INTRODUCTION OF INACTIVATED POLIO VACCINE IN THE ROUTINE IMMUNISATION SCHEDULE IN ZAMBIA

Report

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS ........................................................................................................ 5
ACRONYMS ............................................................................................................................ 6
EXECUTIVE SUMMARY ........................................................................................................ 7

1 INTRODUCTION ................................................................................................................ 10
  1.1 Background ..................................................................................................................... 10
  1.2 Overview of introduction of Inactivated Polio Vaccine (IPV) ...................................... 10
  1.3 Perceptions and attitudes of health service providers towards introduction of IPV .... 11
  1.4 Perceptions and attitudes of Caretakers towards introduction of IPV ....................... 12

2 OBJECTIVES ....................................................................................................................... 13
  2.1 Main aim ....................................................................................................................... 13
  2.2 Specific Objectives ....................................................................................................... 13

3 METHODOLOGY ................................................................................................................ 14
  3.1 Study design .................................................................................................................. 14
  3.2 Study setting ................................................................................................................. 14
  3.3 Study population .......................................................................................................... 14
  3.4 Sampling and sample Size ............................................................................................ 15
  3.5 Data collection .............................................................................................................. 16
  3.6 Data management and quality control of the research ............................................... 16
  3.7 Data analysis ............................................................................................................... 16
  3.8 Ethical consideration ................................................................................................... 17

4 FINDINGS ............................................................................................................................ 18
  4.1 Perceptions of mothers/care givers towards multiple injections ............................... 18
  4.2 Perceptions of health workers towards multiple injections ........................................ 20
  4.3 Fears and concerns: Multiple injections and Introduction of IPV as a third injection 20
    4.3.1 Fears and concerns: Mothers/caregivers ................................................................. 20
  4.4 Fears and concerns: Co-administration of IPV and OPV .......................................... 28
  4.5 Acceptability of the IPV as the third injection ............................................................. 30
  4.6 Addressing the barriers and fears ............................................................................. 33
  4.7 Possible Solutions ........................................................................................................ 34

5 DISCUSSION ....................................................................................................................... 39

6 CONCLUSION ..................................................................................................................... 41
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<table>
<thead>
<tr>
<th>ACRONYMS</th>
<th>Description</th>
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<tr>
<td>CSO</td>
<td>Central Statistical Office</td>
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<tr>
<td>IPV</td>
<td>Inactivated Polio Vaccine</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>SSA</td>
<td>Sub-Saharan Africa</td>
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<tr>
<td>OPV</td>
<td>Oral Polio Vaccine</td>
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<td>IM</td>
<td>Intra Muscular</td>
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<td>PCV</td>
<td>Pneumococcal Conjugate Vaccine</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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<td>ZDHS</td>
<td>Zambia Demographic Health Survey</td>
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<tr>
<td>DTP</td>
<td>Diphtheria and Tetanus Toxoids and Pertussis</td>
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<td>GIVS</td>
<td>Global Immunization Vision and Strategy</td>
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<tr>
<td>MMR</td>
<td>Measles Mumps-Rubella</td>
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<td>EPI</td>
<td>Expanded Programmes in Immunisation</td>
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EXECUTIVE SUMMARY

**Background:** Coverage for routine immunisation has improved in Zambia since 2000. Despite challenges in sustaining high coverage, the 2013/14 Zambian Demographic Health Survey (ZDHS) indicates improvements in under-five mortality ratios from 119 deaths per 1,000 live births in 2007 to 75 deaths per 1,000 live births in 2013/14 (CSO, 2014). Immunisation has been a key contributor in the reduction of mortality ratios for infants and under-five children. In Zambia multiple injections are given to babies at the same time during their immunisation schedule: three doses of pneumococcal conjugate vaccine (PCV 10) and Diphtheria Pertussis and Tetanus (DPT) vaccine and two doses of measles at nine months and at one year. In 2014, Zambia committed itself to introducing an additional inactive polio vaccine (IPV) starting 2015. The introduction of injectable IPV means that on one visit (at six weeks, and every after 4 weeks for two doses), three injections (DPT, PCV and IPV) in addition to OPV will be administered to a child. In view of the imminent introduction of IPV, an understanding of the fears and concerns towards multiple injections, co-administration of IPV and OPV and acceptance of IPV by both the service providers and the care givers is important for achieving universal coverage.

**Rationale:** In Zambia, scientific evidence on perceptions and concerns of mothers and health workers with regards to multiple immunisations in infants is not well known. Through support from UNICEF, the department of Public Health in the School of Medicine at University of Zambia committed to conduct an IPV study.

**Objective:** The aim of the study was to understand the perceptions of mothers/caregivers, health workers and some opinion leaders towards multiple injections and acceptability of IPV into the current under-five routine immunization schedule.

**Methods:** This was an explorative qualitative case study design which was conducted among mothers/caregivers and health workers/opinion leaders aged 18 years and above in Lusaka (Lusaka and Chongwe districts) and Copper belt (Luanshya, Mufulira and Chingola districts) provinces of Zambia. Participants for the focus group discussions and in-depth interviews were purposively recruited using a maximum-variation sampling criteria. Twenty (20) in-depth interviews and ten (10) focus group discussions with short-listed participants were conducted in five districts. All recorded interviews (in-depth interviews and focus group discussions) were
Results: The study was conducted between February and March 2015. Perceptions about multiple immunization injections varied from caregiver to caregiver with majority reporting having no problems with the multiple injections currently being given. They felt that injections are given to prevent their children from diseases and believed that “prevention is better than cure”. Health workers’ perceptions were that human resources and logistics in supplying the vaccine are essential in administration of vaccines to ensure success of vaccination programme. With regards to fears and concerns, caregivers expressed concerns about the site where the injection will be administered, pain, high temperature and swelling that comes due to multiple injections. They felt that the third injection would make it worse. Mothers/caregivers also felt that because of inadequate health care staff, multiple injections may lead to possible errors and compromise the quality of care. Other caregivers expressed that, just as a normal reaction, mothers or parents will always express fear in a new product, which is later overcome by time and sensitizations. Health workers, like the caregivers, explained that the children already experience a lot of pain with the two injections they receive and adding the third one would make it worse. All in all, most of the health care givers had no problems giving multiple injections and indicated that it was their job to give vaccines.

In regards to co-administration of IPV and OPV, caregivers seem not to have any fears and concerns towards the co-administration of IPV and OPV. Caregivers in particular indicated that it was fine for the two vaccines to be given at the same time as long as the government had recommended the administration of the drugs. However, issues of overdose were coming out from some health workers who questioned the co-administration of IPV and OPV as a possible cause of drug overdose.

Despite the many concerns and fears raised by the mothers/caregivers and the health providers, they expressed interest in the third vaccine as long as it was of benefit to the child. Generally, based on the interviews conducted, both caregivers and health care providers seem to accept the introduction of IPV as a third injection in the immunization schedule. Various suggestions were made on how to alleviate fears and concerns that mothers and care givers may have towards introduction of IPV. These included: training workshops for healthcare staff on IPV,
recruiting more health workers, community and national sensitisation through radio television, and print media, public vehicle announcement and drama. Participants also thought it important to train and sensitise the fathers on the new vaccine.

**Conclusions:** This study found that, despite the various perceptions and fears and concerns towards multiple injections including introduction of IPV, there was a general acceptance to the introduction of IPV by caregivers, and the health centre committee (opinion leaders and the health workers). The fears and concerns raised can be addressed through development and implementation of comprehensive communication strategies aimed at informing and educating both health workers and caregivers.

**Recommendations:** Focus should be on strategies that will build capacity and improve knowledge of communities, families and care-givers as well as of health workers, and allay potential fears. It is recommended that IPV orientation programmes for health staff and community mobilisation strategies be considered prior to the introduction of IPV. In addition, effective communication strategies that contain key messages aimed at allaying the concerns raised by both caregivers and health workers should be considered significant
1 INTRODUCTION

1.1 Background

Coverage for routine immunisation has improved in Zambia since 2000. Despite challenges in sustaining high coverage due to shortage of human resources, poor cold chain maintenance and lack of sustained strengthening of routine activities, the 2013/14 Zambian Demographic Health Survey (ZDHS) indicates improvements in under-five mortality ratios. The survey reports that under-five mortality has reduced from 119 deaths per 1,000 live births in 2007 to 75 deaths per 100 live births in 2013/14 (CSO, 2014). Immunisation is a key contributor in the reduction of mortality ratios for infants and under-five children, therefore the caregivers and families need to understand that immunizing all children against vaccine preventable diseases is very important. It is also important to have strong service delivery system as well as demand creation.

In Zambia babies are given a number of vaccines in injection form during their immunisation schedule: three doses of pneumococcal conjugate vaccine (PCV 10) and Diphtheria Pertussis and Tetanus (DPT) vaccine and two doses of measles (at nine months and at one year). Pneumococcal conjugate vaccine (PCV) and Measles second dose were introduced in the country’s routine immunisation schedule in 2013. Recently, in 2014, Zambia committed itself to introducing an additional Inactive Polio Vaccine (IPV) starting 2015. The introduction of injectable IPV means that on one visit (at six weeks, and every after 4 weeks for two doses), three injections (DPT, PCV and IPV) in addition to OPV will be administered to a child. However, as the number of injections is increasing per visit, there are may be parental and health workers concern over multiple injections. Therefore it is important to understand their perceptions towards multiple injections.

1.2 Overview of introduction of Inactivated Polio Vaccine (IPV)

While the oral polio vaccine (OPV) has successfully reduced polio cases by 99 percent worldwide, an increasing number of polio-free developed countries have now replaced OPV with IPV in their routine immunization schedules, primarily because of the risk of vaccine-associated paralysis (Schoub, 2012).

Introduction of one dose of Inactivated Polio Vaccine has been recommended in the routine immunisation programmes by the end of 2015, to improve immunity and help prevent new
vaccine-associated outbreaks from emerging. The introduction of IPV as a lead up to the phased removal of OPV is due to risks associated with OPV use. WHO is determined to ensure that a substantial proportion of the population is protected against type 2 polio by calling for a phased withdrawal of OPV type 2 vaccine and recommending all polio endemic countries to introduce at least one dose of inactivated polio vaccine (IPV) in their routine immunization programs before end of 2015.

IPV has been recommended because it is known to be very effective in eliminating polio from many developed countries and has been known to achieve and sustain high levels of immunization coverage. In addition, in developed countries IPV has been demonstrated to be one of the safest vaccines and has significant clinical efficacy in preventing paralytic poliomyelitis (Robertson et al., 1988). It is recommended that one dose of IPV should be administered into the routine immunization at or after 14 weeks of age, in addition to the 3-4 doses of OPV in the primary vaccination schedules. This introduction of IPV means an increase in the number of injections for the child at each visit.

However, introduction of a new vaccine into a country’s immunization schedule is by no means a simple exercise, particularly for developing countries. In view of the imminent introduction of IPV, an understanding of the perceptions and acceptance of IPV by both the service providers and the care givers is important for achieving universal coverage (Tagbo et al., 2014).

1.3 Perceptions and attitudes of health service providers towards introduction of IPV

Studies have shown that there is a relationship between providers and immunization rates (Allela et al., 2012) and health service providers are cited as the most frequent source of immunization information by parents (Omer et al., 2009). Practices regarding vaccination mostly depend on vaccination providers who provide guidance and information on the immunization timing and administration (Smith et al., 2006). Importantly too, health care providers have positive effects on the parental decisions related to vaccinations. Therefore, the way in which a health care provider understands and perceives a vaccine can influence the caretaker’s decision over a vaccine.

The results of a study done in Zambia and Sudan showed that nurses and midwives contributed significantly in implementing immunization programme activities (Nkowane et al., 2009).
1.4 Perceptions and attitudes of Caretakers towards introduction of IPV

Perceptions and attitudes of caretakers of children receiving multiple injections also have an impact on the uptake of vaccines by children since they are the ones who ensure their babies receive the recommended vaccinations. Despite appreciation of the benefits of immunization, studies have shown that parents still express concerns on the possible side effects. Freed et al. (2010) found that overall; parents in their study overwhelmingly shared the belief that vaccines are a good way to protect their children from disease (90%) and did what their doctor recommends regarding the provision of vaccines for their children (88%). However, many of these same parents did express concerns regarding the potential adverse effects of immunizing their child and especially seemed to question the safety of newer, as compared with older, vaccines (Freed et al., 2010). With regard to multiple injections, studies have shown that parents are concerned with the number of injections (Madlon-Kay and Harper, 1994). Similar findings have been shown in more recent studies, where it has been shown that, several reasons that make caretakers concerned and afraid of multiple injections include a child’s possible pain, likely adverse side effects following multiple injections and stress perception to the immune system (Wallace et al., 2014).

According to Wallace et al. (2014) parents only accept multiple injections for their children after weighing multiple factors including health provider recommendations, perceptions of the disease severity and vaccine effectiveness. Therefore, as stated by Wang et al. (2014) it is clear that parents mostly control young children’s access to vaccines, so understanding parental decision-making for their children’s vaccinations is important.

In Zambia, scientific evidence on perceptions and concerns of mothers and health workers with regards to multiple immunisations in infants is not well known. Through UNICEF, the Department of Public Health in the School of Medicine at University of Zambia committed to conduct a study to appreciate the perceptions, concerns and fears of mothers/caregivers towards multiple injections and the acceptability of the IPV as the third injection. Having information on how mothers/caregivers, health workers and some opinion leaders perceive the provision of multiple injections in Zambia would assist in developing communication plan and key messages and material and to implement communication of interventions on immunisation in under-five children especially with regards to introducing the IPV vaccine to routine immunisation programmes.
2 OBJECTIVES

2.1 Main aim

The overall objective of this study was to understand the perceptions of mothers/caregivers, health workers and some opinion leaders towards multiple injections.

2.2 Specific Objectives

1. To identify and document perceptions, fears and concerns of families/care givers and health workers towards multiple injections and acceptability of the IPV.
2. To explore possible solutions to addressing the care-givers’ potential fears regarding multiple injections as identified in objective one.
3. To identify potential threat to the co-administration of IPV and OPV and recommend actions for service provision and health communication (including key messages).
3 METHODOLOGY

3.1 Study design

This was an explorative qualitative case study design which was conducted in Lusaka and Copper belt provinces of Zambia. This study design was selected because it was suitable for identifying and eliciting in-depth insights into factors related to mothers/caregivers perceptions towards multiple injections.

3.2 Study setting

This study was conducted in two provinces: Lusaka and Copper belt. In Lusaka province, Lusaka and Chongwe districts were selected while in the Copper belt province, three districts were selected namely: Luanshya, Mufulira and Chingola. The selection of these districts was purposive, based on the fact that some districts (Lusaka and Mufulira) are performing poorly while others (Chongwe, Luanshya and Chingola) are performing well in terms of immunisation coverage.

3.3 Study population

The study population were mothers/caregivers of childbearing age and health workers/opinion leaders belonging to the health centre committee aged 18 years and above who come from the selected study sites. Mothers/caregivers in this study were defined as all people either male or female above the age of 18 years who make decisions and provide direct care to children under the age of 5 years. These mothers/caregivers must have taken a child for immunization at least once. Health workers in the study were health centre staff directly involved in Expanded Programmes in Immunisation (EPI) and belonged to the Health Centre Committee (HCC). These were selected from two health centres in each district depending on their involvement in the under-five child immunization programs.

Opinion leaders were defined as influential members of the community to whom others turn for advice, opinions and views. The opinion leaders in this study were part of the HCC, actively involved in working with the community and health workers during under-five child immunization programs.
3.4 Sampling and sample Size

Participants for the focus group discussions and in-depth interviews were purposively recruited using a maximum-variation sampling criteria from the five (5) selected districts which simply means choosing participants with different characteristics. A general estimation for the sample size had been put at 10 focus group discussions in five districts and 20 in-depth interviews with the key informants. In each district the following were conducted: one (1) focus group discussion with the caretakers to children under five per district from one of the facilities and another one (1) focus group discussion with HCC members per district and four (4) in-depth interviews with key informants two (2) caretakers to children under-five per district and two (2) with health workers managing vaccinations at facility level per district. Recruitment of the participants for the in-depth interviews and focus group discussions was based on the data saturation principle meaning participants were added until data saturation point where no new insights were generated and the emerging themes were repeated. The mothers/caregivers were identified using the health workers/opinion leaders who work with mothers/caregivers that take their children for immunization programs. Identified mothers/caregivers were then screened by the research team for eligibility. Health workers and opinion leaders were sampled based on their involvement in the under-five child immunization programs. Three interview guides were developed for each category of participants. Table 1 below shows the categories, number of in-depth interviews and focus group discussions that were conducted in each site.

Table 1: Overview of categories, numbers of IDIs and FGDs conducted in each site

<table>
<thead>
<tr>
<th>Site name</th>
<th>Category</th>
<th>Number of In-depth interviews with key informants</th>
<th>Category</th>
<th>Number of focus group discussions with HCC and caretakers of children below five years</th>
</tr>
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<tbody>
<tr>
<td>Lusaka</td>
<td>Care givers</td>
<td>2</td>
<td>Care givers</td>
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<tr>
<td></td>
<td>Health workers</td>
<td>2</td>
<td>Health Centre Committee</td>
<td>1</td>
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<tr>
<td>Chongwe</td>
<td>Care givers</td>
<td>2</td>
<td>Care givers</td>
<td>1</td>
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<tr>
<td></td>
<td>Health workers</td>
<td>2</td>
<td>Health Centre Committee</td>
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<tr>
<td>Chingola</td>
<td>Care givers</td>
<td>2</td>
<td>Care givers</td>
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<td></td>
<td>Health workers</td>
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<td>Health Centre Committee</td>
<td>1</td>
</tr>
<tr>
<td>Mufulira</td>
<td>Care givers</td>
<td>2</td>
<td>Care givers</td>
<td>1</td>
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<td></td>
<td>Health workers</td>
<td>2</td>
<td>Health Centre Committee</td>
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<tr>
<td>Luanshya</td>
<td>Care givers</td>
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<td>Care givers</td>
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<td></td>
<td>Health workers</td>
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<td>Health Centre Committee</td>
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<tr>
<td>Total</td>
<td></td>
<td>20</td>
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<td>10</td>
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3.5 Data collection

In-depth interviews and focus group discussions were employed as the study tools. Participants for the IDI and FGD were taken from the three main categories (mothers/caregivers, health workers and community leaders). Participants in the mothers/caregivers category were recruited in consultation with the key informants from the health workers and the community leaders. The criteria for selecting mothers/caregivers who participated in this study were given to the key informants. This criteria was developed using a maximum-variation sampling criteria based on demographic characteristics such as age, marital status, number of children and relationship with the child resulting into a variety of participants. The research team short-listed the participants for the FGD in terms of their characteristics and also ensured that the groups were homogenous.

Face-to-face in-depth interviews and FGDs were conducted with eligible research participants using an in-depth interview guide and a focus group discussion guide respectively. The data collection tools were pretested at the University Teaching Hospital (UTH) and University of Zambia, Ridgeway Campus. Key informant interviews were conducted in English while interviews with mothers/caregivers were conducted in either English or Bemba/Nyanja the local languages widely spoken in the in both Lusaka and Copper belt provinces. Likewise, the FGDs were conducted in the language that the participants were comfortable with. Permission was sought from the participants to audio record the in-depth interviews and focus group discussions using a digital audio recorder. Interview notes were also taken during the interviews. Data collection and preliminary data analysis was a cyclical process. Data collection was concluded based on the data saturation principle.

3.6 Data management and quality control of the research

All recorded interviews were transcribed and translated verbatim while in the field by professional transcribers and stored on a password protected computer which was only accessible to the research team. The field supervisor on a daily basis went through the transcribed and translated information to ensure that the transcripts retained the original meaning and all personal identifiers were removed.

3.7 Data analysis

The transcribed and translated transcripts were entered in QSR NVIVO-9 electronic software for qualitative data management. The data was analysed thematically. This process involved
careful reading and exploring of the data, themes were identified and the text was coded. The coded text were categorized, similar codes were grouped together and then later merged into themes.

3.8 Ethical consideration

Ethical approval to conduct the study was given by ERES CONVERGE (I.R.B No. 00005948; Ref. No. 2014-Dec-005) in Lusaka, Zambia. Permission was also obtained from Ministry of Community Development Mother and Child and the respective Districts Community Medical Offices under the ministry, where the study was carried out.

The interviews were conducted only after verbal and written information about the nature and purpose of the study had been given out to respondents, and informed consent had been obtained. Formally written or thumb printed signatures as evidence of their consent prior to enrolment and participation in the study. Participants’ confidentiality and data protection was respected. Participants in audio recordings were given oral and written information on the aims of the study. All individual in-depth interviews were conducted in confidence. Anonymity was guaranteed and no names or any identifiers were quoted in the report.
4 FINDINGS

This study was conducted between February and March 2015. It was aimed at exploring the perceptions, fears and concerns of caregivers and health workers towards multiple injections and the introduction of IPV in the routine immunisation schedule in Zambia.

4.1 Perceptions of mothers/caregivers towards multiple injections

Perceptions about multiple immunization injections varied from caregiver to caregiver and were mostly dependent on what was learnt at the under-five clinic and from the community at large. In most interviews mothers/caregivers reported having been taught that any child who is born must be taken for injections for prevention of diseases. However some mothers mentioned different diseases that a child is protected from when they receive the multiple immunization injections. One mother who was interviewed in Chingola explained that;

“They teach us that when a child is born you have to bring him/her for injections for prevention from diseases. So we follow what they teach us. We are supposed to bring them for injections until they finish” Chingola Caregiver

The diseases mentioned were Tuberculosis (TB), diarrhoea, polio and measles. Another mother stated that

“I bring my child to the clinic so that the baby can be injected on the thighs as vaccination against measles; they also give them some vaccinations against diarrhoea and other different diseases like TB and the rest” Luanshya Caregiver

Some caregivers did not see any problem with the multiple injections currently being given because they feel the injections are given to prevent their children from diseases. The mothers or caregivers therefore believe that “prevention is better than cure” and hence better to take the child for immunization rather than have a child suffer from a disease.

“Some have the habit of thinking that when the child is given the injection the child will have high fever, the child will get sick if it is not that, they say the child will fail to walk, when the leg get swollen, they forget that the injection is meant to protect the baby, the fever can be there just for a day, the following day the baby will be okay”. Mfulira Health Centre Committee Member
Parents/caregivers also believe that the child needs to receive all the immunization injections for them to grow well, hence the children who are injected with immunization injections are expected to grow up stronger and healthier than the children who are not injected with the immunization injections.

“...also for the child to grow up well like if a child was not given all the injections, that child can’t grow properly like a child who has been injected, like those injected on thighs (refers to the immunization injections that are given on the thighs at under-five clinic), they are strong children ... because they (meaning the immunization injections) help a child to grow in the body so that the child can grow” Chongwe Caregiver

“Yes we feel happy because the injections prevent our children from diseases. And children will look like children....so that the children are healthy and strong unlike those children who are not given injections” Lusaka Caregiver

As for the caregivers from Luanshya, immunization injections are viewed to be very important such that the parents/caregivers need to ensure that the child does not miss any injections. In cases where the caregiver is unable to take the child for immunization, any responsible adult could help.

“All you want is for your child not to miss under-five clinic or miss injections. So when you are sick its better you send someone to help you unlike letting the child miss out on vaccines because that can destroy the child’s health....an adult can have the patience to wait until the child is attended to” Luanshya Caregiver

Perceptions about what the reaction of the child to the multiple immunization injections was common among all the mothers/caregivers that a child injected with multiple injections must show some symptoms of sickness. These symptoms of sickness are a sign that the vaccine is working and will protect the child.

“When the child is given injections the child should feel as if he/she is getting sick that means that medicine is working in the body. If there are no signs of sickness then the medicine has not worked. And when the child is given injections you are not supposed to put anything like ice so that it cools. They (meaning the health workers) don’t allow putting anything” Luanshya caregiver
4.2 Perceptions of health workers towards multiple injections

For the health workers, their perception was that human resources and logistics in supplying the vaccine are essential in administration of vaccines. They are needed to ensure that the vaccination campaigns are successful.

"What I can say is man power, I don’t know maybe we would need to look for people to help us, generally the staff members are few and the other vaccines like polio, Vitamin A, these community health workers help us, now with an injection we need people that are qualified, already we have a short fall....." Chingola Health Worker

4.3 Fears and concerns: Multiple injections and Introduction of IPV as a third injection

Mothers/caregivers and health providers expressed concerns and fears to multiple immunization injections and on introducing of the third injection in one visit. When asked about the concerns that they may have towards the multiple injections, some of the fears mentioned were:

4.3.1 Fears and concerns: Mothers/caregivers

Pain, High temperature and swelling: Most of the caregivers expressed concern about the pain, high temperature and swelling that comes due to multiple injections that a child receives. Even though some mothers considered this as normal, it was clear that this is one of the main fears as they take the children for immunization injections,

“there things I get scared of, like to me it happened at 6 weeks, when the child was injected, the body temperature became high and that is what scares me but the temperature drops afterward because they say it protect from diseases” Lusaka caregiver

“It’s the high body temperature. Others say it’s the swelling, when they bring their child for injections they swell ....." Lusaka Caregiver

The two injections that babies receive have been reported to cause high temperatures and sometime rashes; this was mentioned by most of the caregivers as one of the sources of concern.
"The only problem that is there when they give the child two injections by the time you reach home the body temperature of the child is high or the child develops rash. That is the only problem that is there." Luanshya Caregiver

"Maybe the child can get sick, maybe the temperature becomes very high and he can become very sick maybe the child can die” Chongwe caregiver

The concern for pain that the children experience when they receive an immunization injection was expressed by some caregivers. Furthermore, the caregivers feared that introduction of another injection would increase the pain that the children already experience after being injected with the current multiple injections.

"But truly speaking that one will be a challenge of its own. It will be a bit difficult on the side of us parents reason being that children, I will just say more pain will be added on those two that already exist ............” Luanshya Caregiver

The concern for pain, high fever and temperature was cross cutting for all the sites among the mother/caregivers.

**Swelling:** Most caregivers also indicated that, their fear was the swelling due to inefficient administration of injections

"No, we are just scared at the time the baby is being given the injection, maybe he becomes swollen, that’s what we think about, saying that maybe the one who injected him did not inject the baby properly. So if the injection swells we come back here at the clinic asking that “why has the injection swollen the baby like this?”, then they will explain to say it will swell down just give it this number of days. Then when we wait for some days the swelling goes down and it becomes levelled. Chingola Caregiver

“For some it swells like a boil; like some baby it came out as a boil...we took him to the barrack clinic, we were told to wait for it to make pus (Chipye), until it made pus we took him there again and there cleaned it. They said it was reaction to the vaccine” Mufulira Caregiver
**Crippled child:** The fear of having a crippled child due to multiple injections is one of the barriers to multiple immunization injections. Some mothers claimed that they had heard of one or two mothers whose child was crippled after receiving an immunization injection.

“For others I said it’s up to how the mother feels. Every mother has a way of how they feel about their children’s welfare. All mothers may not want their children to be injected, even if you tell them that it’s for the prevention of diseases. Maybe they had a child who was injected and got crippled. So others think that injections make their ‘children crippled’” Chingola Caregiver

Another caregiver in Mufulira explained pointing out the one year six months immunization injection as an example,

“Just like she said some say that no the child may become lame but they do not know that the injection is meant to protect the baby from diseases. The other thing, even me had fears, some say that the one year six months injection makes children become lame” Mufulila Caregiver

**Too many injections:** In line with the above mentioned fear, some mothers feared that too many injections would compromise the health of the children because it would lead to having too much medicine in the body especially if they are injected with more than one injection at a time. A mother to a 1 year old child,

“They are afraid that the child will get damaged because there be too much medicine in the body and…. the child cries a lot today he cries next month he cries again following month he cries and the child keeps on crying he is just troubling me, the body is very warm because when the child gets injected because when the child is crying the reaction of injections makes the body warm so all those things they are ones they afraid of” Chingola Caregiver

“Just the way the child can react on her body or maybe the injection have become a lot in the body maybe he can die or gets sick that can frighten them” Chongwe Caregiver

**Distance from the clinic:** Mothers/caregivers were also concerned about the distance between their home and the clinic. Walking from home to the clinic, finding and waiting in a long queue
at the clinic and then walking back home with a child who has just received multiple injection or not was mentioned to be worrisome. The mothers/caregivers mostly worried about how to carry a child who has just been given an injection back home without injuring where they were injected. One mother from Chongwe, with a 5 months baby lamented saying, 

“It’s just okay for the baby to be given (more than one) injections, the problem maybe on how to bring the baby to the health facility. You may come here and find that there is a queue when they give the baby those three injections, when going back home if you come from a place which is far from the clinic how to carry the baby is a challenge. You put the baby at your back, but the chitenge material we use to carry the babies maybe affect the babies negatively. But am not sure if that is what causes babies to have high temperatures” Chongwe Caregiver.

Sleepless nights with cries: Caregivers were concerned about the numbers of injections that children receive. According to the caregivers, children cry a lot and are sleepless when they receive the two injections. One caregiver in Luanshya said

“Because for two injections that they are receiving right night my child fails to sleep and now what will happen when they become three injections. If they give three injections to a child how is it going to be” Luanshya Caregiver

“Would prefer they give the child two injections not three, because they cry a lot” Luanshya Caregiver

And another caregiver in Lusaka lamented saying

“..........they will be crying because injections are painful” Lusaka Caregiver

Number of injections: Some mothers/caregivers thought that if the current two injections children were receiving made children sleepless with cries, the third injection would make it worse. This concern specifically comes out during the Luanshya FGD with the caregivers,

“Am a bit scared, three injections on a child am scared” Luanshya Caregiver
Some caregivers thought caregivers who think two injections are too much for the baby, may not accept the third injection and hence may not bring their children to the clinic. Some caregivers from Chingola said,

“There are those that have fear, yes others can’t bring the baby for injections saying not now, because when the baby is still very small others fear, saying that no, the baby is too small to be given three injections, we shall take him when his a bit older, so during that period they are wasting time, instead of letting the baby grow with the injections at the stipulated intervals.” Chingola Caregiver

As a result of these worries some caregivers questioned whether the oral polio vaccine will be stopped immediately the injectable was introduced. They questioned whether the oral vaccine was working.

“Yes. Does it mean the polio vaccine for the mouth does not work and that is why you are introducing the injectable one?” Luanshya Caregiver

**Site of Injection:** The caregivers also worried about the site were the injection would be administered. To most caregivers, giving two injections on the same leg was already a problem and hence they questioned were the other injection would be administered. Some caregivers also suggested the arm as an alternative site for the third immunization injection if the vaccine would work the same regardless of where the child is injected.

“Now a child only has two legs does that mean on one leg they will be giving them more than two injections?” Luanshya Caregiver

“This crucial, three injections on one child it is difficult, I think the other one should be injected on the hand I would love to ask if it can be ok if one can be injected on the buttocks and on the hand and not all the three on the legs, that’s if only the injections for the hand and the legs works the same the same then it is ok….and if they work differently then, they should be injecting 3 on the legs” Lusaka Caregiver

**Shortage of staff:** Mothers/caregivers indicated that because of inadequate health care staff, multiple injections would lead to possible errors and compromise the quality of care.
"Because like here nurses are few and most of the time they are helped by community health workers so you will find one day of under-five .....Ms X is here in the screening room, in the dispensary there is one person, maybe at the maternity comes a case, emergence accident comes and they want to sew the wounds. Just to give a child two or three injection in a day you find that in under-five there are 150 people. Time becomes limited to them and you find BP starts rising because of overworking and is overload with work and she can confuse the injections in the body of the child.”

Chongwe Caregiver

Besides all the above mentioned concerns, there were other views towards the introduction of IPV. Some caregivers expressed that, just as a normal reaction mothers or parents will always express fear in a new product which is later overcome by time and sensitizations.

Table 1 summarizes the main concerns mentioned by the caregivers across all the 5 districts. The Table also shows specific districts and the total number of interviews where these fears/concerns were mentioned strongly.

**Table 2: Specific districts where fears/concerns were strongly mentioned**

<table>
<thead>
<tr>
<th>Fear/concern</th>
<th>District were the fear/concern was mentioned strongly</th>
<th>Number of interviews where the concern was mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain, High temperature and swelling</td>
<td>All districts</td>
<td>23 out of 29 interviews</td>
</tr>
<tr>
<td>Swelling</td>
<td>All districts</td>
<td>13 out of 29 interviews</td>
</tr>
<tr>
<td>Crippled child</td>
<td>All districts</td>
<td>14 out of 29 interviews</td>
</tr>
<tr>
<td>Too many injections</td>
<td>All districts</td>
<td>26 out of 29 interviews</td>
</tr>
<tr>
<td>Distance from the clinic</td>
<td>Strongly mentioned in Chongwe and Mufurila districts</td>
<td>15 out of 29 interviews</td>
</tr>
<tr>
<td>Sleepless nights with cries</td>
<td>All districts</td>
<td>25 out of 29 interviews</td>
</tr>
<tr>
<td>Number of injections</td>
<td>All districts</td>
<td>28 out of 29 interviews</td>
</tr>
<tr>
<td>Site of Injection</td>
<td>Strongly mentioned in Luanshya and Lusaka districts</td>
<td>12 out of the 29 interviews</td>
</tr>
<tr>
<td>Shortage of staff</td>
<td>Strongly in Mufurila and Chongwe districts</td>
<td>16 out of 29 interviews</td>
</tr>
</tbody>
</table>
As can be seen in the table above, fears/concerns were mentioned in all districts, it is therefore important to address all the above fears/concerns regardless of the area.

**Fears and concerns: Health workers**

**Pain, multiple injections and fever:** The concern for pain that the children experience was not only a concern for caregivers but the health care providers as well. The health providers like the caregivers explained that the children already experience a lot of pain with the two injections they receive and adding the third one would make it worse.

“It’s the issue of multiple injections. It’s like you are adding on the pain even though that pain in the end is going to benefit the children and the nation.” Chingola Health Worker

Another health provider stated,

“.........it’s just well seeing how many times these children are injected, how many times at the same time, you know, because ah you know for me as coordinator like I have stated I think personally, eh it’s just you know giving more pain to the children than they are supposed to have” Lusaka Health Worker

The health care providers also expressed concern over the fever that children experience;

”The concerns that are there, it’s the issue of the babies experiencing a fever after the DPT injection but despite that fever all the mothers want their children to be vaccinated. So I can say it’s not a major concern even though they talk about it but it’s not something which can like stop them having their babies from being vaccinated.” Chingola Health Worker

**Lack of qualified staff to inject children:** The other challenge was on the lack of qualified staffing to administer the injections. The health care providers reported that the volunteers were assisting them in giving the oral vaccines but would not give injections. The health care providers said this requires a lot of concentration in order to administer the right vaccine.
“I think the common challenge which I have observed, actually even from my colleague when we were discussing about the same multiple, you will find that you need a lot of concentration actually, you end up giving 2 injections but of the same vaccine if you are not careful so you need to concentrate, you need to ensure that everything is in place, you know what you are supposed to be doing at that particular time, and yes those things have happened instead of giving the baby PCV 10 you give DPT 1 again instead of getting PCV 10 you give DPT 1 again thinking you have given a different one without realizing that you have just given a same vaccine, that’s where the challenge has been ...” Chingola Health Worker

Other health caregivers suggested that, lack of qualified staff (man power) to give injections contribute to the children taking longer at the clinic before they receive the immunization injection. This however was dependent on the turn up of the children that need immunization.

“The shortage of nurses is the biggest challenge, we don’t have enough to administer fast, we waste time, when people have come to be attended fast, now they fail, they go very late because there is only one nurse...obviously since we have been working with one person giving the vaccines there, now when you add another injection it means that there will be more work needing more man power” Mufulira Health Worker

All in all, most of the health care givers had no problems giving multiple injections. They indicated that it was their job to give vaccines.

“Yes, we can administer multiple, three is ok, now it also depends on the people we are giving the injections, for us we can do it because we know that those injections are given for a purpose, so for us we are comfortable, we can give three injections” Mufulira Health Worker

“They can be comfortable....the work load will be three (injections) and OPV (the community workers were able to give) but if they are introducing (refers to the IPV) it then health worker should do it and all we need is man power especially in George, nurses then we will do it” Lusaka Health Worker
**Failure to complete all immunisation vaccines:** Health care providers in Lusaka reported that the only concern was with some care givers who did not comply with full immunisation of their children. Some caregivers have a tendency of not completing all the immunisation vaccines.

“The challenges that we are facing in these immunisations is that, with the first immunisations, the mothers will come in numbers, but then the number keeps on reducing as the child grows, if the child given the first dose and the second dose, with the third dose, the mothers seem to slacken or to, they don’t see any importance of binging the child on the third dose. “Lusaka Health Worker

The fears/concerns expressed above were from all the districts by both health workers and opinion leaders during in-depth interviews and focus group discussions. Out of the 15 interviews across the five districts, the concern regarding pain, multiple injections and fever was strongly mentioned in 11 interviews: lack of qualified staff to inject was strongly mentioned in 13 interviews and failure to complete all immunization was mentioned in 9 interviews.

### 4.4 Fears and concerns: Co-administration of IPV and OPV

Both caregivers and health care workers seem not to have any fears and concerns towards the co-administration of IPV and OPV.

**Caregivers**

Caregivers in particular indicated that it was fine for the two vaccines to be given at the same time as long as the government had recommended the administration of the drugs. Most of the caregivers did not seem have information or understand the injectable IPV which is yet to be introduced. This was expressed in one of the interviews with a caregiver in Chingola.

“Yes, the oral one is just fine, we are just curious about the one being introduced, how it will be.” Chingola Caregiver

“Yes, the oral one is just fine, we are just curious about the one being introduced, how it will be.” Chingola Caregiver

On this issue like a parent I think its fine because that is prevention and reducing other pains so it just fine.” Chongwe Caregiver
Health workers

Most health care workers did not see the co-administration of IPV and OPV as a problem because they believed that with time the communities will understand.

“At first as myths in the community will always arise, stories which they can create, they have also may be heard from somewhere that in a certain society this was given and this is what happened, we will take those threats as fears.” Mufulira Health Worker (EHT)

However, issues of overdose were coming out from some health workers who indicated that the co-administration of IPV and OPV would pose some challenges from the care takers’ point of view.

“Won’t there be an overdose; where you are administering double and there are other immunization medications that child is taking?” Lusaka HCC member

“She asked about overdose and we are asking about information, these women we know each other, what they will be saying is that how can they give him two polio vaccines, they were lying to us that it will be an injection but why are they still giving two, that will be the problem.” Lusaka HCC member

To avoid concerns a Health Centre Committee member in Chingo indicated that they will need to explain such fears.

“What I can say is that, yes it can be difficult because they will (be) given the oral and then the same medicine (meaning the polio vaccine) you inject them, now if you explain to them the reason as to why you are administering the same medicine (meaning polio vaccine) orally and as an injectable they can understand if you explain thoroughly, something they can understand.” Chingola HCC member
Acceptability of the IPV as the third injection

Health workers acceptability of IPV as the third injection

From the health care providers’ interviews, acceptance of this vaccine was important. Most of them showed interest in the IPV and said this will help eradicate polio. They believed that this was as a result of conclusive research studies to replace oral polio with an injectable one. This realization helped the health care providers develop confidence which will eventually help educate the community with acceptability messages.

“Yes, the main issue of interest is that, it is going to help in eradication of polio so that is the main interest.” Chingola Health Worker

“It will be acceptable to the mothers and even to the members of staff, because it will be like just added to the vaccines that we give. Yes instead of giving two we just add the third one.” Chingola Health Worker

“Over this I can say that, it’s based on how this injection will be introduced, the third one. Because these injections two injections the babies are given are very well known, even this third one, if its explained clearly together with the problem that has led it to be introduced, the women are not difficult to convince, all the babies cry after being injected, what’s important is just consoling them,” Chingola Health Worker

Its fine if conclusive research says so: The health providers also thought that if the result to introduce the third injection came from conclusive research, the injections was acceptable and good. One health provider from Chingola said;

“It’s good because may be you know what I can say is that for these things to come out it means a research was done. And if a research was done it might have proved that this problem of polio might come out and become difficult to control it, so to completely eliminate it we will do whatever we can do, I think it’s important to carry out more research, and when a research is done it completely shows that we need to see the way forward on how we can do it.” Chongwe Health Worker

Past experience with other vaccines: According to some of the health workers, the third polio injection was acceptable as long as it was safe and had no side effects as seen from the past
immunization vaccines that have been introduced. A health care provider from Chongwe said that,

“I don’t see any problem in terms of infections or any effects afterwards because so far these vaccines we have been using we haven’t experienced any side effects from any client, so I should believe may be a good job or research has been already done which will not give us problems in terms of side effects upon giving the baby that vaccine”

Chongwe Health Worker

Care givers acceptability of IPV as the third injection

Despite the many concerns and fears raised by the mothers/ caregivers and the health providers, most of the expressed interest in the third vaccine as long as it was of benefit to the child. Some of the reasons expressed by the mothers and caregivers as to why the 3rd injection was acceptable are as follows:

It will fully protect children from polio: Some caregivers in Lusaka showed pleasure and indicated that introduction of another injection was a good idea as this would fully protect their children from illnesses.

“I think polio for injection sounds better and a lot of people will not be getting sick because we usually see a lot in our compounds suffering from polio.” Lusaka Caregiver

“On this issue like a parent I think its fine because that is prevention and reducing other pains so it just fine.” Chongwe Caregiver

“They should introduce it because it will be protecting children from all diseases...Because we are different other parents will condemn it but for us who know that injections prevent diseases in our children. This nothing much I can say. For others I don’t know how they will feel about it” Luanshya Caregiver

Caregivers need to be reassured so that they take their children to receive the third injection to be introduced,

“It’s just okay if they have taken a research seen that an injection is better. We cannot say they should do such and such. They are the ones who look at the health of children in this world. Even if you say we won’t take a child to be given the injections because we are scared of the three injections. If there is a problem its better you bring the child
It is fine if people who are responsible to look at the health of the community recommend it: The caregivers believe that if people who are responsible to look at the health of the community (health workers) have seen the need for the third injection then it is good and welcome. For example one caregiver who had a child under the age of five in Chingola said,

“It’s just going to be fine. Because they have seen that adding one more of the injection is better so that children should not suffer from polio. What would be a problem is the crying of babies when they are given injections but once the pain goes away they will get used. It will be just fine”. Chingola Caregiver

Other caregivers also echoed the same, that if it has been recommended, then it is fine.

“The injections for immunisation we do not even have issues with them because they are recommended and screen by the doctors, you see ... so they will be injecting how many, three injections? ....so the injections do not scares us off as long they have been recommended there for us is just to receive them” Mufulira Caregiver

Injections are more effective and reliable: Some caregivers thought the oral polio vaccine was not very effective and reliable as the injectable hence it is good that they oral will be replaced by the injection. In Mufulira district, all the FGD members agreed when one caregiver commented that,

“Like she has said some babies are naughty with polio oral drops, they spit it out maybe the injectable one will be better. .....It is true what they have said, some babies would do like this, and it flows out of the mouth. Now what they have said that there is a new one which they inject on the thigh then they have done well. Us we are glad as parents so that our children can be protected” Mufulira Caregiver.

Past experiences of a sick child: From the some of the mothers/caregivers, the experience of nursing a child with an illness that can be prevented had made them realize the importance of having their children immunized. The current introduction of the pneumonia vaccine has living testimonies from communities that have seen a reduction in children suffering from coughs and
pneumonia related illnesses. With this in place there is hope that even when only few people have seen a child suffering from polio, communities will welcome this injection.

"The reason why I cannot be scared is because I have seen a child who is suffering from polio. It also becomes a burden for you people at home because that child cannot walk to the toilet and answer the call of nature the child can’t even drink water unless you help that child. So the injection that they have introduced is just okay because it will protect children from polio." Luanshya Caregiver

Generally, based on the interviews conducted, both caregivers and health care providers seem to accept the introduction of IPV as a third injection in the immunization schedule. They have attached value in the programme as it provides protection for their children.

4.6 Addressing the barriers and fears

After discussing issues of acceptability from the parents and the health care providers, mothers/caregivers were asked how the barriers would best be managed. It has emerged from the data that to address the barriers the community needed to be educated about this vaccine. They asked for the truth...

"When telling them you give them details so that they understand that what you are telling them is the truth." Luanshya Caregiver

Based on past experiences with the introduction of other vaccines, some participants indicated that there was need for health care providers to explain the purpose of the vaccine and why the change so that mother’s understand. Mothers/caregivers may not easily accept the vaccines that are not fully explained even after massive campaigns as expressed by one of the caregivers.

"With PCV really when they said it is something to prevent pneumonia, there was no problem with that... but I think the problem was with the measles (vaccine), you know because some women children reacted during that time of measles campaign, some children reacted and some mothers really were upset about it, they were hiding their children, they didn’t want their children to be vaccinated against measles, but with explanations you will even find now (as you introduce IPV) that a child of one year six months will be brought for, IPV." Lusaka Health Worker
Therefore, to avoid concerns a Health Centre Committee member in Chingola indicated that they will need to explain such fears.

“What I can say is that, yes it can be difficult because they will be given the oral and then the same vaccine you inject them, now if you explain to them the reason as to why you are administering the same vaccine orally and as an injectable they can understand if you explain thoroughly, something they can understand.” Chingola HCC member

4.7 Possible Solutions

Various suggestions were made on how to alleviate fears and concerns that mothers and caregivers may have towards introduction of the Inactive Polio Vaccine. Among suggestions made were;

a. Training workshops for Health Providers

Training workshops for healthcare staff on IPV were suggested. These are aimed at introducing healthcare providers to IPV, its importance, reasons why it is being introduced and all technical details on how to administer it, dosages etc. This information will help them effectively administer the vaccine as well as communicate to the community. According to healthcare providers in Chingola,

“You have to bring up workshops and seminars so that you teach the health workers and the volunteers in the health centres, so that when you train those, it will be easy for them to be found at clinics sensitizing and educating the women, they would welcome it.” Chingola Health Worker

b. Community Sensitisation

Community sensitisation was deemed important to ensure buy-in from mothers and caregivers. This sentiment was expressed by healthcare providers and mothers/caregivers. According to healthcare providers in Chingola,
“Going into the community, even in the markets, there at the public places...you discuss with them, you explain what is needed with the babies, just where there are a lot of people such as in markets, churches and here at the clinic as well, just where a lot of people are found, you explain to them.” Chingola Health Worker

In Mufulira, healthcare providers suggested that

“With sensitization, if we sensitize them well, they will learn and then they will accept it obviously, it’s just a matter of sensitizing them. They need to understand, because they have to understand why we are giving polio orally and then the injectable. We have to explain to them properly even the side effects and why we are giving it, the benefits and then obviously they are going to accept it with good sensitization.” Mufulira Health Worker

Mothers and caregivers expressed similar sentiments. A caregiver in Lusaka suggested that

“...what you can do, you have to go round in the houses, you go round with a car they announce saying people there is this injection coming so that they are aware, like that they welcome it, because they know that there is this injection coming they have already mentioned.” Lusaka Caregivers

Various methods of disseminating these messages were also suggested. Among these were radio and print media, public vehicle announcement and drama. On radio, phone in programmes on the vaccine were also suggested. A caregiver in Lusaka suggested that

“... just get a car to go round with a mega phone announcing in the whole community. They explain saying we shall be at Chibolya this and that will come. Yes that’s what can help us, so that they are aware as well that they mentioned that this injection is coming.” Lusaka caretaker

“Drama also helps us just as my friend said. In markets we go round with young people, explaining through drama plays, saying “Mrs X! Yes? Have you heard? No I haven’t, Now this year they have introduced another injection to protect the babies.” So the drama groups go round in the community performing. It’s easy for the community to pick it from
the drama and by the time they come to the clinic they will realize what they saw at the market or what they saw at the church and other places.” Chingola Health Worker

In Chingola, health workers suggested that

“We can use the media; print media, radio, there are about two radio stations here in Chingola...” Another health worker in Chingola suggested that since “...the media the news spreads fast, especially on Radio Icengelo (name of a radio station). On Radio Icengelo, they bring a lot of programs on health matters.... Most people like to tune in and phone in as well. They even give a phone in period where anyone can call and ask about the topic of discussion.” Chingola Health Worker

They said there is need to sensitize the community and the nation on the importance of immunizations. This work is vested in the hands of health care providers to sensitize the community so that they understand the benefits of this new vaccine. There is also need to involve the headmen, chiefs and NHCs in educating the community.

“Oh, the main strategy is to first sensitize the community or the nation. After sensitization the community and the nation is going to understand the importance of polio injection. So after sensitization it will be easy for the mothers to accept because they would have understood the reason why polio immunization is coming in injection form not the oral form.” Chingola Health Worker

“I think so we can talk to head men so that they talk to community health workers so that they are sensitized that when they can understand because if you use people they do know they will be saying we do know these they may say maybe it is Satanism them but if use the people from the community whom they know properly like health workers they can understand more than people from outside.” Chongwe Caregiver

This information must be based on result from clinical trials on the efficacy and safety of this drug. The community must be informed on how safe the drug is if injected to their children

“I can feel nice if I see how well it is working and that the people have tested it. In 2015 it will be used and we have to understand that it has been introduced”. Mufulira Caregiver
“I don’t see any problem in terms of infections or any effects afterwards because so far these vaccines we have been using we haven’t experienced any side effects from any client, so I should believe may be a good job or research has been already done which will not give us problems in terms of side effects upon giving the baby that vaccine.” Chongwe Health Worker

For a better share of information other respondents argued that the media will help explain the information better.

“…like it is always done, you know there is radio, TV, advertising and so forth it will help a lot, because sometimes when they just hear it from us the local providers they wouldn’t take it but sometimes when you advertise through radio, through TV that will carry weight...” Mufulira Health Worker

“Apart from telling the people in the community, I think you should use the media except to those who are far away in the villages, effort should be made to travel and inform them. Otherwise the best way is the media and through the new means of computers. Using the TV, you talk through the TV or radio even just through the phone.” Mufulira Caregiver

c. Breaking Language barriers

When asked what language would be appropriate most advocated for a local language depending on the region. The local languages mentioned were bemba nyanja and tonga although it is important to note that specific local languages for specific areas should be employed in order to maximize communication interventions during the implementation of outreach programs. English was also proposed for those who prefer getting information though that language. It is appropriate to use a language which a parent in the community would understand.

“And they understand all like English, especially the popular radio like ‘Komboni’ radio…” Lusaka Caregiver

To make it easy for the mothers access this service, the respondent proposed involvement of the male partners in the education and sensitization program. They also proposed for measure for employers to allow parents take children for immunization programs. They also proposed for a door to door sensitization of the community.
“The other one is going into the community, even in the markets, there at the public places, so when you discuss with them, you explain what is needed with the babies, just where there are a lot of people such as in markets, churches and here at the clinic as well, just where a lot of people are found, you explain to them”. Chingola Health Worker

d. Training and Sensitising fathers

Participants also thought it important to train and sensitise the fathers on the new vaccine. It is important for fathers to understand what the new vaccine is about to ensure buy-in from the community taking into account the setting in these communities. In Chingola, a Health Provider suggested that

“...it's important to ensure that even the fathers are trained, because when a father understands it very well, even when the woman comes back from the clinic explaining to him, he will say yes, even at the office we have been told, so resistance there would be reduced, so when sensitizing, even the fathers as well should be sensitized, if you tell him that am taking the baby for an injection which is like this and he hasn't heard about it, unless what his heard about, it's easy to accept, so even the fathers as well, even at their places of work, you can send people to go and tell them that these are the changes coming.”

Chingola Health Worker

e. Work overload

To address the work overload they proposed for an increase in the staffing levels. Other proposed for an incentive for the volunteers as motivation

“The solution maybe if there was some incentives for these volunteers they could be coming to helps us because when they are here there is a difference it makes a difference because they do the weighing (of the children), they do other things while I do other things...at least they are weighing (the children) you tell them how to tally but sometime they do not come. But if there was some incentives they get something maybe once in a month.” Mufulira Health Worker
5 DISCUSSION

This explorative enquiry revealed various perceptions, existing trust expressions and expectations regarding IPV and the health system. There is generally good acceptance by both the caregivers and the health care providers towards multiple injections and IPV. Most caregivers expressed interest in IPV and indicated that IPV would fully protect their children from polio. Caregivers’ perceptions and beliefs that injectable vaccines are most effective and reliable compared to oral vaccines in the prevention of diseases is significant to their acceptance of the IPV. Similarly, health workers’ interviews showed that health workers generally showed acceptance towards the introduction of IPV in the immunisation schedule. Most health workers indicated that based on their past experience with other vaccines that have been introduced before, they have had no problems and so they do not anticipate any problem this time. Their confidence in this is based on possible research that may have been done before the introduction of IPV to provide evidence on the safety of the vaccine.

However, despite acceptability of this vaccine by both caregivers and health workers, we have found that most caregivers have concerns and fears ranging from swelling, vaccine “overdose”, perceived trauma from excessive pricks and children being crippled. These findings are similar to the findings in a study by Madlon-Kay and Harper (Madlon-Kay and Harper, 1994). Their findings showed that parents and health providers agreed that three injections in one visit were too many. The concern is tied to the pain and swelling that children experience after receiving all these injections in one visit. With this being experiences in the current immunization schedule where only two injections are given, addition of a third injection seemed to prompt these concerns among caregivers. In addition health care providers expressed concern of possible shortages of the vaccine and inadequate staff to administer the injectable IPV. This is a common feature in rural areas. As shown in the study by Nkowane et al., (2009), health personnel shortages have been found to pose a challenge in conducting immunisation activities. Health facilities, especially those in rural areas, already experience stock outs of drugs including vaccines. This is what prompted these concerns among health workers. Similar concerns were raised by caregivers and the impression was that this may affect successful implementation of the IPV introduction. This will need to be addressed when rolling out the IPV immunization campaign.
Some health workers also questioned the co-administration of OPV and IPV as a possible cause of drug overdose. Concerns like this one is a clear indication that prior to the introduction of the vaccine, they will be need to address such concerns so that they do not hamper acceptance of IPV among the health workers. For any immunisation programme to succeed, it is imperative that health workers fully understand the vaccine in order for them to effectively communicate to the caregivers. As alluded to by Omer et al. (Omer et al., 2009), health workers are the main sources of information on vaccines for caregivers. They are the principle communicators of health related information as caregivers visit the health facilities. They will prove an essential tool in dispelling some of the concerns and fears as well as any wrong perceptions that caregivers in the community may have towards IPV.

Therefore, for the introduction of IPV to succeed, it is imperative that healthcare providers are fully oriented on the vaccines. Evidence has shown that there is a relationship between providers and immunization rates (Al-lela et al., 2012) with health workers fully oriented and trained on IPV, they will be able to communicate with the community and provide information as well as help dispel any misconceptions, myths and concerns that caregivers may have.

Nevertheless, despite these concerns, caregivers and health workers were of the view that the introduction of IPV is a worthy exercise aimed at improving the lives of children. The trust and expectations expressed by caregivers towards IPV, the health system and health workers provide an opportunity to build on it so as to improve administration of IPV. In this regard there is need to plan for effective communication strategies and community mobilisation strategies that will contain messages aimed at allaying these fears whilst exploiting these opportunities.
6 CONCLUSION

The study set out to understand the fears, concerns and perceptions of caregivers and health workers towards IPV and co-administration of OPV and IPV. Various concerns and fears raised by both caregivers and health workers. Some concerns relating to the users bordered on the effects of the vaccine such as pain, swelling, raised body temperature, drug ‘overdose’ (which may be related to both multiple injections and co-administration) and children being crippled. Supply side factors raised mainly centred on shortage of trained health workers and drug stock outs. However, despite these concerns, there was general acceptability of the introduction of IPV. Both caregivers and health workers seemed to welcome the introduction of the injectable polio vaccine. Most of the caregivers were of the view that ‘prevention is better than cure’ thus had no problems with taking their children for immunization. Therefore, in order to allay the fears and concerns of both caregivers and health workers, we suggest that robust communication strategies (containing key messages) should be developed aimed at building capacity and improve knowledge, and allaying potential fears. Importantly, in this regard, we recommend that IPV orientation programmes for health staff and community mobilisation strategies be considered prior to the introduction of IPV.
7 RECOMMENDATIONS

This study has revealed acceptance by both health care providers and caretakers towards introduction of IPV in the immunisation schedule of Zambia. Although, it seems that both health care providers and caregivers have no issues with accepting this, some questions and concerns that have come out from this study which are important and need to be considered. Therefore, below are the specific strategies that we recommend to effectively scale out the introduction of IPV.

**Short Term Strategies**

a. *Training of Health Care Providers through Workshops/Seminars*
   
   To ensure that the health care providers fully understand the aim of introducing the vaccine and its benefits, it will be essential to conduct workshops and seminars to orient them about IPV. An understanding of the importance of the vaccine, the dosages, including all the technical details on the administration of the vaccine will help the health care providers effectively administer the vaccine as well as communicate to the community. We therefore suggest that the government and its partners conduct these trainings before implementing the programme.

b. *Community Sensitization and engaging fathers in community dialogue*
   
   There is need to conduct community sensitization programmes/campaigns to promote community awareness and buy-in from mothers, fathers and care givers. Fathers need to be involved when sensitizing care givers and the community at large due to the influence they wield in their families as far as decision making is concerned. This influence might affect decisions made with regard to immunization. Community sensitisation will help mothers, fathers and communities at large to understand the benefits of the new vaccine. As suggested, various methods of disseminating the messages could be through the radio and print media, public vehicle announcement and drama.

c. *Enhance provision of Information Education and communication strategies at the under-five.*
   
   This will be significant as an ongoing measure of creating awareness among the caregivers. As mothers take children for Under 5 clinics, they can be sensitized about IPV, its importance, benefits and any potential side effects that children may experience.

d. *Involvement of community volunteers*
   
   Due to the fact that communities have mutual trust with their community leaders and they easily understand issues in their own local languages, we recommend that community leaders such as chiefs and headmen, and community volunteers such as Neighbourhood committees, Community Health Workers/Community Health Assistants and Safe Motherhood Action...
Groups are trained and involved in sensitising the communities on IPV. They will help in disseminating information about IPV and dispelling any fears that the community may have.

e. Use of Trained health Workers in giving the injection
Due to the concerns and fears that have been expressed by caregivers such as perceived lack of competence by student nurses, we argue that in the early stages of the introduction of IPV, only trained health workers administer the vaccine to children to alley anxiety and build confidence in the caregivers. It will be essential to thoroughly train health workers on how to administer the IPV with minimal discomfort to t children. This will help address caregivers’ concerns about poor administration leading to pain and swelling.

f. Messages on IPV
It is important to promote positive messages on IPV by emphasizing the importance of vaccines. Since some mothers already understand that ‘prevention is better than cure’, this message can be promoted in line with the importance of the vaccine. The benefits of the vaccine, along any potential side effects that the children may have and how to treat them, must be communicated to the mothers and care givers. Mothers can be advised on how to address any possible swelling, pain and high temperature.

Long Term Strategies

a. There is need to train more Community Health Workers/ Assistants who can help in administering the IPV. This may prove key to implementation of IPV administration especially in rural areas where distance to health facilities and shortages of trained health workers is a problem.

b. With many rural health facilities experiencing shortages in terms of staff, there is need to improve staffing levels in the MCH clinics. Due to challenges of manpower and work overload, we recommend that the government deploys more health workers to these health facilities.

c. Child health week is an activity that can be taken advantage of. Since immunization is already one of the activities conducted under child health week, we suggest that IPV be incorporated, both under sensitization and actual administration. Programmes and activities can be tailored to deliver messages on IPV.

d. Antenatal clinics can also be employed in delivering of messages on IPV. Mothers can be sensitized on the importance of IPV. This may ensure that when they attend Under 5 clinics after they deliver, this message would have been already communicated and
would only need reinforcing to ensure compliance to and completion of all immunization schedules.

e. The government, through the appropriate ministries, as well as the various stakeholders should ensure that health facilities are always stocked with IPV. Stock outs may deter mothers and caregivers from taking children for immunization. Therefore, to ensure successful implementation of the IPV administration programme, it is imperative that health facilities are constantly stocked with IPV.
LESSONS LEARNED

- The introduction of IPV as a third injection in a single dose is generally acceptable by both the caregivers and health workers.
- However, there are potential fears and concerns by both caretakers and health workers towards multiple injections and the introduction of IPV to the immunisation schedule of Zambia.
- Unlike caregivers who seemed not concerned about the co-administration of IPV and OPV, Health workers seem to have concerns on the co-administration of the two vaccines and they are questioning its effects especially in terms of drug overdose.
- IPV orientation to health workers and community sensitisation (including fathers) has been suggested by most health workers prior to the introduction IPV.
- Caretakers have also suggested that community mobilisation and sensitisation using local languages and with the involvement of community leaders should be enhanced. As suggested, this could be done through different means such as local radio stations and drama groups.
9. REFERENCES


Central Statistical Office (CSO), et al., Zambia Demographic and Health Survey 2007. 2009 CSO and Macro International Inc.: Calverton, Maryland, USA.


WHO. Zambia ready to vaccinate over one million children against Polio. 23 July 2002.


10. ANNEXES

DATA COLLECTION TOOLS

Focus Group Discussion – Care givers

Section A: Interviewee’s Particulars

Name of Zone………………..Region ……………District……………….Ward………………

Name of Health Facility…………………..Date: ____/____/_____ Start Time: ____/____

End time: ____/____ (Total Time spent :_______)

Name of Interviewer: ……………………

Introduction

Hello, my name is [insert your name] and this is [insert name]. We want to thank you for agreeing to take part in this group discussion. I will be leading the discussion and [insert name the note taker] will be taking notes.

We are asking you to take part in a group discussion that will help us to better understand the needs and experiences of persons in this community who take children for immunization. Sometime a discussion among a group of people leads to better understanding of the issues because then we get to hear many different options at the same time. I would like to encourage all of you who have decided to participate to share openly and honestly about any questions you will be asked. We want to hear the experience of everyone even if it’s different from what others have said. What you will
tell us will help us come up with possible solutions of improving child immunization programs. We will also make recommendations that may help improve the health services in your community. Before we start, we would like you to know a few things.

We would ask you that you not use real names or anything that will identify you or others but that you use the numbers that have been assigned to each one of you. Please be honest in sharing your options and experiences as this will help us make better recommendations to meet the needs of parents and guardians like yourself. We will also ask you not to share anything that the other participants have expressed to other people. We will also give you some information about child immunization at the end of the interview.

We will ask for your permission to tape record this discussion because there will be a lot of information that neither I nor the note taker will be able to remember or write down. There will also be times that I will ask follow up questions so that I can better understand what you are saying. By tape recording this discussion, we can also make sure that our notes do not leave out the most important information you have shared. The meaning of your view points and experiences will also not change. This discussion will last about an hour.

Do you have any questions before we start? [Take time to address all the questions and concerns]

With your permission I would like to turn on the tape recorder and begin the interview? [Turn the tape recorder if permission if granted]

[INTERVIEWER: START RECORDING]

Remember to probe, get concrete examples and spend time (up to 90 minutes). Let the informant speak at length and make sure that you use this only as a true guide in the interview process, and not as a list of questions to be covered one after the other.

Potential probes = P
### B. Introduction

**B1** What is the role of a parent/care giver in immunization of children? Does your role include taking a child for immunization?

<table>
<thead>
<tr>
<th>Research areas</th>
<th>Notes</th>
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<tr>
<td>Opening question</td>
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### C. Characteristics of guardians and caregivers who take children for immunization

**C1.** Can you describe the different types of subgroups of parents/caregivers who take children for immunization?

**P:** How do these different groups differ by age? Marital status? Education? Employment status? Parity?

<table>
<thead>
<tr>
<th>General question on demographics</th>
<th>Notes</th>
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### D. Perceptions And concerns towards multiple immunisation

**D1.** What are the fears and concerns that you and your peers have with regard to multiple immunisation injections? *(Take time to list down all the concerns and complaints)*

1. ....................................................
2. ..................................................................
3. ..........................................................

**D2.** **P:** How do the concerns given affect the care givers, the infants, the service providers and the government.

**D3.** What challenges do you face as a parent/care giver with regard to multiple immunisation injections? *(Take time to list all the challenges)*

1. ..............................................................

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<thead>
<tr>
<th>Objective 1</th>
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</table>
P: How do you think the challenges you have given can be addressed?

**D4.** How many injections have the infants been receiving in one single visit?

**D5.** Up to how many injections are you willing the child to receive on one single visit? Why?

**D6.**

1. How do Children Respond to Multiple Vaccines Given at the Same Time?
   **Probe:** Is this response Similar to when they receive Individual Vaccines? How do they differ? How are they similar?

<table>
<thead>
<tr>
<th>P: How do you think the challenges you have given can be addressed?</th>
<th>Objective 2</th>
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<tr>
<td><strong>D4.</strong> How many injections have the infants been receiving in one single visit?</td>
<td>Objective 1</td>
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<tr>
<td><strong>D5.</strong> Up to how many injections are you willing the child to receive on one single visit? Why?</td>
<td>Objective 1</td>
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<tr>
<td><strong>D6.</strong></td>
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<tr>
<td>1. How do Children Respond to Multiple Vaccines Given at the Same Time?</td>
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<tr>
<td><strong>Probe:</strong> Is this response Similar to when they receive Individual Vaccines? How do they differ? How are they similar?</td>
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</table>
E. Perceptions and Acceptability of the IPV as the third injection

Let me tell you about a different immunization injection that Zambia has committed to introduce in 2015. Zambia plans to introduce another immunization injection called the Inactive polio vaccine (IPV). This immunization injection will be part of the multiple injections that babies/infants receive during their immunization schedule and as such the babies will receive multiple injections at one time. The IPV is meant to protect the person from the infectious disease caused by polio virus which lives in the throat and intestinal track and often spreads from person to person through oral/nasal secretions. The polio disease may eventually lead to paralysis which may result in permanent disability and even death. To prevent this, Zambia intends to introduce this third immunization injection which will be given at the same time infants receive the other two injections. As with all the vaccines there can be minor reactions, including pain, and redness at the injection site, headache, fatigue or a vague feeling of discomfort which soon clears. For the babies to be fully protected from polio they need to receive this third vaccine.

E1. What sounds most interesting about this IPV injection they want to introduce? Why? What sounds less interesting? Why?

E2. Do you think the various subgroups of parents/guardians would be interested to bring the children to be injected?
Probe: (if mixed responses) Why would some parents be interested? Why would others not be interested?

E3. What are the fears and concerns that you and your peers have with regard to the introduction of the third injection? *(Take time to list down all the concerns and complaints)*

P: Do you think introducing the third injection in the immunization schedule will be acceptable to the parents? If so, Why? If not, why not?
| P: What strategies can we use to overcome the barriers of parents/guardians not bringing the children for this immunization?  
| P: How can we make it easier for the working and busy mothers/guardians to bring the children?  
| P: Are there time of the day or places that are better for injecting the children?  
| E4. What do you think can be done to help mothers/guardians overcome the fear of the child receiving multiple injections?  
| Probe: How can the fears that parents/guardians have towards multiple immunization be addressed? [Probe until all the specific solutions have been listed]  
| Probe: How can these solutions be carried out? Who should be involved in executing them? When? Where? And Why? [e.g., probe for each solution one by one]  

**F Recommendations**

| F1. What actions would you recommend before the babies/infant is injected with both IPV and OPV?  
| P: How would these actions reduce the fears and concerns of mothers/caregivers when of injecting the baby/infant with both IPV and OPV at the same time?  

| E2. How would these threats of co-administration of IPV and OPV be communicated to the mothers/caregivers?  
| P: What could be the key messages in this communication?  
| P: How should these key messages be communicated?  

---

**Objective 3**
**E3:** Before we close up our discussion, what do you think are the most important issues to be addressed before the introduction of multiple injections in the current immunization schedule?

**E4:** Is there anything else you would like to tell me about child immunization programs?

[Remember to thank you the participants and switch off the recorder]
Focus Group Discussion – Health Centre Committee

Section A: Interviewee’s Particulars

Name of Zone………………..Region ………….…District……………….Ward……………….

Name of Health Facility……………………..Date: ____/____/_____ Start Time: ____/____

End time: ____/____(Total Time spent:_______)

Name of Interviewer: ……………………

Introduction

Hello, my name is [insert your name] and this is [insert name]. We want to thank you for agreeing to take part in this group discussion. I will be leading the discussion and [insert name the note taker] will be taking notes.

We are asking you to take part in a group discussion that will help us to better understand the needs and experiences of persons in this community who work with care givers that take children for immunization. Sometime a discussion among a group of people leads to better understanding of the issues because then we get to hear many different options at the same time. I would like to encourage all of you who have decided to participate to share openly and honestly about any questions you will be asked. We want to hear the experience of everyone even if it’s different from what others have said. What you will tell us will help us come up with possible solutions of improving child immunization programs. We will also make recommendations that may help improve the health services in your community. Before we start, we would like you to know a few things.

We would like to ask you not to use real names or anything that will identify you or others but that you use the numbers that have been assigned to each one of you. Please be honest in sharing your options and experiences as this will help us make better recommendations to meet the needs of the
health workers like yourself and parents/guardians who bring their children for immunization. We will also ask you not to share anything that the other participants have expressed to other people. We will also give you some information about child immunization at the end of the interview.

We will ask for your permission to tape record this discussion because there will be a lot of information that neither I nor the note taker will be able to remember or write down. There will also be times that I will ask follow up questions so that I can better understand what you are saying. By tape recording this discussion, we can also make sure that our notes do not leave out the most important information you have shared. The meaning of your view points and experiences will also not change. This discussion will last about an hour.

Do you have any questions before we start? [Take time to address all the questions and concerns]

With your permission I would like to turn on the tape recorder and begin the interview? [Turn the tape recorder if permission if granted]

[INTERVIEWER: START RECORDING]

Let the focus group participants discuss the topic with one another and make sure that you use this only as a true guide in the focus group discussion and not as a list of questions to be covered one after the other. Encourage all members to participate and do not let one person dominate. Before starting the discussion under each theme, please read the theme introduction and all questions sorting under that theme.

Potential probes = P

<table>
<thead>
<tr>
<th>B. Introduction</th>
<th>Research areas</th>
<th>Notes</th>
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<tr>
<td></td>
<td>Opening question</td>
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<tr>
<td>B1 What is your role as Health Centre Committee members in the immunization programs?</td>
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<tr>
<td><strong>P:</strong> Can you describe the role of the health workers in the Immunization program</td>
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</table>
**P:** Can you describe the role of the community leaders in the immunization program

<table>
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<tr>
<th>C. Characteristics of guardians and caregivers who take children for immunization</th>
<th>General question</th>
<th>Notes</th>
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<tr>
<td><strong>C1.</strong> Can you describe the different types of subgroups of parents/caregivers who take children for immunization?</td>
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<tr>
<td><strong>P:</strong> How do these different groups differ by age? Marital status? Education? Employment status? Parity</td>
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<table>
<thead>
<tr>
<th>D. Perceptions And concerns towards multiple immunisation injections</th>
<th>Objective 1</th>
<th>Objective 1</th>
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<tbody>
<tr>
<td><strong>D1.</strong> Can you tell me about the concerns/complaints you receive from parents/caregivers with regard to the multiple injections in the immunization schedule? <em>(Take time to probe and list down all specific concerns and complaints)</em></td>
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<td><strong>P:</strong> In terms of the following: thrilled</td>
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</tr>
<tr>
<td>i.</td>
<td>Service Providers</td>
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<td>ii.</td>
<td>Parents/caretakers</td>
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<td>iii.</td>
<td>Children</td>
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</table>

**D2.** What challenges do health workers face as a service provider with regard to multiple immunisation injections? *(Take time to probe and list all the challenges)*

**P:** How do you think the challenges and concerns you have given can be addressed? *(Probe for specific solutions for each fear and challenge)*

**E. Perceptions And Attitudes towards the introduction of IPV**

**E1.** Are health workers aware of plans to introduce IPV as an additional injection in the current Immunization schedule? (If yes) What are the details/ What do you and your peers know about it?

**E2.** What do health workers think will be the challenges of introducing multiple injections in the current immunization schedule? Probe the challenges related to:

- i. Resources
- ii. Storage
- iii. Human resource
- iv. Parental concerns
- v. Risks of AEFI
- vi. Other

…………………………………………………………………………
**E3.** Can you explain to me how you think introducing an additional injection into the current immunization schedule will affect your work?…………………………………………………………………

**E4.** What do health workers foresee as benefits of an additional multiple polio injection in the immunization schedule? Probe in terms of the following:

   i. Protecting Children
   ii. Fewer vaccination visits
   iii. Increasing Efficiency
   iv. Any other reason mentioned by the informant

**E5.** What do you think are disadvantages of additional IPV injection in the current immunization schedule?

1. …………………………………………………………………
   ……………………………
2. …………………………………………………………………
   ……………………………
3. …………………………………………………………………
   ……………………………

**E6.** Are health workers comfortable administering multiple injections to children at one visit? If yes why? If not why?

1. …………………………………………………………………
   ……………………………
2. …………………………………………………………………
   ……………………………
E7. How many injections have health workers been administering to a child in one single visit? Are you administering all injections as per the immunization schedule?

E8. Up to how many injections are you as health workers willing to administer to a child on one single visit?

E9.

   ii. How do Children Respond to Multiple Vaccines Given at the Same Time in a Manner? Is this response Similar to when they receive Individual Vaccines? How do they differ? How are they similar?

   iii. How do multiple vaccines affect the infant’s immunity system?

   iv. DO you think Infants Have the Capacity to Respond to an Enormous number of Antigens? If yes why? If no, why?

   v. Are Children are exposed to fewer Antigens in Vaccines today than in the past? Why?

E10. Who do you think parents/caregivers listen to and believe in when receiving health/immunization information? At household level? At community level? and at health care level?

F. Acceptability of the IPV as the third injection

   *Let me tell you about a different immunization injection that Zambia has committed to introduce in 2015. Zambia plans to introduce another immunization injection called the Inactive polio vaccine (IPV). This immunization injection will be the third injection of the two multiple injections that babies/infants receive during their immunization schedule and as such the babies will receive 3 injections at one time. The IPV is meant*
to protect the person from the infectious disease caused by polio virus which lives in the throat and intestinal track and often spreads from person to person through oral/nasal secretions. The polio disease may eventually lead to paralysis which may result in permanent disability and even death. To prevent this, Zambia intends to introduce this third immunization injection which will be given at the same time as the other two injections that infants already receive. As with all the vaccines there can be minor reactions, including pain, and redness at the injection site, headache, fatigue or a vague feeling of discomfort which soon clears. For the babies to be fully protected they need to receive this third vaccine.

F1. What sounds most interesting about this IPV injection they want to introduce? Why? What sounds less interesting? Why?

F2. DO you think parents/guardians would be interested to bring the children to be injected?
P: (if mixed responses) Why would some parents be interested? Why would others not be interested?
P: What do you think about the introducing the third injection in the immunization schedule? Will the third injection be acceptable to the parents? If so, Why? If not, why not?

F3. This third injection will be given at the same time the other two injections are given. Do you think the mothers/caregivers will be comfortable with this arrangement? If yes why? If not why not?

P: What strategies can we use to overcome the barriers of parents/guardians not bring the children for this immunization?
P: how can we make it easier for the mothers/caregivers to bring the children for these 3 injections?

P: Are there times of the day or places that are better for injecting the children?
<table>
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<tr>
<th><strong>Objective 3</strong></th>
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<tbody>
<tr>
<td><strong>F4</strong>. What do you think can be done to help mothers/guardians overcome the fear of the child receiving 3 multiple injections at once?</td>
</tr>
<tr>
<td><strong>P</strong>. How can the fears that parents/guardians have towards multiple immunization be dressed [Probe until all the specific solutions have been listed]</td>
</tr>
<tr>
<td><strong>P</strong>. How can these solutions be carried out? Who should be involved in executing them? When? Where? And Why? [e.g. probe for each solution one by one]</td>
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<tr>
<th><strong>H Recommendations</strong></th>
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<tbody>
<tr>
<td><strong>G1</strong>. Are there any threats that you think will arise because of co-administration of IPV and OPV in babies/infants? What are these threats and how can they be addressed?</td>
</tr>
<tr>
<td><strong>G2</strong>. What actions would you recommend before the babies/infant is injected with both IPV and OPV?</td>
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<tr>
<td><strong>P</strong>. How would these actions reduce the potential threats of injecting the baby/infant with both IPV and OPV at the same time?</td>
</tr>
<tr>
<td><strong>G3</strong>. How would these threats and advantages of co-administration of IPV and OPV be communicated to the mothers/caregivers?</td>
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<tr>
<td><strong>P</strong>. What could be the key messages in this communication?</td>
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<tr>
<td><strong>P</strong>. How should these key messages be communicated?</td>
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<tr>
<td><strong>P</strong>. In which language do you think they should be communicated</td>
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<td><strong>G4</strong>. Before we close our discussion, what do you think are the most important issues to be addressed before the introduction of the third injection in the current immunization schedule?</td>
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<tr>
<td><strong>G5:</strong> Is there anything else you would like to tell me about under five child multiple immunization injections and about health work in immunization programs?</td>
</tr>
</tbody>
</table>
In-depth Interview – Caregivers

Section A: Interviewee’s Particulars

Name of Zone......................Region ................District...............Ward............... Date: ____/____/_____ Start Time: ____/____

End time: ____/____(Total Time spent:_______)

Name of Interviewer: .........................

Introduction

Hello, my name is [insert your name] and this is [insert name]. We want to thank you for agreeing to take part in this one to one interview. I will be leading the discussion and [insert name the note taker] will be taking notes.

We are asking you to take part in an interview that will help us to better understand the needs and experiences of persons in this community who take children for immunization. I would like to encourage you to share your experience and the experiences of other mothers/caregivers you know openly and honestly. What you will tell us will help us come up with possible solutions of improving child immunization programs. We will also make recommendations that may help improve the health services in your community. Before we start, we would like you to know a few things.

We would like to ask you that you do not use real names or anything that will identify you or others. Please be honest in sharing your options and experiences as this will help us make better recommendations to meet the needs of parents and caregivers like yourself. There is no right and wrong answer. We will also give you some information about child immunization at the end of the interview.
We will ask for your permission to tape record this interview because there will be a lot of information that neither I nor the note taker will be able to remember or write down. There will also be times that I will ask follow up questions so that I can better understand what you are saying. By tape recording this discussion, we can also make sure that our notes do not leave out the most important information you have shared. The meaning of your viewpoints and experiences will also not change. This discussion will last about an hour.

Do you have any questions before we start? [Take time to address all the questions and concerns]

With your permission I would like to turn on the tape recorder and begin the interview? [Turn the tape recorder if permission if granted]

[INTERVIEWER: START RECORDING]

Remember to probe, get concrete examples and spend time (up to 90 minutes). Let the informant speak at length and make sure that you use this only as a true guide in the interview process, and not as a list of questions to be covered one after the other.

Potential probes = P

<table>
<thead>
<tr>
<th>B. Introduction</th>
<th>Research areas</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1 What is your role as a parent/care giver? Does your role include taking a child for immunization?</td>
<td>General Question</td>
<td></td>
</tr>
</tbody>
</table>
C. Characteristics of guardians and caregivers who take children for immunization

C1. Can you describe the different types of subgroups of parents/caregivers who take children for immunization?

P: How do these different groups differ by age? Marital status? Education? Employment status? Parity?

D. Perceptions And concerns towards multiple immunisation injections

D1. What are the fears and concerns that you and your peers have with regard to the current multiple injections in immunization schedule? (*Take time to list down all the concerns and complaints*)

4. ........................................................................................................
5. ........................................................................................................
6. ........................................................................................................
7. ........................................................................................................

P: How do the concerns and fears given affect the caregivers, the infants, and the service providers?

D2. What challenges do you face as a parent/caregiver with regard to multiple immunisation injections? (*Take time to list all the challenges*)

P: How do you think the challenges you have given can be addressed?
D3. How many injections have the infants been receiving in one single visit?

D4. Are you comfortable with health workers administering multiple injections to children at one visit? If yes why? If not why?

P: how can this process be made easier for mothers to be comfortable?

D5. Up to how many injections are you willing the child to receive on one single visit? Why?

vi. How do Children Respond to Multiple Vaccines Given at the Same Time?

P: Is this response Similar to when they receive Individual Vaccines? How do they differ? How are they similar?

E. Perceptions and Acceptability of the IPV as the third injection

Let me tell you about a different immunization injection that Zambia has committed to introduce in 2015. Zambia plans to introduce another immunization injection called the Inactive polio vaccine (IPV). This immunization injection will be part of the multiple injections that babies/infants receive during their immunization schedule and as such the babies will receive multiple injections at one time. The IPV is meant to protect the person from the infectious disease caused by polio virus which lives in the throat and intestinal track and often spreads from person to person through oral/nasal secretions. The polio disease may eventually lead to paralysis which may result in permanent disability and even death. To prevent this, Zambia intends to introduce this third immunization injection which will be given at the same time infants receive the other two injections. As with all the vaccines there can be minor reactions, including pain, and

Objective 2

Objective 2

General question

Objective 1 & 2
redness at the injection site, headache, fatigue or a vague feeling of discomfort which soon clears. For the babies to be fully protected from polio they need to receive this third vaccine.

E1. What sounds most interesting about this IPV injection they want to introduce? Why? What sounds less interesting? Why?

E2. Do you think parents/guardians would be interested to bring the children to be injected?

P: (if mixed responses) Why would some parents be interested? Why would others not be interested?
P: Do you think introducing the third injection in the immunization schedule will be acceptable to the parents? If so, Why? If not, why not?
P: What strategies can we use to overcome the barriers of parents/guardians not bringing their children for this immunization?

P: How can we make it easier for the parents/guardians to bring their children to this third immunization injection?

E2. What are the fears and concerns that you and your peers havewith regard to the the introduction of the third injection? *(Take time to list down all the concerns and complaints)*

E3. What do you think can be done to help mothers/guardians overcome the fear of the child receiving multiple injections?
P: How can the fears that parents/guardians have towards multiple immunization be dressed *[Probe until all the specific solutions have been listed]*
P: How can these solutions be carried out? Who should be involved in executing them? When? Where? And Why? *[e.g probe for each solution one by one]*

F. Recommendations
<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>F1. What actions would you recommend before the babies/infant is injected with both IPV and OPV?</td>
</tr>
<tr>
<td>F2. How would this co-administration of IPV and OPV be communicated to the mothers/caregivers?</td>
</tr>
<tr>
<td>F3. Before we close up our discussion, what do you think are the most important issues to be addressed before the introduction of the third injection in the current multiple immunization schedules?</td>
</tr>
<tr>
<td>F4. Is there anything else you would like to tell me about child immunization programs?</td>
</tr>
</tbody>
</table>

**Objective 3**

[Remember to thank the informant and switch off the recorder]
In-depth Interview – Health Service Providers

Section A: Interviewee’s Particulars

Name of Zone………………..Region ...............District..................Ward.............

Name of Health Facility…………………..Date: ____/____/_____Start Time: ____/____

End time: ____/____(Total Time spent:_______)

Name of Interviewer: ....................

Introduction

Hello, my name is [insert your name] and this is [insert name]. We want to thank you for agreeing to take part in this one to one interview. I will be leading the discussion and [insert name the note taker] will be taking notes.

We are asking you to take part in an interview that will help us to better understand the needs and experiences of persons in this community who take children for immunization. I would like to encourage you to share your experience and the experiences of other mothers/caregivers you know openly and honestly. What you will tell us will help us come up with possible solutions of improving child immunization programs. We will also make recommendations that may help improve the health services in your community. Before we start, we would like you to know a few things.

We would like to ask you not to use real names or anything that will identify you or others. Please be honest in sharing your options and experiences as this will help us make better recommendations to meet the needs of parents and caregivers like yourself. There is no right and wrong answer. We will also give you some information about child immunization at the end of the interview.
We will ask for your permission to tape record this interview because there will be a lot of information that neither I nor the note taker will be able to remember or write down. There will also be times that I will ask follow up questions so that I can better understand what you are saying. By tape recording this discussion, we can also make sure that our notes do not leave out the most important information you have shared. The meaning of your viewpoints and experiences will also not change. This discussion will last about an hour.

Do you have any questions before we start? [Take time to address all the questions and concerns]

With your permission I would like to turn on the tape recorder and begin the interview? [Turn the tape recorder if permission if granted]

[INTERVIEWER: START RECORDING]

Remember to probe, get concrete examples and spend time (up to 90 minutes). Let the informant speak at length and make sure that you use this only as a true guide in the interview process, and not as a list of questions to be covered one after the other.

**Potential probes = P**

<table>
<thead>
<tr>
<th>B. Introduction</th>
<th>Research areas</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B1.</strong> What is your role in this institution? How long have you been working here?</td>
<td>Opening questions</td>
<td></td>
</tr>
<tr>
<td><strong>B2.</strong> Can you describe your role in the under five child immunization programs that are carried out by your institution?</td>
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</tbody>
</table>
### C. Characteristics of guardians and caregivers who take children for immunization

**C1.** Can you describe the different types of subgroups of parents/caregivers who take children for immunization?

**P:** How do these different groups differ by age? Marital status? Education? Employment status? Parity?

### D. Perceptions And concern towards multiple immunisation injections.

**D1** can you tell me about the concerns/complaints and fears you receive from parents/caregivers with regard to the Multiple immunization injections? *(Take time to probe and list down all specific concerns and complaints)*

8.  
9.  
10.  

**P:** in terms of the following:

- iv. Service Providers
- v. Parents/caretakers
- vi. Children

**D2.** What challenges do you face as a service provider with regard to multiple immunisation injections? *(Take time to probe and list all the challenges)*

- v.  

<table>
<thead>
<tr>
<th>Objective 1</th>
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<tbody>
<tr>
<td>General Question on demographics</td>
<td>Notes</td>
</tr>
</tbody>
</table>
**P:** How do you think the challenges and fears you have given can be addressed?

**E. Perceptions And Attitudes towards IPV as the third injection**

**E1.** Are you aware of plans to introduce IPV as an additional injection in the current Immunization schedule? (If yes) What are the details/ What do you know about it?

……………………………………………………………………
……………………………………………………………………
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**E2.** What do you think will be the challenges and fears of introducing multiple injections in the current immunization schedule? **Probe the challenges related to:**

- vii. Resources
- viii. Storage
- ix. Human resource
- x. Parental concerns
- xi. Risks of AEFI
- xii. Other

……………………………………………………………………

**E3.** Can you explain to me how you think introducing an additional injection into the current immunization schedule will have any effect to your work?

……………………………………………………………………

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<th>Objective 2</th>
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<td>Objective 1</td>
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<td>Objective 1 &amp; 2</td>
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<td></td>
<td>Objective 1</td>
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</table>
E4 What do you foresee as benefits of additional multiple polio injection in the immunization schedule? Probe in terms of the following:
  v. Protecting Children
 vi. Fewer vaccination visits
 vii. Increasing Efficiency
 viii. Any other reason mentioned by the informant

E5. What do you think are disadvantages of additional IPV injection in the current immunization schedule?
  4. ........................................................................
     ................................................
  5. ........................................................................
     ................................................
  6. ........................................................................
     ................................................

E6. Are you comfortable administering multiple injections to children at one visit? If yes why? If not why?
  3. ........................................................................
     ................................................
  4. ........................................................................
     ................................................

E7. How many injections have you been administering to a child in one single visit?

F8. Up to how many injections are you willing to administer to a child on one single visit?
vii. How do Children Respond to Multiple Vaccines Given at the Same Time in a Manner? Is this response Similar to when they receive Individual Vaccines? How do they differ? How are they similar?
viii. How do multiple vaccines affect the infant’s immunity system?
ix. DO you think Infants Have the Capacity to Respond to an Enormous number of Antigens? If yes why? If no, why?

<table>
<thead>
<tr>
<th>F. Acceptability of the IPV as the third injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Let me tell you about a different immunization injection that Zambia has committed to introduce in 2015. Zambia plans to introduce another immunization injection called the Inactive polio vaccine (IPV). This immunization injection will be part of the multiple injections that babies/infants receive during their immunization schedule and as such the babies will receive multiple injections at one time. The IPV is meant to protect the person from the infectious disease caused by polio virus which lives in the throat and intestinal track and often spreads from person to person through oral/nasal secretions. The polio disease may eventually lead to paralysis which may result in permanent disability and even death. To prevent this, Zambia intends to introduce this third immunization injection which will be given at the same time infants receive the other two injections. As with all the vaccines there can be minor reactions, including pain, and redness at the injection site, headache, fatigue or a vague feeling of discomfort which soon clears. For the babies to be fully protected they need to receive this third vaccine.</td>
</tr>
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</table>

**F1.** What sounds most interesting about this IPV injection they want to introduce? Why? What sounds less interesting? Why?

**F2.** DO you think parents/guardians would be interested to bring the children to be injected? 
**P:** (if mixed responses) Why would some parents be interested? Why would others not be interested?
| **P:** What do you think about the introducing the third injection in the immunization schedule? Will the third injection be acceptable to the parents? If so, Why? If not, why not?  
**Probe:** What strategies can we use to overcome the barriers of parents/guardians not bring the children for this immunization?  

**Probe:** How can we make it easier for the parents/guardians to bring there children to this third immunization injection?  
**Probe:** Are there time of the day or places that are better for injecting the children?  

**Probe:** How can the fears that parents/guardians have towards multiple immunization be addressed [**Probe until all the specific solutions have been listed**]  
**Probe:** How can these solutions be carried out? Who should be involved in executing them? When? Where? And Why? [e.g **probe for each solution one by one**] |

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| **Objective 3** |
| **G Recommendations**  
**G1.** Are there any threats that you think will arise because of co-administration of IPV and OPV in babies/infants? What are these threats and how can they be addressed?  

**G2.** What actions would you recommend before the babies/infant is injected with both IPV and OPV?  

**P:** How would these actions reduce the potential threats of injecting the baby/infant with both IPV and OPV at the same time?  

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77
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| **G3.** How would these threats of co-administration of IPV and OPV be communicated to the mothers/caregivers?  
**P:** What could be the key messages in this communication?  
**P:** How should these key messages be communicated?  
**P:** In which languages do you think these messages should be communicated?  
**G4.** Before we close our discussion, what do you think are the most important issues to be addressed before the introduction of multiple injections in the current immunization schedule?  
**G5.** Is there anything else you would like to tell me about child immunization program and about health work in immunization programs? |   |