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Factors Influencing Vaccine Hesitancy and Immunization Coverage in Zimbabwe: A Rapid Assessment



Factors Influencing Vaccine Hesitancy and Immunization Coverage in Zimbabwe: A Rapid Assessment

Version 1

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Executive Summary

Introduction: The infant mortality rate and under-five mortality rate is 50 deaths per 1,000 live births and 69 deaths per 1,000 live births¹ respectively in Zimbabwe (ZDHS 2015). The country continues to experience a disease burden of preventable diseases such as HIV and AIDS, tuberculosis, malaria, diarrheal diseases, and other vaccine-preventable diseases. Vaccine preventable diseases contribute to the total child deaths amounting to approximately 38,766 deaths² per year. Such deaths from vaccine preventable diseases are inexcusable and tragic. Vaccine hesitancy and refusal continue to pose challenges to reaching immunization targets in the country, and potentially affect the country's ability to drastically reduce infant and child mortality. It is based on "sociocultural, political, economic, or religious factors" (Kriss et al. 2016), and which affect uptake of vaccination services, and more broadly maternal, newborn and child health (MNCH) services.

Objectives: The Ministry of Health and Child Care (MoHCC) and UNICEF Zimbabwe commissioned this

rapid assessment to explore reasons for vaccine hesitancy and refusal, and identify barriers and facilitators to uptake of vaccination among socio-cultural and religious groups in Masvingo and Manicaland Provinces in Zimbabwe in order to strengthen evidence-based communication and programming strategies to improve vaccination adherence, utilization of routine vaccination services, and MNCH services. This qualitative rapid assessment provides insights on social norms, religious doctrine beliefs and practices, and local health service delivery issues, and therefore fill in knowledge gaps regarding routine vaccination, supplementary immunization activity, and immunization campaigns in the two provinces.

Methodology: This rapid assessment was conducted in selected communities in Gutu district (Masvingo Province³) and Mutare Rural district (Manicaland Province) in Zimbabwe, and used qualitative methods (individual in-depth interviews, key informant interviews and focus group discussions). A total of 60 participants participated in focus group discussions (FGDs), in-depth interviews (IDIs) and

¹ ZDHS 2015 Key Indicators

² WHO (2013) "Zimbabwe: Neonatal and Child Health Profile", African Region. http://www.who.int/maternal_child_adolescent/epidemiology/profiles/neonatal_child/zwe.pdf

³ Masvingo Province had the lowest proportion of children age 12-23 with full immunization (MICS 2014)



key informant interviews (KIIs). Caregivers with children under 5 years of age were purposively identified through a mixture of convenience and snowballing sampling approaches. Local leaders and health workers were purposively selected on the basis of satisfying the characteristics required to better inform the objectives of the rapid assessment. The results and conclusions of the study cannot be generalized to a wider population, and merely offer insights and lessons on vaccine hesitancy and refusal based on the purposive sample. So caution has to be exercised in drawing conclusions from this Rapid Assessment results given their limited generalizability. Given that this was a rapid assessment study, there was time limitation and budgetary constraints to allow for in-depth exploration of themes emerging during the study.

However, the Rapid Assessment study yielded rich information and insights on reasons behind vaccine hesitancy and refusal, barriers and facilitators to uptake of vaccination services, and drivers of declining routine immunization in the study communities in Zimbabwe.

Results: The key drivers of vaccine hesitancy and refusal, and acceptance include socio-cultural and religious, political, and institutional factors, and these influence use and non-use of vaccination services and more broadly MNCH services. The results highlighted the influence of Apostolic religion, supply-side factors, traditional leadership and police in the uptake of vaccination services in the study sites in Zimbabwe:

(a) Socio-cultural and religious factors determining vaccination and healthcare seeking behaviors

Similar to other findings of other studies⁴ on Apostolic religion, healthcare seeking and utilization of modern health services, this study revealed the constraining and overriding influence of Apostolic religion and doctrine on uptake of maternal and child health services (including vaccination). The caregivers cited religious doctrine, beliefs, practices and sanctions as some of the reasons for vaccine refusal and hesitancy. The negative perceptions of modern medicines and health services are embedded in the religious views that ascribe their use to lack of faith in God, ignoring the spiritual dimensions of health and child diseases, and low confidence in Apostolic healing system (faith healing rituals such as prayer, holy water, faith healers including prophets and Apostolic birth attendants etc.). Modern medicines and vaccines are perceived as dangerous, and cause diseases or deaths. Therefore, spiritualization of illness and childhood diseases reinforce “radical beliefs that shun medical care, which is viewed as antithetical to God’s call for divine healing”⁵.

The association of child’s death with God’s will and law, and the view that a “child is like a brick” reinforce the suboptimal health care seeking behaviors related to child health and restrict vaccination of children among religious objectors. Therefore, childhood diseases and related deaths are treated as spiritual issues, which modern medicine and vaccines have not ‘power’ to prevent, and thus when a child dies from vaccine-preventable diseases it should be regarded as God’s will and law.

The death of child is likened to a ‘broken brick’, and parents (church members) are expected to ‘replace’ [mold] the children by giving birth to another one. This sense of immediate replacement alters the value placed on young children, and speaks to their dispensability even from vaccine-preventable childhood diseases or preventable deaths. The ‘martyring’ of children over radical doctrine and beliefs is predicated on ‘God’s will and law’, which then raises fundamental challenges for child immunization. So if a child dies from a vaccine-preventable disease, it is regarded as God’s will.

The ultra-conservative Apostolic groups encourage polygamy, and male members are encouraged to have many wives⁶ and children. Therefore, this possibly creates ‘emotional distance’ between the men and his children. In the words of one Apostolic member, “If a child of one of the many wives dies, will he [man] be really pained?” [informal discussion with an Apostolic male in Mutare].

Affiliation to Apostolic religion is a significant factor in reducing use of modern health services. Across all markers of child immunization, Apostolic religion retains its significance. Ha et al. (2012) and Mukungwa (2015) established a strong association between religion and vaccination against measles in Zimbabwe, and children in Apostolic faith affiliated households were less likely to have BCG, measles, and polio immunization compared to other Christian groups⁷. The studies also showed that women of Apostolic religion were less likely to use antenatal care (ANC), institutional delivery, skilled birth attendants, and postnatal care (PNC) services compared to other Christian

⁴ Daneel ML (1970) *Zionism and Faith Healing in Rhodesia: Aspects of African Independent Churches*, The Hague: Mouton

Ha W, Salama P, Gwavuya S, & Kanjala C (2014) “Is Religion the Forgotten Variable in Maternal and Child Health? Evidence from Zimbabwe”, *Social Science & Medicine*, 2014 October, 118: 88-88

Mpofu E, Dune TM, Hallfors DD, Mapfumo J, Mutepfa MM & January J (2011) “Apostolic Faith Church Organization Contexts for Health and Wellbeing in Women and Children”, *Ethn Health* 16(6): 551-566

OHID (2014) *Exploring the Forgotten Variable: Engaging, Listening and Learning from Apostolic Birth Attendants. An Exploratory Qualitative Study of the Role of Apostolic Midwives in Mashonaland Province, Zimbabwe*, Harare: OPHID

UNICEF (2011) *Apostolic Religion, Health and Utilization of Maternal and Child Health Services in Zimbabwe*, Harare: UNICEF. Report by Brian Maguranyanga

UNICEF (2015) *Apostolic Maternal and Newborn Intervention (AMENI) Model: Improving Maternal and Newborn Child Health Outcomes among Apostolic Religious Groups in Zimbabwe*, Harare: UNICEF. Report by Brian Maguranyanga and Geoffrey Feltoe

UNICEF Zimbabwe (2016) *Extended Analysis of Multiple Indicator Cluster Survey (MICS) 2014: Religion*, Harare: UNICEF

⁵ UNICEF (2015) *Apostolic Maternal and Newborn Intervention (AMENI) Model: Improving Maternal and Newborn Child Health Outcomes among Apostolic Religious Groups in Zimbabwe*, Harare: UNICEF. Report by Brian Maguranyanga and Geoffrey Feltoe (p.5)

⁶ Machingura F (2011) “A Diet of Wives as the Lifestyle of the Vapostori Sects: Polygamy Debate in the Face of HIV and AIDS in Zimbabwe”, *Africana Journal* 5(2): 186-210

groups. This has an impact of maternal and child health outcomes, and the less likelihood of Apostolic women to attend ANC and deliver at a health facility increases the likelihood of Apostolic babies missing on vaccinations from births onwards.

The findings provide some reasons for non-vaccination and incomplete vaccination of Apostolic children, and points to the challenges posed by non-utilization of maternal and child health services. In encouraging pregnant women to seek pregnancy-related services from Apostolic birth attendants, faith healers, and deliver at home, Apostolic women miss out of the health and vaccination knowledge given by health workers and their new babies also miss out on vaccination. The infants and children in Apostolic households therefore face increased risks of mortality due to vaccine-preventable diseases.

The lack of knowledge and negative perceptions of modern child health services and vaccines contribute to vaccine hesitancy and low uptake of vaccination services⁷. The lack of knowledge was reflected by caregivers not knowing, for example what the BCG vaccine is for or what disease it prevents. In most cases, the caregivers generally associated vaccination with 'disease' / 'diseases' but had no clear perception of the specific disease(s). Those who accepted vaccines emphasized the benefits of vaccination in terms of reducing the intensity of the diseases and preventing children from being ill and dying of vaccine-preventable diseases. In contrast, some caregivers and community leaders who object to the use of vaccines perceived vaccines to cause ill-health and weaken the body of children, and conflict with their faith and will of God for faith and divine healing. Such refusal has to be understood in the context of rejection of the modern health, biomedical system.

Apostolic female caregivers have devised "stealth strategies" to access health services despite the

restrictions imposed by their religion on the use of modern health services including vaccination. The secretive use of health services is empowering for the women, and serves as a pathway for healthcare seeking. The 'gardens', as non-physical spaces, are social spaces where women access modern health services from health workers outside the health facility or outreach platforms.

The social relationship between women and health workers is that of trust, and anchored on provision of service secretly outside the knowledge of male partners. At the health facility, women who fear being seen accessing modern health services and having their children vaccinated are attended by health workers in rooms and spaces that offer privacy. All these innovations reflect adaptive responses to religious and social restrictions imposed by religious leaders and male partners on maternal and child health care seeking behaviors. Therefore, secrecy and privacy provide women with pathways for healthcare seeking, obtaining vaccination services, and empowers them to create space for decision-making related to their health and children's wellbeing.

Apostolic female caregivers suggested that the door-to-door approach and vaccination campaigns should be prioritized for religious objectors since it provides opportunities for their children to be vaccinated within the confines of the houses, and hence offering privacy and reduce fear of religious sanctions. The religious leaders expressed satisfaction with immunization campaigns and SIAs since they regarded them as a 'government directive'. As perceived 'government directive' / policy, the community leaders claimed that they would respect immunization campaigns and SIAs, and ensure that children are vaccinated, and then provide cleansing rituals and prayers for the children and parents. Some Apostolic caregivers felt that their religious leaders accepted campaign vaccination and 'door-to-door' vaccination if required by

⁷ Ha W, Salama P, Gwavuya S, & Kanjala C (2014) "Is Religion the Forgotten Variable in Maternal and Child Health? Evidence from Zimbabwe", *Social Science & Medicine*, 2014 October, 118: 80-88

Mukungwa T (2015) "Factors Associated with Full Immunization Coverage amongst Children aged 12-23 Months in Zimbabwe", *African Population Studies* 29(2): 1761-1773

UNICEF Zimbabwe (2016) *Extended Analysis of Multiple Indicator Cluster Survey (MICS) 2014: Religion*, Harare: UNICEF

⁸ Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC

Larson HJ, Jarret C, Eckersberger E, Smith DM, & Paterson P (2014) "Understanding Vaccine Hesitancy around Vaccines and Vaccination from a Global Perspective: A Systematic Review of Published Literature, 2007-2012", *Vaccine* 32(19): 2150-2159

law, in cases of emergencies, and under force by government or police. In addition, when properly educated and sensitized about vaccination and other health interventions, the religious leaders accepted vaccination and modified their position regarding restrictions on use of vaccines and modern health services as well as accommodated emerging circumstances⁹.

The Apostolic religious leaders expressed reservations about routine immunization, which is largely associated with constant / routine use of modern health services. Given that campaign vaccination only lasts some days, it does not fundamentally affect the expected health seeking behavior of Apostolic members (in line with church doctrine). In contrast, routine immunization requires visiting health facilities for scheduled vaccination appointments, and hence caregivers are expected to behave differently for routine immunization of children.

The fundamental question is how to facilitate religious leaders' and male partners' acceptance of routine immunization as an important intervention for improving child health outcomes in Apostolic communities. The possible answer lies in community leaders' (religious and traditional) engagement and dialogue, and strengthening their knowledge about vaccines and benefits of vaccination. As key gatekeepers in the community, local leaders provide the framework for healthcare seeking behaviors and actions of community members. Hence, when they speak against modern health services, and impose social sanctions on members who use child health services, they constrain behavior and reinforce non-adherence to vaccines.

During vaccination campaigns, health workers involve local leaders in the activities of these big events and they mobilize the local community to get children vaccinated. Local leaders – traditional, political, and sometimes religious – are approached to approve the vaccination campaign activities, and hence tend to exercise influence over local community members during campaigns unlike with routine immunization where they are hardly involved.

Therefore, the influence on local leaders in routine immunization remains weak.

The results point to a shift in leaders' attitudes toward vaccination, and even ultra-conservative Apostolic communities (e.g., Johanne Marange) have also shifted from total refusal of vaccination to allowing "circumstantial acceptance" of vaccines during activities deemed as 'government directive'. When provided with information on vaccines and the benefits of vaccination, the religious leaders expressed support for child vaccination in order to prevent diseases and deaths. During the 2015 Zimbabwe Measles/Rubella and Vitamin A Catch-Up Campaign, there was "high proportion of Apostolic Faith followers accepting the 2015 campaign with their children having 90% MR vaccine coverage"¹⁰. Based on our evidence, such "encouraging coverage" reflects shifting trends and fruits of health workers-religious leaders' engagement and dialogue, health workers-caregivers' interactions, and Apostolic caregivers' personal efforts and strategies in overcoming barriers to use of modern health services and vaccines as well as growing acceptance of modern health interventions.

Based on the emergent evidence, it is misleading to treat, for example, Johanne Marange and other ultra-conservative Apostolic religious objectors of modern health care as totally rejecting vaccination and use of modern health services. The collective non-acceptance and resistance of use of modern health services (including vaccination) seems to have weaned and replaced by mediated, graduated responses and actions that accommodate circumstantial use of modern health services, and participation in vaccination campaigns and community-based health interventions. Inasmuch as the Apostolic leaders and caregivers believe in faith healing rituals (prayer, holy water, Zvitsidzo etc.), there is gradual acceptance and use of modern medicine and health services secretly or in privacy. As stated earlier, past experiences with child disease and death, and exposure to empowering knowledge and information tend to

⁹ Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC.

¹⁰ Ministry of Health and Child Care (2015) *Report on Evaluation of Coverage Achieved during Zimbabwe Measles/Rubella and Vitamin A Catch Up Campaign Combined with Assessment of Routine Immunization. Part I Coverage Survey: MR Vaccine and Vitamin A Supplementation Campaign*, Harare: MoHCC

influence the shift towards acceptance of modern health services including vaccination. Similar to the results of other studies, caregivers' experience with child diseases and death trigger shifts in healthcare seeking behaviors, and those who shifted their views against modern health services tend to actively encourage other Apostolic caregivers to use modern health services and get their children vaccinated¹¹.

(b) Communication as critical in improving uptake of vaccination services

The results show the importance of communication in strengthening knowledge and empowering actions related to uptake of modern health services and vaccination. Without benefits of vaccines effectively communicated, and social and behavioral change communication initiatives undertaken at a larger scale within local communities, the caregivers will lack the information and motivation to overcome barriers to uptake of vaccination and other health services. It seems the campaign vaccinations are driven by high publicity, community mobilization and social and political visibility that routine immunization does not have, and hence they are able to generate high vaccination coverage over a short period of time. Therefore, the gaps in routine immunization possibly reflect a fundamental gap in communication around it.

The findings revealed that caregivers had limited knowledge and passive understanding of vaccination, and hardly identified the vaccine with specific disease. They understood vaccination as merely 'injections', and lacked the confidence to ask health workers about specific vaccines and diseases, and hence without the empowering information and knowledge they did not fully understand the risks of missing / skipping vaccines in stipulated in the child health card / vaccination schedule. In addition, communication on vaccination has largely been based on traditional information, education and communication (IEC) materials (pamphlets, visual aids), which are viewed as panacea to demand generation and awareness raising.

Consequently, it managed to raise awareness but with limited actionable, empowering knowledge to drive social and behavioral change, and fundamentally alter perceptions and social norms. The evidence clearly points to the centrality of communication for development (C4D) or social and behavioral change communication (SBCC) in increasing routine immunization, uptake of modern health services, and resolving problems of non-adherence as well as increase the involvement of key social influencers including male partners, in-laws, and religious and traditional leaders.

(c) Supply-side factors - health workers' attitudes, service delivery innovations, and health worker-caregivers' interaction - influencing routine immunization and uptake of child health services among caregivers of children under 5 years of age.

The study highlighted the importance of health workers-caregivers' relationship in influencing uptake of vaccination services for children. As stated earlier, the ill-treatment of caregivers by health workers especially when they miss scheduled appointments in the child health card cause some of the caregivers to skip subsequent appointments or stop using the child health services. In addition, the caregivers complained about the negative attitude of some health workers, whom they alleged verbally abuse (insult) them for asking questions. They also indicated that some health workers hardly commit time to explain the vaccines, symptoms of the disease prevented by the vaccine, the benefits of vaccination, and the importance of respecting the vaccination schedule but merely serve them passively. Without heightened awareness and adequate knowledge of the importance of vaccination, the propensity of vaccination diminishes.

Given these experiences, it is possible that ill-treatment of caregivers becomes a strong barrier to accessing modern health and vaccination services who are not willing to be insulted. The insults and intolerance of questions possibly

¹¹ Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC

reflect the health workers' attempts to reaffirm their authority of caregivers and patients, and thus showing the power dynamics in health worker-caregiver relationship. Therefore, interpersonal communication between health workers and caregivers has to be addressed to improve knowledge sharing and interaction between them. It is also important to understand health workers' attitudes and responses in context, particularly conditions of work, heavy workload, and the overlap of professional and personal lives in close-knit communities.

Stock-out of vaccines affect vaccination behaviors of caregivers traveling long distances to get their children vaccinated. This issue was rarely mentioned by study participants, and the health workers and caregivers highlighted the challenges posed by vials. In Gutu District, the challenge was the restriction on routine vaccination due to limited number of children to be vaccinated on specific dates, and hence determining the vials for a limited number of children. In instances where the number of children to be immunized for a specific vaccine is limited, the health workers would encourage caregivers to mobilize others until the threshold number for opening the vial is reached otherwise they would turn caregivers back home.

Notwithstanding the challenges faced by health workers, some health workers have taken personal initiatives to improve engagement and communication with caregivers, and stakeholders in the local community. The personal initiatives include flexible opening hours for religious objectors seeking medical care and vaccination, offering privacy and services secretly, promoting 'gardens', and conducting personal home visits to caregivers and children needing some health care services. The health workers, including village health workers (community cadres), have adopted contextually-relevant strategies to increase access to health care, and take services to community members without necessarily limiting service provision to the health facility.

Building on trust and mutual respect, the health workers create safe spaces for women, caregivers and children to receive care in light of Apostolic religious objection and community problems. In both study sites (Zvipiripiri in

Mutare Rural District and Makumbe in Gutu District), the health workers had developed strong ties with caregivers (local community) and community leaders such that they were active agents of change in the community, and were well respected in terms of helping the community solve health problems. The health workers' personal initiatives in delivering health services and vaccination seem to have positive outcomes.

In view of rumors about public health interventions (campaign vaccination, SIA etc.) and anecdotes on adverse events following immunization (AEFI), health workers need to address these issues since they affect perceptions of vaccines and uptake of vaccination service against spiritual / faith healing system. The rumors and fears of AEFI contribute to vaccine hesitancy and refusal. When there has been collective resistance to vaccination among community members, the police and local traditional leaders have been engaged to enforce vaccination of children.

(d) Use of police and traditional leaders in public health interventions

The study highlighted the use of power and influence of police and local traditional leaders in reducing vaccine hesitancy among Apostolic caregivers and other objectors, particularly during vaccination campaigns and SIAs. The use of police in vaccination campaigns in Gutu District was mentioned by caregivers and traditional leaders as a strategy to improve coverage among Apostolic communities. Interestingly, some Apostolic caregivers felt that 'coercive vaccination', through police enforcement and traditional leaders' local decree, opens up space for Apostolic children to be vaccinated without their caregivers fearing the consequences of 'breaking' Apostolic doctrine on non-use of modern health services. The authority of traditional leaders is respected, and with such respect comes influence over community members and religious leaders residing with the traditional leader's jurisdiction. While use of force by police¹² and traditional leaders was a reason for having children vaccinated, the consequences

¹²Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC

of such force or 'coercive vaccination' must be understood in the context of human rights and democracy. Should coercion and use of police be a viable intervention for increasing immunization coverage? What are the authoritarian possibilities of traditional leaders given that culture may give traditional leaders an authoritarian bent¹³? We caution against the use of police in improving vaccination coverage during campaigns especially in the absence of a clear legal and policy framework governing immunization in the country. Use of police fails dismally in routine immunization since it has very limited or no space to operate, and potentially generates backlash.

There are limitations on use of law / legal enforcement to bring about social and behavioral change related to healthcare seeking behavior and vaccination in the absence of a clear legal framework. In countries where there have been challenges with obtaining support for immunization, the governments (e.g., Botswana) passed "a law making it illegal for a caregiver to withhold children from a government-sanctioned immunization program, and Malawi and Swaziland used law enforcement assistance to immunize children of religious objectors and to hospitalize seriously ill children of religious objectors during a recent measles outbreak"¹⁴. Instead, soft techniques – dialogue, engagement and mobilization of community members and religious leaders – offer sustainable opportunities for improving uptake of vaccination services. In other words, there has to be a clear understanding of the consequences of legal interventions (invoking the law) in promoting vaccination, and we suggest pursuing soft techniques (carrot approach) first in bring about social and behavioral change¹⁵.

Conclusion: This Rapid Assessment study explained caregivers' limited knowledge on vaccines and related diseases they seek to prevent, their passive acceptance of vaccination, and poor / non-adherence to routine

immunization as specified in the child health card (appointment schedule). The caregivers and community leaders largely referred vaccination to "injection", and sometimes in terms of where the "injection" is administered. Apostolic caregivers and religious leaders who objected to vaccination (vaccines) identified religious reasons and fears of death and illness (diseases) caused by vaccines, and emphasized the importance of faith healing rituals in protecting their children from vaccine-preventable childhood diseases. Based on their faith, they explained death of a child from a vaccine preventable disease as a 'will and law of God', and rationalized such death based on their religious view that a "child is a like a brick, if it breaks [child dies], you can mold another [give birth to other children]. Such value placed on children by Apostolic members, and their attributing a child's death to God's will, possibly mediates their valuation of vaccination benefits and thus fail to fully appreciate vaccination as a critical public health intervention ensuring child health and survival. However, it should be noted that the Apostolic sect is not homogeneous, and comprises of heterogeneous groups with diverse doctrine. Therefore, such diversity of sub-groups and doctrine has implications for varying acceptance and rejection of immunization (vaccination) and other medical interventions.

The experience of diseases and death of a child shaped caregivers' attitude towards vaccination and use of modern health services. In order to increase chances of child survival through vaccination and health care services, caregivers devised "stealth strategies" in accessing care from health workers. They secretly accessed vaccination and child health services at health facilities, after hours, and private rooms where they are not seen by other community members. The 'gardens' and home-based visits were pathways through which the caregivers obtain medical care, information and vaccination services. These

¹³ Mamdani M (1996) *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*, Princeton, New Jersey: Princeton University Press

¹⁴ Kriss L., Goodson J, Machekeyanga Z, Shibeshi ME, Daniel F, Masresha B & Kaiser R (2016) "Vaccine Receipt and Vaccine Card Availability among Children of the Apostolic Faith: Analysis from the 2010-11 Zimbabwe Demographic and Health Survey", *The Pan African Medical Journal* 24:47 doi:10.11604/pamj.2016.24.47.8663

¹⁵ UNICEF (2015) *Apostolic Maternal and Newborn Intervention (AMENI) Model: Improving Maternal and Newborn Child Health Outcomes among Apostolic Religious Groups in Zimbabwe*, Harare: UNICEF. Report by Brian Maguranyanga and Geoffrey Feltoe

interventions minimize the chances of caregivers from religious objectors going to health facilities publicly, and thus risking sanctions from their church for violating its doctrine on modern health services. The vaccination campaigns, perceived as government directive and mandated program, were welcomed by the caregivers and religious leaders on the basis that they ought to respect the government's law. Therefore, the circumstantial acceptance of vaccination based on a number of reasons reflects a shifting trend in vaccination and healthcare seeking behaviors of Apostolic groups, even religious objectors. In view of such circumstantial acceptance, it would be misleading to speak of Apostolic groups (particularly, the ultra-conservative groups like Johanne Marange) as collective objectors of modern health services. The emerging "stealth strategies" by church members and circumstantial acceptance of health services expand space for Apostolic members to modify their healthcare seeking behaviors toward utilization of health services. These shifts have to be understood in the context of emerging social innovations by health workers, and collaborative efforts between health workers and caregiver / community leaders.

The use of police, legal enforcement, coercive mechanisms, and authoritarian authority of local traditional leaders in public health interventions is controversial, and has to be assessed against human rights and democracy. Instead, "soft techniques (carrot approach), mainly dialogue and engagement, reduce possibilities of backlash associated with the "stick approach". To drive soft techniques in social and behavioral change, sustained communication interventions are crucial in improving knowledge of vaccination, interpersonal relationship between health workers and caregivers and key social influencers, advocacy and community / social mobilization, and changing negative perceptions on vaccination in order to address health challenges in the community.

Recommendations: The following recommendations are important:

- Strengthen health communication interventions that drive increased uptake of pregnancy care services (antenatal care (ANC), institutional delivery, skilled birth attendance) and post-natal care (PNC)
- Leverage and intensify the 'gardens' system and home-based approach to increase vaccination and use of modern medicines while supporting health workers' personal initiatives that strengthen interaction with caregivers
 - The role of secrecy as an empowering strategy should be recognized since it allows caregivers previously deemed powerless to claim their agency and make decisions that have implications for the health of mothers and children
- Strengthen incentive mechanisms and result-based financing in health facilities in order to reward health workers reaching targets on child immunization in their catchment areas
- Policy advocacy on legal framework for child vaccination, and clarify law enforcement on children's right to healthcare
- Religious and traditional leaders' engagement and dialogue to address vaccine hesitancy/refusal and improve child and maternal health outcomes
 - Strengthen involvement of community leaders and male partners in vaccination
 - Raise knowledge and understanding of vaccination among religious and traditional leaders, and promote modification of religious doctrine on use of modern health services to accommodate individual and circumstantial level factors
 - Leverage religious leaders' respect for government and its laws to improve vaccination coverage
- Design and implement a national social and behavior change communication (SBCC) or communication for development (C4D) strategy on immunization

Background

The World Health Organization (WHO) launched the Expanded Program on Immunization (EPI) in 1974, which provides free routine vaccinations to children. In 2012, its Global Vaccine Action Plan set a goal for 90% national coverage with vaccines in national programs by 2020. Notwithstanding this goal, approximately 1.5 million children under age 5 die annually from vaccine-preventable diseases¹⁶.

Zimbabwe has a population of approximately 13,061,239 million, and children under five years constitute 15.1% of the population¹⁷ (Census 2012). Its infant mortality rate is 50 deaths per 1,000 live births and the under-five mortality rate is 69 deaths per 1,000 live births¹⁸ (ZDHS 2015). Zimbabwe continues to experience a disease burden of preventable diseases such as HIV and AIDS, tuberculosis, malaria, diarrheal diseases, and other vaccine-preventable diseases. Vaccine preventable diseases contribute to the total child deaths amounting to approximately 38,766 deaths¹⁹ per year. Such vaccine preventable deaths are inexcusable and tragic. Vaccine hesitancy and refusal continue to pose challenges to reaching immunization targets in the country, and potentially affect the country's ability to drastically reduce infant and child mortality. The vaccine hesitancy and refusal is based on "sociocultural, political, economic, or religious factors" (Kriss et al. 2016), and such barriers affect uptake of vaccination services, and more broadly maternal, newborn and child health (MNCH) services. It is against this background that the Ministry of Health and Child Care (MoHCC) and UNICEF Zimbabwe commissioned this rapid assessment to explore barriers and facilitators to uptake of vaccinations among socio-cultural and religious groups in Masvingo and

Manicaland Provinces in Zimbabwe, and strengthen evidence-based communication and programming strategies for improving utilization of routine vaccination services, and MNCH services.

This qualitative rapid assessment provides insights on social norms, religious doctrine beliefs and practices, and local health service delivery issues, and fill in knowledge gaps regarding routine vaccination, supplementary immunization activity, and immunization campaigns in the two provinces. The qualitative rapid assessment was conducted in selected communities in Gutu district (Masvingo Province²⁰) and Mutare Rural district (Manicaland Province) in Zimbabwe.

Expanded program on immunization in Zimbabwe: Brief overview

The Government of Zimbabwe initiated the Zimbabwe Expanded Program on Immunization (ZEPI) in 1982 as part of a broader effort to fight major vaccine preventable diseases – measles, polio, tetanus, tuberculosis and diphtheria, and Hepatitis B included in 1999. Later the government adopted World Health Organization (WHO) guidelines on Bacille Calmette Guerin (BCG) vaccination for tuberculosis, three doses of DPT (Diphtheria, tetanus and pertussis) vaccine and measles vaccines for children by nine months of age. However, with changes in the guidelines, the government introduced antigens protecting against Hepatitis B and Haemophilus influenza, and the Pentavalent vaccine ("DPT-HepB-Hib, Pneumococcal Conjugate and Rotavirus Vaccines in 2008, 2012 and 2014

¹⁶ Kriss JL, Goodson J, Machekeyanga Z, Shibeshi ME, Daniel F, Masresha B & Kaiser R (2016) "Vaccine Receipt and Vaccine Card Availability among Children of Apostolic Faith: Analysis from the 2010-11 Zimbabwe Demographic and Health Survey", *The Pan African Medical Journal* 24:47, doi:10.11604/pamj.2016.24.47.8663

¹⁷ Zimbabwe National Statistics Agency (2012) *Zimbabwe Population Census 2012: National Report*, Harare: Population Census Office

¹⁸ ZDHS 2015 Key Indicators

¹⁹ WHO (2013) "Zimbabwe: Neonatal and Child Health Profile", African Region. http://www.who.int/maternal_child_adolescent/epidemiology/profiles/neonatal_child/zwe.pdf

²⁰ Masvingo Province had the lowest proportion of children age 12-23 with full immunization (MICS 2014)

respectively in an effort to reduce the incidence of pneumonia and rotavirus diarrhea²¹. In 2015, the government introduced the Measles second dose as Measles Rubella (MR) through a campaign in June 2015. Therefore, ZEPI is one of the key interventions aimed at “reducing vaccine preventable diseases such as pneumonia, diarrhea and measles which are the third, fourth and fifth leading causes of mortality of children under five years of age respectively” (ibid., p5).

According to ZEPI, a child is deemed fully immunized is he/she “receives one dose of BCG Vaccine (vaccination against tuberculosis), three doses each of Pentavalent (a combination of diphtheria, pertussis, tetanus, haemophilus influenzae type b and hepatitis B), three doses of Pneumococcal Vaccine (PCV), Polio Vaccines, one dose of Measles Vaccine and two doses of Rotavirus”²² (MICS 2014:60).

According to MICS 2014, 69% of children age 12-23 months were fully vaccinated compared with 5% that had no vaccinations. Among children age 24-35 months, 54% are fully vaccinated and 6% had no vaccinations (ZIMSTAT 2015). Across all vaccine regimens, the proportion (%) of children vaccinated decreased with subsequent doses of the vaccine regimen. In contrast, the trends in vaccination coverage based on ZDHS 2010-11 and ZDHS 2015 show improvement: from 86.9% to 89.9% (BCG); 79.1% to 81.9% (measles); 64.5% to 72.7% (all basic vaccinations); 12.2% down to 9.8% (no vaccinations). While recognizing the differences in methodology between MICS and ZDHS, the two surveys point to the gaps in meeting the immunization target of 95%, and more concerning is the

drop in the proportion of children fully vaccinated (based on MICS 2014) and the increase in proportion of children age 12-23 months who had no vaccinations (ZDHS 2015 shows higher percentage than MICS 2014).

The proportion of children with no vaccinations against vaccine preventable diseases is a major concern, and affects the country’s ability to meet the immunization coverage target of 95%. The ZDHS 2015 reports that “73 percent of children age 12-23 months are fully vaccinated, while 10% have not received any vaccinations” (ZIMSTAT 2016:20). In addition, urban areas had higher proportion of children (85.3%) with full vaccination than rural areas (78.4%). The data also show socio-demographic and sub-national level variations in immunization coverage as well as downward trend in routine immunization coverage and full vaccination (from 80% in 1994 to 64.5% in 2011), which reflect the need for the country to strengthen immunization interventions and significantly reduce under-five mortality (U5M) attributable to vaccine-preventable diseases²⁴.

Despite these challenges, the Zimbabwe Expanded Program of Immunization (ZEPI) has been making progress in “expanding the range of vaccines for child and woman immunization”²⁵ and applying “innovative strategies such as Reaching Every District (RED)²⁶, Child Health Days (CHDs), Child Health Weeks (CHWs), Extended Outreach Strategies (EOS), catch up and follow up measles campaigns”²⁷. The “increasing trend toward vaccine refusal and hesitancy”²⁸, incomplete vaccination in some communities, overall recent decline²⁹ in immunization coverage, and poor uptake of vaccination services among some socio-cultural and religious groups

²¹ Ministry of Health and Child Care (2014) *Zimbabwe Expanded Program on Immunization Comprehensive Multi-Year Plan 2015-2019*, Harare: Government of Zimbabwe, p4

²² Zimbabwe National Statistical Agency (2015) *Multiple Indicator Cluster Survey 2014*, Harare: ZIMSTAT

²³ ZIMSTAT & ICF International (2016) *Zimbabwe Demographic and Health Survey: Key Indicators*, Rockville, Maryland, USA: ZIMSTAT and ICF International

²⁴ Mukungwa T (2015) “Factors Associated with Full Immunization Coverage amongst Children aged 12-23 Months in Zimbabwe”, *African Population Studies* 29(2): 1761-1774

²⁵ Ministry of Health and Child Care (2015) *Report on Evaluation of Coverage Achieved during Zimbabwe Measles/Rubella and Vitamin A Catch Up Campaign combined with Assessment of Routine Immunization: Part II Coverage Survey: Routine Immunization*, December 2015, Harare: MoHCC National Expanded Programme on Immunization

²⁶ See Muchekeza M, Chimusoro A, Ncube N & Pomerai KW (2014) “An Evaluation of the Reaching Every District (RED) to Reach Every Child (REC) Immunization Strategy in Mberengwa District, Midlands Province 2007-2010”, *Vaccines & Vaccination* 5(4) <http://dx.doi.org/10.4172/2157-7560.1000235>

²⁷ UNICEF and WHO (2010) *Measles Outbreak Response in Zimbabwe: A Proposal to Respond to and Control the Ongoing Measles Outbreak in Zimbabwe*, March 2010. Harare: UNICEF & WHO

(communities) deserve our attention. Incomplete vaccination and inadequate levels of immunization against childhood diseases are public health concerns. These may lead to a “large pool of susceptible” especially when immunization coverage is lower than target (95% coverage at national and district levels by 2020), and consequently undermine “universal immunization against vaccine preventable diseases”³⁰.

Therefore, the immunization remains a critical, cost effective public health intervention to address infant and child mortality, promote child health / survival and socio-economic development in the country. Reducing under five mortality requires increased use of “key health interventions such as immunization, the use of insecticide-treated bed nets to prevent malaria, and Vitamin A supplementation” (Mukungwa 2015).

■ Problem Statement

Vaccine hesitancy, refusal, and increasing the proportion of children with no vaccinations are major concerns. These pose challenges to reaching the immunization goal (universal childhood immunization) and immunization coverage targets for children under five years. Caregivers’ vaccine hesitancy and refusal to have children immunized against vaccine-preventable diseases or use child health services for child illnesses is influenced by socio-cultural, religious, economic, political, and institutional factors³¹, which affect child healthcare seeking behavior and vaccination uptake. While other studies³² highlight factors and contextual issues affecting vaccination uptake, perceptions and attitudes of health workers and socio-cultural and religious objectors (caregivers, traditional and religious leaders) toward vaccination have not been fully understood qualitatively. There is fragmented evidence

and/or dearth of qualitative evidence on drivers of vaccine hesitancy and refusal (socio-cultural and religious), reasons for incomplete vaccination, demand- and supply-side issues affecting routine immunization as well as missed opportunities for immunization of children under five years. The decline in routine immunization points to barriers and contextual influences including socio-cultural beliefs, MNCH and immunization services delivery, individual and household level factors, and institutional factors. Therefore, this study builds our understanding of vaccine hesitancy and refusal among socio-cultural and religious groups in Manicaland and Masvingo Provinces in Zimbabwe, and offers evidence to refine SBCC strategies and improve collaboration with socio-cultural and religious objectors or vaccine hesitant groups for improved child and maternal health outcomes.

²⁸ WHO (2015) Qualitative Assessment of Vaccine Hesitancy among Members of the Apostolic Church of Zimbabwe: A Case Study, Unpublished Paper, Harare: WHO

²⁹ Mukungwa T (2015) “Factors Associated with Full Immunization Coverage amongst Children aged 12-23 Months in Zimbabwe”, *African Population Studies* 29(2): 1761-1774

³⁰ Ministry of Health and Child Care (2014) *Zimbabwe Expanded Programme on Immunization: Comprehensive Multi-Year Plan 2015-2019*, Harare: Ministry of Health and Child Care

³¹ Kriss JL, Goodson J, Machekanyanga, Shibeshi ME, Daniel F, Masresha B & Kaiser R (2016) “Vaccine Receipt and Vaccine Card Availability among Children of the Apostolic Faith: Analysis from the 2010-11 Zimbabwe Demographic and Health Survey”, *The Pan African Medical Journal*, 24:47. doi:10.11604/pamj.2016.24.47.8663

³² Maguranyanga B (2011) *Apostolic Religion, Health and Utilization of Maternal and Child Health Services in Zimbabwe*, Harare: UNICEF

Ha W, Gwavuya S & Kanjale C (2014) “Is Religion the Forgotten Variable in Maternal and Child Health? Evidence from Zimbabwe”, *Social Sciences & Medicine* 2014, 118: 80-88

Ha W, Salama P, Gwavuya S & Kanjale C (2014) “Equity and Maternal and Child Health - Is Religion the Forgotten Variable in Maternal and Child Health? Evidence from Zimbabwe”, Paper presented at “Addressing Inequalities: The Heart of the Post-2015 Development Agenda and the Future We Want for All”, Global Thematic Consultation, October 2012

Mpofu E, Dune TM, Hallfors DD, Mapfumo J, Mutepfa MM & January J (2011) “Apostolic Faith Church Organization Contexts for Health and Wellbeing in Women and Children”, *Ethn Health* 16(6): 551-566

Chitando E, Gunda MR & Kugler J (eds) (2014) *Multiplying in the Spirit*, Bamberg: University of Bamberg Press

UNICEF (2015) *The Apostolic Maternal Empowerment and Newborn Intervention (AMENI): Improving Maternal and Newborn Child Health Outcomes among Apostolic Religious Groups in Zimbabwe*, Harare: UNICEF. Report by Maguranyanga B & Feltoe G.



■ Rapid Assessment Objectives

In addressing the abovementioned challenges, this Rapid Assessment was guided by the following objectives:

- To examine socio-demographic characteristics of caregivers with vaccine hesitancy in the selected communities
- To identify factors contributing to uptake and utilization of vaccination services and maternal, newborn and child health (MNCH) services
- To examine reasons behind vaccine hesitancy, refusal and poor uptake of vaccination services in the selected communities
- To make recommendations for strengthening vaccination and social and behavioral change communication (SBCC) interventions aimed at improving routine immunization and uptake of child health services

■ Rapid Assessment Questions

The **rapid assessment** sought to answer the “why” and “what” aspects of the research problem and meet the assessment objectives.

The **primary question** was: Why is there vaccination hesitancy and declining routine immunization coverage in some communities in Zimbabwe?

The **secondary questions** are:

- What drives vaccination hesitancy, refusal and poor uptake of vaccination services among selected socio-cultural and religious groups in Zimbabwe? How have caregivers navigated their social landscape to get children vaccinated despite socio-cultural and religious constraints?
- What is the influence of local leaders in the uptake of MNCH services, including vaccination services?
- What local demand generation interventions are implemented to improve routine immunization and supplementary immunization activities for children under five years of age? How effective are these interventions?
- Which supply-side issues influence the uptake of vaccination services in local communities? Which strategies have been employed by healthcare providers to improve vaccination coverage and uptake of MNCH services among socio-cultural and religious objectors?
- What recommended strategies and interventions improve vaccination of children under 5 years of age, and uptake of MNCH services?

These research questions examine barriers and facilitators to uptake of vaccination services. They highlight demand-side and supply-side factors and other key factors (at various socio-ecological levels) that contribute to uptake of vaccination and MNCH services in Zimbabwe. Understanding the perspectives and experiences of caregivers, traditional and religious leaders, and

healthcare providers on vaccination is crucial in strengthening programming and communication for development (C4D) interventions aimed at improving demand for, and uptake of, vaccinations and MNCH services as well as inform social and behavioral change communication interventions.

Therefore, in exploring qualitatively the barriers and

■ Assessment's Propositions

The key propositions were:

- Social norms and religious doctrine shape health seeking behaviors related to vaccine-preventable diseases, and serve as key barriers to uptake of vaccination services.
- Health workers' attitudes undermine routine immunization and supplementary immunization activities resulting in incomplete vaccination of children

³³ It is important to understand reasons for incomplete vaccination as well as identify factors contributing to missed opportunities for vaccination in children. Refer to: Abdulraheem IS, Onajole AT, Jimoh AAG & Oladipo AR (2011) "Reasons for Incomplete Vaccination and Factors for Missed Opportunities among Rural Nigerian Children", *Journal of Public Health and Epidemiology* 3(4): 194-203

³⁴ The Apostolic sect groups have been largely identified as key religious objectors to vaccination in Zimbabwe. Refer to: Pomerai KW, Mudyiradima R & Gombe (2012) "Measles Outbreak Investigation in Zaka, Masvingo Province", *BMC Research Notes* 2012, 5:687 <http://www.biomedcentral.com/1756-0500/5/687>

Kriss JL, Goodson J, Machekeyanya, Shibeshi ME, Daniel F, Masresha B & Kaiser R (2016) "Vaccine Receipt and Vaccine Card Availability among Children of the Apostolic Faith: Analysis from the 2010-11 Zimbabwe Demographic and Health Survey", *The Pan African Medical Journal*, 24:47. doi:10.11604/pamj.2016.24.47.8663

Theoretical Approach:

Social Ecological Model (SEM)

The Social Ecological Model (SEM) was applied to understand the multifaceted and interactive effects of individual (personal) and environmental factors that influence and determine behaviors. It recognizes that health outcomes are “shaped less by individual behavior and more by the wider environment in which people live and make choices, influenced by family, peers, local beliefs and values, cultural norms and practices and political and economic circumstances”³⁵. An individual’s behaviors and health outcomes are nested within different levels of the social ecological system as depicted by “the overlapping concentric circles, through which pathways of influence

can take multiple routes” (ibid). These five nested, hierarchical levels are the individual, interpersonal, community, organizational, and policy/enabling environment (Figure 1). In applying SEM, it was possible to identify and examine factors at each of the SEM levels in terms of how they influence vaccination as well as locate possible social and behavior change communication interventions at each level. The model recognizes that combining interventions at all levels of the social ecological system is crucial for improvement in health interventions (including vaccination) and sustainable social and behavior change.

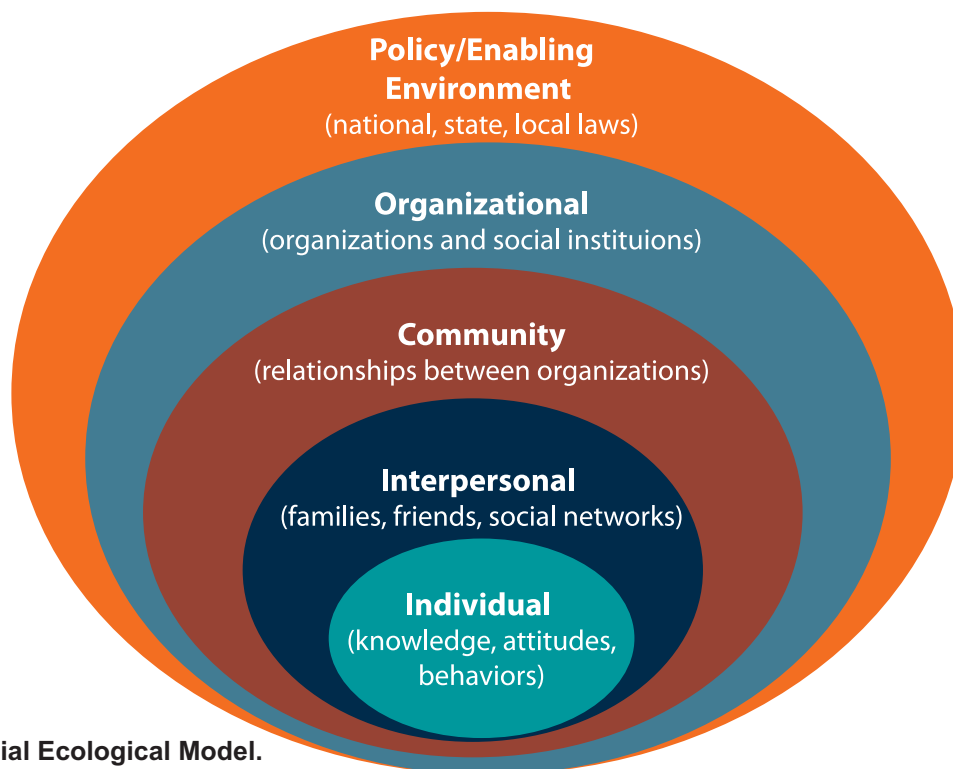


Figure 1. The Social Ecological Model.

Source: UNICEF³⁶

³⁵ Busza J, Walker D, Hairston A, Gable A, Pitter C, Lee S, Katirayi L, Simiyu R and Mpofu D (2012) “Community-Based Approaches for Prevention of Mother to Child Transmission in Resource-Poor Settings: A Social Ecological Review”, *Journal of the International AIDS Society* 2012, 15(Suppl 2):17373 <http://www.jiasociety.org/index.php/jias/article/view/17373> | <http://dx.doi.org/10.7448/IAS.15.4.17373>

³⁶ www.unicef.org/cbsc/files/Module_1_SEM-C4D.docx

Methodology –

Design, Methods and Sampling

Research Design

The rapid assessment was a descriptive qualitative study aimed at yielding rich, in-depth information on knowledge, attitudes and practices (KAP), perceptions on vaccination, child healthcare seeking behaviors, and characteristics of socio-cultural and religious objectors as well as drivers of vaccine hesitancy and refusal among communities in Manicaland and Masvingo Provinces in Zimbabwe. It examined barriers and facilitators to vaccination and uptake of immunization services at various socio-ecological levels.

Study Population and Sampling

The rapid assessment was conducted in Mutare Rural District and Gutu District in Manicaland and Masvingo Provinces respectively. Manicaland Province's Mutare Rural District was purposively selected because of the high population of the Apostolic Sect, whose members especially of Johanne Marange and other Apostolic groups have strong religious doctrine that forbids the use of modern medicines and healthcare services. Masvingo Province has the lowest vaccination coverage in terms of children age 12-23 months with full vaccination (78.1% according to MICS 2014; 60.3% according to ZDHS 2015). It has the highest proportion (20.7%) of children age 12-23 months who had no vaccinations, followed by Manicaland Province with 14.4% (ZDHS 2015).



The study population comprised purposively sampled³⁷ caregivers, local leaders (religious and traditional), and health workers in order to obtain deeper understanding of knowledge, attitudes, perceptions, practices and experiences related to child vaccination / immunization and uptake of MNCH services in the selected communities in Gutu District in Masvingo Province and Mutare Rural District in Manicaland Province in Zimbabwe. Purposive sampling of caregivers (mothers, grandmothers, aunts, fathers and other categories), local leaders and health workers enabled the Rapid Assessment to capture perspectives of diverse actors. An iterative process of purposive sampling ensured that new participants were selected to respond to new, emergent or unexpected evidence in the Rapid Assessment. In view of our need to need to obtain participants with characteristics relevant to the Rapid Assessment objectives, mixed purposeful sampling – combining elements of purposive, snowballing, theoretical and convenience sampling – was employed to recruit sufficient participants³⁸.

³⁷ Purposive sampling is “a method of selecting individuals with qualities of interest to the research question” (Doherty et al 2006:2422)

³⁸ Creswell JW (1998) *Qualitative Inquiry & Research Design: Choosing among Five Traditions*, Thousand Oaks, CA: Sage Publications Inc.

Moriarty J (2011) “Qualitative Methods Overview 1: Improving the Evidence Base for Adult Social Care Practice”, School for Social Care Research, London School of Economics and Political Science, *Methods Review 1*, London: National Institute for Health Research

Patton MQ (2001) *Qualitative Evaluation and Research Methods*, Newbury, CA: Sage Publications

Methods

A total of **60 participants** participated in focus group discussions (FGDs), in-depth interviews (IDIs) and key informant interviews (KIIs). Caregivers with children under 5 years of age were purposively identified through a mixture of convenience and snowballing sampling approaches. Local leaders and health workers were purposively selected on the basis of satisfying the characteristics required to better inform the objectives of the rapid assessment.

Four FGDs comprising of 36 female caregivers who resided in the local study community were conducted, and they covered relevant topics including knowledge, perceptions, attitudes, and experiences with vaccination and healthcare. FGDs generated qualitative data that offered interpretative understanding of influences on vaccination and health care seeking. **In-depth interviews (n=6)** with caregivers age 18 years and above were also conducted to capture individual attitudes, perceptions and

experiences. A total of 14 **key informant interviews** were carried out with eight health professionals, two village health workers, and four community leaders (religious leaders, village heads /sabhuku, Chief).

A desk review of secondary sources - peer-reviewed articles, grey literature, official documents, and policy documents on vaccination / immunization was undertaken to generate evidence on challenges and opportunities in routine immunization and campaigns. Relevant studies on vaccination / immunization in Zimbabwe were identified using keywords, and full articles were searched using internet search engines (Google Scholar) and online/electronic databases. The desk review highlighted vaccine hesitancy and refusal, social norms, healthcare seeking behaviors, and supply-side factors related to childhood illnesses or vaccine-preventable diseases in Zimbabwe and the region, and therefore generating insights and lessons for Zimbabwe Expanded Program of Immunization (ZEPI).

Ethics

The Rapid Assessment (study) protocol was submitted to the Medical Research Council of Zimbabwe (MRCZ) as a new application for Exemption from Ethical Review (Approval Number MRCZ/E/150), and support for the study obtained from the Ministry of Health and Child Care, provincial and district authorities (Health, Local Government Administrators and Councils). Security clearance and permission of traditional leaders and councilors were sought to collect data in the study sites. In line with the study protocol ethics, written informed consent was obtained from all study participants, and having shed light on the rapid assessment (study) objectives and explained participants' rights, and ensured their

confidentiality and anonymity. Permission to record interviews and FGDs on digital audio recorders was sought, and all participants agreed for the interviews and FGDS to be recorded in digital audio recording device.

In this Rapid Assessment, only sampled community members and health workers in the study sites who consented to participate were interviewed, and no minors and any special populations (individuals living with disabilities) were recruited. No tests, collection and analysis of samples (bio-specimens) were conducted nor vaccinations administered.

■ Data Analysis

The FGDs, IDIs and KIIs were fully transcribed and translated from local language to English, and the typed transcripts and field notes with observations (in MS Word) were reviewed independently by the Principal Researcher and two supporting researchers. They analyzed the transcripts, and through systematic identification and coding of themes, explored emerging themes and sub-themes relevant to the Rapid Assessment objectives. Most of the categories were generated deductively from guides, and further complemented by emerging categories from the ongoing analysis. Illustrative quotes were selected to reinforce the analysis. In addition, an iterative analysis process was employed, and original data reassessed after each analysis to identify any missing information that may be critical for addressing the Rapid Assessment objectives. The Principal Researcher and two supporting researchers

debated the identified themes to facilitate analytical refinements and saturation point in data analysis (i.e., no new themes or ideas were emerging from the analysis).

In essence, the transcripts (data) were initially subjected to content analysis, and then thematic analysis. The content analysis determined the meanings, and identified themes and patterns in the data. The data were classified and coded into various categories, and different characteristics brought out. The thematic analysis entailed identifying key categories and recurrent themes concerning vaccination / immunization, vaccine hesitancy and refusal; caregivers, health workers and local leaders' perspectives and experiences; barriers and facilitators to vaccination and uptake of modern health services.

■ Conflict of Interest

The investigator conducted the study as a Consultant contracted by UNICEF in collaboration with the Ministry of Health and Child Care (MoHCC) but undertook the research independently without undue influence from UNICEF and MoHCC. Hence, he exercised professional integrity and research independence in the conduct of this Rapid Assessment.

Results

Table 1 below shows the socio-demographic characteristics of the female caregivers in the study sample. Twenty-two caregivers were affiliated to apostolic sect religion (61.1%), and followed by Protestants (19.4%). The majority of the caregivers had secondary education (61.1%), were married (91.7%), and had their children vaccinated (88.9%) and with health cards (74.3%). Other socio-demographics are available under Appendix A.

Table 1: Socio-demographic characteristics of caregivers in the study sample

Variables	Frequency	Percentage
Age		
20-24 years	6	16.7
25-29 years	9	25.0
30-34 years	9	25.0
35-39 years	8	22.2
40-44 years	4	11.1
Marital Status		
Married	33	91.7
Widowed	3	8.3
Religion		
Traditional	1	2.8
Catholic	1	2.8
Pentecostal	5	13.9
Protestant	7	19.4
Apostolic	22	61.1
Highest Level of Education		
No Education	1	2.8
Primary	13	36.1
Secondary	22	61.1
Number of Children		
1-2	8	22.9
3-4	18	51.4
5+	9	25.7
Child/Children Vaccinated*³⁹		
Yes	32	88.9
No	4	11.1
Health Card(s)*		
Yes	26	74.3
No	9	25.7

³⁹ * The research team did not request the caregivers to verify self-reports of vaccinated children and health cards, and therefore the figures merely reflect self-reported information.

Awareness, knowledge, and perceptions of vaccination

The caregivers were aware of vaccination as an important intervention in protecting children from preventable diseases. Such awareness was not anchored on knowledge of vaccines for specific diseases. Most of the caregivers did not associate vaccinations with specific diseases but generally referred to them as “injections”:

“*...you are supposed to take them [children] to the clinic and get injected because if they are not injected, they might be affected by diseases*”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

“...administering injections to children”

(FGD, Caregivers of children under 5, Marange, Mutare Rural District)

“I don’t know the vaccines but we are just told to come and get our children injected...we are just told to bring our children at six weeks, fourteen weeks, and at nine months”

(IDI, caregiver of children under 5, Zvipiripiri, Marange, Mutare Rural).

Vaccinations were mainly associated with measles, tetanus, polio and diphtheria but the vaccination for specific diseases were hardly identified by name (vaccine name). Some women identified the vaccine by the vaccination schedule, whether it is the first vaccine or last vaccine without really knowing what disease is prevented by that vaccine. Rather, they only “heard from the nurses that vaccination helps children by preventing sicknesses” (FGD, Caregivers of children under 5, Marange, Mutare Rural District).

Some women identified the vaccine by where it is administered – whether on the arm, leg or oral (mouth), and hence called the arm or leg injection (kubayiwa pa rwoko kana pagumbo) or kudonedzerwa mukanza (oral drops). However, most women associated vaccination with injection, and the Vitamin A with drops.

The vaccinations were also associated with prevention, protection and treatment of illnesses, and the women spoke of prevention and treatment interchangeably:

“I think if my baby is injected, everything is fine. I feel that my child was treated”

(FGD, Caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural District).

“I heard from the nurses that vaccination helps children by preventing sicknesses; that’s how it helps”

(FGD, Caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural District).

“...children are supposed to be protected. All diseases are prevented through injections”

It seems that most women know passively about the vaccination schedule without active understanding of the purpose of the vaccines:

“The way I know it, our nurses prepare their injections, and when we bring our babies, they are injected and we go home. We don’t know how they are prepared and what they are for [specific use]. Whenever I hear that there are vaccines for measles, or Vitamin supplements, that’s what I will be thinking when I’m on my way. What I know is that my child will get injected or have drops”

(FGD, Caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural District).

Without a clear understanding of the vaccination schedule in the “child card” and benefits of the scheduled vaccines, the caregivers merely perceive vaccination as a single continuum and do not distinguish the vaccines from one another.

“Vaccines are at the clinic. If you go with your child, she will get vaccinated at different stages. At birth, then you go for 6 weeks, 10 weeks, 14 weeks, 9 months, 1 year and 6 months. That’s when they get last vaccinations. They then take vitamins after every 6 months...”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

It is possible that this may contribute to caregivers missing some vaccinations without recognizing that the missed vaccination may expose their children to some of the vaccine-preventable diseases.

Perceived side-effects of vaccination

Some caregivers perceived vaccinations to cause pain and certain illnesses / diseases, and anecdotally narrated stories of children who cried a lot, vomited, and had fever after being vaccinated.

“When the child is vaccinated, the body temperature might go high sometimes but it's normal”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

“...I don't remember which vaccine it was. She went with the child and after that the child started vomiting. The mother thought it was going to end. After vomiting the body temperature started to increase...”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

Adverse events following immunization

In the study site in Gutu District, the women in the FGDs spoke about death of a child in 1997 purportedly following immunization, and this story was narrated vividly almost 20 years later. While the health workers did not confirm it, the story appears to be widely known in the community and used to explain some hesitancy towards vaccination. Some experiences of adverse events following immunization (AEFI) were also reported by a Village Health Worker but this could not be directly verified.

“...She gave birth to a girl child and went with her to get injected. The child was not sick but when she came back home the child died...The child died on her back when she was carrying her but did not realize it. She only realized that the child was dead when she arrived at home”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

“...I don't remember which vaccine it was. She went with the child and after that the child started vomiting. The mother thought it was going to end. After vomiting the body temperature started to increase. She took the child to the Mission hospital, and the child died just after arriving at the hospital. It happened in 1997”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

“...some face challenges like death, like I said earlier of a child who was vaccinated at six weeks and eventually died. But this does not happen always. Since I came to this area, I only witnessed that incident”

(VHW, Makumbe, Gutu District)

The story of the adverse event following immunization also highlights the delay in seeking care after the child starting showing danger signs. It also points to the power of this shared anecdote even after almost two decades, and some people use it to explain vaccine refusal.

Supplementary immunization activities (SIAs) and immunization campaigns perceived as risky

Some caregivers mistrust supplementary immunization activities and campaigns primarily because of misunderstood motives, stories and rumors of adverse events following immunization (AEFI), and the frequency of the SIAs and campaigns.

“

“Some people refuse vaccinations during supplementary immunization activities (SIAs) as risky and ad hoc (ma injections ekumukira). They say that there is Satanism, and people are looking for blood in different ways. Mostly people follow those ones [vaccines] given at the hospital with stages [routine immunization] until they finish. They don't like those ones administered during campaigns, For example, people are now afraid of these incidences like deaths. People don't like vaccinations during campaign programs, ma injections ekumukira”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

“...the injections that were administered during the last days were not liked by people because 'it was said, that there are areas where some children received vaccinations and died”

“...there are always campaigns, after three months you hear that there is another one. People end up asking what kind of injections are these that do not come to an end”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

”

SIA and campaigns as government directives / mandatory programs

The caregivers, community leaders and health workers highlighted the vaccination campaigns and SIAs are perceived as government directives and mandatory programs, which should be adhered to by all community members. Hence, even some religious objectors felt that SIAs and vaccination campaigns provide opportunities for caregivers to have their children vaccinated. They emphasized that vaccination during SIAs and campaigns be made mandatory, and advocated for door-to-door follow-up for immunization since they enable some Apostolic women to get their children vaccinated without fear of religious sanctions. In addition, the Apostolic leaders interviewed in this study expressed their respect for government directives and policy, and stated that they would adhere to government directive and policy on immunization (especially during SIAs and vaccination campaign) but would reluctantly encourage routine immunization:

“

“They [children] were only vaccinated during campaigns”

“Some of them were vaccinated during the door-to-door campaign, and that was it”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural)

“We wish the people [health workers] could do that [mobile outreach / door-to-door vaccination campaign] every year. The village health workers should continue doing that because our church does not allow us to come to the clinic. But they say, if the nurses come to your home, it’s not a problem...”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

”

Therefore, the sense that vaccination should be a government directive or policy, which should be adhered to or enforced by the police raises a number of fundamental questions for vaccination campaigns and routine immunization. It begs the core question of how to enforce routine immunization without violating individual rights and extending policing into the private sphere.

“

“They say they are under the government, so since it [vaccination campaign] is a government policy, they [Apostolic members] follow it and they cannot oppose it”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

“Yes, just for that time, they say if the government has a policy that needs to be followed, let’s follow the policy for that time. When that is over, then we can go back to our old ways”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

”

“

“That’s why they stand in a queue and the one whose child has received vaccination will then go to the church leader to be cleansed. The health workers come for meetings so the leaders now understand that they are in a country that has laws, and they have to follow those laws. After vaccinating your child you go straight for cleansing”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

”

Even the religious leaders in conservative Apostolic churches agreed on the importance of ‘government directives’ on vaccination but felt that they would not publicly encourage vaccination to their church members. However, they would not impose religious sanctions on their members but rather provide ‘cleansing’ ceremonies and prayers for the vaccinated children and their parents.

“

“...they go to the holy place, to the church leader, and they ask for an appointment. When that day comes, they go and inform the high priest that there is a campaign on such a date. The church leader will give them the green light to come and vaccinate. Even after saying that, some people refuse despite the high priest having agreed to vaccination. However he does not publicly tell the church members that they should go for vaccination but he would have agreed. And he knows that after the vaccination the church members will be cleansed”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

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Door-to-door, home-based approach

Another intervention promoting vaccination of children among socio-cultural and religious objectors is the “door-to-door”, home-based approach in communities. This approach was emphasized mainly by caregivers of Apostolic churches who felt that the approach gave the compelling reasons to adhere to vaccination and justify the vaccination to their male partners.

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“If the health worker comes to our homes, they [leaders and men] will not oppose because it’s a community program”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

“If you go to the clinic without permission [of the religious leaders], and then come to the durawall [place of worship], you don’t get inside. You wait outside because they would say you are defiled for having used medication. You have gone to the clinic out of your own will. But if the health worker comes to your home, they [health worker] would have ‘forced’ you to vaccinate your children. ‘What did you want me to do? Did you want me to flee from my home? So I just agreed’. Yet you would have called them [health workers] over to come to your home so that your child can be vaccinated”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

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Schools as spaces for improving vaccination coverage

For children who are over the age of five years, vaccination initiatives in schools was identified as a viable option to ensure that socio-cultural and religious objectors’ children get the vaccinations:

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“If the health workers go to the schools, they will be able to vaccinate everyone, and the children will just line up. They [children] just tell their parents that they were told to eat in the morning because they will receive vaccines, and even Apostolic and non-Apostolic children will be vaccinated”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

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However, when caregivers of school-going children who object to vaccination know about the scheduled vaccination at school, they would decline their children from attending school:

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“Even if during the campaign, they tell their children to run away from school if they come to know the dates of the campaigns, they don't send children to school during campaign days unless if health workers come without notice...”

(FGD with caregivers, Makumbe, Gutu District).

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■ Perceived benefits of vaccination

The results showed that knowing the benefits of vaccination improved acceptance of vaccines among caregivers and community leaders, and hence strengthening the motivation for seeking vaccination services and encouraging caregivers to get children vaccinated. The caregivers who claimed to have vaccinated their children, and adhere to vaccinations emphasized that vaccination reduces the intensity of diseases, improves child health and prevents death from preventable child diseases:

(a) Vaccination reduces intensity of diseases

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“...if your child is vaccinated, chickenpox will not be very powerful when it affects your child”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

“Injections are important to prevent measles because when it [measles] comes, it will not be very powerful. We might not even know if the child is affected because she will be playing ...”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

“Yes, we believe our children are not affected by many diseases like flu. Even if they get affected but it won't be serious, meaning that vaccines do work for the children”

” (FGD, Caregivers of children under 5, Makumbe, Gutu District).

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(b) Vaccines improve health of the child

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“What I need is my child to be in good health. If the injection can make my child healthy, it’s good. Crying does not matter. The child will stop crying anyways but as long as she got the vaccine... Otherwise injections are not bad if they can protect the child”

(FGD, Caregivers of children under 5, Makumbe, Gutu District).

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Apostolic religion and healthcare seeking behaviors

The results highlighted the influence of Apostolic doctrine, particularly of Johanne Marange Apostolic Church and other conservative Apostolic churches that restrict use of modern healthcare services and medicines while emphasizing faith healing and Apostolic healing rituals. To appreciate responses to maternal and child health needs among religious objectors, one needs to explore the values and perspectives on life, death, children and women as well as philosophy on reproduction.

Religious doctrine and beliefs

The restriction on use of modern healthcare services is anchored on faith in God and Apostolic healing system while death is perceived as the will and law of God. Children are deemed ‘replaceable’ and their death explained ‘easily’ in terms of God’s will and law.

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“In our religion, people are not allowed to go to the clinic. If a child dies, you will give birth to another one. But as mothers, we know that giving birth is painful. That’s why some of us tell nurses to come and help us secretly because getting pregnant every year is not easy. We are at risk of maternal deaths”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“Some say a child is a brick, you can always mold another one [laughter]. That’s what they say...”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“They site that people die everywhere. Even at church or at the hospital people die”

(IDI, caregiver of children under 5, Zvipiripiri, Marange, Mutare Rural).

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Given these views, the religious doctrine on non-use of modern healthcare services including vaccination influences healthcare seeking behaviors of Apostolic caregivers, and increases the risks of Apostolic children to vaccine preventable diseases and preventable deaths.

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“They have their beliefs and they are not afraid of death. When a child dies they say it was God’s and there is nothing that overcomes God.”

(VHW, Makumbe, Gutu District)

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Religious sanctions and social harm related to use of modern healthcare services

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“...all [my children] are not vaccinated because we are not allowed to take them for vaccination. The church does not allow that. Maybe if the health workers move around in the villages, it might save our children from death... If you take your baby and say you want to go to the clinic, there will be war at home. Our husbands don’t want to hear that yet the child will be sick. So if they [health workers] move around in the villages, it would help our children get medication”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“People fail to vaccinate because of religion. If they see you here, you will be banished from the church... It means that you are unholy, and you are not supposed to be in church. Once they see you at the clinic, word will get to the elders, and they tell you that ‘you’re not supposed to be in church. You must not even wear church garments.

So many people are afraid that they will not be allowed to wear church garments because they would have gone to the clinic...”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

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Health care seeking pathways

Notwithstanding the barriers imposed by religion, the female caregivers identified several avenues for overcoming them and ensuring that their children are vaccinated and access child health services. The pathways for healthcare seeking include using health services secretly and privately:

Secrecy as pathway to child vaccination

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“We are from the Apostolic sect, and our coming to the clinic is something secretive. We do not come here freely. We then realized it was better to seek help for our children by having them vaccinated. So when I started vaccinating my children, I noticed a difference. I never face any of the challenges [health] I faced in the past”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“My husband didn’t know about it but I later told him, and he said it is fine. Yes, he knows it and he can now see that he was the one who was backward because we would come to the clinic without telling him. I would lie that we were going to get firewood”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“Some people are now doing it secretly. This ward is Apostolic dominated. So entering this gate [clinic] is taboo. So if there are programs for the ward, it’s better if they are done secretly. We have what we call the ‘gardens’, you can come and have a look there. It’s something that we are telling you in confidence so that you can help others to prevent deaths because children are dying from lack of vaccination”

(FGD, caregivers of children under 5).

“As a mother I would love the immunization to be done secretly since this would enable us to do it without fear and also that a single person [health worker] should be assigned to come and vaccinate my children”

(IDI, caregiver of children under 5, Zvipiripiri, Marange, Mutare Rural).

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Secrecy provides the privacy needed to get children vaccinated, and the collaboration between health workers and caregivers seems to create sustainable opportunities for women and children to access modern health services and medicines.

“If they have knowledge of the importance of modern medicines, they can even send someone to get family planning pills without husband’s knowledge. They do the same for vaccinations. They pretend as if they are going to the township with the child. But if they are seen at hospital, it becomes a problem...So they pretend as if they are going to Gutu, and then they vaccinate their children”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

“If we see them here [at the clinic] we serve them quickly because they would have run away from home. These people are not even free, even if they come, they will be rushing because they don’t have that freedom to access health services”

(Service Provider, Mutare Rural)

Previous loss of children as a motivating factor for child immunization

The results indicated how previous loss of child served as motivating factor to seek vaccination services in order to prevent death of a child from vaccine-preventable diseases. Having witnessed the improved health of an immunized child, the caregivers would actively ensure that their children are vaccinated.

“I believe they [vaccines] can protect my children because before we started using health facilities, I had children who fell ill and one of them passed away. But since I started to have my child vaccinated, I have never had any problem”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“Yes, two of them died. They were not vaccinated because of the church we attend. I then thought it would be better that I try and have my children vaccinated, and see what happens. That is when it changed for the better. I now have five children... I believe that it [vaccination] saved my child, and the others at home. I am also from the Apostolic Sect, and we do these things [vaccination] secretly...”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“I took the risk with the first child. Now I come to the clinic secretly. It's better now. I buried 4 children, so this one comes after one who is at home...They [4 children] were not vaccinated because we were 'praying' [laughter in the FGD]. We were overzealous about our religion. Whenever people talked to me about the clinic, I would disagree with them. I thought they wanted to lead me astray but I later realized that I was the one 'lost' because every time there was a funeral, I was the one morning...I later realized that if I go to the clinic, it would help my children live”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“...I lost my children to these vaccine preventable diseases and had no knowledge that hospitals are so helpful. Now that I know they are so good I like it because my children are surviving and they are healthy...having lost my children before to these vaccine preventable diseases I now know that for them to live I have to get them vaccinated”

(IDI, caregiver of children under 5, Zvipiripiri, Marange, Mutare Rural).

Emotional plea for vaccination following loss of a child

The strong emotions triggered with loss of a child, and the costs of not vaccinating children, provide opportunities to reconsider the value and benefits of vaccination. These feelings and emotions were largely articulated by women from the Apostolic churches who lamented the needless deaths of the children from vaccine-preventable diseases. They recognized the errors of their religious doctrine that forbids use of modern healthcare services (including vaccination) and equate children with bricks, and hence contributing to infant and child mortality from vaccine-preventable diseases.

“It's hard to be mourning your children time and again, yet there is something [vaccination] that can help you”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

Positive, beneficial experience with vaccination

Caregivers who had positive experiences with vaccination of their children were able to navigate the religious landscape and doctrine forbidding use of vaccines and modern health services. Upon discovering their children were battling worms, some religious objectors wanted medical treatment for their children.

“*Especially some of us who are Apostolic don't believe in hospitals. But last year when health workers visited us in the villages, we didn't have any problems with measles among children after that [vaccination]*”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“Yes we believe because last year...some of us went for vaccination and others refused. They later wanted their children vaccinated when they developed worms after their mothers had run away from the vaccinators / health workers”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

Non-institutional delivery and missed opportunity for vaccination

Non-institutional delivery based on religion limits the opportunities for women in Apostolic groups to effectively utilize health care services. Without institutional delivery there is an increased likelihood of the child missing vaccination and subsequent care.

“*My child is not at risk because he is fully vaccinated. Even here at the clinic they know that I don't miss any vaccine, and I will be at the forefront calling other people to come for vaccination. All my 4 children have never had a problem [illness]*”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“I say my children are not at risk because they are many illnesses these days, and my children have never come across any problem such as bilharzia and measles. All my children are fully vaccinated”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

High risk perceptions due to non-vaccination

The religious objectors noted that their children were at high risk of vaccine-preventable diseases since they were not vaccinated and did use modern health care services. Despite their confidence in alternatives to modern healthcare, these caregivers recognized that reliance on prayers and healing rituals exposed their children to vaccine-preventable deaths.

“My children are at risk because some of us do not go to the clinic [laughs]. We take them for prayers, and some die [laughs]”
(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

Measles-Rubella campaign

The Measles-Rubella campaign was associated with preparation for an outbreak of “stronger variant of measles”. Despite their hesitancy, some caregivers accepted their children being vaccinated for fear of deaths and the ‘imminent disease outbreak’

“We just thought that with the campaign, it means it’s a disease coming and would kill our children. So the people at the top saw it fit that we prepare so that our children do not die”
(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“When they were vaccinating, they said it’s different from the vaccine [for measles] we already know, and this one is much stronger”
(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

“I heard that it’s different, and I rushed. As for how it was different, it did not matter to me [laughter]. I heard this one was bigger”

(FGD, caregivers of children under 5, Zvipiripiri, Marange, Mutare Rural).

'Gardens' as safe space for women and children's treatment

The emergence of 'gardens', socially-constructed safe social spaces, for women and health workers help address the social barriers to uptake of health services for women and children. The 'gardens' reflect the innovativeness of health workers in implementing approaches that work for local communities as well as taking services to the community. Therefore, women and children get medicines and attended to by health workers.

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“Garden' is a place that accommodates Apostolic people because they are not allowed to go to the clinic. So word will just go around that on such a date will be at such and such a garden. And people will know that they are going to that garden on stated date. If you go there you will be surprised to see a very big crowd like a church gathering. There will so many people. It's a place for medication. Even those men who forbid their women to go to the clinic won't know, and they will not think it's a 'clinic'. Yes it's just a name that we found easy to us so that we can get help. Its dry land as you can see. We don't even have water at those 'garden. That's a trick that we use”

(FGD, caregivers of children under 5).

“We have what we call the 'gardens', you can come and have a look there. It's something that we are telling you in confidence so that you can help others to prevent deaths because children are dying from lack of vaccination”

(FGD, caregivers of children under 5)

“...we have private gardens where they come in secret...for mothers there are private gardens where they pretend as if they are going to fetch water, and we meet them there and vaccinate their children, after 45 minutes we would have returned to the clinic”

(Service Provider - Nurse)

“They want to access their services privately, that is after hours, the 'garden system', where the pretend they are going to buy vegetables and they get their children vaccinated.”

(Service Provider – EPI Community Nurse)

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Main reasons for vaccine hesitancy and refusal

The respondents identified socio-cultural and religious reasons for vaccine hesitancy and refusal among caregivers, and these included church doctrine restricting use of modern healthcare services and medicines, fear of religious sanctions, confidence in faith healing rituals or alternatives to modern medicine (holy water and prayers), and negative perceptions of vaccines.

When asked about the main religious objectors to modern healthcare services and medicines (including vaccines), the respondents identified mainly Johanne Marange Apostolic Church.

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“...Johanne Marange followers don't vaccinate children, and their children are dying. So because of that, their children are in trouble. They believe in faith healing”

(FGD with caregivers, Makumbe, Gutu District)

“It's because the Johanne Marange followers do not vaccinate their children. Children are dying of measles. During measles outbreaks, many Apostolic children die...”

(FGD with caregivers, Makumbe, Gutu District)

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Confidence in Apostolic healing rituals

The ultra-conservative Apostolic doctrine on non-use of modern healthcare services and medicines (including vaccines) affects healthcare seeking behaviors, and tends to emphasize alternatives to modern medicines and health care services such as faith healing rituals (prayer, holy water, Apostolic traditional birth attendants etc.).

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“...they are given rules at church, and told not to go to the clinic. For example if a woman is impregnated, she doesn't know how to care for the baby. She is told about the Apostolic birth attendant. She can just believe them from the beginning of her pregnancy until birth of the child. She won't know about the clinic...”

(FGD with caregivers, Makumbe, Gutu District)

“The church doctrine does not allow them to go to the clinic and to vaccinate children. They are supposed to use holy water”

(FGD with caregivers, Makumbe, Gutu District).

“...their rule is holy water heals, and nothing else”

(FGD with caregivers, Makumbe, Gutu District).

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Life experience without vaccination

Some objectors refuse vaccinations on the basis of not having had personal experience with modern medicines, including vaccines:



“Some have never used modern health services their entire life. So it becomes difficult to start vaccinating their children”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

This position was reiterated by other religious objectors in the FGD:

“I never grew up using modern health services. So I do not find the benefit of these practices [vaccinations]”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).



Accepting the will of God and not vaccines

Some caregivers felt that there was no need for vaccination since it contradicts their faith, and view death as inevitable, and God’s will and law. Hence, they are not worried about death from vaccine-preventable disease:



“They say death is God’s law (kufa murawo wa Mwari)...They don’t care if the child dies of measles. After all everyone dies. They don’t understand that it’s a disease that should be prevented”

(FGD with caregivers, Makumbe, Gutu District).

“Some say death is present everywhere. If you go to the churches where they do not allow vaccination, children are dying. If you go to the hospitals, mortuaries are full”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).



Vaccines kill

Some caregivers perceived vaccines to kill children, and thus refuse to get their children vaccinated:



“They say injections [vaccines] kill children”

(FGD with caregivers, Makumbe, Gutu District).

“Some say when children are vaccinated, some die and others say vaccination has lots of benefits of benefits for the child”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).





Supply-side factors

The study examined supply-side issues such as health workers' interaction with, and attitudes, towards caregivers, including objectors; stock-outs and cold-chain issues; and shared vials. The relationship between the caregivers and modern health system (including health workers) is an important aspect of routine immunization, SIAs and vaccination campaigns. As stated earlier, the caregivers had limited knowledge of the vaccines and related diseases prevented by the vaccines but rather demonstrated awareness of vaccine preventable diseases. Given this situation, they put their trust in health workers (nurses), and hardly asked questions regarding the vaccines given their children. Inevitably, this professional gap undermines the caregivers' confidence to raise questions related to vaccines and vaccination of their children.

Relationship between health workers and caregivers

Most caregivers interviewed during the study expressed that health workers did not provide them with adequate information, education and communication on specific vaccines and related diseases they are meant to prevent. They felt there were serious limitations in the completeness of information provided by health workers, since the health workers may not create sufficient time to explain anything about vaccination.

Mistreatment of caregivers

The caregivers also indicated that they lacked the confidence to ask the health workers (nurses) about the vaccines for fear of being insulted (verbally abused) or mistreated if they do not comply with the vaccination appointment schedule. Asking the health workers (nurses) questions about vaccination implies lack of respect of the health workers. The following quotes reflect health workers' attitudes and interpersonal care skills when dealing with caregivers and their children:

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“If you try and talk to them, they will tell you that you can't tell them what to do. Especially those ones at the rural hospital, they are very rough sometimes”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

“...there are some nurses who are cruel. Even when you try and ask something, you won't ask much. They might not vaccinate your child if you try and show them that you know much. You end up being silent knowing that she is rough”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

*“They get shouted at (*kutukwa unotukwazve*) so that you remember to take your child to the clinic next time”*

(FGD, caregivers of children under 5, Makumbe, Gutu District).

*“It's a good thing for children to get vaccinated but there are some nurses who are very cruel that they don't feel comfortable. When you visit the clinic for the second time, you will be hesitating to find the same nurse, and you end up taking your child for vaccination without feeling comfortable. Some nurses are not kind to child, they just inject recklessly (*anongojungira!*)”*

(FGD, caregivers of children under 5, Makumbe, Gutu District).

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When the health workers ill-treat women for asking questions, missing their appointment schedule, and perceived to be 'cruel' to the child, the caregivers' fear of ill-treatment causes them to skip follow-up appointments and hesitate taking their children for vaccination. Some dissatisfied caregivers may stop utilizing health services, including vaccination. Therefore, the health workers' negative attitude towards some caregivers, and their ill-treatment serve as a significant barrier, and also reflect gaps in some health workers' interpersonal care skills.

Social innovations by health workers

The participants indicated caring attitudes of health workers, and some of the social innovations they have come up with in supporting caregivers and improving access to modern health care. They felt that some health workers are extremely accommodating to caregivers with children needing services and vaccination despite their families and religion objecting. The simple, low cost interventions include flexible, quick service, and community-tailored service delivery:

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“Even here at the clinic, they would know that so and so is from the Apostolic church, so they quickly serve her and they won't ask a lot of questions like 'where is the card?' because they know the background”

(FGD with caregivers, Zvipiripiri, Marange, Mutare Rural).

“I have no problem with them. We are served early when we come here even if they are many people seeking the same medical attention. The nurse are well aware of our predicament so they are very accommodation. For instance, coming here I had to lie to my husband that I'm visiting my sister. The health workers are very helpful to such an extent that even when the clinic is closed, they open for us”

(IDI, caregiver, Zvipiripiri, Marange, Mutare Rural).

“...if you come and you want your child to be vaccinated at 14 weeks, and your immunization card is showing that you missed the 10 weeks vaccine, the nurses will openly tell you that they will not vaccinate the child at 14 weeks without the 10 weeks vaccine. They will first administer the 10 weeks vaccine, then they will tell you to come back again and they will administer the 14 weeks vaccine. The reason they do this is that they say a child should get all his vaccines”

(IDI, caregiver, Zvipiripiri, Marange, Mutare Rural).

“...the 'garden' is not monitored by anyone. Even at the 'gardens', church people are served first, then the rest are served later, so it's a good things”

(FGD with caregivers).

“...the 'garden' is not monitored by anyone. Even at the 'gardens', church people are served first, then the rest are served later, so it's a good things”

(Service Provider, Mutare Rural)

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The caregivers identified the adaptive responses of health workers to the challenges faced by women in seeking care for their children, and create privacy for caregivers whose religion forbids use of modern healthcare services:

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“The nurses now understand them [Apostolic women], and they help them in rooms reserved for these women. This is done to avoid prying eyes because it is known they may be forced to confess at church in front of everyone, which is shameful”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

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Religious and traditional leaders' engagement

In addition to social innovations devised by health workers to assist Apostolic caregivers, health workers also engage local religious and traditional leaders as part of their strategy to reach out to objectors. Local leaders commended this engagement and establishment of relationships with health workers saying they have noticed improvements in infant mortality their communities. Health workers had greater success conducting vaccinations with the permission and 'blessing' and of the religious leader in Marange. Having the blessing of the religious leaders gives caregivers an opportunity to freely vaccinate their children without fear of being banished from the church. In Mutare they have also been training Village Health Workers from the Apostolic sect as they would be able to better relate with their community.

“...the fact that these nurses are working after hours [is one strategy] and there is also ongoing dialogue between the Bishop and the Health executives; the DNO and others. We are also training village health workers of the same religion so that they can be able to relate to each other on the same level”

(Service Provider, Mutare Rural)

“The Chiefs feel respected when they have been consulted. They tell you that ‘we are the custodians of the people and you cannot deny it’. If you don’t go through the Chief, the Village Headman, and the Chairman in the rural areas definitely you are bound to fail in many programs you want to undertake. If you go there and the Chief says ‘I will be there and I want to see who doesn’t come’, people do come. They know if the Chief says a word they need to abide”

(Service Provider, Gutu District)

“I have noticed improvement if we compare with the past years and today in terms of children’s health. This is because of the relationship between health workers and the traditional leadership. Children are no longer dying like they used to do before. People have more knowledge now”

(Traditional Leader – Chief, Gutu District)

“We visited the Bishop [Marange Religious leader] and he said if it’s a government program, he was not opposing it so we can go ahead, he himself took the information to the schools so that we can administer vaccines. Like I was saying if he himself sends out the word, there is no opposition, people want these services but they are afraid. However, if he gives consent, they won’t be afraid, because when we were administering vaccines, the mothers were happy that their children were being given life. They [caregivers] were lamenting about the children that died because of lack of vaccines. They are so afraid of being banished from the church”

(Service Provider, Mutare Rural)

Stock-outs or shared vial problems

Some caregivers expressed their frustration with vaccine stock-out especially when they arrive at the health facility seeking vaccination services but told to go back home without having their children vaccinated. This was reiterated by a Village Health Worker in the same area..



“Sometimes you get to the hospital, and you are told that this vaccine is not there. You are told to come back next week...”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

“My opinion is that vaccines that have to be opened when children are in groups should be packaged in a way that every child must have a vial packaged only for them. So that we do not have a situation where the mother has to go back home and come back at a later date for vaccination. Many do not come back”

(VHW, Gutu District)



Distance to the health facility

Caregivers in Gutu District highlighted facing challenges in accessing the health facility because of long distance to health facilities. Such long distance to the health facility requires use of motor transport, which tends to be costly for most caregivers. The distance to health facilities was stated a barrier to uptake of services particularly routine immunization services.



“We actually use a vehicle to get there. So to come from where are, maybe some do not have cars, but we have ours so we just go for free. But others have to pay \$2, to go and \$2 to come back. \$4 if you have decided to go there”

(IDI, caregiver of children under 5, Makumbe, Gutu District).

“I wanted to talk about distance to the hospital. It is also a barrier. Secondly, some have got children of the same ages and they won't find anyone to leave these children with. The hospital is far away that they can't carry all the children to the hospital”

(FGD, caregivers of children under 5, Makumbe, Gutu District).



Communication

The caregivers and the health workers highlighted Village Health Workers (VHWs) and Lead Mothers and Lead Fathers, local traditional leaders, schools, media and IEC materials as channels of communication.

Health workers and village health workers

Health workers attend community meetings and church gatherings, and use these platforms to speak on health matters including vaccination. Village Health Workers are also given opportunities at community meetings speak to people about health matters. Hence, caregivers expressed confidence and trust in the VHWs, and regarded them as effective tools for communicating information on vaccination.



“We work with Village Health Workers, we also send letters to the schools, via the headmaster so that children will go and tell their parents. We also send a message to care group lead mothers and lead fathers...sometimes we attend community meetings and do awareness campaigns at village level and we also go to church gatherings. We take advantage of an existing community meeting, maybe its Women’s Affairs, or any other partner who would have come to the area”

(Service Provider, Mutare Rural)

“Village Health Worker (chorus), because she usually goes to the hospital and workshops, she is always up-to-date and has full information. During meetings they [village health workers] can speak to people, even if they don’t go to the clinic they should be told because they will appreciate that. Even the Chief likes the idea of vaccinating children. Our usual health worker does not make a mistake, even during funeral services, after the Chief she gets a chance to speak to people. She reminds people about the dates of health service programs like the baby clinic”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

“At meetings, whenever there are community meetings with the Chief, the clinic Sister-in-Charge sends a message about vaccinations. Awareness is done even at funerals, there is always a message from the clinic...we hear from village health workers that there is vaccination for different kinds of sicknesses, so we are asked to bring our children”

(FGD, caregivers of children under 5, Zvipiripiri, Mutare Rural).

“...we sometimes hold meetings with health workers where we discuss about the need to encourage parents to vaccinate their children”

(Traditional Leader – Chief, Gutu District)



“They [village health workers] just call us aside, maybe at the borehole and explain that health workers are coming to vaccinate children and we should come at an appointed time”
(FGD, caregivers of children under 5, Zvipiripiri, Mutare Rural).

Lead mothers and fathers

In some areas, in “Lead mothers and fathers” were trained to assist in tracking and monitoring children in need of vaccination, and some lead mothers and fathers are from the Apostolic community. They engage community members within Apostolic groups to use vaccination and other health services.

“In a village of about 100 households, they make groups of 10 to 15 mothers or fathers, and the village health workers will be supervising them. Each group has a lead mother and a lead father. The groups are mixed, some have lead fathers or mothers who are from the Apostolic church. The syllabus covers things such as immunization and institutional deliveries. The lead fathers look after 10 households that are under them, they look for pregnant women and children who are due for vaccinations. They discuss these things at a round table then inform the village health worker. So since there are lead mothers and fathers who are Apostolic, it means with time, they will appreciate the clinics”
” (Service provider, Mutare Rural District).

Schools

Schools can serve as platforms for health workers to communicate with community members about immunization activities, and hence health workers engage headmasters and all school children to convey messages to caregivers regarding SIAs.

“I see using the schools as the most effective channel”
(Service provider, Mutare Rural District).

“The nurse sends the messages to the school so that the children will tell their parents that there is a vaccinating program”
(FGD, caregivers of children under 5, Zvipiripiri, Mutare Rural).

“The strategy I know is to use schools as school children come mostly from all directions and can easily pass the information”
(FGD, caregivers of children under 5, Makumbe, Gutu District).

Traditional Leaders

Caregivers identified community leaders, particularly traditional leaders, as respected authority figures who can effectively influence the healthcare seeking and vaccination behaviors of community members, and make local decrees compelling vaccination of children within their local jurisdiction. The word of the Chief is taken as a decree, and the traditional leaders also highlighted their power and influence on community members.

“...because leaders of people have people. If you want people to get the message, you go through traditional leaders because they are the ones with the people. People listen more when they are told by their leaders”

(Traditional Leader – Chief, Gutu District)

“In very normal circumstances, when these people (health workers) want to carry immunization programs, they tell us and we tell headmen and village heads. As I said earlier it’s different when it comes from other sources”

(Traditional Leader – Chief, Gutu District)

“Definitely, they have to engage us, because I’m not a leader of church people only, I also lead some people who believe in vaccinations, some who believe in hospitals, so we have to be engaged...if the nurses don’t approach us as leaders, when they do outreach, the community members may refuse to take part. So they have to come through us. The way you explain it to the people is different from how I do it as a chief”

(Traditional Leader – Chief, Marange, Mutare Rural)

“The village head has a role to play. If it is children who are not being vaccinated, it is a problem in the community and it is his worry so he should encourage his community to have their children vaccinated”

(FGD, caregivers of children under 5, Zvipiripiri, Mutare Rural).

“With the chiefs and village head, the village head should use strategy that does not allow anyone who does not vaccinate their children to reside in that village so that the number of children dying will be reduced. This will make everything much easier. For one to be in a village it is because of the village head, so if the village head exercises authority on such issues, everything else will be much easier”

(IDI, caregiver of children under 5, Zvipiripiri, Mutare Rural).

Media

Some caregivers reported the media as their source of information on vaccination

“*...Radios also work. Even during the last campaign [Measles-Rubella and Vitamin A], messages were aired through radios to go to the nearest centers*”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

Coercion and use of police in vaccination activities

In Gutu District, the police was deployed under the request of the traditional leader to mobilize objectors for vaccination, and the strategy was deemed effective. In some areas, health workers used the police to raid church gatherings and stop buses so that they could vaccinate children. Caregivers recounted incidents where health workers and police with guns raided Apostolic church gatherings and vaccinated children. Guns were used as a way of intimidation. However, in Marange, this was not the case and the local leaders actually felt that use of police would violate people's rights. Instead, the Chief's local decree was highlighted as a better intervention that police involvement in facilitating vaccination of children during vaccination campaigns. Police involvement was generally perceived as part of efforts to enforce a government directive, which community members have to comply.

“*In this area, the police have even been brought in, going into homesteads with that car that has those who vaccinate and they were looking and searching where the children are, so that every child has to get vaccinated. So maybe if they bring the police to sometimes actually come and get into the homes that's how children can get vaccinated. Without that it is difficult for an apostolic child to go and get vaccinated, it's difficult*”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

“If they [objectors] see the police in uniform they may not run away for fear of being beaten...the police should be involved more in mobilizing people”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

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“I don't have but I was worried with people who used to refuse vaccination but now we no longer have such. They now bring children to the hospital. We encourage them and put fear in them too. We now have very few of them because we said if it's like that then we use law enforcement agents like the police force because some of them would run away with children into the mountains. Because of that, only very few people refuse to vaccinate their children...I cannot particularly remember at the moment where it really happened. I remember that it is somewhere in Chiguhune where there was a sect of those people [objectors] but I can't remember the year now. They didn't want to take children to the hospital and then we asked the police to go and help. We got the report that the people later took children for vaccination”

(Traditional Leader – Chief, Gutu District).

“I don't see the need to involve the police, because no one opposes the chief if he says a word, but if we involve the police, it's like we will be forcing them”

(Traditional Leader – Chief, Marange, Mutare Rural).

“Yes, the use of police does work. There is time when the police were used, police would visit people in homes. For example, there is a time when they would just come to the apostolic gathering holding guns and the nurses would just vaccinate every child they see”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

“Yes, they went to surround the Apostolic followers who run away to hide themselves even in the mountains, but whoever they catch will be injected, the police will be holding guns and threatening to shoot whoever may decide to run away”

(FGD, caregivers of children under 5, Makumbe, Gutu District).

“The police are helping us because we do not instill that fear factor as the police do. When the police are involved they would assume that the government has sent them, and they will tell each other to come. If the government intervenes it works well. It is really working, very effectively, because at the growth point where there are many people, you might have gone there, the people not anticipating for anything to happen, then suddenly you just hear yourself being called to bring your child to be immunized. Hahaha! Yes!

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You won't refuse. They rally (*vanoita kutinha*) 'let's go! Let's go and have your child immunized', even if you do not want they make you immunize them. Those on the buses would also be told to disembark and take part. So if you see that, you act quickly, get help and then go back on the bus. Even here if they come and see you around before they run away they just round you up and have your children immunized"

(VHW, Gutu District).



Discussion

The results of this rapid assessment highlight the key drivers of vaccine hesitancy and refusal, and strategies deployed to improve child immunization in the study communities in Manicaland and Masvingo Provinces in Zimbabwe. It identified socio-cultural and religious, political, and institutional factors influencing use and non-use of maternal and child health services, and provided a nuanced understanding of the influence of community leaders and health workers on uptake of modern health services including vaccination.

The study confirmed the influence of Apostolic religion, supply-side factors, traditional leadership and police in the uptake of vaccination services in the study sites in Zimbabwe:

(e) Socio-cultural and religious factors determining vaccination and healthcare seeking behaviors

Similar to other findings of other studies⁴⁰ on Apostolic religion, healthcare seeking and utilization of modern health services, this study revealed the constraining and overriding influence of Apostolic religion and doctrine on uptake of maternal and child health services (including vaccination). The caregivers cited religious doctrine, beliefs, practices and sanctions as some of the reasons for vaccine refusal and hesitancy. The negative perceptions of modern medicines and health services are embedded in the religious views that ascribe their use to lack of faith in God, ignoring the spiritual dimensions of

⁴⁰ Daneel ML (1970) *Zionism and Faith Healing in Rhodesia: Aspects of African Independent Churches*, The Hague: Mouton

Ha W, Salama P, Gwavuya S, & Kanjala C (2014) "Is Religion the Forgotten Variable in Maternal and Child Health? Evidence from Zimbabwe", *Social Science & Medicine*, 2014 October, 118: 88-88

Mpofu E, Dune TM, Hallfors DD, Mapfumo J, Mutepfa MM & January J (2011) "Apostolic Faith Church Organization Contexts for Health and Wellbeing in Women and Children", *Ethn Health* 16(6): 551-566

OHID (2014) *Exploring the Forgotten Variable: Engaging, Listening and Learning from Apostolic Birth Attendants. An Exploratory Qualitative Study of the Role of Apostolic Midwives in Mashonaland Province, Zimbabwe*, Harare: OPHID

UNICEF (2011) *Apostolic Religion, Health and Utilization of Maternal and Child Health Services in Zimbabwe*, Harare: UNICEF. Report by Brian Maguranyanga

UNICEF (2015) *Apostolic Maternal and Newborn Intervention (AMENI) Model: Improving Maternal and Newborn Child Health Outcomes among Apostolic Religious Groups in Zimbabwe*, Harare: UNICEF. Report by Brian Maguranyanga and Geoffrey Feltoe

UNICEF Zimbabwe (2016) *Extended Analysis of Multiple Indicator Cluster Survey (MICS) 2014: Religion*, Harare: UNICEF

health and child diseases, and low confidence in Apostolic healing system (faith healing rituals such as prayer, holy water, faith healers including prophets and Apostolic birth attendants etc.). Modern medicines and vaccines are perceived as dangerous, and cause diseases or deaths. Therefore, spiritualization of illness and childhood diseases reinforce “radical beliefs that shun medical care, which is viewed as antithetical to God’s call for divine healing”⁴¹.

The association of child’s death with God’s will and law, and the view that a “child is like a brick” reinforce the suboptimal health care seeking behaviors related to child health and restrict vaccination of children among religious objectors. Therefore, childhood diseases and related deaths are treated as spiritual issues, which modern medicine and vaccines have not ‘power’ to prevent, and thus when a child dies from vaccine-preventable diseases it should be regarded as God’s will and law.

The death of child is likened to a ‘broken brick’, and parents (church members) are expected to ‘replace’ [mold] the children by giving birth to another one. This sense of immediate replacement alters the value placed on young children, and speaks to their dispensability even from vaccine-preventable childhood diseases or preventable deaths. The ‘martyring’ of children over radical doctrine and beliefs is predicated on ‘God’s will and law’, which then raises fundamental challenges for child immunization. So if a child dies from a vaccine-preventable disease, it is regarded as God’s will.

The ultra-conservative Apostolic groups encourage polygamy, and male members are encouraged to have many wives⁴² and children. Therefore, this possibly creates ‘emotional distance’ between the men and his children. In the words of one Apostolic member, “If a child of one of the

many wives dies, will he [man] be really pained?” [Informal discussion with an Apostolic male in Mutare].

Affiliation to Apostolic religion is a significant factor in reducing use of modern health services. Across all markers of child immunization, Apostolic religion retains its significance. Ha et al. (2012) and Mukungwa (2015) established a strong association between religion and vaccination against measles in Zimbabwe, and children in Apostolic faith affiliated households were less likely to have BCG, measles, and polio immunization compared to other Christian groups. The studies also showed that women of Apostolic religion were less likely to use antenatal care (ANC), institutional delivery, skilled birth attendants, and postnatal care (PNC) services compared to other Christian groups.⁴³ This has an impact of maternal and child health outcomes, and the less likelihood of Apostolic women to attend ANC and deliver at a health facility increases the likelihood of Apostolic babies missing on vaccinations from births onwards.

Our findings provide some of the reasons for non-vaccination and incomplete vaccination of Apostolic children, and points to the challenges posed by non-utilization of maternal and child health services. In encouraging pregnant women to seek pregnancy-related services from Apostolic birth attendants, faith healers, and deliver at home, Apostolic women miss out of the health and vaccination knowledge given by health workers and their new babies also miss out on vaccination. The infants and children in Apostolic households therefore face increased risks of mortality due to vaccine-preventable diseases.

The lack of knowledge and negative perceptions of modern child health services and vaccines contributes to

⁴¹ UNICEF (2015) Apostolic Maternal and Newborn Intervention (AMENI) Model: *Improving Maternal and Newborn Child Health Outcomes among Apostolic Religious Groups in Zimbabwe*, Harare: UNICEF. Report by Brian Maguranyanga and Geoffrey Feltoe (p.5)

⁴² Machingura F (2011) “A Diet of Wives as the Lifestyle of the Vapostori Sects: Polygamy Debate in the Face of HIV and AIDS in Zimbabwe”, *Africana Journal* 5(2): 186-210

⁴³ Ha W, Salama P, Gwavuya S, & Kanjala C (2014) “Is Religion the Forgotten Variable in Maternal and Child Health? Evidence from Zimbabwe”, *Social Science & Medicine*, 2014 October, 118: 80-88

Mukungwa T (2015) “Factors Associated with Full Immunization Coverage amongst Children aged 12-23 Months in Zimbabwe”, *African Population Studies* 29(2): 1761-1773

UNICEF Zimbabwe (2016) *Extended Analysis of Multiple Indicator Cluster Survey (MICS) 2014: Religion*, Harare: UNICEF

vaccine hesitancy and low uptake of vaccination services.⁴⁴ The lack of knowledge was reflected by caregivers not knowing, for example what the BCG vaccine is for or what disease it prevents. In most cases, the caregivers generally associated vaccination with 'disease' / 'diseases' but had no clear perception of the specific disease(s). Those who accepted vaccines emphasized the benefits of vaccination in terms of reducing the intensity of the diseases and preventing children from being ill and dying of vaccine-preventable diseases. In contrast, some caregivers and community leaders who object to the use of vaccines perceived vaccines to cause ill-health and weaken the body of children, and conflict with their faith and will of God for faith and divine healing. Such refusal has to be understood in the context of rejection of the modern health, biomedical system.

However, female caregivers of Apostolic religion have devised "stealth strategies" to access health services despite the restrictions imposed by their religion on the use of modern health services including vaccination. The secretive use of health services is empowering for the women, and serves as a pathway for healthcare seeking. The 'gardens', as non-physical spaces, are social spaces where women access modern health services from health workers outside the health facility or outreach platforms.

The social relationship between women and health workers is that of trust, and anchored on provision of service secretly outside the knowledge of male partners. At the health facility, women who fear being seen accessing modern health services and having their children vaccinated are attended by health workers in rooms and spaces that offer privacy. All these innovations reflect adaptive responses to religious and social restrictions imposed by religious leaders and male partners on maternal and child health care seeking behaviors. Therefore, secrecy and privacy provide women with pathways for healthcare seeking, obtaining vaccination

services, and empowers them to create space for decision-making related to their health and children's wellbeing.

Interestingly, the female caregivers from the Apostolic churches suggested that the door-to-door approach and vaccination campaigns should be prioritized for religious objectors since they allow their children to be vaccinated without fear of religious sanctions. The religious leaders expressed satisfaction with immunization campaigns and SIAs since they regarded them as a 'government directive'. As perceived 'government directive' / policy, the community leaders claimed that they would respect immunization campaigns and SIAs, and ensure that children are vaccinated, and then provide cleansing rituals and prayers for the children and parents. Some Apostolic caregivers felt that their religious leaders accepted campaign vaccination and 'door-to-door' vaccination if required by law, in cases of emergencies, and under force by government or police. In addition, when properly educated and sensitized about vaccination and other health interventions, the religious leaders accepted vaccination and modified their position regarding restrictions on use of vaccines and modern health services as well as accommodated emerging circumstances⁴⁵.

Ironically, the Apostolic religious leaders interviewed in this study expressed reservations about routine immunization, which was largely associated with constant / routine use of modern health services. Given that campaign vaccination only lasts some days, it does not fundamentally affect the expected health seeking behavior of Apostolic members (in line with church doctrine). In contrast, routine immunization requires visiting health facilities for scheduled vaccination appointments, and hence caregivers are expected to behave differently for routine immunization of children.

The fundamental question is how to facilitate religious leaders' and male partners' acceptance of routine immunization as an important intervention for improving

⁴⁴Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC

Larson HJ, Jarret C, Eckersberger E, Smith DM, & Paterson P (2014) "Understanding Vaccine Hesitancy around Vaccines and Vaccination from a Global Perspective: A Systematic Review of Published Literature, 2007-2012", *Vaccine* 32(19): 2150-2159

⁴⁵Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC

child health outcomes in Apostolic communities. The possible answer lies in community leaders' (religious and traditional) engagement and dialogue, and strengthening their knowledge about vaccines and benefits of vaccination. As key gatekeepers in the community, local leaders provide the framework for healthcare seeking behaviors and actions of community members. Hence, when they speak against modern health services, and impose social sanctions on members who use child health services, they constrain behavior and reinforce non-adherence to vaccines.

During vaccination campaigns, health workers involve local leaders in the activities of these big events and they mobilize the local community to get children vaccinated. Local leaders – traditional, political, and sometimes religious – are approached to approve the vaccination campaign activities, and hence tend to exercise influence over local community members during campaigns unlike with routine immunization where they are hardly involved. Therefore, the influence on local leaders in routine immunization remains weak.

Our evidence suggests a shift in leaders' attitudes toward vaccination, and even ultra-conservative Apostolic communities (e.g., Johanne Marange) have also shifted from total refusal of vaccination to allowing "circumstantial acceptance" of vaccines during activities deemed as 'government directive'. When provided with information on vaccines and the benefits of vaccination, the religious leaders expressed support for child vaccination in order to prevent diseases and deaths. During the 2015 Zimbabwe Measles/Rubella and Vitamin A Catch-Up Campaign, there was "high proportion of Apostolic Faith followers accepting the 2015 campaign with their children having 90% MR vaccine coverage"⁴⁶. Based on our evidence, such "encouraging coverage" reflects shifting trends and fruits of health workers-religious leaders' engagement and dialogue, health workers-caregivers' interactions, and Apostolic caregivers' personal efforts and strategies in overcoming barriers to use of modern health services and vaccines as well as growing acceptance of modern health interventions.

It is therefore misleading to treat, for example, Johanne Marange and other ultra-conservative Apostolic religious objectors of modern health care as totally rejecting vaccination and use of modern health services. The collective non-acceptance and resistance of use of modern health services (including vaccination) seems to have waned and replaced by mediated, graduated responses and actions that accommodate circumstantial use of modern health services, and participation in vaccination campaigns and community-based health interventions. Inasmuch as the Apostolic leaders and caregivers believe in faith healing rituals (prayer, holy water, Zvitsidzo etc.), there is gradual acceptance and use of modern medicine and health services secretly or in privacy. As stated earlier, past experiences with child disease and death, and exposure to empowering knowledge and information tend to influence the shift towards acceptance of modern health services including vaccination. Similar to the results of other studies, caregivers' experience with child diseases and death trigger shifts in healthcare seeking behaviors, and those who shifted their views against modern health services tend to actively encourage other Apostolic caregivers to use modern health services and get their children vaccinated⁴⁷.

(f) Communication as critical in improving uptake of vaccination services

There is evidence showing the importance of communication in strengthening knowledge and empowering actions related to uptake of modern health services and vaccination. Without benefits of vaccines effectively communicated, and social and behavioral change communication initiatives undertaken at a larger scale within local communities, the caregivers will lack the information and motivation to overcome barriers to uptake of vaccination and other health services. It seems the campaign vaccinations are driven by high publicity, community mobilization and social and political visibility that routine immunization does not have, and hence they are able to generate high vaccination coverage over a

⁴⁶Ministry of Health and Child Care (2015) Report on Evaluation of Coverage Achieved during Zimbabwe Measles/Rubella and Vitamin A Catch Up Campaign Combined with Assessment of Routine Immunization. Part 1 Coverage Survey: MR Vaccine and Vitamin A Supplementation Campaign, Harare: MoHCC

⁴⁷Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC

short period of time. Therefore, the gaps in routine immunization possibly reflect a fundamental gap in communication around it.

Our findings highlighted that caregivers had limited knowledge and passive understanding of vaccination, and hardly identified the vaccine with specific disease. They understood vaccination as merely 'injections', and lacked the confidence to ask health workers about specific vaccines and diseases, and hence without the empowering information and knowledge they did not fully understand the risks of missing / skipping vaccines in stipulated in the child health card / vaccination schedule. In addition, communication on vaccination has largely been based on traditional information, education and communication (IEC) materials (pamphlets, visual aids), which are viewed as panacea to demand generation and awareness raising. Consequently, it managed to raise awareness but with limited actionable, empowering knowledge to drive social and behavioral change, and fundamentally alter perceptions and social norms.

The evidence clearly points to the centrality of communication for development (C4D) or social and behavioral change communication (SBCC) in increasing routine immunization, uptake of modern health services, and resolving problems of non-adherence as well as increase the involvement of key social influencers including male partners, in-laws, and religious and traditional leaders.

(g) Supply-side factors - health workers' attitudes, service delivery innovations, and health worker-caregivers' interaction - influencing routine immunization and uptake of child health services among caregivers of children under 5 years of age

The study highlighted the importance of health workers-caregivers' relationship in influencing uptake of vaccination services for children. As stated earlier, the ill-treatment of caregivers by health workers especially when they miss scheduled appointments in the child health card cause some of the caregivers to skip subsequent appointments or stop using the child health services. In addition, the caregivers complained about the negative attitude of some health workers, whom they alleged verbally abuse (insult)

them for asking questions. They also indicated that some health workers hardly commit time to explain the vaccines, symptoms of the disease prevented by the vaccine, the benefits of vaccination, and the importance of respecting the vaccination schedule but merely serve them passively. Without heightened awareness and adequate knowledge of the importance of vaccination, the propensity of vaccination diminishes.

Given these experiences, it is possible that ill-treatment of caregivers becomes a strong barrier to accessing modern health and vaccination services who are not willing to be insulted. The insults and intolerance of questions possibly reflect the health workers' attempts to reaffirm their authority of caregivers and patients, and thus showing the power dynamics in health worker-caregiver relationship. Therefore, interpersonal communication between health workers and caregivers has to be addressed to improve knowledge sharing and interaction between them. It is also important to understand health workers' attitudes and responses in context, particularly conditions of work, heavy workload, and the overlap of professional and personal lives in close-knit communities.

Stock-out of vaccines affect vaccination behaviors of caregivers traveling long distances to get their children vaccinated. This issue was rarely mentioned by study participants, and the health workers and caregivers highlighted the challenges posed by vials. In Gutu District, the challenge was the restriction on routine vaccination due to limited number of children to be vaccinated on specific dates, and hence determining the vials for a limited number of children. In instances where the number of children to be immunized for a specific vaccine is limited, the health workers would encourage caregivers to mobilize others until the threshold number for opening the vial is reached otherwise they would turn caregivers back home.

Notwithstanding the challenges faced by health workers, some health workers have taken personal initiatives to improve engagement and communication with caregivers, and stakeholders in the local community. The personal initiatives include flexible opening hours for religious objectors seeking medical care and vaccination, offering privacy and services secretly, promoting 'gardens', and conducting personal home visits to caregivers and children

needing some health care services. The health workers, including village health workers (community cadres), have adopted contextually-relevant strategies to increase access to health care, and take services to community members without necessarily limiting service provision to the health facility.

Building on trust and mutual respect, the health workers create safe spaces for women, caregivers and children to receive care in light of Apostolic religious objection and community problems. In both study sites (Zvipiripiri in Mutare Rural District and Makumbe in Gutu District), the health workers had developed strong ties with caregivers (local community) and community leaders such that they were active agents of change in the community, and were well respected in terms of helping the community solve health problems. The health workers' personal initiatives in delivering health services and vaccination seem to have positive outcomes.

In view of rumors about public health interventions (campaign vaccination, SIA etc.) and anecdotes on adverse events following immunization (AEFI), health workers need to address these issues since they affect perceptions of vaccines and uptake of vaccination service against spiritual / faith healing system. The rumors and fears of AEFI contribute to vaccine hesitancy and refusal. When there has been collective resistance to vaccination among community members, the police and local traditional leaders have been engaged to enforce vaccination of children.

(h) Use of police and traditional leaders in public health interventions

The study highlighted the use of power and influence of police and local traditional leaders in reducing vaccine hesitancy among Apostolic caregivers and other objectors, particularly during vaccination campaigns and SIAs. The

use of police in vaccination campaigns in Gutu District was mentioned by caregivers and traditional leaders as a strategy to improve coverage among Apostolic communities.

Some Apostolic caregivers felt that 'coercive vaccination', through police enforcement and traditional leaders' local decree, opens up space for Apostolic children to be vaccinated without their caregivers fearing the consequences of 'breaking' Apostolic doctrine on non-use of modern health services. The authority of traditional leaders is respected, and with such respect comes influence over community members and religious leaders residing with the traditional leader's jurisdiction. While use of police⁴⁸ and traditional leaders was a reason for having children vaccinated, the consequences of such force or 'coercive vaccination' must be understood in the context of human rights and democracy. Should coercion and use of police be a viable intervention for increasing immunization coverage? What are the authoritarian possibilities of traditional leaders given that culture may give traditional leaders an authoritarian bent⁴⁹? We caution against the use of police in improving vaccination coverage during campaigns especially in the absence of a clear legal and policy framework governing immunization in the country. Use of police fails dismally in routine immunization since it has very limited or no space to operate, and potentially generates backlash.

There are limitations on use of law / legal enforcement to bring about social and behavioral change related to healthcare seeking behavior and vaccination in the absence of a clear legal framework. In countries where there have been challenges with obtaining support for immunization, the governments (e.g., Botswana) passed "a law making it illegal for a caregiver to withhold children from a government-sanctioned immunization program, and Malawi and Swaziland used law enforcement assistance to immunize children of religious objectors and to hospitalize seriously ill children of religious objectors during

⁴⁸Ministry of Health and Child Care (2015) Zimbabwe National Program on Immunization. Vaccination Acceptability Assessment in Zimbabwe. Draft Report, Harare: MoHCC

⁴⁹Mamdani M (1996) Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism, Princeton, New Jersey: Princeton University Press

a recent measles outbreak”⁵⁰. Instead, soft techniques – dialogue, engagement and mobilization of community members and religious leaders – offer sustainable opportunities for improving uptake of vaccination services. In other words, there has to be a clear understanding of the consequences of legal interventions (invoking the law) in promoting vaccination, and we suggest pursuing soft techniques (carrot approach) first in bring about social and behavioral change⁵¹.

Study Limitations

The results and conclusions of the study cannot be generalized to a wider population, and merely offer insights

and lessons on vaccine hesitancy and refusal based on the purposive sample. So caution has to be exercised in drawing conclusions from this Rapid Assessment results given their limited generalizability.

Given that this was a rapid assessment study, there was time limitations and budgetary constraints in allowing for in-depth exploration of themes emerging during the study. However, the Rapid Assessment study yielded rich information and insights on reasons behind vaccine hesitancy and refusal, barriers and facilitators to uptake of vaccination services, and drivers of declining routine immunization in the study communities in Zimbabwe.

Conclusion

This Rapid Assessment study explained caregivers’ limited knowledge on vaccines and related diseases they seek to prevent, their passive acceptance of vaccination, and poor / non-adherence to routine immunization as specified in the child health card (appointment schedule). The caregivers and community leaders largely referred vaccination to “injection”, and sometimes in terms of where the “injection” is administered. Apostolic caregivers and religious leaders who objected to vaccination (vaccines) identified religious reasons and fears of death and illness (diseases) caused by vaccines, and emphasized the importance of faith healing rituals in protecting their children from vaccine-preventable childhood diseases. Based on their faith, they explained death of a child from a vaccine preventable disease as a ‘will and law of God’, and rationalized such death based on their religious view that a “child is a like a brick, if it breaks [child dies], you can

mold another [give birth to other children]. Such value placed on children by Apostolic members, and their attributing a child’s death to God’s will, possibly mediates their valuation of vaccination benefits and thus fail to fully appreciate vaccination as a critical public health intervention ensuring child health and survival. However, it should be noted that the Apostolic sect is not homogeneous, and comprises of heterogeneous groups with diverse doctrine. Therefore, such diversity of sub-groups and doctrine has implications for varying acceptance and rejection of immunization (vaccination) and other medical interventions.

The experience of diseases and death of a child shaped caregivers’ attitude towards vaccination and use of modern health services. In order to increase chances of child survival through vaccination and health care services,

⁵⁰Kriss L, Goodson J, Machekeyanga Z, Shibeshi ME, Daniel F, Masresha B & Kaiser R (2016) “Vaccine Receipt and Vaccine Card Availability among Children of the Apostolic Faith: Analysis from the 2010-11 Zimbabwe Demographic and Health Survey”, *The Pan African Medical Journal* 24:47 doi:10.11604/pamj.2016.24.47.8663

⁵¹UNICEF (2015) Apostolic Maternal and Newborn Intervention (AMENI) Model: Improving Maternal and Newborn Child Health Outcomes among Apostolic Religious Groups in Zimbabwe, Harare: UNICEF. Report by Brian Maguranyanga and Geoffrey Feltoe

caregivers devised “stealth strategies” in accessing care from health workers. They secretly accessed vaccination and child health services at health facilities, after hours, and private rooms where they are not seen by other community members. The ‘gardens’ and home-based visits were pathways through which the caregivers obtain medical care, information and vaccination services. These interventions minimize the chances of caregivers from religious objectors going to health facilities publicly, and thus risking sanctions from their church for violating its doctrine on modern health services.

The vaccination campaigns, perceived as government directive and mandated program, were welcomed by the caregivers and religious leaders on the basis that they ought to respect the government’s law. Therefore, the circumstantial acceptance of vaccination based on a number of reasons reflects a shifting trend in vaccination and healthcare seeking behaviors of Apostolic groups, even religious objectors. In view of such circumstantial acceptance, it would be misleading to speak of Apostolic groups (particularly, the ultra-conservative groups like Johanne Marange) as collective objectors of modern

health services. The emerging “stealth strategies” by church members and circumstantial acceptance of health services expand space for Apostolic members to modify their healthcare seeking behaviors toward utilization of health services. These shifts have to be understood in the context of emerging social innovations by health workers, and collaborative efforts between health workers and caregiver / community leaders.

The use of police, legal enforcement, coercive mechanisms, and authoritarian authority of local traditional leaders in public health interventions is controversial, and has to be assessed against human rights and democracy. Instead, “soft techniques (carrot approach), mainly dialogue and engagement, reduce possibilities of backlash associated with the “stick approach”. To drive soft techniques in social and behavioral change, sustained communication interventions are crucial in improving knowledge of vaccination, interpersonal relationship between health workers and caregivers and key social influencers, advocacy and community / social mobilization, and changing negative perceptions on vaccination in order to address health challenges in the community.

Recommendations

Based on the key findings of this Immunization Rapid Assessment, the following recommendations are important:

- Strengthen health communication interventions that drive increased uptake of pregnancy care services (antenatal care (ANC), institutional delivery, skilled birth attendance) and post-natal care (PNC)
- Leverage and intensify the ‘gardens’ system and home-based approach to increase vaccination and use of modern medicines while supporting health workers’ personal initiatives that strengthen interaction with caregivers
- The role of secrecy as an empowering strategy should be recognized since it allows caregivers previously deemed powerless to claim their agency and make decisions that have implications for the health of mothers and children
- Strengthen incentive mechanisms and result-based financing in health facilities in order to reward health workers reaching targets on child immunization in their catchment areas
- Policy advocacy on legal framework for child vaccination, and clarify law enforcement on children’s right to healthcare

- Religious and traditional leaders' engagement and dialogue to address vaccine hesitancy/refusal and improve child and maternal health outcomes
 - Strengthen involvement of community leaders and male partners in vaccination
 - Raise knowledge and understanding of vaccination among religious and traditional leaders, and promote modification of religious doctrine on use of modern health services to accommodate individual and circumstantial level factors
- Leverage religious leaders' respect for government and its laws to improve vaccination coverage
- Design and implement a national social and behavior change communication (SBCC) or communication for development (C4D) strategy on immunization

Appendix A:

Selected socio-demographics of respondents in the sample

Socio-demographic characteristics of caregivers in the sample

Variables	Frequency	Percentage
Age		
20-24 years	6	16.7
25-29 years	9	25.0
30-34 years	9	25.0
35-39 years	8	22.2
40-44 years	4	11.1
Marital Status		
Married	33	91.7
Widowed	3	8.3
Religion		
Traditional	1	2.8
Catholic	1	2.8
Pentecostal	5	13.9
Protestant	7	19.4
Apostolic	22	61.1
Highest Level of Education		
No Education	1	2.8
Primary	13	36.1
Secondary	22	61.1
Number of Children		
1-2	8	22.9
3-4	18	51.4
5+	9	25.7
Child/Children Vaccinated		
Yes	32	88.9
No	4	11.1
Health Card(s)		
Yes	26	74.3
No	9	25.7

CROSS-TABULATION TABLES: CAREGIVERS**Caregivers' age by number of children**

		Number of Children			Total
		1-2	3-4	5+	
Age	20-24 years	5	1	0	6
	25-29 years	3	6	0	9
	30-34 years	0	7	2	9
	35-39 years	0	2	5	7
	40-44 years	0	2	2	4
Total		8	18	9	35

Religion of caregivers by number of children

		Number of Children			Total
		1-2	3-4	5+	
Religion	Traditional	1	0	0	1
	Catholic	0	1	0	1
	Pentecostal	1	3	0	4
	Protestant	4	1	2	7
	Apostolic	2	13	7	22
Total		8	18	9	35

Caregivers' age by child/children vaccinated

		Child/Children Vaccinated		Total
		Yes	No	
Age	20-24 years	5	1	6
	25-29 years	9	0	9
	30-34 years	8	1	9
	35-39 years	7	1	8
	40-44 years	3	1	4
Total		32	4	36

Caregivers' religion by child/children vaccinated

		Child/Children Vaccinated		Total
		Yes	No	
Religion	Traditional	1	0	1
	Catholic	1	0	1
	Pentecostal	5	0	5
	Protestant	6	1	7
	Apostolic	19	3	22
Total		32	4	36

Caregivers' religion by health card(s)

		Health Card(s)		Total
		Yes	No	
Religion	Traditional	1	0	1
	Catholic	1	0	1
	Pentecostal	5	0	5
	Protestant	5	2	7
	Apostolic	14	7	21
Total		26	9	35

Caregivers' marital status by religion

		Religion					Total
		Traditional	Catholic	Pentecostal	Protestant	Apostolic	
Marital Status	Married	1	0	5	6	21	33
	Widowed	0	1	0	1	1	3
Total		1	1	5	7	22	36

Caregivers' religion by highest level of education

		Highest Level of Education			Total
		No Education	Primary	Secondary	
Religion	Traditional	0	0	1	1
	Catholic	0	0	1	1
	Pentecostal	0	1	4	5
	Protestant	0	3	4	7
	Apostolic	1	9	12	22
Total		1	13	22	36

Socio-demographic characteristics of community leaders in the sample

Variables	Frequency	Percentage
Age		
45-49 years	1	25.0
50+ years	3	75.0
Gender		
Male	4	100
Female	-	-
Religion		
Protestant	1	25.0
Apostolic	3	75.0
Highest Level of Education		
Primary	-	-
Secondary	4	100
Position		
Chief Gutu	1	25.0
Chief Marange	1	25.0
Councilor - Marange	1	25.0
Village Head	1	25.0

Socio-demographic characteristics of service providers in the sample

Variables	Frequency	Percentage
Age		
25-29 years	2	20.0
35-39 years	1	10.0
40-44 years	4	40.0
45-49 years	3	30.0
Gender		
Male	3	30.0
Female	7	70.0
Religion		
Catholic	2	20.0
Pentecostal	3	30.0
Apostolic	5	50.0
Highest Level of Education		
Certificate	2	22.2
Diploma	6	66.7
Secondary	1	11.1
Profession		
DNO	1	10.0
Midwife	1	10.0
Registered Nurse	2	20.0
Primary Care Nurse	1	10.0
Primary Care	1	10.0
Counsellor		
Village Health Worker	3	30.0
Peer Educator	1	10.0

