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## Qualitative Assessment of Vaccination Hesitancy Among Members of the Apostolic Church of Zimbabwe: A Case Study

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### Abstract

Vaccine hesitancy or lack of confidence in vaccines is considered a threat to the success of vaccination programs. The rise and spread of measles outbreaks in southern Africa in 2009–2010 were linked to objections among Apostolic Church members, estimated at about 3.5 million in Zimbabwe as of 2014. To inform planning of interventions for a measles–rubella vaccination campaign, we conducted an assessment of the factors contributing to vaccine hesitancy using data from various stakeholders. Among nine districts in three regions of Zimbabwe, we collected data on religious attitudes toward, and perceptions of, vaccines through focus group discussions with health workers serving Apostolic communities and members of the National Expanded Programme on Immunization; semi-structured interviews with religious leaders; and open-ended questions in structured interviews with Apostolic parents/caregivers. Poor knowledge of vaccines, lack of understanding and appreciation of the effectiveness of vaccinations, religious teachings that emphasize prayers over the use of medicine, lack of privacy in a religiously controlled community, and low levels of education were found to be the main factors contributing to vaccine hesitancy among key community members and leaders. Accepting vaccination in public is a risk of sanctions. Poor knowledge of vaccines is a major factor of hesitancy which is reinforced by religious teachings on the power of prayers as alternatives. Because parents/caregivers perceive vaccines as dangerous for their children and believe they can cause death or disease, members of the Apostolic Church have more confidence in alternative methods such as use of holy water and prayers to treat diseases. Under these circumstances, it is important to debunk the myths about the power of holy water on the one hand and disseminate positive information of the efficacy of

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*Disclaimer:* The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

vaccines on the other hand in order to reduce hesitancy. Education about vaccines and vaccination in conjunction with government intervention, for example, through the use of social distancing policies can provide a framework for reducing hesitancy and increasing demand for vaccination.

## Keywords

Vaccination hesitancy; Vaccination confidence; Vaccination acceptance; Apostolic community

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## Introduction

Founded in the 1950s, the Apostolic Church of Zimbabwe has built up a large number of followers estimated at about 3.5 million in 2014. The rise and spread of measles outbreaks in southern Africa in 2009–2010 were linked to objections to vaccination originating from Apostolic gatherings throughout the region, including Zimbabwe.

Reasons for hesitancy among Apostolic Church members in Zimbabwe have generally been assumed to be related to their religious beliefs (Pomerai et al. 2012; Ha et al. 2014; Tumwine 1999; Hove et al. 1999). Hesitancy has also been viewed as a result of racial separation under White Rule when indigenous Africans had none or at the best limited access to hospitals (Andersson 1958; Sundkler 1961). Daneel (1970) noted along the same lines of this argument that nearly 50% of members joined the Apostolic Church when they were sick, and that the healing issue is the strongest influence drawing people to the Church rather than faith (Daneel 1970). Maguranyanga (2011) have noted that Apostolic communities are made of different sects with varying degrees of religious conservatism, and as a result they do not have a uniform health seeking behavior or attitude toward immunization (Gresson et al. 1999; Maguranyanga 2011).

Qualitative data collection is a useful tool to investigate complex sociocultural behaviors, and specifically factors contributing to vaccination hesitancy, because it helps to capture and understand differences in perspectives among different groups of stakeholders and provides in-depth knowledge of the various meaningful factors that underlie vaccination hesitancy. It may also help understand the context of the attitudes and decisions of Apostolic Church members toward immunization. In particular, the use of participant observers and key informants, including health-care workers and religious leaders in Apostolic communities, allows us to capture important information that is provided by key figures who have firsthand knowledge and a deep understanding of their community.

## Methods

This study was conducted concurrently with a quantitative survey performed in three regions of Zimbabwe with known large Apostolic communities: Harare City, Manicaland, and Matabeleland South (Gerede et al. 2017). Three districts with the highest Apostolic populations were selected within each region. To better understand attitudes toward immunizations among Apostolic populations, we conducted semi-structured interviews with religious leaders, key informants, and parents/caregivers in each of the three assessment

areas. In addition, we selected EPI managers and health-care workers (HCWs) in each assessment area to participate in focus group discussions (FGDs) (Fig. 1).

This study was reviewed by the CDC Human Subjects Research Office and determined to not involve human subjects research due since it was judged to involve routine public health activities for program evaluation. The protocol received ethical approval by the Institutional Ethical Review Committee of the Zimbabwe Medical Research Council.

Ten Apostolic parents/caregivers of children aged 9–59 months were included per district in the interviews. To obtain the target number, ten households with at least one eligible parent/caregiver were selected; in selected households with more than one eligible parent/caregiver all parents/caregivers were included in the assessment. A sample of ninety caregivers were obtained among all nine selected districts.

For the health-care worker FGDs, a total of ten HCWs were selected in the two health facilities with the largest Apostolic communities in each of the three assessment regions. In total, sixty HCWs participated in FGDs.

Religious leaders included in the study were identified from a complete list of religious leaders drafted by district medical officers in each of the three assessment areas. Interviewers approached religious leaders and interviewed the first ten in each assessment region who were willing to talk. A total of thirty religious leaders were interviewed.

All six members of the national EPI team participated in the FGDs.

FGDs were conducted in English and facilitated by a trained social epidemiologist from the US Centers for Disease Control and Prevention (CDC) who was assisted by two Zimbabwean epidemiologists who took notes and kept a written record of the discussions. A consent form was read to participants to inform them about the purpose of the assessment, their rights to refuse or withdraw from the interview anytime, and their anonymity. Discussions were also tape-recorded and transcribed. Transcriptions were used to complement the written recordings of the discussions that were entered for the final analysis. The FGDs were held at the Provincial Health Department in each of the selected provinces for the HCWs and at the Ministry of Health for the EPI team. Each FGD lasted 65 min.

Topics covered in the FGDs among HCWs and EPI managers include experiences with vaccination efforts among religious communities, pitfalls and successes related to delivering immunization and other services in these communities, perceived reasons for vaccination hesitancy, and thoughts on feasibility and acceptability of potential strategies for interventions.

Topics covered in semi-structured key informant interviews of religious leaders included knowledge, attitudes, and practices regarding vaccines, messages and information about vaccination given to church members, willingness to use/support immunization (and other health services) for church members, and acceptance of specific interventions and services that could strengthen demand for immunization services among Apostolic communities.

Topics in the open-ended question interviews with parents/caregivers include willingness to use immunization services (and other health services), knowledge, attitudes, and practices regarding vaccines, and acceptance of specific interventions and services related to vaccines.

Interviewers for the unstructured surveys attended a 2-day training in interviewing techniques during which the study objectives were discussed, and participated in the field testing of the questionnaires. The unstructured interviews took place wherever and whenever the subjects chose and privacy was assured. Each interview lasted on average between 20 and 25 min.

Computer-assisted qualitative data analysis software QSR NVivo version 10 (NVivo QSR, International, Victoria, Australia) was used to analyze FGD data and responses to open-ended questions from key informants and parents/caregivers. In our analysis, we performed queries on most used words and phrases (frequencies) and broadened the search into their context. This process allows a first look at what people are saying and facilitates the identification of themes or important factors. We performed a constant comparison process in which themes were merged into broader analytical categories.

Coding was performed by two data analysts for comparison and agreement on the most significant themes. An inter-rater agreement was reached on 100% of our coding. A summary of findings is shown in Table 1.

## **Focus Group Discussion Findings: Health-Care Workers**

### **Factors Related to Vaccination Hesitancy Among Apostolic Church Members According to HCWs**

Our analysis of HCW data suggests that Apostolic Church members refuse vaccinations because they are not educated about vaccines and lack positive information about them. They perceive vaccines as dangerous and believe that they can cause death or disease. Apostolic parents/caregivers also show more confidence in alternative medicines and treatments for diseases, including vaccine-preventable disease (VPD), such as holy water and prayer. They feel no need for vaccines, and they feel pressure from religious leaders and fear sanctions if they are seen receiving vaccines in public.

### **Factors Related to Vaccination Acceptance Among Apostolic Church Members According to HCWs**

According to HCWs, parents and caregivers tend to accept vaccination when it is provided in private. Caregivers whose life experiences have exposed them to “external” influences such as those who have relatives, who are not Apostolic, and who live outside their community, or recently converted Apostolics tend to accept vaccinations. Having experienced a death from a VPD in their family or community is also a motivating factor for accepting vaccinations. According to HCWs, Apostolic parents and caregivers who are educated or have been sensitized by HCWs tend to accept vaccinations. The levels of vaccine acceptance within various sects of the Apostolic Church vary from very accepting to complete intolerance of vaccinations, and members whose sects are more tolerant also accept vaccinations. Parents and caregivers, even in sects where vaccination is forbidden,

accept vaccination when police force is used or when they perceive that vaccination is a government order or backed by strong governmental involvement and the use of law enforcement, as was the case during the 2009 measles epidemic, rather than just a recommendation. Apostolic Church members who visit health facilities for other services such as family planning, antiretroviral (ARV) treatment, pediatric nutrition/food distribution, or mosquito net distribution events often use the opportunity to request or receive vaccinations for their children.

### **Recommended Strategies from HCWs to Reduce Vaccination Hesitancy**

HCWs recommend using community education, especially education interventions targeting women, as the primary intervention. Information should also be targeted and provided to school children and husbands/fathers. Incentives such as baby food, groceries, and t-shirts should be provided. HCWs suggested engaging and sensitizing religious leaders and getting government involvement in various ways ranging from adopting mandatory pediatric immunization policies to engaging religious leaders to show their commitment during vaccination campaigns.

### **Focus Group Discussions: National Expanded Program on Immunization Staff**

#### **Factors Related to Vaccination Hesitancy Among Apostolic Church Members According to EPI Staff**

National EPI staff state that parents and caregivers demonstrate a high level of vaccine hesitancy because they have more confidence in alternative treatments and medicines. The low level of education among Apostolic Church members and their lack of knowledge of modern medicine contribute to their negative perceptions of vaccines, which they perceive as something that “weakens the body.” EPI staff noted that Apostolic parents and care-givers also refuse vaccinations when there is no privacy to protect them from being discovered and sanctioned.

#### **Factors Related to Vaccination Acceptance Among Apostolic Church Members According to EPI Staff**

EPI staff indicated that Apostolic Church members accept vaccination (a) when it is required to accomplish a goal that is important to them (e.g., when they want to travel abroad), (b) when they are convinced that the government requires or advocates for vaccinations, or (c) during implementation of integrated health services where they are asked to have their children vaccinated before receiving complementary services such as provision of vitamin A, deworming medications, and/or mosquito nets. EPI staff also indicated that Apostolic Church members who have experienced death or disease in their family or community as a result of VPD tend to accept vaccinations, citing education, information, and sensitization as other highly influential factors.

## Recommended Strategies from EPI Staff to Reduce Vaccination Hesitancy Among Apostolic Church Members

National EPI staff think that health staff should be available at health facilities at odd times (i.e., off-hour services) when Apostolic parents and caregivers who want their children to receive vaccinations, but are afraid of being “punished” by their religious leaders or conservative community fellows, can obtain services in private. They also suggest that government should adopt policy directives to vaccinate all children.

The medical community should partner with community members such as HCWs and traditional healers or “chidzidzo,<sup>1</sup>” who are respected and influential members of the Apostolic community, to offer vaccinations. Last but not least, EPI staff argue for more information, education, and sensitization because Apostolic Church members who are educated and well informed are more inclined to accept vaccinations.

In summary, using the power and influence of government appears to be the most important strategy to increase vaccine acceptance, with community outreach as an important secondary strategy.

## Semi-Structured Interviews: Religious Leaders

The vast majority of religious leaders in our sample had lived in their communities for 20 years or more and had been in leadership positions for 20 years or more at the time of the study. More than half were over 60 years of age, and most were either self-employed or farmers, and both married and polygamous.

## Factors Related to Vaccination Hesitancy and Acceptance According to Religious Leaders

Religious leaders reported that their religion forbids vaccination. However, they also cited “personal” reasons for refusing vaccinations. During the semi-structured interviews, religious leaders clearly demonstrated a limited knowledge of vaccines and displayed a poor understanding and lack of appreciation of the effectiveness of vaccines.

About a quarter of religious leaders interviewed reported that observing the absence of diseases in a child who had been vaccinated is their primary reason to accept vaccinations, and experiences with death and disease as another important factor in their decision. These data suggest that some Apostolic leaders may have learned from these experiences and, as a result, accept vaccinations to prevent deaths from VPDs.

About half of religious leaders interviewed reported that they would consider vaccinations when force is used and when both they and their congregations have received the necessary information about vaccines and vaccinations. Most said they would prefer to receive the information from community health workers. The type of information that they wish to receive includes information on VPD in general and the risks, benefits, and importance of vaccines.

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<sup>1</sup>“Chidzidzo are local health doctors who offer local medicine in the Apostolic community.

## Conclusions

Our findings confirm the significance of the factors linked to vaccination hesitancy among parents and caregivers found in the quantitative assessment, notably, lack of privacy, social pressure, fear for sanctions, and religious teachings. They also confirm findings from the quantitative assessment on the importance of engaging church leaders, using government or law enforcement, and privacy to encourage vaccination acceptance (reference in this issue). Overall, we found that the influence of religion on vaccination hesitancy is mitigated by personal, environmental, and circumstantial factors such as experiences with death or disease, exposure to external influence, or encounters with government forces or the law.

Apostolic parents and caregivers are generally fearful of sanctions from religious leaders if they vaccinate children under their care, and therefore rely on prayers. Their reliance is reinforced by what Daneel (1970) describes as “the mystical world in which they live and according to which faith healing is strongly favored over modern medicine because of the widely accepted African belief in the personal causation of all ailments and misfortunes—such personal forces being the neglected family spirits, malignant alien spirits, witches or sorcerers” (Daneel 1970).

According to three of our four information sources, lack of knowledge of vaccines and negative perceptions of them are a major contributing factor to hesitancy (Table 1). These same factors may contribute to the persistence of the reliance on prayers as an alternative. According to all community members in our assessment, parents and caregivers perceive vaccines as dangerous and ineffective. This poor perception appears to be related to the lack of access to information, especially among women as a result of their powerless status, and reinforced by teachings that they receive from religious leaders who offer prayers as alternatives. The lack of privacy is an important contributing factor that was discussed by three of our four sources of information (see Table 1); it increases hesitancy behavior due to the threat of sanctions if members are caught accepting vaccinations for their children, especially during public vaccination campaigns.

By and large, the power and influence of government to implement mechanisms and other forms of authority or policy to regulate, encourage, and/or require immunizations can provide a framework for reducing hesitancy and increasing demand for vaccination.

## Implications for Developing a Framework for Interventions

Based on our findings, we propose an intervention framework designed to enhance access and increase demand by building a partnership between health providers, Apostolic communities, and government.

Offering vaccines during off-hour services may allow vaccine provision whenever needed in a private environment that protects parents/caregivers against sanctions by religious leaders or shunning or isolation by their more conservative neighbors.

In order to address the vaccine demand side, we think that education and information strategies are needed to improve knowledge and perceptions of vaccines. Qualitative data



indicate that the education and sensitization currently being conducted are insufficient and ineffective. Messages about vaccines should emphasize their safety and effectiveness in comparison with or in complement to other alternatives, including prayers. The myth of personal causality of diseases must be debunked. Opportunities to educate and sensitize would include, for example, when Apostolic parents/caregivers visit health facilities for other routine services. These services could include family planning, malaria treatment, antiretroviral treatment for those who are HIV-infected, treatment of wounds or burns, child nutrition, deworming for children, and mosquito net distribution. Community health workers are trusted and would be good candidates for reaching out to Apostolic communities for education, information, and sensitization.

Government can use its influence to pass laws and leverage its control of other opportunities such as school entries, the issuance of driver's licenses and acquisition of permits to require evidence of child vaccinations, thereby making it necessary or useful to have children vaccinated.

Analysis of the qualitative data showed that little is being done to address hesitancy, and the current response is limited to the passive reaction of providers who vaccinate only when asked. We think that the lack of an active engagement of the Apostolic populations contributed to the persistence of hesitancy, but this could change if providers and governments are more engaged and proactive. Overall, religious community leaders should be engaged, but both nurses and EPI staff think that government must step up and has the power to influence religious leaders who have themselves conceded their respect of government during interviews.

## Study Limitations

Findings from the study are qualitative and cannot be generalizable. Religious leaders who are interviewed were those willing to be interviewed and may not be representative of the Apostolic leadership in the study area.

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**Fig. 1.** Assessment areas in the regions of Matabeleland South, Manicaland, and Harare, rep of Zimbabwe

**Table 1**

Themes or factors related to vaccination hesitancy and acceptance among Apostolic Church members by sources of information

Themes/factors	Sources of information			
	Health-care workers	EPI staff	Religious leaders	Caregivers
Vaccination hesitancy				
Religious teachings	X	X	X	X
Poor knowledge of vaccines	X		X	
Negative perception of vaccines	X	X	X	
Confidence in alternative medicine or prayers	X	X		
Lack of privacy	X	X		X
Low level of education		X		
Lack of knowledge of modern medicine		X		
Child is healthy				X
Child absent when vaccination was offered				X
Vaccination acceptance				
Exposure to external influences	X			
Experiences with deaths or VPD in family or near relative	X	X	X	
Education and sensitization about vaccinations	X	X	X	X
Presence of police force or law enforcement	X		X	X
Government order or requirement	X	X		X
Use of other health services	X	X		
Want to accomplish a high priority		X		
Preventing diseases			X	X
Child born abroad (South Africa)				X
Child is sick/medical emergency				X
Church leaders give orders				X