrappers; people laugh at you or scold you when you go to the clinic looking shabby. This brings discouragement to attend clinics- IDI_Primary Care-giver_Mkanda_Mchinji.*

**Illicit Fees Charging by Health Workers**

Primary care-givers and CHVs indicated some hindrances they face when they want to access immunisation services at the clinic. Some care-givers indicated that health workers ask them to pay money to access services at an outreach clinic. When they do not pay, they are either sent back or treated after the ones who have managed to pay have finished receiving services.

*When you don't have the k50 to pay during the clinic, it's so embarrassing for you to attend as you are sent back or made to wait till all those who have brought money have done the scale or immunisation. - FGD_Primary care-givers_Velentino_Mchinji.*

**Cancellation and Late Commencement of Clinics**

Primary care-givers, CHVs and traditional leaders indicated that care-givers wait for long period of time before starting to receive services. In addition, some indicated that the delay and cancellation of clinic is due to health workers being busy with other activities such as trainings. Some CHVs indicated that there is poor communication among the service providers such that there is poor arrangement to cover activities for someone who is busy with other activities. Traditional leaders, CHVs and primary care-givers participants indicated that the delay and cancellation of the clinics makes care-givers lazy for next visits. They also miss some household chores.

*There are a lot of centres here for immunisation but the problem is with the health workers to bring vaccines. Sometimes it can even take 2 months before they show up, and this bring laziness to caregivers to attend immunisation clinics. - IDI_Traditional Leader_3_Mkanda_Mchinji.*

*We leave other things to do at home and here at the clinic we are told to come at 7am but we sometimes receive vaccines at 2pm. This discourages us to come for the next visits-* *FGD_Primary Care-givers_Mkanda_Mchinji.*

*We fail to carry out other household chores especially because the health staffs are usually late. This makes us disappointed with the services and eventually we lose interest in getting to come again-* *IDI_Primary Care-giver_Velentino_Mchinji.*

*Sometimes the health workers are occupied with other things like trainings and they don't come in time. This leads to having clinics start late, thereby discouraging us to come again-FGD_Primary care-givers_Velentino_Mchinji.*

**Lack of support from husbands**

Some care-givers indicated that care-givers are discouraged by their husbands not to come for immunisations. Some indicated that care-givers are pre-occupied with household chores, making it difficult to attend clinics.

*Mostly our men do not understand us when we delay at the clinic and when we arrive home late, some of husbands shout at us, and then another day we are afraid of going to the clinic to avoid quarrels at our home.-FGD_Primary Care-givers_Mkanda_Mchinji.*

*Some of our husbands they don't show interest, when you are about to go to the clinic they give us things to do, like other chores.-* *FGD_Primary Care-*

*giver_Chisala_Nkhatabay.*

**Competing Priorities**

Others indicated that some care-givers fail to attend the clinics when there is a funeral or someone is sick on the day of the clinic.

*Some problems at home such as funerals make caregivers to miss out immunisation for their children since mothers have to attend the funerals. - IDI_Community Volunteer_Velentino_Mchinji.*

### 3.1.3 Community-Suggested Approaches for Improving Immunisation Coverage and Equity

**Providing Mode of Transport to HSAs and CHVs**

CHVs indicated that there is need to support HSAs and volunteers with a form of transport to enable them travel long distance and ferry vaccines.

*The government should help us volunteers with modes of transportation such as bicycles or motorcycles so that we can carry vaccine to the clinics easily. - IDI_Community Health Volunteer _Chisala_Nkhatabay.*

**Clinic Organisation**

Some care-givers indicated that health workers should do follow-ups on those care-givers who missed immunisation visits.

*Health workers should be following up those that are participating in immunisation and those that are not, to be encouraging them.-IDI_Primary care-giver_Mtoto_Nkhatabay.*

In addition, some CHVs indicated that efforts should be made to ensure that every child that comes to the clinic should receive immunisation at every visit so that care-givers are encouraged to bring their children without fearing of being sent back without their child getting vaccinated.

*No matter what when a care giver comes to a clinic he/she should be given the service needed and should not be sent back without receiving the service. This encourages them that whenever they go the clinic they will get their needs. - IDI_Community Health Volunteer_Mkanda_ Mchinji.*

There was a suggestion that clinic should start early and that both care-givers and health workers should arrive in good time.

In addition to these suggestions, some suggested that there should be efforts to ensure that adequate vaccines are constantly available so that no care-giver should be sent back because of inadequate quantities of vaccine.

*Vaccines should be readily available so that people should not be sent back in order to come again. - IDI_Community Health Volunteer_3_Velentino_Mchinji.*

*Every caregiver should be early for immunisation visits so that the child doesn't miss out. - IDI_Primary Care-giver_Mkanda_Mchinji.*

*Health staff should not miss out immunisation dates and they should come in good time so that we are encouraged for next visits. - IDI_Primary care-giver_Mtoto 2_Nkhatabay.*

Some of the participants suggested that community health volunteers could be trained to provide immunisation services to the under-five children in order to increase coverage.

*I suggest that we volunteers are trained to give immunisation to the communities; since there is more congestion at the clinic therefore volunteers can be going in the communities to meet caregivers.-IDI_Community Health Volunteer_Mkanda_ Mchinji.*

Some traditional leaders suggested that there should be introduction of initiative of providing food

for care-givers and their children to eat during immunisation clinic so that they should not be hungry.

*Some children lack food; clinics should offer food to children and their mothers during clinics so that they are not hungry while waiting for services, this can encourage care-givers not to miss immunisation days- IDI_Traditional Leader_2_ Chisala_Nkhatabay.*

**Establishing Additional Clinics**

Traditional leaders and care-givers also suggested that more outreach clinics should be established to ensure that all children access immunisation.

*There should be an initiative of having many centres to do immunisation since many fail to come because of the long distances. I repeat this; the most important thing is having centres near our villages. This baby I am carrying is the third but the other one is not more than 5years but I cannot carry two of the due to the long distance I walk. We need centres close to our villages. - FGD_Primary Care-giver_Chisala_Nkhatabay.*

Some care-givers and traditional leaders indicated that politicians and government should construct outreach clinic structures and roads for better travel for health workers and volunteers.

*Politicians should help us in construction of roads so that the health workers and volunteers don't face any problems when transporting the vaccines- FGD_Primary care-givers_Velentino_Mchinji.*

*Politicians should help us in building outreach clinics so that there are more sites for immunising children- IDI_Traditional Leader_3 Chisala_Nkhatabay.*

*Government should make sure outreach clinics should be built with proper infrastructures so that more children are reached out. - IDI_Tradtional Leader_1_Mtoto_Nkhatabay.*

**Community activities**

The study gathered suggestions that teachers, health workers, CHVs, HSAs, traditional leaders and political leaders could do at the community. All participants indicated that teachers can play roles in promoting immunisation. Firstly, some of the participants indicated that they can teach the learners about immunisation so that the learners can relay the message to their parents. Secondly, they can teach parents on the importance of immunisation during parents-teachers meetings. Thirdly, they can tell school committee members to tell learners to teach parents on immunisation. Lastly, they can paste posters on immunisation in their schools.

> *Teachers should tell their school committee members to tell the students to teach their parents about immunisation. Teachers should also teach the parents in a parent-teachers meeting so that they can understand the goodness of immunisation. This will promote utilisation of immunisation services-FGD_ HCAC_Chisala_Nkhatabay.*

> *Teachers should write posters to help parents learn and understand the immunisation program. - FGD_Primary Care-givers_Mkanda_Mchinji.*

> *Teachers should make sure they teach children about immunisation at school in order for them to take the message to their parents. - IDI_Community Health Volunteer_3_Chisala_ Nkhatabay.*

> *Teachers must make sure all learners coming to school have completed immunisation stages. This will encourage parents to get all children vaccinated- IDI_Traditional Leader_3_Mkanda_Mchinji.*

Members of HCAC indicated that health workers need to assist in awareness by training members of health centre advisory teams and traditional leaders on immunisation. Others indicated that health workers can also sensitise people on immunisation during gatherings such as funerals.

> *Health workers should teach the HCAC and the leaders in the community about immunisation to reach everyone. Announcements concerning immunisation can be made during funeral gathering. - FGD_ HCAC_Chisala_Nkhatabay.*

Community Health Volunteers suggested that health workers and community health volunteers should conduct door-to-door campaigns on immunisation. Other participants indicated that CHVs should do door-to-door follow-ups on those who missed immunisation and be empowered to provide immunisation on their own.

> *We should be encouraging women about the importance of immunisation; through door to door campaigns, encouraging caregivers to attend immunisation clinics. - IDI_Community Health Volunteer _Chisala_Nkhatabay.*

> *Health workers (HSA'S) should embark on door to door campaigns to increase demand for immunisation services. - IDI_Community Health Volunteer _Chisala_Nkhatabay.*

> *I suggest that we volunteers are trained to give immunisation to the communities; since there is more congestion at the clinic therefore volunteers can be going in the communities to meet caregivers. This will ensure that more children are immunised- IDI_Community Health Volunteer_Mkanda_ Mchinji.*

> *Volunteers should be visiting door-to-door following up if caregivers are taking their children for immunisation. This will assist those that missed immunisations. -*

*IDI_Community Health Volunteer_Mtoto_Nkhatabay.*

Health Centre Advisory Committee members and traditional leaders indicated roles that political leaders can play in immunisation. Some suggested that the political leaders include messages on immunisation when they are holding political rallies and meetings. In addition, others indicated that political leaders should sponsor dissemination of messages on immunisation.

*Political leaders should also talk about immunisation when they are conducting rallies. The children are the future leaders so they should be immunized to have strong and healthy leaders.-FGD_ HCAC_Chisala_Nkhatabay.*

*Politicians should sponsor civic education of immunisation so that more mothers come to the clinic for child immunisations, - IDI_Traditional Leader_2_Mtoto_Nkhatabay.*

Health Centre Advisory Committee members and traditional leaders also suggested roles of religious leaders in immunisation. Some indicated that they can be making announcements about immunisation activities in churches or mosques. Others added that they should collaborate with health workers in sensitising care-givers.

*Religious leaders should make announcements in the churches whenever there is immunisation to take place. This will encourage care-givers to go for immunisations- HCAC_Chisala_Nkhatabay.*

*Religious leaders should constantly liaise with health personnel and intensify awareness campaigns on immunisation. - IDI_Traditional Leader_2_ Chisala_Nkhatabay.*

*Religious leaders should help in awareness by announcing in church/mosques about immunisation so that care-givers can be encouraged to go for immunisations. - IDI_Traditional leader_Mkanda_Mchinji.*

Health Centre Advisory Committee members and traditional leaders indicated that traditional leaders can play a role in immunisation by sensitising their villagers on importance of immunisation. In addition, some indicated that the leaders can put in place laws that discourage care-givers from missing immunisations for their children.

*There is a need of putting laws to ensure that they everyone is not missing immunisation. This will discourage those that miss immunisation clinics- FGD_ HCAC_Chisala_Nkhatabay.*

*Traditional leaders should have meetings with villagers on the importance of immunisation. This will show people seriousness of leaders on issue of vaccinations- IDI_Traditional Leader_3 Chisala_Nkhatabay.*

Role of husbands was also pointed out by traditional leaders and care-givers. Some participants suggested that the men should encourage their wives to attend the clinics. Some participants suggested that traditional leaders should do a follow-up on the husbands of women who are lazy to come to immunisation clinic. Some care-givers suggested that men should escort women who had more than one under-five child who needed immunisation so that they are not afraid of being shouted at by health workers.

*We, traditional leaders, personally approach husbands of lazy women to change the attitude of these women. - IDI_Traditional leader_Mkanda_Mchinji.*

*If we care-givers have two under-five children within immunisation age, let us ask our husbands to escort us to the clinic to avoid humiliation from health workers concerning our poor child spacing. - IDI_Primary care-giver_2_ Chisala_Nkhatabay.*

*Men should encourage caregivers not to miss immunisation as some women are lazy. - IDI_Primary Care-giver_Velentino_Mchinji.*

There were some suggestions on the roles of CHAGs in immunisation from HCAC members, CHVs, care-givers, and traditional leaders. Some participants suggested that they should be involved in sensitising the community about immunisation. Other participants indicated that CHAGs should be present during the immunisation clinic in order to give encouragement to the care-givers present. There was also mention of making sure that CHAGs have records of those care-givers who have missed immunisation so that they should do follow-ups in the community.

*CHAGs should be coming on immunisation day to encourage caregivers to keep coming to the clinic. - IDI_Community Health Volunteer_3_Chisala_ Nkhatabay*

*CHAGS should also have a record on the children that are receiving immunisation so that they should easily follow up on those who missed immunisations. - Community Health Volunteer_Mkanda_ Mchinji.*

In addition to the above suggestions, there was also suggestion of creating support groups for care-givers. Participants mentioned that care-givers can discuss issues concerning immunisation within these groups. In addition, there was also a suggestion that there should be a prior communication by the health workers to the primary care-givers if a clinic is going to be cancelled or delay.

*Creating groups whereby women should be able to interact and discuss about the significance of vaccines. There should be mentors within the group. - IDI_Community Health Volunteer_2_Chisala_Nkhatabay.*

*Health workers should inform people in good time if they will miss the scheduled date. If they miss the date; the heath staff should make sure the rescheduled date should be set closer so that the children should not suffer. - IDI_Community Volunteer_Mkanda_Mchinji.*

*Health workers should communicate if they will not make it on scheduled scale or immunisation dates. - IDI_Primary care-giver_Mtoto 2.*

**Awareness Campaigns Using Radio**

Some traditional leaders indicated the need to use the radio to disseminate messages on immunisation.

*There is a need to do campaign meetings in the communities to spread the message of immunisations. Our community radio in Mchinji does not work in some parts of Mkanda because of this mountain, if it could have worked this was the best way to be giving out messages of immunisation to care-givers to come to immunisation clinics.-IDI_Traditional Leader_2_Mkanda_Mchinji.*

### 3.2 Quantitative Research Results

#### 3.2.1 Knowledge of Primary Care-givers on Immunisations

This section presents results of the quantitative data analysis. The table below shows the demographic characteristics of the sampled participants.

**Table 2: Demographic Characteristics of Care-givers from the Sampled Areas**

| Variable | Mchinji | Nkhatabay | Total (%) |
|---|---|---|---|
| **Interviewed caregivers** | N=349 | N=353 | N=702 |
| **Gender** | | | |
| Male | 5 | 2 | 7 |
| Female | 344 | 351 | 695 (99%) |
| **Hard to Reach Areas** | | | |
| Hard to reach | 95 | 126 | 221 (31%) |
| Not hard to reach | 254 | 227 | 481 |
| **Age** | | | |
| 15-24 | 131 | 158 | 289 (41%) |
| 25-39 | 193 | 172 | 365 (52%) |
| 40-50 | 25 | 23 | 48 (7%) |

**Demographic Factors**

The table above shows demographic distribution of care-givers in percentage column. From the table, 99% of interviewed care-givers were females. Majority (52%) of the care-givers were

between the ages of 25-39 followed by 15-24 (41%). Those from hard-to-reach were 31% of the participants.

**Proportion of primary care-givers from hard-to-reach (HTRA) or under-performing facilities with correct knowledge of diseases prevented by vaccinations according to Malawi immunisation schedule in under-five children**

**Knowledge on importance of immunisation**

Caregivers were asked on whether immunisations are important or not, all the caregivers (702) from the sampled areas indicated that immunisations are important.

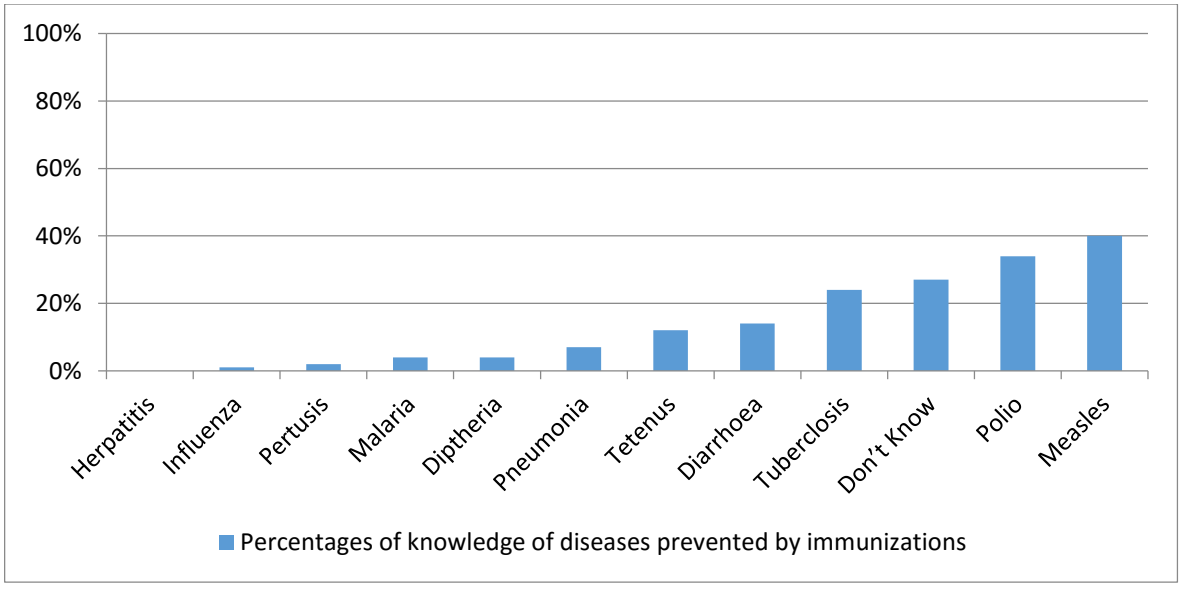



**Figure 1: Proportion of Care-givers with Knowledge on Specific Vaccine-preventable Diseases**

From the graph above, majority of the care-givers (40%) had knowledge of Measles as the vaccine-preventable disease, followed by Polio (34%) and Tuberculosis (24%). 27% of the care-givers did not know any disease prevented by immunisation. No care-givers indicated knowledge of Hepatitis as a vaccine-preventable disease.

**Proportion of primary caregivers from the hard to reach areas with correct knowledge of current immunisation schedule (names of vaccines)**

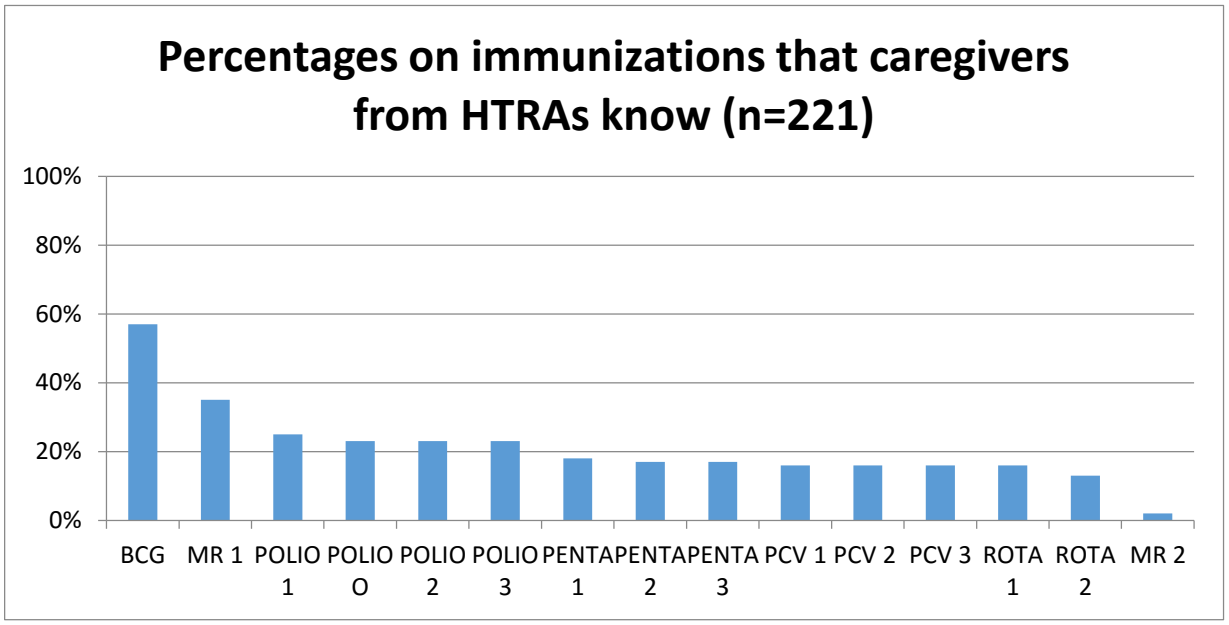



**Figure 2: Proportion of Care-givers from HTRAs with Accurate Knowledge on Specific Vaccine**

The graph above shows that majority of care-givers (57%) in hard-to-reach areas had knowledge of BCG as a vaccine, followed by Measles rubella 1(35%) and Polio 1(25%). MR2 was the least with 2% having knowledge of it.

## Chapter 4 Discussion

This chapter discusses the findings in relation to reviewed literature. The first section covers the qualitative part which is categorised into factors leading to low immunisation uptake and equity and community-suggested strategies of improving the immunisation coverage and equity. The second section involves discussion of the finding of secondary data analysis.

### 4.1 Qualitative Research Data

#### 4.1.1 Factors Leading to Low Immunisation Coverage and Equity

The finding from the study stating long distance for both care-givers and lack of transport for health workers and CHVs to travel in order to reach immunisation facility and clinic as one of the factors for low immunisation coverage and equity is similar to what was gathered in a survey conducted by Babalola and Adewuyi in six states in 2005 in Nigeria. The survey showed that more than a third of mothers claimed distance or access as a problem in getting children access immunisations[24]. The health worker (HWs) and CHVs lack mode of transport to carry vaccine and travel to outreach clinics located far away from the health facility. There is need to address this distance challenge for both health workers and the caregivers.

Cancellation of the clinics, mainly attributed to health workers being engaged with other activities like trainings, was consistent with what Lifalaza found in a study conducted in Namibia. In that study, outreach clinics were not reliable and had taken more than 2 months without being conducted in hard-to-reach areas. in that study, mothers indicated that they were turned away from the facility more than once and sometimes the health facility would be closed for a week or more to allow all the nurses to attend to unplanned workshops[26]. There is a need for each district health office to facilitate development of clear plan on how to ensure continued service provision during the times some health workers responsible for providing immunisation are attending

trainings or meetings.

The finding that inadequate vaccine was the other reason for being sent back without receiving immunisations is similar to what a review by Unicef pointed out. The review stated that mothers are discouraged when they travel long distance to access immunisation only to find that the clinic does not have an adequate supply of vaccines, needles or syringes[12]. This discouragement could influence the mothers to miss subsequent scheduled immunisation clinics. Having EPI unit address supply chain challenges to reduce shortage of vaccine could improve caregivers' attendance of immunisation clinics.

The findings from this study of experience of care-givers of late commencement of clinics, long waiting times, health workers' demand to pay a fee to access immunisation and harsh welcome from health workers of care-givers at immunisation sites were similar to what other studies gathered. This finding was also observed in a review by UNICEF where inconvenient hours of vaccination services, long queues and waiting times were cited as having an influence on whether parents decide to bring their children back for subsequent immunisations, especially if they were coming from far[12]. In another study conducted in Zambia by Kashinka, mothers spent a lot of time waiting for their children to be vaccinated and some of them were spoken to harshly by the health workers and consequently, they were discouraged to come for next visits [27]. Health workers should consider using reinforcement such as by providing gifts, rewards, and praise rather than punishment like scolding and shouting to encourage the wanted behaviour of improved immunisation uptake[27]. Perceived satisfaction with vaccination services was seen to influence children vaccination completion[18]. Therefore, EPI's efforts provide good immunisation service delivery for the care givers could improve coverage and equity.

Competing priorities as another factor leading to low immunisation coverage was also found in a study conducted in Zambia in 2017 by Kashinka. Kashinka indicated that mothers and community health workers had cited being busy with work and coupled with the lack of a significant other to bring the child for immunisation as the major reasons for immunisation drop outs[27]. This is similar to this study's findings where care-givers hinted that they failed to make it for immunisation when there was a funeral or when they were sick or when someone who was sick and needed their attention. Solutions to this challenge would require considering cultural context of each setting and community engagement.

### 4.1.2 Approaches for Improving Immunisation Coverage

**Immunisation Task-Shifting to CHVs**

The study gathered suggestion from the CHV that they should be empowered to provide vaccinations to children in order to reach out to more children. They suggested being trained and legalised to offer immunisations. A literature review by Ryman et al recommended use of volunteers because of their community knowledge, the respect they are given by the community, and the fact that they have access to community members who may not be reached by mass media such as radio or television[28]. Similarly, in Mexico, trained community members were used to conduct home visits during which immunisation education was provided along with needed vaccines. This intervention increased the percentage of full vaccination coverage of children less than one year of age from 21% to 77% in five months, compared with the control group where coverage increased only from 30% to 35% [28]. However, the problem would be sustainability since a number of interventions rely on the same community volunteers.

**Establishing More Outreach Clinics**

The study gathered that participants suggested the need of establishing more outreach clinics to improve access to immunisation services. Ryman et al indicated that in Kenya, school buildings

were utilized as immunisation centres, with an educational component provided by schoolchildren who circulated immunisation information within their communities. Furthermore, mobile teams were used to increase access. Coverage outcomes varied according to population density[28]. Similarly, in Nigeria, access to immunisation services was improved by increasing the number of locations offering immunisations and adding mobile clinics conducted in the evenings. The area in which this intervention was conducted saw an increase in FVC from 5% to 43% over a two-year period [28]. The EPI unit could consider increasing the immunisation sites and times of the day to improve access and equity.

**Provision of food incentives at the clinic**

The suggestion of providing food incentives at the clinic gathered by this study is consistent with findings of a study done in Nicaragua.. Ryman et al states that, in Nicaragua, food incentives were introduced to create demand for immunisation services. Mobile outreach without food incentives had 63% attendance but when food incentives were added, attendance increased to 102%. A static clinic achieved 94% attendance with food incentives[28]. However, sustainability would be a challenge in the setting of Malawi due to inadequate funds. As a solution, care givers could be encouraged to take along some food to eat whilst attending the clinics.

**Ensuring Consistent Immunisation Services**

The study finding of inconsistent immunisation clinics is similar to what Lifalaza found in a study conducted in Namibia in 2016. Lifalaza found that inconsistent outreach services was a major contributor to defaulting and a recommendation of making outreach clinics available and consistent was made[26]. Wysonge et al also in their systematic review found that regular immunisation outreach sessions are likely to be useful for hard-to-reach communities. [31]. Therefore, EPI unit should make efforts to ensure consistency of clinics in order to improve

immunisation coverage and equity.

**Involvement of Community in Follow-ups**

The study gathered suggestions to involve CHAGs in sensitisation and defaulter tracing. Door-to-door follow ups were recommended. It was suggested that the CHAGs should keep registers on the vaccinated and unvaccinated children and do follow-ups. This is similar to what was implemented in Mexico where trained community members conducted home visits during which immunisation education and vaccination. The percentage of FVC for children less than one year of age increased from 21% to 77% in five months, compared with the control group where coverage increased only from 30% to 35% [28]. Involvement of this community structure in immunisation program could improve equity and coverage.

**Male Involvement**

The study revealed that some female care-givers were discouraged by their husbands to attend immunisation clinics. Few care-givers reported being supported by their husbands to attend the clinics.. These findings are similar to what was found in a study by Kashinka in Zambia. He found that some husbands encouraged their wives to take their children for immunisation. Other husbands took their children for immunisation themselves[27]. From these study findings, male involvement could improve the immunisation coverage and equity.

## 4.2 Quantitative Section

### 4.2.1 Care-givers Knowledge on Immunisation

This study's finding shows that there is little technical knowledge of care-givers about vaccines. Most of them get their children immunised without having the technical knowledge. This finding is similar to a study by Kashinka where few mothers could name vaccines. This study found that

mothers who knew all the vaccines were found to be less likely to have their child fully immunised than mothers who did not know the vaccine[27]. A study by Leach and Fair head in Gambia indicated that less than half of the urban and rural mothers could not correctly name any vaccine preventable diseases[23]. Favin and others found that almost all of parents in that community believed that immunisation was important despite very low levels of community knowledge and understanding of the 'scientific' foundation of immunisation in Uganda[22]. From a study in Rwanda, Habimana and Bararwandika concluded that knowledge of vaccination on the part of parents is not an important factor in vaccination coverage[33]. Awareness among caregivers emphasizing on significance of immunisation rather than technical knowledge is more critical in improving immunisation coverage.

# Chapter 5 Conclusion and Recommendations

## 5.1 Conclusion

In summary the study has established the following:

### 5.1.1 Factors Contributing to Low Immunisation Coverage and Equity

It was reported that some of the care-givers returned without their children receiving immunisation due to shortage of vaccine, cancellation of clinics and unavailability of health workers due to engagement in other activities. There were fears of some care-givers of being turned back if they were not able to pay a fee to the health workers. In addition, the study captured complaints of late commencement of the clinics and long waiting times. The study also found some additional factors. Long distance and competing priorities for care-givers, lack of transport for health workers and volunteers, lack of storage equipment and misconceptions about vaccines were some of the raised factors.

### 5.1.2 Strategies to Improve Immunisation Coverage and Equity in Hard-to-Reach and EPI Under-performing Facilities

Participants suggested strategies to improve immunisation coverage and equity. Task-shift of immunisation to CHVs, establishing more outreach clinics, male involvement, formation of care-giver support groups and involving community in follow-ups on care-givers whose children missed immunisation were some of them. In addition, some participants suggested community awareness on immunisation by community leaders, introduction of food incentives to children and care-givers at the clinic and ensuring consistent immunisation services.

### 5.1.3 Knowledge of Primary Care-givers on Immunisations

From the quantitative data analysis, it was found that the proportion of care-givers with correct knowledge of vaccines and vaccine-preventable diseases was low. However, all care-givers reported to know the importance of immunisation.

## 5.2 Recommendations

In order to improve immunisation coverage and equity, there is need to ensure that accessible, quality and consistent immunisation services are offered.

- The Ministry of Health should consider the suggestion of training the CHVs to offer immunisation to children in order to overcome the challenge of shortage of health workers. In addition, there is need to provide health workers and CHVs with mode of transport so that the can reach out to children in hard-to-reach areas.
- At the district level, supervision of immunisation clinics should be conducted regularly to reduce clinic late starting and cancellation, and illicit charging of care-givers.
- The EPI unit should encourage male involvement in immunisation services. The men should be sensitised on the importance of immunisation and their role in assisting children to get vaccinated.
- In addition, consideration to train community leaders and CHAGs on immunisation should be made by the EPI unit. The leaders and CHAGs can help in awareness and follow-up of care-givers of children with incomplete immunisation for age.
- The initiative of forming care-givers' support groups should be taken on board. This will strengthen immunisation programme at community level and reduce the number of defaulters.
- There is need for the government to show a strong political will to provide additional resources to the immunisation program.
- Efforts to increase the awareness of care-givers on the importance of vaccinations rather than technical knowledge should be the focus. Care-givers knowledge of the importance of immunisation would be adequate to improve their attendance to immunisation services.
- There is also a need for a further research to gather suggestions from the health workers on how to improve the immunisation coverage and equity.

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## Appendices

### APPENDIX 1: INFORMED CONSENT, ENGLISH VERSION

### APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI

**Background**

This study is titled "Approaches for Improving Immunisation Coverage and Equity for Under-five Children in Nkhatabay and Mchinji". It is being conducted by a Masters" of Public Health student and it aims at gathering suggestions from the community on ways of improving immunisation coverage for under-five children in hard-to-reach and low-performing facilities. The study will involve interviews with community health volunteers, village headmen, care-givers of under-five children and members of health centre advisory committees. The study will also use already collected data to assess the knowledge level of care-givers on immunisation.

**Study Rationale**

This study aims at capturing strategies that are suggested and acceptable by the communities and care-giver on how to improve the immunisation coverage. The strategies will help those who are involving in ensuring that quality immunisation services are available to improve on planning and service delivery.

**Reason for Being Chosen to Participate in the Study**

The reason that you have been chosen to participate in this study is because you have a role in decision making on immunisation of under-five children whether at household or community level.

**Benefits of the Study**

The study will benefit under-five children in the country. The information gathers in this study will help implementers of vaccine programs to improve the immunisation services in this community and other parts of Malawi.

**Any Potential Harm Associated with the Study**

There is no known harm associated with participation in this study. However, it may happen that you may feel uncomfortable in answering some questions. We ask you that you let us know when you feel uncomfortable and ask for clarity where it is not clear. In addition, you are free to withdraw from the study at any point that you feel it is worthy for you to do so. We will ensure that the interview should not take more than an hour so that you should not be delayed to attend to your other planned activities.

**Confidentiality**

The information you will give us will be kept confidential. We will use numbers not your name to identify the information. The information will only be accessible to the study team and during dissemination of the results no names will be used.

**Contact for Any further Questions**

Dr Arnold Kapachika,

Machinga District Hospital, P.O Box 44, Liwonde. Phone:

+265 994 292 108

Email: arnoldkapachika@gmail.com

CONSENT

If you have understood the study details and you are willing to participate in the study, would sign or print your thumb below following which I will ask you questions from the study

questionnaire.

Research assistant……. Participant ID……..

Signature…… Signature/Thumb print……. Date ……. Date……..

Impartial witness ……..

Signature…….

Date……

Should you have any concerns or questions as a participant in the study, you can contact College of Medicine and Research Committee on the following contacts

John Chiphangwi Resource Centre, Phone:

+265 1 871 911/+265 1874 377

Fax: +265 1 874 740

Email: comrec@medcol.mw

APPENDIX 2: **ASSENT FOR PRIMARY CARE-GIVERS, ENGLISH VERSION**

**APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI**

My name is ……..

We are conducting a study on how to increase the number of children under-five years of age who are immunised.

We are asking you to take part in the study because it will help us in finding the best ways to make sure most under-five children are immunised and protected from diseases.

If you agree to take part in the study, we will ask you some questions concerning immunisations.

There is no known harm for you to participate in this study. However, should you feel uncomfortable, feel free to withdraw from the study.

Please talk this over with your parents before you decide whether to take part in this study or not. We will also ask your parents for permission for you to take part in the study. However, even if your parents accept, you can still decide not to participate.

If you don't want to be in this study, you are free to do so.

You can ask me any question that you have about the study. Should you have any questions later you can call me on ……

Should you have questions regarding your rights as a research participant, contact Arnold Kapachika on 0994 292108 or Dr Arnold Kapachika, Machinga District Hospital, P.O Box 44, Liwonde, email: arnoldkapachika@gmail.com

Signing this form means you have agreed to take part in the study.

Name of Child……

Signature of child…… Date……

Signature of investigator or research assistant……Date….....

APPENDIX 3: **INTERVIEW GUIDE FOR PRIMARY CARE-GIVERS' FOCUS GROUP DISCUSSIONS, English version**

**APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI**

I would like to express my gratitude for setting aside time to meet with me today. I am…… and I would like to learn from you on the approaches that could help improve immunisation status of under-five children in this area. The information that will be obtained during this interview will help those who plan immunisation program improve service delivery in order to reach all under-five children with immunisation. The interview will approximately take 40 to 60 minutes. I will be recording our conversation so that I don't miss any of your comments.

However, all your responses will not be shared with anyone outside our study team. In addition, your identification in the study will not involve use of your name. Be free to speak only what you will feel comfortable to respond.

Do you have any questions or any areas that need clarification on what I have explained?

| | | |
|---|---|---|
| Do you agree to participate in the interview | Yes | No |
| Do you allow me to record this interview | Yes | No |

Consent given ☐

Signature of the participant ……..

| | | | |
|---|---|---|---|
| **District** | | **Date of Interview** | |
| **Health facility** | | | |
| **Village** | | | |
| **Sex of participant** | | | |

| | | | |
|---|---|---|---|
| **How old are you?** | | | |
| **What is the immunisation status of your child?** | | | |

1. **To identify factors leading to low immunisation uptake and coverage for under-five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers**

- What challenges do primary care-givers face in receiving immunisation services in this area?

  Probing questions:

  - What beliefs do you know discourage care givers from getting their children immunized?
  - What support do spouses offer you to get your child immunized?

- What challenges do you experience in getting more children immunized at the following levels in your respective area?
  - Household
  - Community
  - Health facility/outreach clinic
- How has any of the following affected you to get your child immunized?
  - Distance
  - Timing of clinic
  - Waiting time at a clinic

2. **To identify approaches for improving immunisation coverage for under-five**

**children in hard-to-reach areas and low-performing facilities as proposed by primary care-givers, village headmen, HCAC members and community health volunteers**

- In your opinion, what do you think would be the approaches to improve the immunisation services?
- In your opinion, what do you think should be done to reach more children of under-five age with immunisation?

  Probing question:

  - What role do you think the following can play:
    - Primary care-givers of under-5 children
    - your health facility
    - Religious leaders
    - Political leaders
    - Teachers
    - Health workers
- In your opinion, what do you think should be done to ensure that all children in your area receive immunisation according to individual needs

Thank you for spending your time in this interview. We will be analyzing the information you have given. A report will be compiled of the finding s and it will be shared with the district health office and health center. You may access the report that time at your nearest health center.

APPENDIX 4: **INTERVIEW GUIDE FOR HEALTH CENTRE ADVISORY COMMITTEE' FOCUS GROUP DISCUSSIONS, English version**

**APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI**

I would like to express my gratitude for setting aside time to meet with me today. I am…… and I would like to learn from you on the approaches that could help improve immunisation status of under-five children in this area. The information that will be obtained during this interview will help those who plan immunization program improve service delivery in order to reach all under-five children with immunisation. The interview will approximately take 40 to 60 minutes. I will be recording our conversation so that I don't miss any of your comments.

However, all your responses will not be shared with anyone outside our study team. In addition, your identification in the study will not involve use of your name. Be free to speak only what you will feel comfortable to respond.

Do you have any questions or any areas that need clarification on what I have explained?

| | | |
|---|---|---|
| Do you agree to participate in the interview | Yes | No |
| Do you allow me to record this interview | Yes | No |

Consent given ☐

Signature of the participant ……..

| | | | |
|---|---|---|---|
| **District** | | | |
| **Health facility** | | | |
| **Village of your ……** | | | |
| **Sex of participant** | | | |
| **How old are you?** | | | |

| | | | |
|---|---|---|---|
| **Date of Interview** | | **Names of** | |

3. **To identify factors leading to low immunisation uptake and coverage for under-five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers**
    - In your opinion on a scale of low, medium or high, how is immunisation coverage of your facility?
    - Are you aware of any challenges that your health facility is facing in providing immunisation services in your area?
        - If yes, would you describe them?
    - Do you know any challenges that primary care-givers face in getting under-five children immunized in your area?
        - If yes, would you describe and mention them?
    - Do you know any beliefs existing in your area that could contribute to low immunisation uptake?
        - If yes, would you describe them?
    - From your observation, are all children in your area able to access immunisation according to their specific needs?
        - If no, what could be the reasons
4. **To identify approaches for improving immunisation coverage for under-five children in hard-to-reach areas and low-performing facilities as proposed by primary care-givers, village headmen, HCAC members and community health volunteers**
    - What role do you think your committee can play to:
        - Increase the number of under-five children reached out with

immunizations?

    - Ensure that all under-five children receive immunizations according to their respective needs?

- What should your health facility or outreach clinic do to improve the immunization status of your area?
    - Increase the number of under-five children reached out with immunizations?
    - Ensure that all under-five children receive immunizations according to their respective needs?
- What role should community action groups do to improve the immunisation status of your area?
    - Increase the number of under-five children reached out with immunizations?
    - Ensure that all under-five children receive immunizations according to their respective needs?
- What role should the following people do to help improve immunisation status of your community?
    - Religious
    - Political
    - Teachers
    - Health workers
    - Traditional leaders
- What other strategies can be employed to improve the immunisation status of your area?

Thank you for spending your time in this interview. We will be analyzing the information you have given. A report will be compiled of the finding s and it will be shared with the district health office and health center.  You may access the report that time at your nearest health center.

APPENDIX 5: **IN-DEPTH INTERVIEW GUIDE FOR COMMUNITY HEALTH VOLUNTEERS, English version**

**APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI**

I would like to express my gratitude for setting aside time to meet with me today. I am…… and I would like to learn from you on the approaches that could help improve immunisation status of under-five children in this area. The information that will be obtained during this interview will help those who plan immunisation program improve service delivery in order to reach all under-five children with immunisation. The interview will approximately take 40 to 60 minutes. I will be recording our conversation so that I don't miss any of your comments.

However, all your responses will not be shared with anyone outside our study team. In addition, your identification in the study will not involve use of your name. Be free to speak only what you will feel comfortable to respond.

Do you have any questions or any areas that need clarification on what I have explained?

| | | |
|---|---|---|
| Do you agree to participate in the interview | Yes | No |
| Do you allow me to record this interview | Yes | No |

Consent given ☐

Signature of the participant ……..

| | | | |
|---|---|---|---|
| **District** | | | |
| **Health facility** | | | |
| **Village of your …** | | | |
| **Sex of participant** | | | |
| **How old are you?** | | **Names of interviewers** | |
| **Date of Interview** | | | |

5. **To identify factors leading to low immunisation uptake and coverage for under-five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers**
    - What challenges do you face in providing immunisation services in your area?
    - What challenges does your health facility or outreach clinic face in providing immunisation services in your area?
    - In your opinion, what challenges do primary care-givers face in getting under-five children immunized in your area?
    - From your experience, what beliefs do you know that exist in this area that could contribute to low immunisation uptake?
    - What other challenges affect immunisation coverage in this area?
    - What are the reasons why some children in your area do not access immunisation according to their specific needs?
6. **To identify approaches for improving immunisation coverage for under-five children in hard-to-reach areas and low-performing facilities as proposed by primary care-givers, village headmen, HCAC members and community health volunteers**
    - What role do you think you and other community health volunteers can play to:
        - Increase the number of under-five children reached out with immunizations?
        - Ensure that all under-five children receive immunizations according to their respective needs?
    - What should your health facility or outreach clinic do to improve the immunization status of your area?

    - Increase the number of under-five children reached out with immunizations?
    - Ensure that all under-five children receive immunizations according to their respective needs?
- What role should community action groups do to improve the immunisation status of your area?
    - Increase the number of under-five children reached out with immunizations?
    - Ensure that all under-five children receive immunizations according to their respective needs?
- What role should the following people do to help improve immunisation status of your community?
    - Religious leaders
    - Political leaders
    - Teachers
    - Health workers
- What other strategies can be employed to improve the immunisation status of your area?

Thank you for spending your time in this interview. We will be analyzing the information you have given. A report will be compiled of the finding s and it will be shared with the district health office and health center. You may access the report that time at your nearest health center.

APPENDIX 6: **IN-DEPTH INTERVIEW GUIDE FOR PRIMARY CARE-GIVERS-FACILITY, English version**

**APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI**

I would like to express my gratitude for setting aside time to meet with me today. I am…… and I would like to learn from you on the approaches that could help improve immunisation status of under-five children in this area. The information that will be obtained during this interview will help those who plan immunization program improve service delivery in order to reach all under-five children with immunisation. The interview will approximately take 40 to 60 minutes. I will be recording our conversation so that I don't miss any of your comments.

However, all your responses will not be shared with anyone outside our study team. In addition, your identification in the study will not involve use of your name. Be free to speak only what you will feel comfortable to respond.

Do you have any questions or any areas that need clarification on what I have explained?

| | | |
|---|---|---|
| Do you agree to participate in the interview | Yes | No |
| Do you allow me to record this interview | Yes | No |

Consent given ☐

Signature of the participant ……..

| | | | |
|---|---|---|---|
| **District** | | **Date of Interview** | |
| **Health facility** | | | |
| **What village do you come from?** | | | |
| **Sex of the participants** | | | |
| **How old are you?** | | | |

| | | | |
|---|---|---|---|
| **Age of under-five** | | **Names of** | |
| **State of immunisation for** | | | |

7. **To identify factors leading to low immunisation uptake and coverage for under-five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers**

    a. **Immunisation Coverage**

- How satisfied are you with immunisation services offered at this facility?
- What challenges have you experienced in getting your children immunized at these levels:
    - Household
    - Community
    - Health facility

    b. **Equity in immunisation**

- What are the reasons why every child does not get immunized based on individual needs in your area?

8. **To identify approaches for improving immunisation coverage for under-five children in hard-to-reach areas and low-performing facilities as proposed by primary care-givers, village headmen, HCAC members and community health volunteers**

    - In your opinion, what do you think would be the approaches to improve the immunisation services?
    - In your opinion, what do you think should be done to reach more children of under-five age with immunisation?

        Probing question:

        - What role do you think the following can play:

- Primary care-givers of under-5 children
- your health facility
- Religious leaders
- Political leaders
- Teachers
- Health workers

- In your opinion, what do you think should be done to ensure that all children in your area receive immunisation according to individual needs?

Thank you for spending your time in this interview. We will be analyzing the information you have given. A report will be compiled of the finding s and it will be shared with the district health office and health center. You may access the report that time at your nearest health center.

APPENDIX 7: **IN-DEPTH INTERVIEW GUIDE FOR PRIMARY CARE-GIVERS-OUTREACH CLINIC, English version**

**APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI**

I would like to express my gratitude for setting aside time to meet with me today. I am…… and I would like to learn from you on the approaches that could help improve immunisation status of under-five children in this area. The information that will be obtained during this interview will help those who plan immunization program improve service delivery in order to reach all under-five children with immunisation. The interview will approximately take 40 to 60 minutes. I will be recording our conversation so that I don't miss any of your comments.

However, all your responses will not be shared with anyone outside our study team. In addition, your identification in the study will not involve use of your name. Be free to speak only what you will feel comfortable to respond.

Do you have any questions or any areas that need clarification on what I have explained?

Do you agree to participate in the interview Yes No

Do you allow me to record this interview Yes No

Consent given ☐

Signature of the participant ……..

| | | | |
|---|---|---|---|
| **District** | | **Date of Interview** | |
| **Health facility** | | | |
| **What village do you come from?** | | | |
| **Sex of the participants** | | | |
| **How old are you?** | | | |

| | | | |
|---|---|---|---|
| **Age of under-five** | | **Names of** | |
| **State of immunisation for** | | | |

9. **to identify factors leading to low immunisation uptake and coverage for under-five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers**

    a. **<u>Immunisation Coverage</u>**

- How satisfied are you with immunisation services offered at this facility?
- What challenges have you experienced in getting your children immunized at these levels:
    - Household
    - Community
    - Health facility
- How has the following affected you to get your child immunized?
    - distance
    - timing of clinic
    - waiting at a clinic
    - attitude of the health workers

    b. **<u>Equity in Immunization</u>**

- What are the reasons why every child does not get immunized based on individual needs in your area?

10. **To identify approaches for improving immunization coverage for under-five children in hard-to-reach areas and low-performing facilities as proposed by primary care-givers, village headmen, HCAC members and community health volunteers**

- In your opinion, what do you think would be the approaches to improve the immunization services?
- In your opinion, what do you think should be done to reach more children of under-five age with immunisation?

  Probing question:

  - What role do you think the following can play:
    - Primary care-givers of under-5 children
    - your health facility
    - Religious leaders
    - Political leaders
    - Teachers
    - Health workers
- In your opinion, what do you think should be done to ensure that all children in your area receive immunisation according to individual needs?

Thank you for spending your time in this interview. We will be analyzing the information you have given. A report will be compiled of the finding s and it will be shared with the district health office and health center. You may access the report that time at your nearest health center.

APPENDIX 8: **IN-DEPTH INTERVIEW GUIDE FOR TRADITIONAL LEADERS, English version**

**APPROACHES FOR IMPROVING IMMUNISATION COVERAGE AMONG UNDER-FIVE CHILDREN IN MALAWI**

I would like to express my gratitude for setting aside time to meet with me today. I am…… and I would like to learn from you on the approaches that could help improve immunisation status of under-five children in this area. The information that will be obtained during this interview will help those who plan immunization program improve service delivery in order to reach all under-five children with immunisation. The interview will approximately take 40 to 60 minutes. I will be recording our conversation so that I don't miss any of your comments.

However, all your responses will not be shared with anyone outside our study team. In addition, your identification in the study will not involve use of your name. Be free to speak only what you will feel comfortable to respond.

Do you have any questions or any areas that need clarification on what I have explained?

Do you agree to participate in the interview Yes No

Do you allow me to record this interview Yes No

Consent given ☐

Signature of the participant ……..

| | | | |
|---|---|---|---|
| **District** | | | |
| **Health facility** | | | |
| **Village** | | | |
| **Sex of participant** | | | |
| **How old are you?** | | | |
| **Date of Interview** | | **Names of** | |

**11. To identify factors leading to low immunization coverage and equity for under-**

**five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers**

- How aware are your people of the importance of immunisation in your area?
    - ( probe from responses)
- How common do primary care-givers miss immunisations for their under-five children in your area?
- What do you think are the reasons why some primary care-givers have missed or not completed immunization for their under-five children?
- What are the reasons why some children in your area do not access immunisation according to their specific needs?
    - Probing questions
        - How has culture of this community contributed?
- How has the following affected your people to get children immunized?
    - Distance
    - Timing of clinic
    - Waiting at a clinic
    - Attitude of the health workers

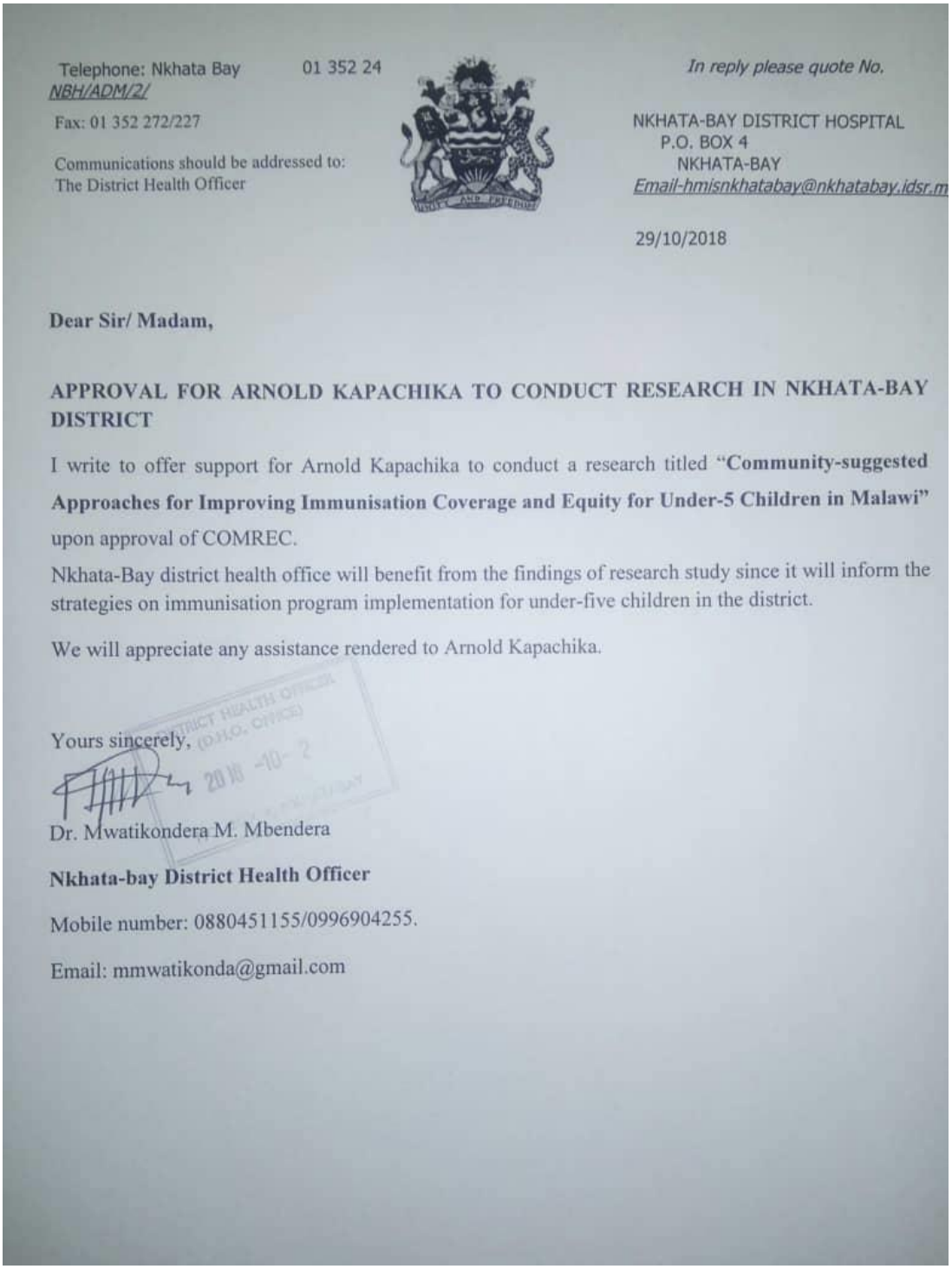
12. **To identify approaches for improving immunization coverage for under-five children in hard-to-reach areas and low-performing facilities as proposed by primary care-givers, village headmen, HCAC members and community health volunteers**

- What do you think should be done to increase the number of children reached with immunisation services in your area?
    - Probing questions

        - What should the following do:
            - Religious leaders
            - Political leaders
            - Teachers
            - Health workers
            - Other traditional leaders
- In your opinion, what do you think should be done to ensure that all children in your area receive immunisation according to individual needs?
    - Probing questions
        - What should the following do:
            - Religious leaders
            - Political leaders
            - Teachers
            - Health workers
            - Other traditional leaders

Thank you for spending your time in this interview. We will be analyzing the information you have given. A report will be compiled of the finding s and it will be shared with the district health office and health center. You may access the report that time at your nearest health center.

## APPENDIX 9: SUPPORT LETTER FROM NKHATABAY DISTRICT HEALTH OFFICE



Telephone: Nkhata Bay 01 352 24
NBH/ADM/2/
Fax: 01 352 272/227

Communications should be addressed to:
The District Health Officer

*In reply please quote No.*

NKHATA-BAY DISTRICT HOSPITAL
P.O. BOX 4
NKHATA-BAY
Email-hmisnkhatabay@nkhatabay.idsr.m

29/10/2018

**Dear Sir/ Madam,**

**APPROVAL FOR ARNOLD KAPACHIKA TO CONDUCT RESEARCH IN NKHATA-BAY DISTRICT**

I write to offer support for Arnold Kapachika to conduct a research titled "**Community-suggested Approaches for Improving Immunisation Coverage and Equity for Under-5 Children in Malawi**" upon approval of COMREC.

Nkhata-Bay district health office will benefit from the findings of research study since it will inform the strategies on immunisation program implementation for under-five children in the district.

We will appreciate any assistance rendered to Arnold Kapachika.

Yours sincerely,

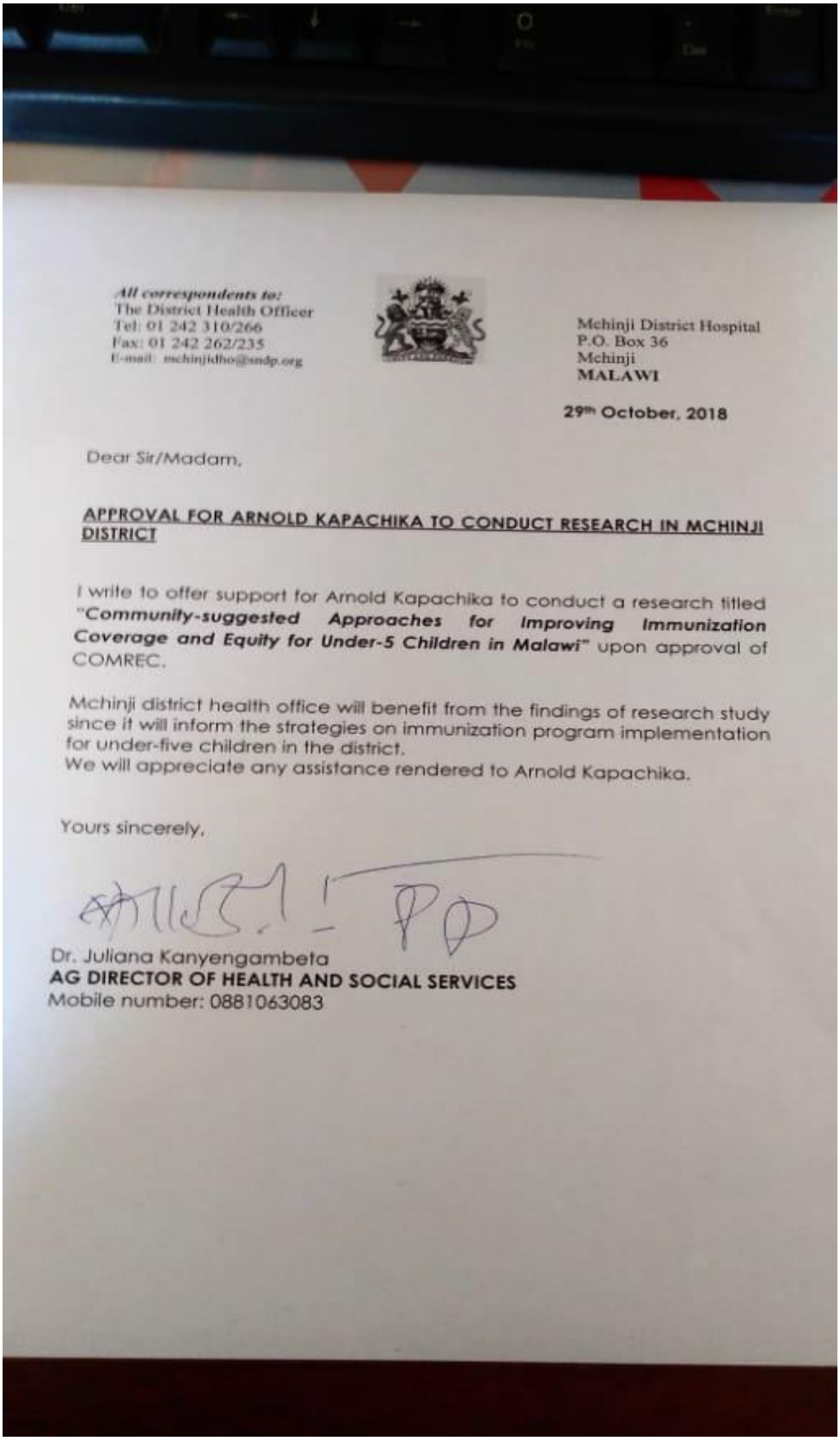
Dr. Mwatikondera M. Mbendera

**Nkhata-bay District Health Officer**

Mobile number: 0880451155/0996904255.

Email: mmwatikonda@gmail.com

APPENDIX 10: SUPPORT LETTER FROM MCHINJI DISTRICT HEALTH OFFICE



*All correspondents to:*
The District Health Officer
Tel: 01 242 310/266
Fax: 01 242 262/235
E-mail: mchinjidho@sndp.org

Mchinji District Hospital
P.O. Box 36
Mchinji
**MALAWI**

**29th October, 2018**

Dear Sir/Madam,

**APPROVAL FOR ARNOLD KAPACHIKA TO CONDUCT RESEARCH IN MCHINJI DISTRICT**

I write to offer support for Arnold Kapachika to conduct a research titled "***Community-suggested Approaches for Improving Immunization Coverage and Equity for Under-5 Children in Malawi***" upon approval of COMREC.

Mchinji district health office will benefit from the findings of research study since it will inform the strategies on immunization program implementation for under-five children in the district.
We will appreciate any assistance rendered to Arnold Kapachika.

Yours sincerely,

Dr. Juliana Kanyengambeta
**AG DIRECTOR OF HEALTH AND SOCIAL SERVICES**
Mobile number: 0881063083

APPENDIX 11: **CERTIFICATE OF APPROVAL FOR KAP STUDY**



# CERTIFICATE OF ETHICS APPROVAL

This is to certify that the College of Medicine Research and Ethics Committee (COMREC) has reviewed and approved a study entitled:

P.04/17/2157 - Assessment of knowledge attitudes and practices of vitamin A supplementation and immunizations in low performing districts. Version 0.3 dated 19 February 2018 by Atupele Kapito-Tembo

*On 23-Mar-18*

*As you proceed with the implementation of your study, we would like you to adhere to international ethical guidelines, national guidelines and all requirements by COMREC as indicated on the next page*

Approved by College of Medicine

23-Mar-18

Dr. YB. Mlombe - Chairperson (COMREC)

23 MAR 2018

Date

(COMREC) Research and Ethic Committee

APPENDIX 12: **Table 3 Showing Summary of Objectives and Corresponding Themes and Sub-themes**

| **Objective** | **Theme** | **Sub-theme** |
|---|---|---|
| ❖ To identify factors leading to low immunisation uptake and coverage for under-five children in hard-to-reach areas and low-performing facilities as suggested by primary care-givers, village headmen, HCAC members and community health volunteers | **Transport challenge for HSAs and CHVs** | Lack of bicycles for HSAs and CHVs |
| | **Shortage of health care workers** | Shortage of health care workers |
| | **Illicit charging of patients** | Lack of K50 to pay at the clinic |
| | **Distance and weather** | Long distance for care-givers<br>Harsh weather |

| | | |
|---|---|---|
| | **Lack of cold chain equipment and power back up** | Lack of back-up power for vaccine refrigerators |
| | **Fear and shyness of care-givers** | Fear of being humiliated<br>Laziness of care-givers<br>Fear of returning without receiving immunisation |
| | **Cancellation and late commencement of immunisation clinics** | Late starting of clinic<br>Cancellation of clinics<br>Lack of vaccine storage facility at outreach clinic |

| | | |
|---|---|---|
| | **Lack of support from husbands**<br><br>**Competing priorities** | Discouragement by husbands<br>Lack of soap<br><br>Household chores<br>Emergencies like sickness or funeral |
| ❖ To identify approaches for improving immunisation coverage for under-five children in hard-to-reach areas and low-performing facilities as proposed by primary | **Awareness by Mass Media**<br><br>**Provision of mode of transport** | Use of radio<br><br>Providing mode of transport to HSAs and CHVs<br>Provision of food to children at immunisation clinics |

| | | |
|---|---|---|
| care-givers, village headmen, HCAC members and community health volunteers | **Follow-ups** | Follow up by volunteers<br>Follow-up lazy care-givers<br>Every child should receive immunisation at the clinic |
| | **Establishing more outreach clinics** | Establishing more outreach clinics<br>Construction of outreach structures |
| | **Task-shifting of immunisation provision to CHVs** | Empowering CHV to provide immunisation services |

| | | |
|---|---|---|
| | **Community Activities** | Door-to-door follow-ups Collaboration<br>Formulation and enforcement of laws that promote immunisation at community level<br>Male involvement<br>Formation of care-giver support groups<br>Communicating with care-givers on cancellation of clinics<br>CHAG presence at immunisation clinics<br>CHAG follow-ups<br>Vaccine promotion by health workers<br>Vaccine promotion by promotion<br>Vaccine promotion by religious leaders<br>Vaccine promotion by traditional leaders |

| | | |
|---|---|---|
| | | |

APPENDIX 13: **COMREC ETHICAL APPROVAL CERTIFICATE**



# CERTIFICATE OF ETHICS APPROVAL

This is to certify that the College of Medicine Research and Ethics Committee (COMREC) has reviewed and approved a study entitled:

P.11/18/2548 - Community-Suggested Approaches for Improving Immunisation Coverage and Equity for Under-Five Children in Malawi. Version 1.0 by Arnold Kapachika

*On 04-Mar-19*

*As you proceed with the implementation of your study, we would like you to adhere to international ethical guidelines, national guidelines and all requirements by COMREC some of which are indicated on the next page for your study*

04-Mar-19

Dr. YB. Mlombe - Chairperson (COMREC) — Date