

Knowledge, Attitudes, Practices & Behaviours on Immunization in Rwanda

FINAL REPORT



Republic of Rwanda
Ministry of Health



Rwanda
Biomedical
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ACRONYMS

AEFI	Adverse Events Following Immunisation
BCG	Bacillus Calmette-Guérin - Tuberculosis vaccine
C4D	Communication for Development
cMYP	Comprehensive Multi Year Plan
COVID-19	Corona virus disease 2019
DTP	Diphtheria, Tetanus, and Pertussis (whooping cough)
EPI	Expanded Program on Immunization
FGD	Focus Group Discussion
GAVI	Gavi The Vaccine Alliance
GVAP	The Global Vaccine Action Plan
Hib	Haemophilus influenzae type b
HPV	Human Papilloma Virus
KAPB	Knowledge Attitudes Practices and Behaviours
KII	Key Informants Interviews
MMR	Measles, Mumps, Rubella
MoH	Ministry of Health
NCDC	National Centre for Disease Control and Public Health
NITAG	National Immunization Technical Advisory Groups
NNT	Neonatal Tetanus
OPV	Oral Poliomyelitis Vaccine
PACV	Parent Attitudes about Childhood Vaccines
PCV	Pneumococcal Vaccine
RBC	Rwanda Biomedical Centre
RDHS	Rwanda Demographic and Health Survey
REC	Reach Every Community
SBCC	Strategy for Behaviour Change Communication
UCI	Universal Coverage of Immunization
UNICEF	United Nations Children's Funds
VPD	Vaccine-preventable diseases
WHO	World Health Organization

EXECUTIVE SUMMARY

Background

Rwanda has, over the last decade (2010 -2020), achieved an average Universal Coverage on Immunization (UCI) rate of 90% or higher for children between 12-35 months old. These successes, though impressive, have demonstrated the gaps that exist in current immunization programs. [Some of these gaps to the EPI program include dependency on external funds; personnel shortages, lack of time to amend some practices, delays in achieving action points and uneven distribution of immunization coverage¹.](#)

To address these gaps, the Government of Rwanda with technical support from UNICEF is working to improve the effectiveness of immunization efforts to achieve universal immunization coverage in the country. As part of efforts to improve immunization coverage, the Ministry of Health/Rwanda Biomedical Centre (RBC) together with UNICEF commissioned a Knowledge, Attitudes, Practices and Behaviors (KAPB) Study on immunization. The objectives of the study include; (i) assess knowledge, attitudes, practices and behaviours about Immunisation among parents/caregivers of children below the age of five-years living in Rwanda; (ii) assess perceptions, myths, and beliefs about child immunization; (iii) identify the enabling factors and barriers to immunization in Rwanda; and (iv) identify the most effective communication channels and tools (for the Rwandan context) to inform the design of the comprehensive SBCC strategy to inspire an increase in immunization services uptake.

Methodological Approach

The study sourced data from 9 randomly selected districts from the provinces of Kigali, Northern Province, Southern Province, Eastern Province and Western Province. A combination of districts with both low and high immunization coverage were selected to represent each province except Kigali. The methodological approach utilised both qualitative and quantitative methods. Desk reviews of relevant documents informed the development of tools and appreciation of the subject matter. A household survey was conducted on a sample of 852 households with at least one child aged less than five years old. Real time data was collected using Kobo and the data was analysed using SPSS and Stata. Qualitative data was collected through 19 Focus Group Discussions (FGDs) including 9 FGD with 71 Community Health Workers (CHWs) from all 9 districts of the study. Additionally, 10 FGDs were conducted with 39 caregivers of under five children (including 19 males and twenty female caregivers) in the 5 districts with the lowest immunization coverage. Moreover, 12 Key Informants Interviews were conducted including 4 key informants at National level with MOH/RBC representatives implementing immunization program in Rwanda and two representatives of partners of EPI program in Rwanda, 4 districts supervisors in charge of immunization in the districts with the lowest immunization coverage in the sampled districts. Additionally, 4 key informant interviews were conducted with nurses heading immunization services in four

¹ EPI Comprehensive Review Report 2019.

health centers where immunization sessions were directly observed (2 in Kayonza and 2 in Karongi Districts). Descriptive data analyses were conducted on the household survey and bivariate analysis was conducted to assess factors associated with knowledge, attitudes, behaviours and practices of caregivers about child immunization in Rwanda. Qualitative data from observations, literature review, FGDs and KIIs were analysed for content manually using matrices and tables to identify key themes and sub-themes related to challenges and barriers to child immunization in Rwanda.

The study was conducted after approval of research protocols by the Rwanda National Ethics Committee (RNEC), the Rwanda Health Scientific Committee, the Ministry of Health and the granting of a research visa by the National Institute of Statistics of Rwanda. As a quality assurance measure, the design of data collection tools used a conceptual framework that responded to the terms of reference of the study. A study team comprised of public health and communication experts supported by trained research assistants and enumerators. The work was supervised by a dedicated quality control expert from Primson Management Services.

KEY FINDINGS

Demographic Characteristics

A total of 852 caregivers were surveyed from 9 districts. The majority of study respondents were female caregivers, accounting for 88% of all study respondents. The study respondents were married caregivers, and these constituted 62.3% of all respondents across the five study provinces while those cohabiting represented 20.4%. Majority of caregivers were mothers, constituting 71% across the districts with fathers only ranging from 4% to as high as 19%. An average of 60.9% of caregivers across the study provinces had attained at least primary education whilst on an average of 7.7% had no formal education while 4.6 had tertiary education.

Knowledge and Attitudes: Observations during clinical vaccination sessions; health education talks and interactions with caregivers demonstrated the high levels of Healthcare provider knowledge on immunization procedures. Consequently, 76.4% of all respondents across the 9 study districts were able to define immunization. The study, however, has revealed that women were more knowledgeable about immunization as compared to men. Between 83% and 100% of women interviewed across the study districts could name different vaccine preventable diseases (e.g. pneumonia; diarrhoea; measles; whooping cough; tuberculosis and polio). Conversely, only 0 to 17% of men were able to name as many vaccine preventable diseases across the same districts. The different knowledge levels between men and women stems from the fact that women are the primary caregivers for children and thus interact more frequently with healthcare providers. There is, however, a significant appreciation across the gender divide of the important role vaccinations and immunization play in the health and well-being of a child. [There was no association between attitude of parents/caregivers towards immunization and their wealth status as well as attitude towards immunization and the geographical setting of respondents. There was no association between](#)

knowledge of parents/caregivers on immunization and their geographical setting (urban or rural place of residence) as well.

Perceptions, Myths and Beliefs about Child Immunization: Over 90% of study participants believe that immunization is beneficial to children's health. Conversely, the study revealed that 86% of respondents from the study districts believe that immunization causes fever in children and a further 27.6% believe that immunization causes other side-effects. This belief, especially in rural districts, results in the high prevalence of the use of alternative medicines. The study revealed that some caregivers across the study districts use injections and herbal remedies to address vaccination side-effects while feedback from FGD with CHW and parents indicated some take no action, opting to wait for the side-effects (mainly pain, discomfort, and fever) to disappear naturally. Evidence points to community rumours and religious leaders as the source of myths about immunization. Therefore, it is imperative that a comprehensive advocacy and engagement program be implemented to address the myths and negative beliefs on immunization and ensure factual information on immunization is imparted to caregivers and parents especially at every interaction with healthcare and health service providers.

Status of Immunization: The percentage of caregivers/parents who indicated that their children had received all vaccinations ranged from 89% in Rutsiro to 100% in Burera and Rwamagana. This suggests that relatively high percentages parents/caregivers are immunizing their children. Contributing factors for high coverage of immunization include knowledge that vaccinations prevent sickness and death, outreach immunization sessions in communities living away from health facilities, interventions of community health workers, making immunization of children mandatory and a strong health system from the national to community level².

Enablers and Barriers to Utilisation of Immunization Services: The study revealed that there are several enablers and barriers to immunization. **Enablers:** Factors that encourage uptake of vaccination include the free nature of vaccination services and community awareness of the importance of immunisation. FGDs with caregivers in study districts corroborated the fact that free vaccinations were an enabler to service uptake. As much as 69% of respondents in study districts reported never facing the problem of injectable vaccines being out of stock or running out. This shows that there is adequate supply to meet the current demand. Feedback from caregivers/parents noted that outreach sessions contributed to easier access to immunization services. **Barriers:** The study revealed that, at 95% confidence level, a child living without disability was 4.59 times more likely to be immunized as per schedule than a child living with disability. Participants in key Informant Interviews (KIIs) at central level explained that children with disability are less likely to receive all vaccines and they believe that it due to the stigma parents face that lead them to hide such children. Transport and time spent at health centers were noted as some of the barriers to immunization services. This transport barrier is especially evident in Rutsiro (87%), Kayonza (74%), Muhanga (81%)

² Child Immunization is one of the health indicators of the Imihigo or Performance contracts between the President and District Mayors. Therefore, it is regularly checked by CHWs and Local leaders for follow-up. Please see the REACH project report pages 9-11.

and Gicumbi (68%) and Gasabo (76%) where caregivers cited transport as the main barrier to immunizing their children. FGD with caregivers, CHWs and KII participants at national, district, and at health centre levels revealed that some children received delayed vaccines or missed appointments due to long distances. On average parents travel for about 45 minutes to the nearest health centre. Facilities have inadequate space to accommodate caregivers. This results in crowding at the few health facilities as well as long waiting times before receiving service, consequently discouraging service uptake. Some participants also indicated that traditional and religious beliefs are also another barrier to uptake of immunization services.

Communication Needs Assessment: The study observed that 24% of parents/caregivers did not have comprehensive knowledge about immunization of which 88% were female. Districts with a relatively high proportion of respondents with limited knowledge of immunization included Burera (32); Kayonza (32) and Rutsiro (30). Generally, there is low risk perception about diseases against which children can be immunized. Parents/caregivers hold the opinion that traditional and religious leaders have negative perceptions on vaccinations and/or immunization, thereby suggesting a need for a robust advocacy program. Study findings also reveal how within communities the immunization and or vaccination of children is the responsibility of the woman. Evidence suggests that care for children below the age of two years (especially in rural settings) is the sole preserve of women. The gender bias in immunization and or vaccination extends beyond the caregivers to the healthcare providers as well. There is a need for a C4D/SBCC strategy that addresses the 20% of caregivers that are not taking up immunization and vaccination services while also ensuring that caregivers currently taking up services do not drop service seeking/uptake behaviours. Advocating for the completion of immunization and or vaccination programs as a point of pride for all caregivers and “national pride” for Rwanda should be adopted. The long wait for services, as noted from KIIs raises the need to improve client (caregiver/parent) experience during service uptake at health facilities and community outreaches. The study results reveal Interpersonal Communication (IPC) channels are the biggest and preferred sources of information about immunization. The most preferred channels are Community Health Workers (CHWs), Umuganda (community events), Community Health Workers, Health Workers at the health facility and lastly radio and mobile phone. A Short Message Service (SMS) on mobile phone represents an opportunity for more tailored engagement with the audiences and could be deployed to address immediate needs like reminding parents the due – dates for immunization. It could also be used in providing support to the parents whose children are [experience vaccines’ side effects](#).

Immunization and COVID-19: 95% of respondents believe that caregivers are still going to clinics to immunize their children amid the COVID 19 pandemic. The rest, 5% believe that caregivers are neglecting to immunize their children as a result of COVID 19.

1. INTRODUCTION

This introductory section covers the background context, an overview of immunisation in Rwanda as well as study objectives.

1.1 Background Context

Global Context: Globally, vaccination is considered one of the most cost – effective interventions to protect human beings from several diseases. The Human Papilloma Virus (HPV), for example, is the main cause of cervical cancer for women and girls, claiming the lives of approximately 311,000 women each year, and more than 60% of these deaths occurring in less developed countries.³ Women often lack access to screening and treatment and young girls lack access to vaccination. Immunization not only saves lives but also contributes to the social economic well-being of communities and this trickle down to households, girls and women.

Despite the tremendous progress recorded by immunization programmes, coverage of immunization services has remained suboptimal in the African Region.⁴ To improve immunization coverage in the African Region multiple strategies are being implemented including functional National Immunization Technical Advisory Groups (NITAG), to guide policy makers in making evidence-based immunization related policy decisions in the context of local epidemiology and cost effectiveness. The aim being to reduce dependency on external bodies for policy guidance. The Global Vaccine Action Plan (GVAP) 2021-2030 was developed by World Health Organisation (WHO) and UNICEF as a framework for strengthening national immunization programmes towards optimizing the benefits of immunization and achieving a vision of expanded access to vaccines and immunization in an equitable manner.⁵

The region has also intensified collaboration with UNICEF and other partners in promoting community ownership of the immunization programmes to create sustainable demand for immunization services. This is particularly important in the drive to maintain and increase demand for and uptake of available services through social and behavioural change interventions; ensuring government transparency and accountability; and supporting resource mobilization. Other benefits of involving civil society organizations and communities include arriving at comprehensive national health policies that address the real needs of the people it serves as well as guaranteeing support in the monitoring and evaluating the effectiveness of the program. Effective engagement of communities is thus essential to ensuring continued progress towards universal access to immunization. All of these measures are geared towards achieving high coverage and equity in immunization programmes, which are critical in ensuring universal immunization coverage and protect communities from vaccine preventable diseases.

In 2014, approximately 23% of infants (7.4 million out of an annual birth cohort of 32.7 million) did not receive the third dose of DTP vaccines in the WHO African Region.

³ Mihigo R, Anya B, Okeibunor J, Poy A, Nshimirimana D. Routine immunization in the WHO African Region: progress, challenges and way forward. *African Health Monitor*. 2015; 19:2–4

⁴ Mihigo R, Anya B, Okeibunor J, Poy A, Nshimirimana D. Routine immunization in the WHO African Region: progress, challenges and way forward. *African Health Monitor*. 2015; 19:2–4

⁵ Global Vaccine Action Plan. Decade of vaccine collaboration. *Vaccine*. 2013 Apr 18; 31 Suppl 2: B5-31

Immunization coverage has stagnated at around 70% for a prolonged period⁶. Worse still, there has been significant disparity and inequities in coverage, as coverage is improved in some settings and not in others.⁷ The African Region missed the health-related Millennium Development Goal (MDGs) and has been off-track of the GVAP targets due to some challenges to the immunization programmes. The persistence of these challenges poses a danger to the realization of the Sustainable Development Goals as well as Immunization 2030 Agenda. These challenges include funding shortfalls and a lack of political will.

Today, deaths from vaccine preventable diseases are higher in areas/regions where the mothers have low education. Children from poorest households are 1.9 times likely to die before age five than their counterparts from the richest households; children from rural areas are 1.7 times as likely to die before age five as children from urban areas; under-five years children in fragile contexts are nearly 2 times as likely to die as children of the world⁸. The figures indicate a need for greater coverage of immunization service and protection of the populations of the African Region.

Nevertheless, the Rwanda Immunization Programme has proven to be among the best performing in Africa and internationally. Despite this, efforts need to be made to sustain these achievements and address the remaining geographical, administrative, and socio-cultural challenges.

Rwanda Context: Rwanda has consistently achieved universal coverage of immunization (UCI) in the last decade (2010-2018), with more than 90 percent of all children aged 12-35 months fully vaccinated. According to the 2020 Rwanda Demographic and Health Survey (RDHS) report, the percentage of children aged 12-35 months fully immunized remained above 90% in the last decade. A recent study on immunization coverage conducted in 2019 in all districts of Rwanda has revealed that 95% of 12-35 months children were fully immunized⁹.

Strategic planning and effective implementation of policies made it possible for immunization service to be delivered in both fixed sites (health centers) and outreach sessions for the hard-to-reach areas. More than 90% of Rwandan's children are vaccinated at the fixed sites¹⁰. The outreach strategy has been revitalized in most health facilities, using financial support made available by the Government of Rwanda and GAVI Alliance. Despite these achievements and efforts, the successes have not been uniform. For instance, official reports, WHO and UNICEF estimates indicate that all districts reported DPT3 coverage of 98% in 2020 from 2019 estimates.¹¹ The RDHS 2019-20 report indicates that basic immunization coverage is steadily high, but [differs slightly by residence, mother's education and wealth. The report highlighted that all basic vaccination coverage was highest in the Southern province \(97.3%\) and lowest in North province \(93.8%\). The report also showed that immunization coverage was lowest in the lower or first wealth quintiles \(93.4%\) and highest in the fourth wealth quintile \(97.5%\).](#)

⁶ LaFond A, Kanagat N, Steinglass R, Fields R, Sequeira J, Mookherji S. Drivers of routine immunization coverage improvement in Africa: findings from district-level case studies. *Health Policy Plan*. 2015;30(3):298–308.

⁷ Mihigo, R., Okeibunor, J., Anya, B., Mkanda, P., & Zawaira, F. (2017). Challenges of immunization in the African Region. *The Pan African medical journal*, 27(Suppl 3), 12. doi: 10.11604/pamj.supp.2017.27.3.12127.

⁸ UNICEF. Analysis based on the United Nations inter-agency group for child mortality estimation.

⁹ EPI Comprehensive Review Report 2019.

¹⁰ National Immunization Coverage Survey conducted in 2007.

¹¹ WHO/UNICEF estimates time series for Rwanda 2020.

but it increases with mothers' education in secondary school or higher as well as with wealth. However complete immunization coverage is slightly lower in the fourth quintile¹². Another recent study on Rwanda immunization coverage conducted in 2017 by MOH in collaboration with UNICEF and the University of Rwanda, School of Public Health, revealed that more than 90% of caregivers do believe that vaccines can protect children from serious diseases. However, 0.8% of caregivers reported to have ever refused vaccination for their children and 0.5% informed that distance, time needed to get to clinic or wait at clinic and/or costs in getting to clinic prevented them from getting their children immunized.

The government of Rwanda through MOH/RBC with technical support from UNICEF are working to improve the effectiveness of immunization efforts and maintain a high immunization coverage in Rwanda. Hence the identification of socio-cultural, administrative and legal barriers and enablers to immunization as well as the communication gaps is key in realising this goal. In light of this background, the Ministry of Health/Rwanda Biomedical Centre (RBC) with support from UNICEF have commissioned a Knowledge, Attitudes, Practices and Behaviours (KAPB) study on immunization. Therefore, this study seeks to identify the socio-cultural, administrative and legal barriers and enablers to immunization in Rwanda in order to inform development of comprehensive SBCC strategy to maintain and further increase the immunization services uptake.

1.2 Rationale and Purpose of the KAP

The government of Rwanda with technical support from UNICEF are working to improve the effectiveness of immunization efforts and maintain a high immunization coverage in Rwanda. Hence the identification of socio-cultural, administrative and legal barriers and enablers to immunization as well as the communication gaps is key in realising this goal. In light of this background, the Ministry of Health/Rwanda Biomedical Centre (RBC) with support from UNICEF have commissioned a Knowledge, Attitudes, Practices and Behaviours (KAPB) study on immunization. These study results inform the social and behaviour change communication (SBCC) interventions and policy advice around addressing social norms and barriers to vaccination and ensure that all children irrespective of gender and health status equally enjoy their right to health.

1.3 Overview of Immunisation in Rwanda

Rwanda is renowned for its best performance in Expanded Program on Immunization (EPI) in Africa. This was shown in the immunization coverage survey carried out by WHO/UNICEF and other stakeholders. The good performance of Rwanda EPI program was also illustrated in a survey carried out by University of Rwanda-College of Medicine and Health Sciences-School of Public Health. From the findings it was shown that 95% of children aged 12-35 months were fully immunized. In addition, only 1% of children had not received vaccination by the time of RDHS 2014-15 survey¹³. In addition, Rwanda carries out comprehensive immunization surveys to assess gaps in immunization nationally and identify solutions to keep up the

¹² MINECOFINE, MACRO. Rwanda Demographic and Health Survey, 2014-2015.

¹³ RBC (vaccine Preventable Diseases Division) and Ministry of Health Comprehensive Multi-Year Plan 2013-2017 4

immunization prevalence. This is in line with WHO recommendations to boost the immunization prevalence worldwide¹⁴.

According to the new Rwanda Demographic and Health Survey (RDHS 2019-2020), child health has increasingly been improved due to vaccination in Rwanda. The latter has achieved an impressive vaccination coverage where 96% of children have received all basic vaccination with less than 1% of children who haven't received any vaccine. Children receive all vaccines in their first five years of their lives and basic vaccines are received by the age of 12-23 months. Altogether, there are 6 universal vaccines against diseases namely Tuberculosis, Diphtheria, Whooping cough (pertussis), Tetanus, Polio, and Measles. For 12-23 months and less, children receive one dose of Bacillus Calmette-Guérin (BCG), 3 doses of DPT vaccine (at 6, 10 and 14 weeks of age), 3 doses of polio vaccines and pentavalent at similar life periods as DPT, and measles at 9 months. At the age of 15 months, the child is given the second dose of measles vaccine. In addition, vaccination schedules and vaccines have been amended over the years but still follow WHO guidelines.

Interestingly, the vaccination is affected by family's wealth status, education and area of residence. Some vaccines have been combined notably Haemophilus Influenza type B, Hepatitis B and DPT to make Pentavalent. Since 2018, one dose of inactivated poliomyelitis vaccines has been added to those issued to children aged 14 weeks. Nevertheless, they still receive an oral polio vaccine altogether for child protection against polio. (RDHS 2019-20).

Rwanda EPI program is implemented through strategies that appear in the Health Sector Strategic Plan (HSSP4), in conformity with the national constitution that recognizes health as a human right, and universal health coverage principles. Rwanda ensures access to immunization services to all eligible populations, and this maintains the high immunization prevalence¹⁵. Over the years, EPI program has made tremendous efforts in tackling challenges to access to immunization by implementing the recommendations from the national comprehensive immunization survey. Of 32 recommendations that were proposed, 19 have been fully met, 10 partially met and two not implemented. Furthermore, vaccines like MR, HPV, and IPV were introduced; and to ensure quality of vaccines, a cold chain assessment and effective vaccine management assessment are carried out. To date, 12 vaccines are given to the population to prevent diseases like tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis, hepatitis B, Haemophilus Influenza B, measles, Rubella, Streptococcus pneumonia, rotavirus infections, and cervical cancer vaccine given to young girls aged 12 years¹⁶. The administration of these vaccines follows the national immunization schedule below and doses comply with WHO recommendations:

¹⁴ Republic of Rwanda Comprehensive Review, 2019: Expanded Programme on Immunization.

¹⁵ Ibid 11.

¹⁶ "Rwanda Routine Immunization Coverage Survey. <http://www.mendeley.com/documents/?uuid=647367b3-1489-4f6a-85b6-d678f4d1ea22>".

Vaccine	Description	Schedule
Primary Infant and Adolescent Vaccination Schedule		
BCG	Bacille Calmette-Guérin vaccine	Birth
OPV	Oral polio vaccine	Birth; 6, 10, 14 weeks
DTwPHibHepB	Diphtheria and Tetanus and Pertussis and Haemophilus influenzae and Hepatitis B vaccine	6, 10, 14 weeks
Pneumo_conj	Pneumococcal conjugate vaccine	6, 10, 14 weeks
Rotavirus	Rotavirus vaccine	6, 10, 14 weeks
MR	Measles and rubella vaccine	9, 15 months
HPV	Human Papillomavirus vaccine	1 st contact; +2 months

Figure 1: Current Routine Immunisation Schedule

To extend immunization prevalence, different strategies are used to reach out to beneficiaries namely fixed sites (health facilities), which accounts for the 90% of the vaccinated children and outreaches sessions in remote areas. Reaching Every Community (REC) strategy was introduced to increase awareness of and access to services. These outreaches are made possible with funds from the Government of Rwanda, GAVI alliance, and other partners like WHO, UNICEF, and USAID¹⁷.

Moreover, the Rwanda EPI program achieved WHO targets on immunization which led to the eradication of polio, elimination of measles, and MNT. EPI implementation is backed up by good governance and political support in pursuit of its vision which is to eradicate all Vaccine Preventable Diseases (VPD) in Rwanda. The political support includes budget allocation to supporting the implementation of EPI 5-year cMYPs 2017-2021.

The EPI program is decentralised countrywide and has district technical working groups that have regular meetings to amend immunization service delivery. The committee also approves the district EPI strategic plan (EPI cMYP) to implement national cMYPs. From there, health centres take the lead in developing and implementing health centre strategic plan, in line with EPI cMYP, in the community. Community Health Workers also play a role in immunization services by tracking defaulters, through community mobilization and infant registrations in their respective villages.

Some of the hindrances to EPI program implementation include dependency on external funds; personnel shortages (immunization providers and supervisors) which results in delayed service delivery; lack of time to amend some practices, and delays in achieving action points.

¹⁷ Ibid 11.

1.4 Specific Objectives

The overall objectives of the study are:

- i. To assess Knowledge, attitudes, practices and behaviours about Immunisation among parents/caregivers of under-five-years children living in Rwanda.
- ii. To assess Perceptions, myths, and misconceptions about child immunization in Rwanda.
- iii. To identify the enabling factors as well as barriers to immunization in Rwanda.
- iv. To identify most effective communication channels and tools used in Rwanda to inform the design of the comprehensive SBCC strategy to maintain and further increase the immunization services uptake.

2. METHODOLOGICAL APPROACH

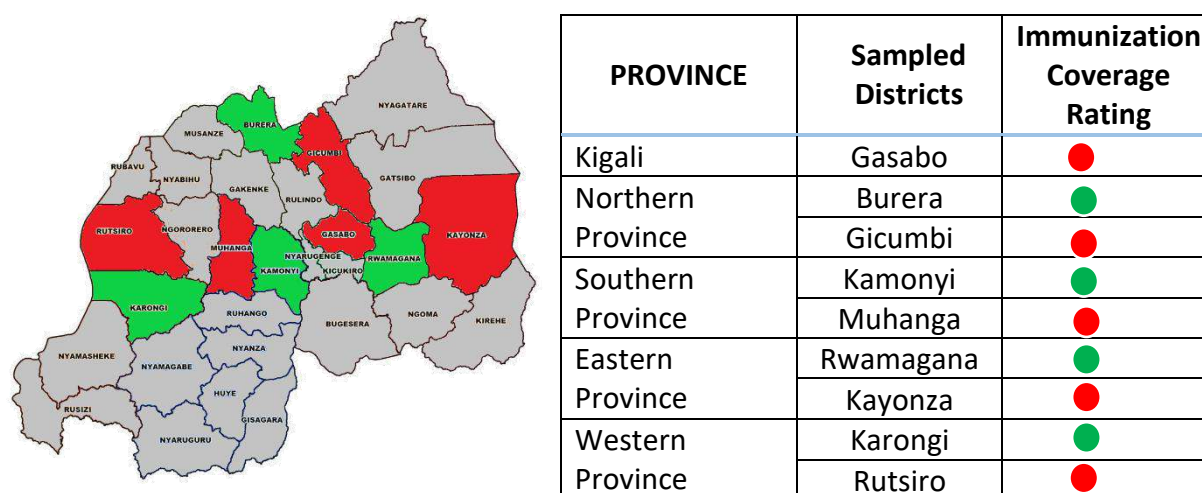
The section details the methodology of the study.

2.1 Design and Study Areas

A cross-sectional survey was conducted to collect qualitative and quantitative data on the knowledge, attitudes and practices on immunization from 9 selected districts in all five Provinces of Rwanda.

This study was carried out in the districts that had the highest and lowest immunization coverage as recorded in the Rwanda Routine Immunization Coverage Survey (2017) and EPI Comprehensive Review Report 2019. Figure 2 shows the provinces and respective districts for the study.

Figure 2: Sampled and Replacement Districts



Key:

High Immunization	●
Low Immunization	●

Following the government notice of 2 June 2020 lock down restrictions, Rusizi and Rubavu were omitted from the original survey plan. While Karongi and Rutsiro districts were sampled for inclusion. In each province (except Kigali) 2 districts were chosen, one with the highest and the other with lowest immunization coverage recorded within the province. In Kigali, Gasabo was chosen as it recorded lowest (Rwanda Routine Immunization Coverage Survey, 2017).

2.2 Quantitative Approach

Sampling Frame: The sampling frame for the household survey consisted of all households in the nine study districts of Rwanda that included Gasabo, Burera, Gicumbi, Kamonyi, Muhanga, Rwamagana, Kayonza, Karongi and Rutsiro.

Sample Size Determination: Assuming 50% of the target population have an attribute of interest, a minimum sample of 900 was found to be adequate at 95% confidence level, 4.95% level of precision and considering a non-response rate of 15%.

Sampling Strategy: A combination of multistage and stratified random sampling was used to select a representative sample of households in each of the 9 study districts. At each sampling stage, the probability of selection for each sampling unit was recorded for calculation of sampling weight. A sector was the primary sampling unit, and a cell was the secondary sampling unit.

In the **first stage**, 1 urban sector and 1 rural sector were randomly selected in each of the 9 study districts.

In **stage two**, stratified random sampling with probability proportional to size was used to select a total of 3 cells in each selected sector.

In **stage three**, two villages per cell were randomly selected.

In **stage four**, a sketch map of each selected village was drawn and a rough estimation of the location of households was done. Using a household list prepared with assistance from the village head, the survey team listed and numbered all households in a sampled village. Households were listed by name of household head, household size, age of household head, number of adults, number of children and number of children aged 12-35 months. Using a random number table, stratified random sampling was used to select 10 households from each village with children aged 12-35 months. Households with children under five living with disability were automatically selected for inclusion in the study.

2.3 Qualitative Methods and Processes

2.3.1 Recruitment Procedures for Key Informants

A Purposive sampling strategy was used to recruit participants including male and female parents/ caregivers with children under the age of five years, immunization service providers in health centres, and key stakeholders at National level including Immunization officers from the MOH, RBC, and key partners.

2.3.2 Data collection procedures

- i. **Desk review:** A literature review of policy documents, research and programme evaluation reports of the EPI Program of Rwanda were reviewed to determine current trends, legislations & policies and explain the enablers and barriers to access and uptake of immunization services with existing literature. The desk review analysed global, regional and Rwandan literature on matters around immunization. The desk review also assessed the global and regional trends on immunization and health care

from social norms, gender and inclusion perspective. Additionally, the current SBCC strategies used in Rwanda were reviewed to identify gaps and relevant recommendations. In total more than 10 documents were reviewed (see the list of references) and the summary of the desk review is provided in the introduction section of this report.

- ii. Focus group discussions with parents/caregivers of children under five:** Ten (10) FGDs were organized in the five districts with the lowest immunization coverage within all Provinces of Rwanda. In each selected district, one of the five villages in which the household survey was conducted was selected randomly. In collaboration with the heads of villages, two (2) FGD groups were conducted one with male and one with female caregivers of children under five. In each group, four (4) participants were purposively identified and recruited to participate. Parents/caregivers with children under five living with disabilities who were identified and willing to participate, were invited to the FGDs. In total, thirty nine (39) parents/caregivers of children under five attended the FGDs including nineteen (19) male and twenty (20) female parents/caregivers.
- iii. Focus group discussion with Community Health Workers:** Nine (9) FGDs were conducted with seventy one (71) CHWs (twenty six (26) male and forty five (45) female CHWs) recruited in all nine districts participating in the study to discuss with them the challenges and facilitators of child immunization in Rwanda. In each district the Research Assistants identified the CHWs in collaboration with the District Health Directors. First One Health Centre (HC) was purposively selected. Secondly, the HC in charge of CHWs with RAs identified eight (8) CHWs that were available to come to the HC for the FGD. Selected CHWs were informed about the place and time of FGD. All FGDs were conducted in Kinyarwanda, transcribed and translated directly in Kinyarwanda by the trained research assistants.

Table 1: Participants in the qualitative study on child immunization in Rwanda

Provinces	Districts	KIIs at national level	KIIs at district level	KIIs with providers in HCs	FGDs with CHWs	FGDs with Parents/ Caregivers	Direct observations
Kigali	Gasabo	4	1	-	7	8	-
Northern	H: Burera	-	-	-	8	-	-
	L: Gicumbi	-	1	-	8	8	-
Southern	H: Kamonyi+	-	-	-	8	-	-
	L: Muhanga	-	1	-	8	8	-
Eastern	H: Rwamagana	-	-	-	8	-	-
	L: Kayonza	-	1	2	8	8	2
Western	H: Karongi	-	-	2	8	-	2
	L: Rutsiro	-	1	-	8	7	-
TOTAL = 126		4	4	4	71	39	4

- iv. Key Informant Interviews (KIIs):** Twelve KIIs were conducted as follow: four (4) KIIs at National level including two (2) KII with RBC representative of EPI implementers, two (2) key informant interviews were conducted with strategic institutions namely WHO and UNICEF. More KIIs were carried out at district level with four (4) districts Health

Supervisors in charge of immunization. One supervisor from Kayonza District was not interviewed and he failed to respond to interview questions by email as he was diagnosed with COVID with all his colleagues and during the household survey he was attending a training in Musanze. At district level four (4) KIIs were conducted with nurses' heads of Immunization services in the health Centers.

- v. **Direct Observation:** Four (4) Direct observations of facilities offering services of immunization were conducted at service delivery points to investigating gaps and enablers for adherence to the services. Table 2 shows the list of health centres that were visited for direct observations.

Table 2: Health Centres for Direct Observations

Province	District	Sector	Cell	Health Centre
Western Province	Karongi (High Coverage District)	Bwishyura	Kayenzi	Kibuye
		Rubengera	Rubengera	Rubengera
Eastern Province	Kayonza (Low coverage district)	Mukarange	Nyagatavu	Mukarange
		Kabare	Cyarubare	Cyarubare

2.4 Quality Assurance

Quality of Data Collected: The use of a conceptual framework and development of data collection tools that are anchored in the key research questions ensured data dependability and relevance. All the tools had questions developed around the conceptual framework to include knowledge, attitudes, practices, behaviours, vaccine coverage, myths & societal gendered norms, community awareness and community access.

Pilot-testing: After training of field workers, data collection tools were pre-tested in Nyarugenge district of Kigali City in % villages selected randomly from Nyarugenge District for one day to help enumerators get familiar with the tools, and to assess the length of interviews as well as the quality of questions. In total, fifty (50) household interviews and two (2) focus group discussions (one with male and one with female parents or caregivers with children under five) were conducted in fifty (50) households. After piloting, the team met to discuss any challenges they faced with the tools. After the discussion team leaders were tasked to summarize all changes in Household questionnaires, in Kobo tools and in the FGD guides before the teams started actual data collection.

Debriefing: For effective communication among team members during data collection and report writing, the team occasionally held meetings some virtual and social network group was generated where questions and issues are regularly discussed.

2.5 Limitations and Mitigation Strategy

List of households with children under the age of five years not available: In the National Institute of Statistics the list of households in all villages aggregated by cell, sector, district

and province is available, however, the number of HH with children under the age of five was not found. In health sector, the number of children under five years was available but in Rwanda many families have more than one child below five years. In order to address the sampling challenge of using Probability Proportional to Size (PPS) for sampling as originally planned, the team used equal allocation of samples in all villages, districts and provinces.

Unavailability of some of the key informants: Some of the key informants were not available when field work was carried out. This was because the study was conducted towards the end of the year when most institutions were preparing for the year end. However, to mitigate this, the researchers conducted the interviews at a later date.

2.6 Ethical clearance and consent

Clearance to conduct the research was obtained from different relevant institutions including the Rwanda National Ethics committee (RNEC), the Rwanda Health Scientific Committee, the Ministers authorisation to collect data in health centres, and the research visa from the National Institute of Statistics of Rwanda (NISR). Research staff received short training in informed consent and principles of ethical research as well COVID-19 special instructions to protect them and study participants from the Pandemic. Individual, written informed consent was obtained from participants on-site immediately before joining the FGDs, KIIs, and household surveys. Permission was obtained from staff and parents/caregivers with children under five before taking their picture during vaccination session observation.

3. KEY FINDINGS

This chapter presents the key findings on demographic characteristics; immunization status; key enablers; and knowledge attitudes and practices. It also presents the communication needs assessment.



Demographic Characteristics

Knowledge, Attitudes, Practices and Behaviours for Immunisation in Rwanda

Female

Sex of Caregiver

Male

88%



12%

Marital Status

62%

Married

Cohabitation

21%

13%

Never Married



Divorced

1%

1%

Widowed

Separated

2%

Relationship to Child



Mother

85%



Father

11%

Grandmother

1%



Grandfather

3%



Yes

Head of Household

No

33%



67%

Highest Level of Education



None

8%

Primary

61%

Secondary

26%

Tertiary

5%

Average Time to the Nearest Health Centre

Rural

45.76 mins

Overall

45.74 min

Urban

45.68 mins

3.1 Demographic Characteristics

Out of 852 respondents surveyed in 9 districts, the highest proportion (12.6%) were from Kamonyi and Karongi with the same proportions. The lowest proportion (8.5%) of respondents were from Rwamagana. Figure 3 presents the distribution of respondents by districts.

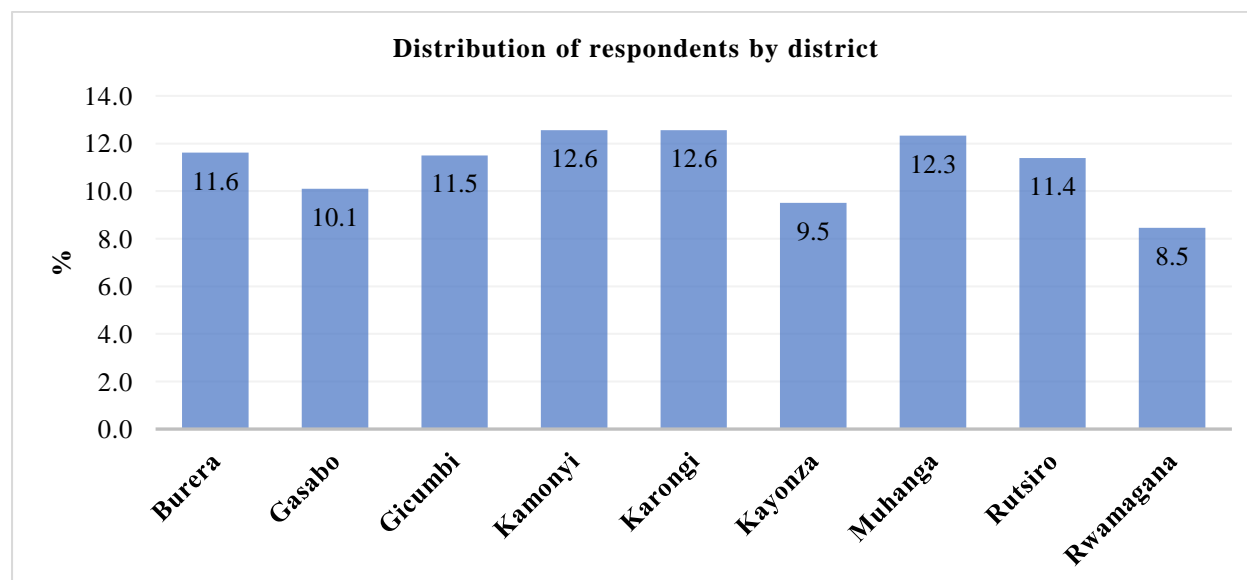


Figure 3: Distribution of Respondents by District

Sex of Care giver or parent

In all surveyed districts, females represented about 88.4% of parents/caregivers with the highest proportion being in Rwamagana and lowest being in Rutsiro. Interviewed caregivers or parents who were male ranged from 4.2% in Rwamagana to 17.5% in Rutsiro.

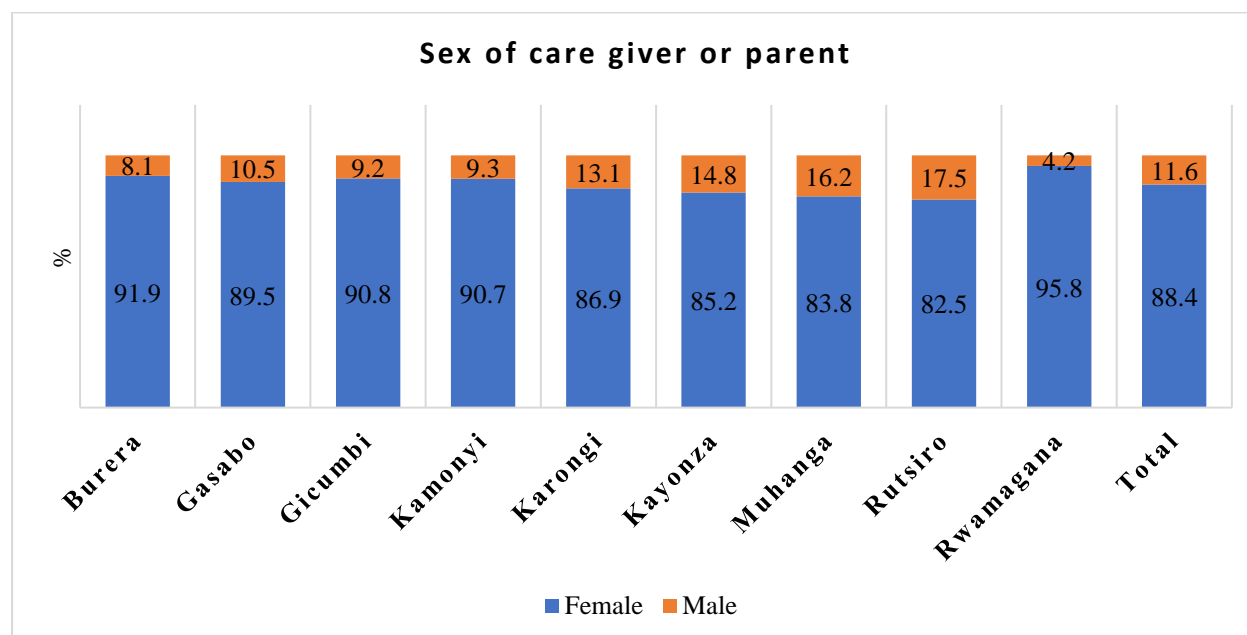


Figure 4: Sex of Respondents by District

Marital Status of Care giver or Parent

In each district surveyed, 61.5% of respondents were married followed by 21.4% of cohabiting couples. In most districts surveyed, the lowest proportion of respondents were separated as shown by proportions ranging from 0.9% in Kamonyi and Karongi to 4.1% in Gicumbi.

Table 3: Marital status of caregiver or parent

District	% Cohabitation	% Divorced	% Married	% Never married	% Separated	% Widowed	Total (%)
Burera	26.3	0.0	67.7	5.1	0.0	1.0	100.0
Gasabo	41.9	0.0	43.0	10.5	0.0	4.7	100.0
Gicumbi	18.4	1.0	65.3	10.2	4.1	1.0	100.0
Kamonyi	26.2	0.0	52.3	19.6	0.9	0.9	100.0
Karongi	7.5	1.9	68.2	18.7	0.9	2.8	100.0
Kayonza	32.1	1.2	53.1	9.9	3.7	0.0	100.0
Muhanga	11.4	0.0	69.5	18.1	1.0	0.0	100.0
Rutsiro	5.2	0.0	72.2	17.5	3.1	2.1	100.0
Rwamagana	31.9	0.0	56.9	9.7	1.4	0	100.0
Total	21.4	0.5	61.5	13.6	1.6	1.4	100.0

Relationship of Respondent to Child included in the Sample: Most of the respondents were mothers to the children included in the survey as shown by proportions ranging from 77% in Rutsiro to 92% in Rwamagana. The proportion of respondents who were fathers to the children included in the survey ranged from 4.2% in Rwamagana to 16.5% in Rutsiro. The proportion of respondents who were grandfathers to the children included in the survey ranged from 0.9% in Kamonyi to 1.9% in Karongi. The proportion of respondents who were grandmothers to the children included in the survey ranged from 1% in Gicumbi to 4.2% in Rwamagana. Table 4 shows the relationship of the respondent with the child.

Table 4: Relationship types between respondent and child

District	Father	Grandfather	Grandmother	Mother	Other	Total
Burera	10.1	0.0	0.0	89.9	0.0	100.0
Gasabo	11.6	0.0	3.5	83.7	1.2	100.0
Gicumbi	9.2	0.0	1.0	88.8	1.0	100.0
Kamonyi	8.4	0.9	3.7	86.9	0.0	100.0
Karongi	12.1	1.9	3.7	81.3	0.9	100.0
Kayonza	13.6	0.0	3.7	82.7	0.0	100.0
Muhanga	16.2	0.0	2.9	81.0	0.0	100.0
Rutsiro	16.5	1.0	4.1	77.3	1.0	100.0
Rwamagana	4.2	0.0	4.2	91.7	0.0	100.0
Total	11.5	0.5	2.9	84.6	0.5	100.0

Respondents who were household heads

Overall, 67.9% of those surveyed were not Household heads ranging from 52.6% in Rutsiro to 83.1% in Rwamagana. The proportion of respondents who were household heads ranged from 16.9% in Rwamagana to 47.4% in Rutsiro. shows the proportion of households who were household heads.

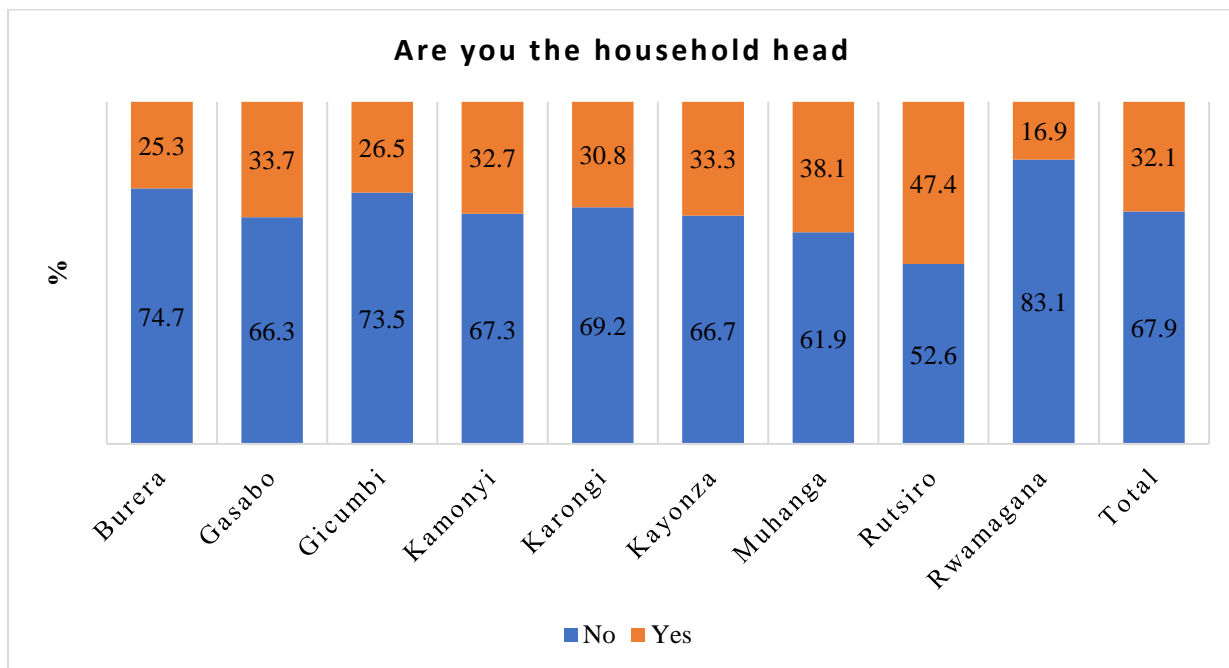
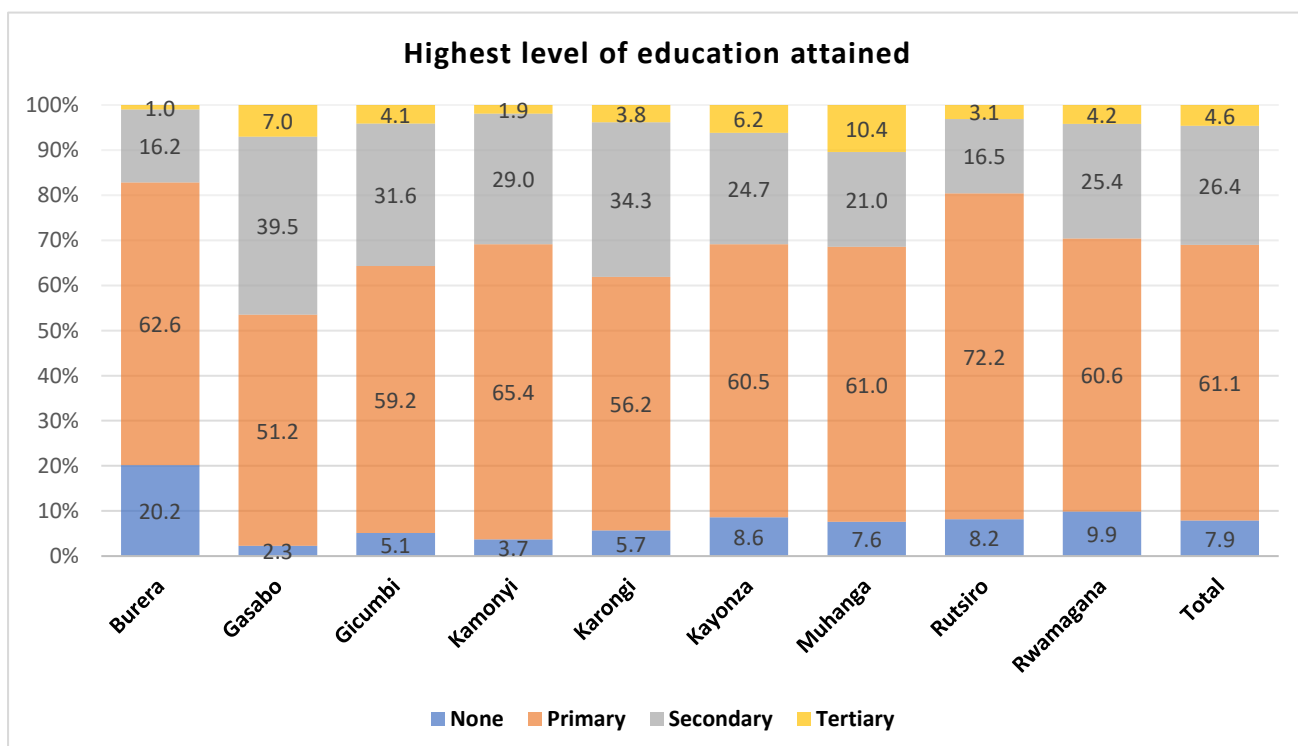


Figure 5: Proportion of Households who are Household Heads

Highest Level of Education Attained

In each district, the majority of respondents reported that they had primary level of education as the highest level of education attained as shown by proportions ranging from 51% in



Gasabo to 72% in Rutsiro. The proportion of caregivers or parents who had attained tertiary education ranged from 1% in Burera to 10.4% in Muhanga. Figure 6 shows the level of education attainment in the sampled districts.

Figure 6: Highest Education Attainment in Sampled Districts

Time taken (in minutes) to the nearest health centre.

The mean time taken to walk to the nearest health centre was 45.74 minutes in all districts ANOVA test indicated that there was no significant difference in the time takes to walk to the nearest health centre by parents in Burera, Gasabo, Muhanga, Rutsiro, Gicumbi and Kamonyi ($p = 0.000$). There was significant difference between the time taken by parents/caregivers in Karongi and Kayonza, Table 5 shows the average time taken to the nearest health centre in the sampled districts.

Table 5: Distance to Nearest Health Facility

District	Mean (minutes)	Minimum (minutes)	Maximum (minutes)
Burera	42.38	5	180
Gasabo	50.12	5	180
Gicumbi	48.05	3	210
Kamonyi	48.53	5	150
Karongi	28.46	1	120
Kayonza	55.81	2	180
Muhanga	41.08	5	120
Rutsiro	41.22	1	180
Rwamagana	62.07	5	180
Total	45.74	1	210

The mean time taken to walk to the nearest health centre was 45.68 minutes for urban households and 45.76 for rural households. A p-value of 0.975 from an independent sample t-test at 95% confidence level showed that the difference between mean time taken to the nearest health centre by urban households and the mean time taken to the nearest health centre by rural households was not statistically significant.

Table 6: Mean time (in minutes) taken for urban and rural households.

District	Mean	Minimum	Maximum
Urban	45.68	1	210
Rural	45.76	1	180
Total	45.74	1	210



Knowledge & Attitudes

for immunisation in Rwanda

78%

of caregivers correctly defined immunisation.



More women than men were knowledgeable about immunization

100%
to
83%

of caregivers across all districts had heard of the preventable diseases

87% 

of respondents indicated knowing the immunisation schedule



GOOD understanding of the benefits

It is generally understood by men and women across all districts that vaccinations offered protection to children and prevented them from catching all kinds of diseases or deaths in all districts that

3.2 Knowledge and Attitudes

In this section, a look at the prevailing knowledge and attitudes of key respondents around immunisation issues are analysed. Results from FGDs, KIIs and observations of vaccination sessions are presented.

Healthcare providers were knowledgeable about immunisation procedures. This analysis was informed by observation of 4 vaccination sessions.

Box 1. Summary of observations of vaccination sessions in two districts

Vaccination sessions were observed in 2 districts. The vaccination process follows the protocol established by the Ministry of Health/Rwanda Biomedical Centre. The following steps are followed (1) each child is registered in child immunization register, (2) immunization card is established with his/her details, (3) registration in Growth Monitoring of Children under 59 Months register, (4) registration in the e-tracker system, (5) filling for each child on the Routine Immunization Tally Sheet, (6) checking the heights, weights, and mid-upper arm circumference (MUAC). Vaccination procedures are organised to prioritise male parents/caregivers as encouragement for men who bring their children for vaccination and avoid breastfeeding challenges for male parents. Parents/caregivers are organized according to the types of vaccinations to be given to children

Based on the interactions observed during the health education talk, the vaccinators (nursing assistants) were quite knowledgeable on immunizations, communicating on immunization schedules and the benefits of immunization as well as side effects/Adverse Events Following Immunization (AEFI). It was observed that caregivers were educated on immunization, rationale and benefits and the purpose it serves as per standard operating procedures. The whole process seemed to have the desired impact on caregivers as evidenced by the knowledge during the health talk discussions and by the desired caregivers' health seeking behaviours of taking the children for immunisations.

The proportion of respondents who correctly defined immunization was 77.5%. Caregivers understood immunisation to refer to drugs, injectable or other medicines administered to children (or adults), to give protection against childhood illnesses or other epidemics. Figure 7 presents proportion of respondents who correctly defined immunisation across districts

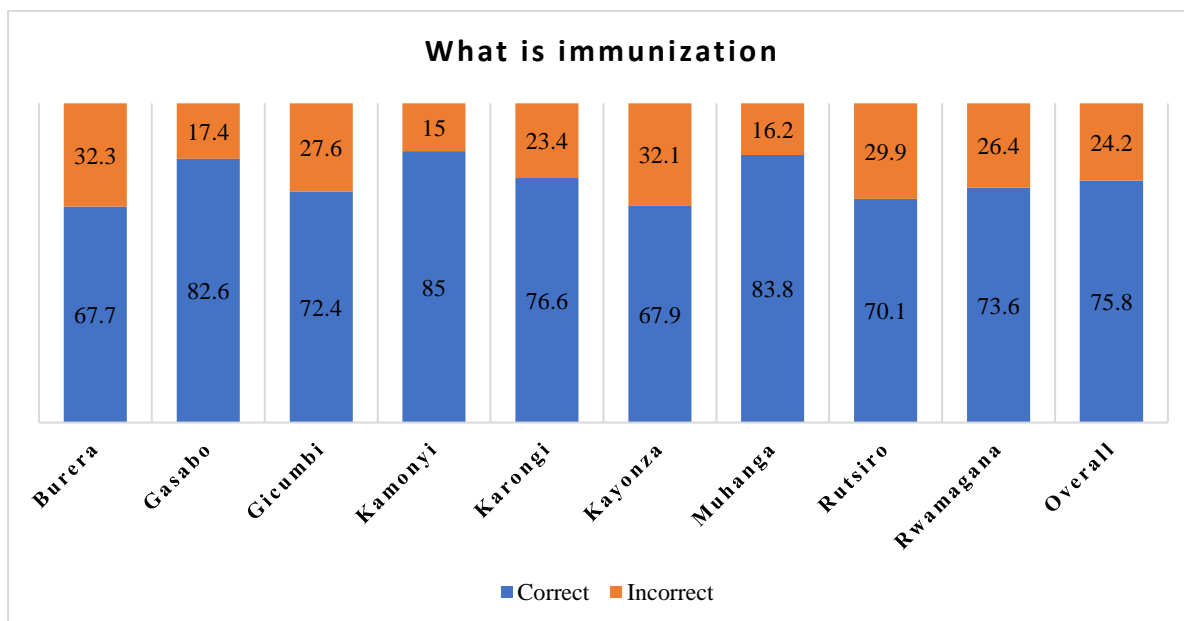


Figure 7: Proportion of caregivers able to correctly define immunisation.

There were gender variations in knowledge about immunization, with more women than men being more knowledgeable about immunization. Male respondents, however, had different levels of understanding of what constituted immunization. This was highlighted in their responses during FGDs. Figure 8. Presents the variations in knowledge.

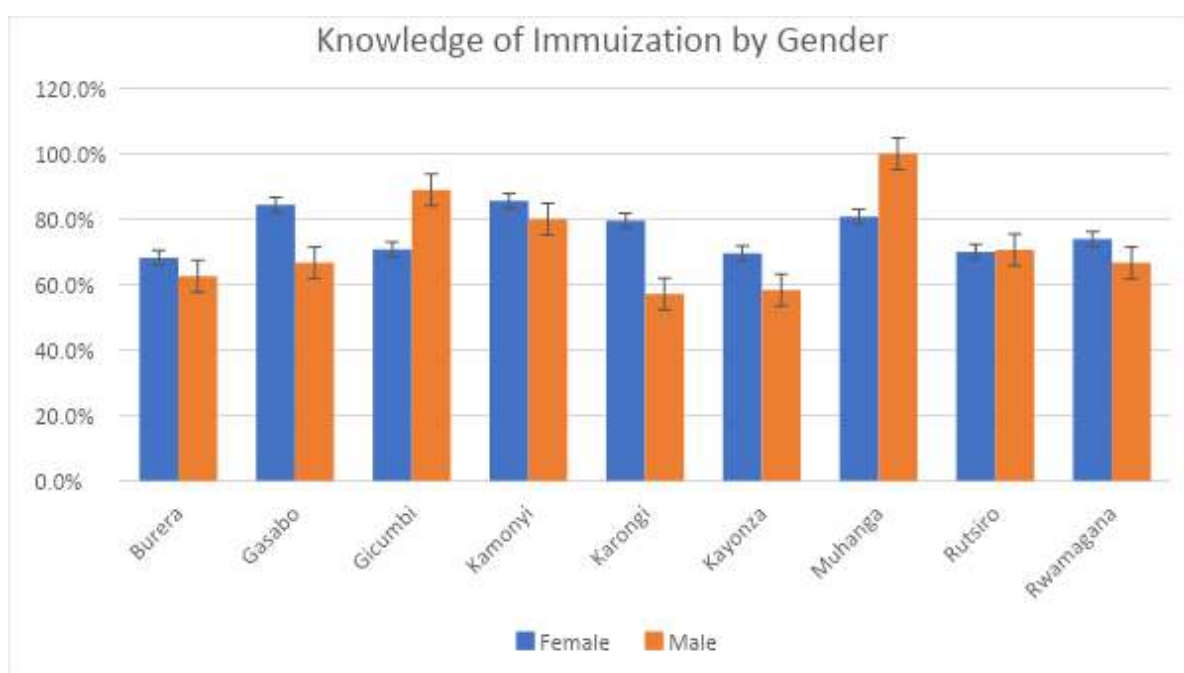


Figure 8: Knowledge of immunisation by sex across KAPB districts

Overall, women were more knowledgeable about immunization. About 76% of all the women were knowledgeable of what immunization is while about 74% of male parents/caregivers were knowledgeable of immunization. During in-session observations it was noted that the female parents/caregivers seem to be more acquainted with vaccines in comparison to men except in Muhanga where males' knowledge was 100%, as compared to women's which was

81% and 85% respectively. During the vaccination session observations health care workers served men first as an incentive to encourage fathers to participate in bringing their children for immunizations. Some men were of the opinion that taking children for vaccinations was a woman job and this is reflected by a male caregivers' response during an FGD.

"I only know that children are taken to immunisation, but I was not interested in that. I think its women's matter." FGD, Male Caregiver, Kayonza.

The proportion of respondents who had heard of the different vaccine preventable diseases (pneumonia, diarrhoea, measles, whooping cough, tuberculosis and polio) ranged from 83% to 100% across districts: Table 7 presents caregiver knowledge of Disease by District. The most common vaccine preventable diseases identified by women across districts included polio, TB, whooping cough, measles, diarrhoea, hepatitis B, rubella and meningitis.

Table 7: Caregiver Knowledge of Disease by District

Districts	Measles	Whooping Cough	Tuberculosis	Polio	Pneumonia	diarrhoea
Burera	97%	90.9%	97%	96%	97%	98%
Gasabo	100%	97.7%	100%	98.8%	98%	98.8%
Gicumbi	94.9%	89.8%	99%	96.9%	98%	99%
Kamonyi	99.1%	97.2%	100%	98.1%	100%	100%
Karongi	98.1%	94.4%	100%	100%	100%	100%
Kayonza	95.1%	93.8%	98.8%	96.3%	97.5%	98.8%
Muhanga	100%	99%	100%	100%	100%	98.1%
Rutsiro	100%	90%	100%	99%	100%	100%
Rwamagana	97.8%	95.8%	97.2%	98.6%	98.6%	98.6%

These results concurred with qualitative results. Some male caregivers appeared to be unable to name as many vaccine preventable diseases as women in the same district. This may be explained by the fact that some men felt that immunisation was a woman's responsibility. Pre-vaccination sessions at Kibuye Health Centre included lessons on the immunization schedule; benefits of immunization, and the vaccinations that children received from birth to 5 years as well as facts on vaccines side effects.

It was generally understood by men and women across all districts that vaccinations offered protection to children and prevented them from catching all kinds of diseases or death: The proportion of respondents with the view that their children were at risk of contracting vaccine preventable diseases ranged from 44% in Karongi to 68% in Gicumbi. Figure 9 summarises the proportion of respondents with the view that their children were at risk. The proportion of respondents with the view that their children were not at risk of contracting the diseases ranged from 32% in Muhanga to 54% in Rwamagana.

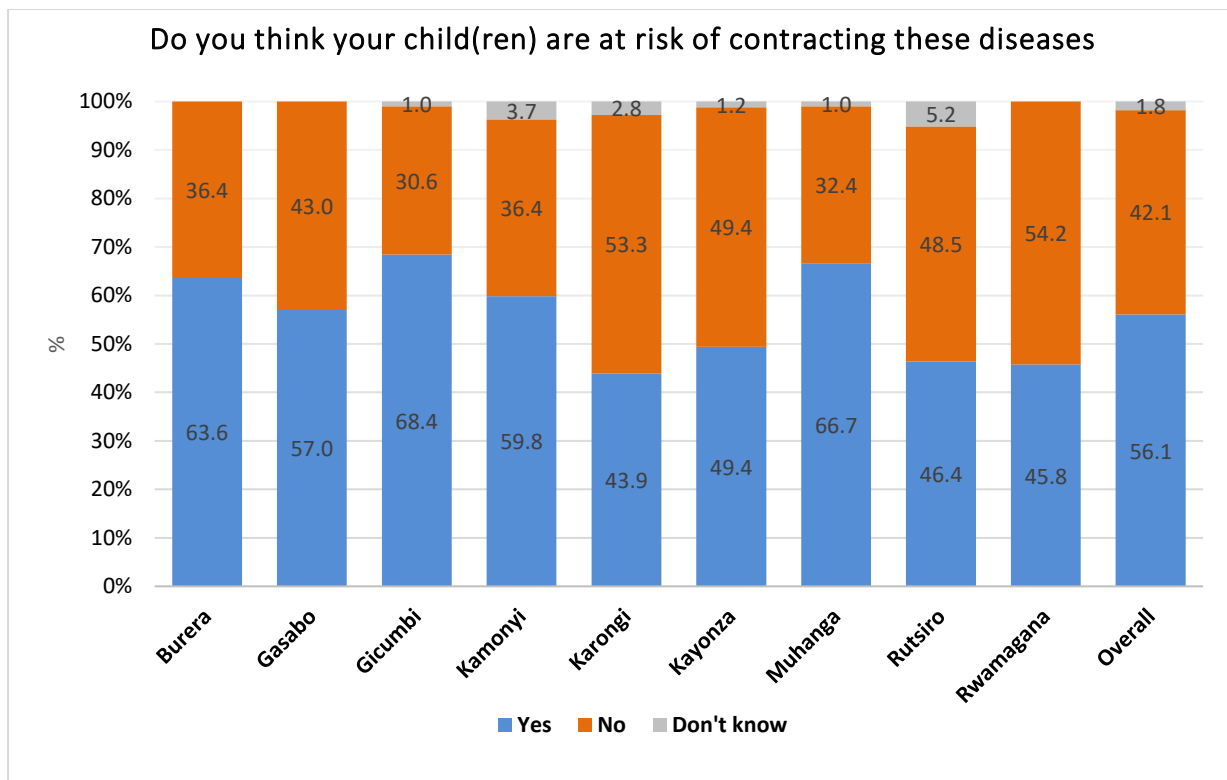


Figure 9: Proportion of respondents who think children are at risk of contracting diseases.

Caregivers were aware of the risks and consequences of contracting diseases if children are not vaccinated. Caregivers in Gicumbi district had this to say.

“My grandmother tells me how there was high mortality in their time before vaccines so with the opportunity that we have to have free vaccination we cannot leave a child without vaccination...” **FGD, Female Caregiver, Gicumbi.**

‘We were born ten and we remain four, the others died when they were young from meningitis and measles, and at that time vaccines were not available...’ **FGD, Female Caregiver, Gicumbi.**

Figure 10 summarises respondents’ views on diseases that cause death. The proportion of respondents that mentioned death as one of the outcomes of not immunizing children ranged from 53% in Muhanga to 69% in Gicumbi.

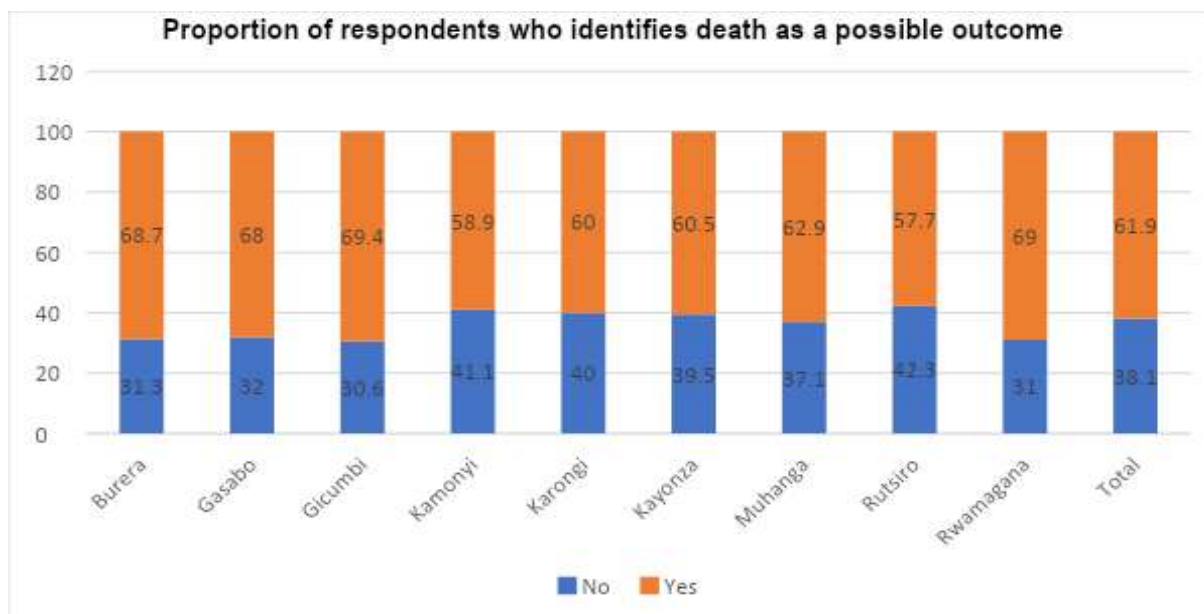


Figure 10: Proportion of respondents who identifies death as a possible outcome.

The majority (87%) respondents indicated knowing the immunization schedule. In the surveyed districts, the proportion of knowledgeable parents/caregivers ranged from 73% in Kayonza District to 99% in Kamonyi: Figure 11 presents respondents' knowledge on immunisation schedule.

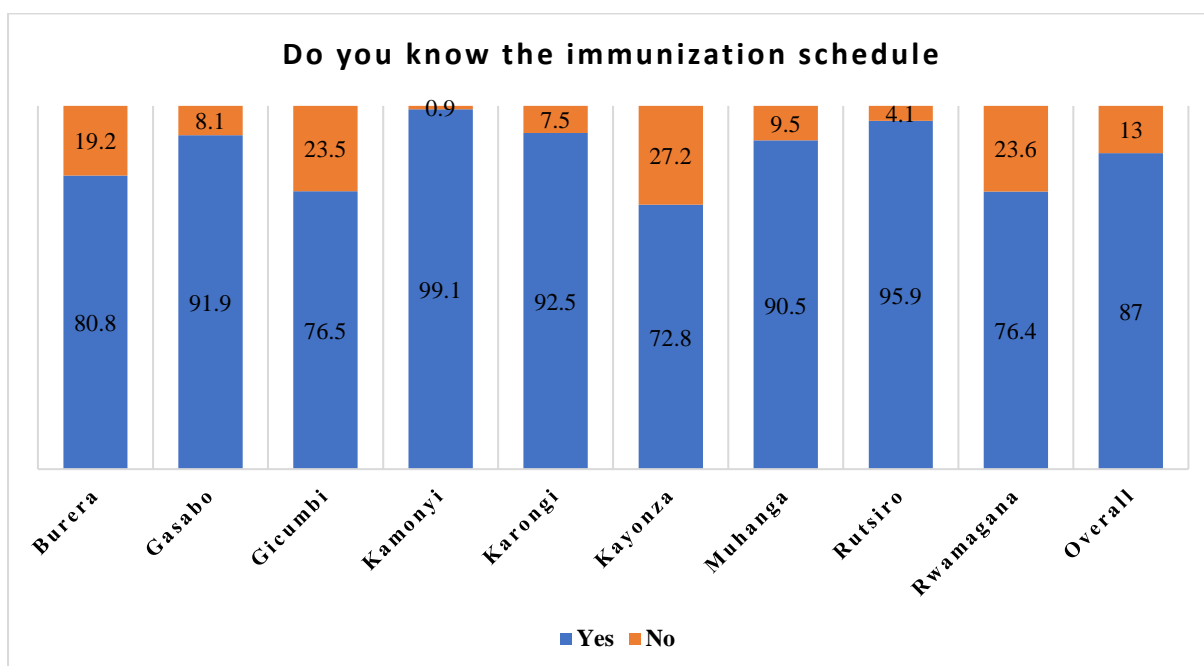


Figure 11: Proportion of respondents who know the immunization schedule.

Most women across districts knew the vaccine schedule and were able to identify the ages at which children received the different vaccines.

Not surprising men were also able to identify the vaccination period as running from birth to 15 months but could not identify the exact ages at which vaccines were scheduled. They were of the opinion that it is a women's chore as demonstrated by the fact that the majority of

respondents, 88% were women with men being only 12%. Moreover, some men were not fully aware as exemplified by the statement,

Immunisation starts just after a child is born. We don't know by heart how vaccine should be administered one after another, but we support our wives to heed all councils as provided by health centres staff. The fact that we, men do not master the vaccination program the same as women is based on house responsibilities sharing. Men take the lead to work and insure to have revenues at home and wives deals with house chores along with taking care of children. FGD, Male Caregiver, Rutsiro

Healthcare workers knew that vaccines were safe and offered protection from vaccine preventable diseases (VPD): Respondents concurred with the notion that the benefits of immunization outweigh the risks. Most respondents further asserted that there were no risks associated with immunizations., healthcare workers reported that immunization was a good thing as it improved children's immune systems and protected them from vaccine preventable diseases.

There was no association between knowledge of parents/caregivers on immunization and their geographical setting (urban or rural place of residence) as well as knowledge of immunization and immunization rate: Seventy nine percent of caregivers and parents in urban areas and 74% of caregivers and parents in rural areas had comprehensive knowledge on vaccination. A p-value >0.05 from the Chi-square test showed that there was no association between knowledge on vaccination and urban or rural location of a caregiver or parent. Seventy six percent of caregivers and parents in districts with a high immunization rate and 76% of caregivers and parents in districts with a low immunization rate had comprehensive knowledge on vaccination. A p-value >0.05 from the Chi-square test showed that there was no association between knowledge of vaccination and immunization rate from the last DHS survey.

Table 8: Chi Square results on associated of Knowledge of immunization with geographic setting and immunization rate.

Variable and Category	Percentage of respondents that had comprehensive knowledge on vaccination			Chi-square p value
	Yes	No	Total	
Geographical setting				
Urban	79.3	20.7	100.0	0.110
Rural	74.2	25.8	100.0	
Immunization rate				
High	75.6	24.4	100.0	0.888
Low	76.1	23.9	100.0	

There was no association between attitude of parents/caregivers towards immunization and their wealth status as well as attitude towards immunization and the geographical setting of respondents: The proportion of caregivers and parents who had a positive attitude towards vaccines ranged from 80% among respondents from households in the fourth wealth quintile to 86% among caregivers and parents from households in the wealthiest group. A chi square test of association was performed on the two variables. A p-value >0.05 from the Chi-square test revealed that there was no significant association between a care giver or parent's

attitude towards vaccines and wealth quintile into which their household fell. Eighty three percent of care givers and parents in urban areas and 83% of care givers and parents in rural areas had a positive attitude towards vaccines. A p-value >0.05 from the Chi-square test showed that there was no association between attitude towards vaccines and urban or rural location of a care giver or parent.

Table 9: Chi Square results on associated of attitude towards immunization with geographic setting and wealth status.

Variable and Category	Percentage of respondents that had a positive attitude towards vaccination			Chi-square p value
	Yes	No	Total	
Wealth quintile				
Poorest	82.4	17.6	100.0	0.530
2 nd Quintile	83.4	16.6	100.0	
Middle Quintile	84.6	15.4	100.0	
4 th Quintile	79.6	20.4	100.0	
Wealthiest	86.2	13.8	100.0	
Geographical setting				
Urban	82.6	17.4	100.0	0.837
Rural	83.2	16.8	100.0	

3.3 Perceptions, Myths and Beliefs About Child Immunisation.

Overall majority of the survey participants (over 90%) hold the belief that child immunization is a good idea. Table 10 summarizes the views of parents/caregivers on their perceived beliefs on vaccination of children. About 91% of the parents and caregivers think that their community leaders think vaccination it is a good idea. While 6% perceived that their leaders think it is a bad idea 3% were uncertain. About 98.9% of the caregiver/parents think that their friends think child immunization is a good idea. A significantly low rating was on traditional healers with only 48.8% of parents perceiving that their traditional leaders think vaccination is a good idea.

Table 10: Perceptions of community belief on child immunization

Perceptions of community beliefs on child immunization injections in Rwanda	Good idea	Bad idea	Uncertain
Perceptions about <u>community elders'</u> idea on injecting vaccines into children	91%	6.0%	3.0%
Perceptions about <u>their friends'</u> idea on injecting vaccines into children	98.9%	0.2%	0.8%
Perceptions about <u>their neighbours'</u> idea on injecting vaccines into children	99.2%	0.2%	0.6%
Perceptions about <u>community leaders'</u> idea on injecting vaccines into children	98.9%	0.1%	1.0%
Perceptions about <u>religious leaders'</u> idea on injecting vaccines into children	89.7%	0.6%	9.7%
Perceptions about <u>health workers'</u> idea on injecting vaccines into children.	98.5%	0.0%	1.5%
Perceptions about <u>CHWs'</u> idea on injecting vaccines into children	92.1%	0.1%	0.5%
Perceptions about <u>traditional healers'</u> idea on injecting vaccines into children	48.8%	5.5%	45.8%
Perceptions about <u>spouses/co-parents'</u> idea on injecting vaccines into children	93.3%	1.3%	5.5%

Information gathered from qualitative methods (KII and FGDs) reinforced the positive beliefs caregivers, health providers, and community stakeholders hold on vaccination of children. Participants from KIIs and FGDs in all provinces indicated that child immunization is well perceived in their communities. People believe that immunization is good for children because immunized children are protected from diseases and grow healthier. Many participants said that immunized children are smarter in school. Some parents and caregivers specified that child immunization is perceived to eliminating some diseases. and decreasing mortality. The most cited disease being eliminated is polio and measles.

Below are some of the excerpts from respondents who participated in FGDs.

“In our community, the immunisation is well understood and rooted to the point that if a parent does not take his or her children to vaccination it sounds stupid. Many people laugh at such parent and shame may push that parent to take children to vaccination.” **FGD, Female parent, Southern Province**

In some cases, parents go for vaccination without necessarily understanding the meaning of it, rather because they see it as family routine for each and every parent that they see around in their community and to have a well filled (in order) vaccination card in case the authority ask for it for any reason. **FGD, Female caregiver, Southern Province.**

Although the majority of respondents currently view immunization as a positive thing, these perceptions were not the same a few years ago. Community health workers and parents revealed that some vaccines, particularly HPV were thought to be contraceptives that were disguised as vaccines. *However, these perceptions are no longer there.*

Few years ago, some people used to think that the HPV vaccines could be a family planning method contraceptive disguised as a vaccine. Some members of our community used to think that if there is no fever after vaccination, it means that the vaccine has expired. Nowadays we don't have such kind of misconceptions in our community. **FGD, Community Health Workers, Rutsiro.**

Survey respondents noted perceived negative effects of immunization. Nearly 86% of respondents reported that immunization causes fever in children. Figure 12 summarised respondent views on the negative impact of immunisation on children.

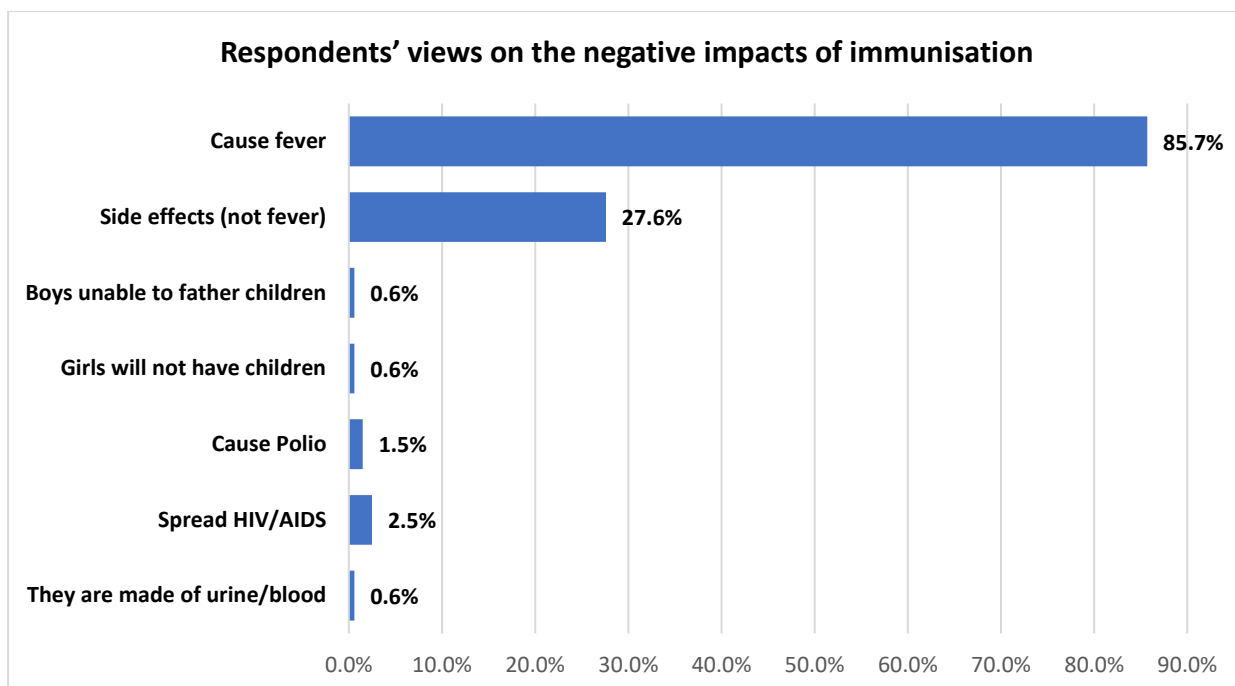


Figure 12: Proportion of respondents' views on the negative impact of immunisation on children

Despite known side effects care givers continue to bring their children for immunisation with some having developed some mitigatory procedures to minimise the effect on their children. About 85.5% of the parents/caregivers perceived that vaccines causes fever to children. About 27% also believed that vaccination has other side effects besides fever. Only 0.5% of the parents think that vaccination causes **sterility in boys**. A same proportion also believes that vaccination causes girls not to have children later on in life. 1.5% of the parents think that vaccination causes polio and about 2.5% of the parents thinks that vaccination can spread HIV/AIDS to their children. Only 0.6% thinks that vaccines are made with urine and blood.

Feedback from qualitative methods similarly noted the perceived negative impact of immunization on children. In all KIIs and FGDs participants said that immunization gives fever and discomfort to children the day of immunization. A nurse providing immunization services specified that fever was common and that parents were informed about it in education sessions as a side effect of immunization. Other side effects mentioned by some participants included skin scars, pain at the point of injection, and babies crying at night.

Few years ago, some people used to think that the HPV vaccines could be a family planning method contraceptive disguised as a vaccine. Some members of our community used to think that if there is no fever after vaccination, it means that the vaccine has expired. Nowadays we don't have such kind of misconceptions in our community. FGD, Community Health Workers, Rutsiro.

In many rural districts, caregivers take measures such as use of injections and herbal remedies to address side effects of immunization. Some participants said that they take no action and that pain, discomfort, and fever disappear the day after immunization. Other participants mentioned measures used to the point of injection to solve the problem. For instance, parents and caregivers use herbal products on their children including tomato peels, and other traditional herbal medicine to cure swelling, fever and pain due to immunization.

Sources of myths about immunization are noted to emanate from community rumours or religious leaders: Participants in FGDs and KIIs were asked to designate possible sources of misconceptions about immunization in their communities and some of them mentioned rumours from the community members including religious leaders, others specified that they originated from ignorance due to lack of information and weaknesses of health education sessions in health facilities that fail to address them.

“The main source of misconception is the miss information or weakness in session education during immunization”. **Female health provider, Gasabo.**

In order to address the myths and negative beliefs on immunization, caregivers and parents are educated on immunization when they attend health services at health facilities. Community health workers and local leaders also address immunization myths and lies as part of their advocacy work.



Behaviour & Practices around Immunisation

in Rwanda

95%



of children were reported to have received full-sets of vaccinations

100%

of caregivers noted that immunisation is a good idea.

4.3%

indicated that they don't have family support.

90%

of caregivers trusted the quality of the injectable vaccines given.

91.5%

cited children being too young to be vaccinated.

5%

of caregivers indicated that their children had not received an injectable in their first year

2.1%

gave no reason.

2020 % OF IMMUNISED CHILDREN

Very High
(96% - 100%)

Gicumbi
Kayonza
Rwamangana
Burera

High
(90% - 95%)

Karongi
Kamonyi
Muhanga
Gasabo

Low
(80% - 89%)

Rutsiro

3.4 Behaviours and Practices

The parents/caregivers were asked a question which read “Did your children receive all the vaccines for their ages?”

The majority 95% of parents/caregivers reported that children were reported to have received full sets of vaccination: This represents relatively high levels of immunization coverage given that sampled districts were from both high and low coverage districts. This figure (95%) is close to the latest RDHS report (2019-2020) citing that 96% of the children had received all relevant vaccinations. Figure 13 represents the proportion of care givers whose children had been fully vaccinated.

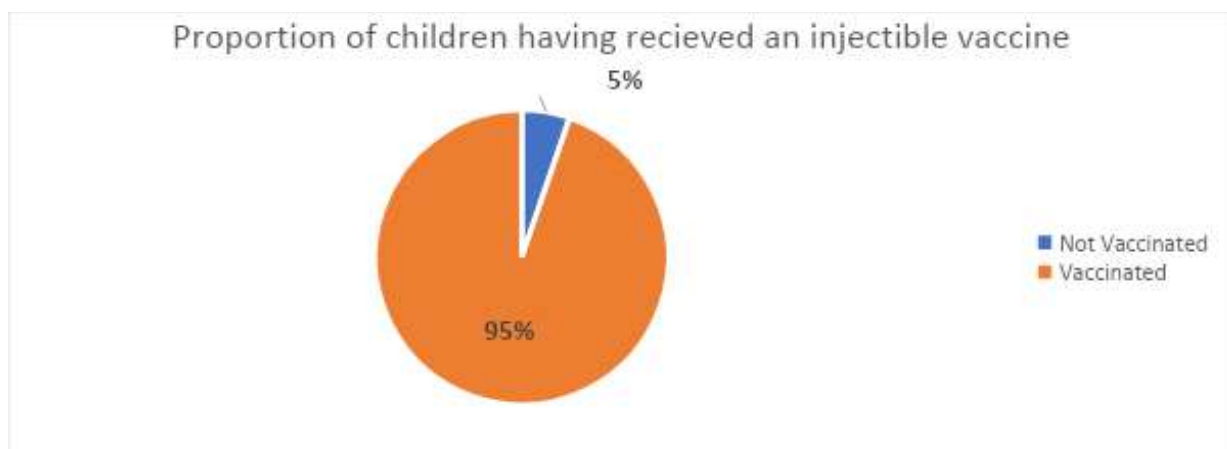


Figure 13: Proportion of Children Having Received Vaccination

The survey noted a lot of favourable factors that contributed to this status. All care givers responded that immunization is a good idea with 95% having taken their children for immunization. Ninety percent generally trusted the quality of the injectable vaccines given to their children and the majority (97.3%) of the caregivers indicated that the health workers who administers vaccines were knowledgeable.

However, out of the 5% (n = 47) of respondents who indicated that their children had not received an injectable in the first year of life, most (91.5%) cited children being too young to be vaccinated whilst 4.3% indicated that they did not have family support. **This highlights a common driver for non-vaccination: limited self-efficacy of mother who need to manage competing priorities.** About 2.1% cited sickness with the remaining 2.1% could not give reason as to why the children had not been vaccinated.

The survey observed relatively high proportions of vaccinated children in Rwamagana (100%), Kayonza (99%), Gicumbi (99) and Burera (100%). Figure 14 presents proportion of children that actually received vaccinations.

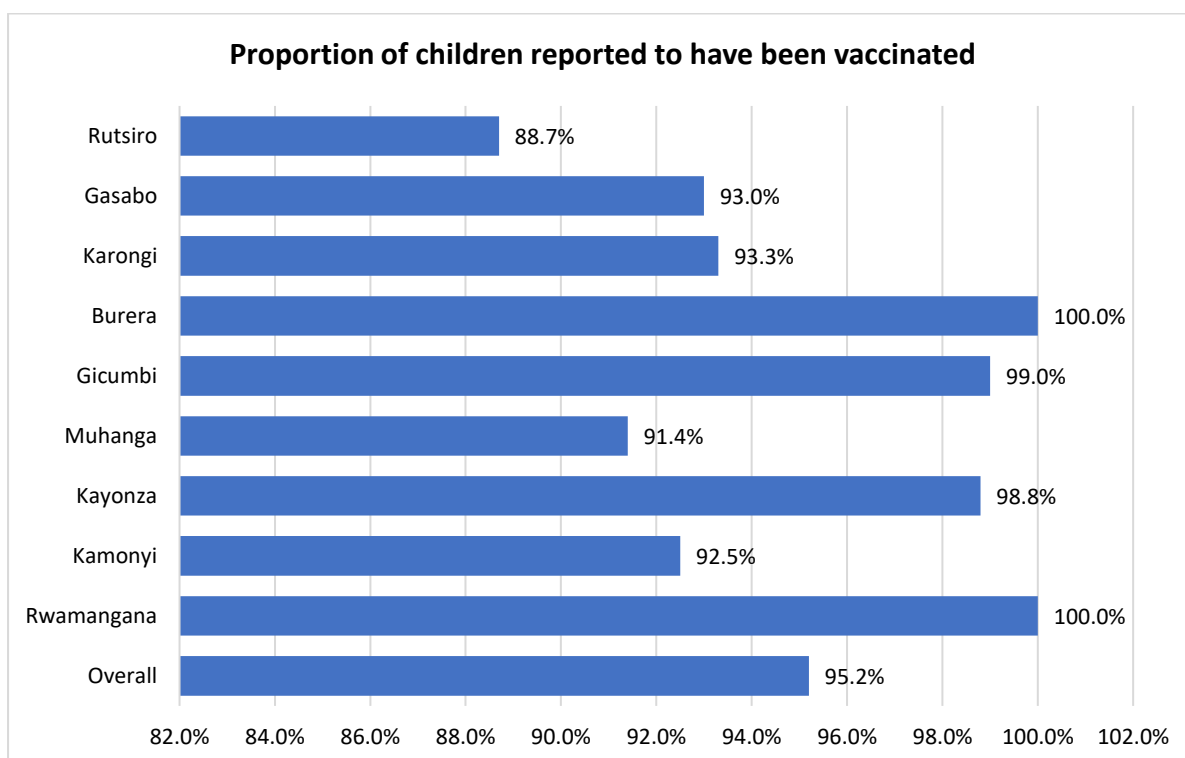


Figure 14: Proportion of children reported to have been vaccinated.

Overall, caregivers or parents take their children for relevant vaccines. This is supported by information from the focus group discussions for both women and men where majority indicated that they take their children for immunization. This is driven by the knowledge that vaccinations prevent sickness, disability and death. In most FGDs caregivers the mandatory nature of immunization. Some also highlighted that it was one of the basic rights for children to be immunized. The following are excerpts from FGDs complemented quantitative data.

“We strictly observe vaccination programme because vaccination is a protection of children’s health, it is a way to tackle poverty. Our children have been immunised in accordance with medical requirements. A family with stickful children is likely to spend more money and time on hospital bills” **FGD Male Caregiver, Muhanga.**

“We were taught that if we do not vaccinate our children regularly, they are at high risk of irreversible body immunity weaknesses. We already know that it is the best way to protect them against pandemics”. **FGD Female Caregiver, Rutsiro.**

Furthermore, consultations with health service providers also reflected a very supportive environment for uptake of immunization services. Health centres are responsible for vaccination outreach programmes and provide spaces for vaccinations. To guarantee efficient constant service delivery, the RBC ensures a constant supply of vaccines. The E-tracker

immunization system helps health officers to easily find details for each child. Some health service providers had this to say.

The benefits are many and cannot be compared with the risks. The benefits are being seen from the beneficiaries themselves whereby they increasingly come to vaccinate their children. For example, last month, Rubengera site has registered more than 500 given and combined antigens. Community Health Workers have played a key role in sensitizing the population on that. Those who get their children vaccinated have realised that the vaccinated diseases are not appearing anymore. All these combined factors have contributed to the increase in uptake of immunization **Female Health Worker, Karongi District.**

“The Rwandan health system is well established from the central level up to the village level where you find a well organised community structure, community health workers with a clear reporting system” **Female Health Worker, Rutsiro District**

2.4.1 Factors Associated with missed or delayed child immunization.

Despite positive perspectives on immunization, a few challenges were noted: Some caregivers do not keep appointments given for their next vaccinations because of various challenges such as *limited self-efficacy of mother who need to manage competing priorities*. This may lead to incomplete schedules of immunization. The study noted that some facilities have inadequate space to accommodate care givers during vaccination. This results in crowding at premises and caregivers enduring long waiting periods (sometimes in the heat or rain) before being served. The health workers noted the challenge of weak internet connectivity in some health centres which limits efficient use of the E-tracker.

Disability status of children, caregivers/parents’ knowledge on positive role of immunization, risks associated with non-immunization and knowledge of what immunization entails are factors that influence choices for immunization. Factors affecting the decision to immunise children were analysed using a Binary Logistic Regression Model (Annex 8).

In all the districts, about 6% of the parents/caregivers reported that their children were living with disabilities. The Binary Logistic Regression results showed that the presence of a disabled child in a household was a significant predictor for the risk of a child not being immunized as per schedule. The study revealed that, at, a child living without disability was 4.59 times more likely to be immunized as per schedule than a child living with disability (95% confidence level). Caregiver/parent’s with knowledge that sickness is a result of non-immunization were more likely to have their children timely immunized. A child whose care giver or parent knew that the child may be sick if not immunized was 3.42 times more likely to be immunized as per schedule than a child whose caregiver/parent did not have that knowledge (at 95% confidence level).

However, participants in KII at central level explained that children with disability are less likely to receive all vaccines and they believe that it due to the stigma parents face that lead them to hide such children.

“... Mainly children with disabilities are likely to miss out immunization services as parents tend to hide these and don't take them for immunisation...” **KII participant at Central level, Kigali City.**

Caregiver/parent's knowledge that children were at risk of contracting the Vaccine Preventable Diseases was a significant predictor for the likelihood of a child being immunized as per immunization schedule. Caregiver/parent who believed that their children were at risk of contracting VPD were 2.17 times more likely to immunize their children as per schedule than caregiver/parent did not believed that their children were at risk of contracting VPD at 95% confidence level. Caregiver/parent's knowledge of the meaning of immunization was also a significant predictor for the likelihood of a child being immunized as per schedule. A child whose caregiver/parent understood the meaning of immunization was 3.46 times more likely to be immunized as per schedule than a child whose caregiver or parent did not have that knowledge at 95% confidence level.

The results revealed that other household demographic factors such as gender of a care giver/parent, marital status of care giver/parent and employment status of a caregiver/giver were not significant predictors for the likelihood that a child would be immunized as per schedule.

3.5 Enablers and Barriers to Utilisation of Immunisation Services

Several factors were identified which improved or hindered access to immunization services. These are presented from the point of view of key stakeholders including caregivers and healthcare workers, CHWs and Central level stakeholders.

3.5.1 Enablers

Outreach visits improved access to immunization with room for improvement: Outreach visits to vaccinate children in the villages are welcomed by villagers. Identified best practices for outreaches include timeous communication of planned outreaches to ensure a positive client experience for caregivers.

Free vaccination services as well as an understanding of the importance of immunization was a driver of utilisation of vaccination services: Caregivers in Rutsiro, Muhanga and Kanyonza districts cited the free nature of vaccinations as an enabler to accessing immunization and or vaccination services. The desire to ensure their children remained healthy was also cited as a major driver of service seeking behaviour, regardless of distance from health centres. Understanding the importance of vaccination also played a part in motivating caregivers to get their children immunized. In Gicumbi district, community education and mobilization motivated caregivers to ensure their children were vaccinated. KIIs with healthcare workers also identified sensitization and community mobilization as a

major immunization benefits advocacy tool leading caregiver appreciation of immunization. This included the historically marginalized segments of the population as well as households living in extreme poverty.

Community Engagement: Most of high level and district health supervisors and nurses indicated that in Rwanda Immunization is well implemented partially due to community mobilization and involvement of political and religious leaders in community mobilization. They mentioned community meetings and immunization being discussed in community gathering, in parental meetings and follow-up of CHWs on parents/caregivers with children under five using the e-tracker that help identify children who missed their immunization visits.

“Actually, the immunisation has become a tradition among our people. Then religious leaders are also involved in mobilisation of the community” **KII District Health Supervisor.**

3.5.2 Barriers

Distance to the nearest health centres: Feedback from both parents/caregivers and community health workers who participated in their respective FGDs indicated that distance to the health centre by parents/caregivers take was one of the barriers to accessing immunisation services. Some of the parents/caregivers live in areas that are far away from the vaccination centres. Karongi district has the highest average time taken by parents/caregivers to reach to the nearest health centres. On average parents/caregivers take 62 minutes (see Table 5). Participants indicated that although they often sacrifice not to miss their appointments, these factors make it difficult for them. One FGD group indicated the following.

“For us, the important barrier is the distance from where we live and the health centre. Although We cannot miss immunization for my child, but my biggest barrier is the time we spend at the health centre.” **FGD, Female caregiver, Gasabo District.**

According CHW this can be solved by setting up other health centres in areas where parents are travelling long distances. Health Officials can also arrange mobile clinics which visit these areas [and organise immunization sessions in places where women gather](#) (e.g., markets).

Time spent at Health Centres: Community Health workers, district supervisors who were interviewed indicated that parents/caregivers often have to wait for long time at the health centres before they can get help. This is because most health centres and health workers at district level are understaffed. Below are some of the comments from KIIs and FGDs conducted.

There are not many challenges. The main issue is on staffing. There is only 1 person at the district level who oversees immunization programs. The person also has other tasks. Hence, most of the times district level personnel are overwhelmed. This significantly affects their efficiency. However, they are trying by all means to deliver. **Key Informant at central level, Kigali City.**

We have few nurses but nowadays they have managed to assign a second nurse to help in vaccination. We really need a health post here. The one vaccinating our community is far from here which may discourage parents to go there. We should have 3 nurses in charge only of vaccination. **FGD, Community Health Worker, Burera District**

Regardless of the outreach sessions, some community health workers who participated in FGDs revealed that some children received delayed vaccines or missed appointments due to long distance.

Religious beliefs as a barrier to the immunization of children: In Kibuye District, however, it was reported that members of a break-away group from the Seventh Day Adventist Church were advising girls to refuse the cervical cancer vaccination as this would lead to infertility. Strong advocacy from community health workers was needed to alter these beliefs. They also taught girls about the vaccine at school and invited vaccinated girls who had babies to give testimonies as to the safety of the vaccine.

Lack of Social support: It is important to note that some of the respondents indicated lack of social support as factor that hindered them from immunizing their children. Lack of social support in dealing with other competing priorities hampers women's self-efficacy.

Immunization service delivery related barriers: Key informant interviews from central level and districts supervisors revealed other barriers to child immunization services including insufficient staff in health centre and one staff at district in charge of immunization services as a challenge. Other barriers mentioned by a few participants include geographical features of Rwanda, population migration for different reasons such as crossing borders and economic hardship of poor parents/caregivers that makes it difficult for CHWs to follow up on their children immunization status.

“...We also have the hard to reach (HTR) Rwanda is a hilly country with forests. Some parents especially in districts bordering other countries are busy with cross border trading and some in the agricultural business tend not to bring children for immunisations. Unstable families who are rare economically disadvantaged as they constantly on the move due to unavailability of financial resources to pay for rent thus CHW may not be able to follow them up” **KII participant from Central level, Kigali City.**

Table 11: Frequency of stock out of vaccines across districts

District	Very frequently	Somewhat frequent	Not very frequent	Never	Total
Burera	13.3%	6.1%	8.2%	72.4%	100%
Gasabo	14.5%	12.0%	9.6%	63.9%	100%
Gicumbi	4.1%	6.2%	20.6%	69.1%	100%
Kamonyi	13.2%	4.7%	5.7%	76.4%	100%
Karongi	16.7%	15.6%	8.9%	58.9%	100%
Kayonza	7.5%	11.3%	11.3%	70.0%	100%

Muhanga	16.0%	12.0%	6.0%	66.0%	100%
Rutsiro	11.1%	6.2%	9.9%	72.8%	100%
Rwamagana	0.0%	5.6%	12.7%	81.7%	100%
Total	11.3%	8.7%	10.8%	69.2%	100%

3.6 Communication Channels and Approaches

Parents/caregivers were asked about their current sources of information on immunization. The most common source of information was the Community Health Worker (67.2%) followed by health workers (63.5%) and radio (32.4%). Table 12 presents a summary of sources of information on immunization.

Table 12: Sources of Information on Immunization

District	Radio	Neighbour	Newspaper	Road show	Health worker	Poster in HC	CHW	Religious leader	Traditional healer
Karongi	42.9%	21.0%	1.0%	1.9%	44.8%	12.4%	59.0%	20.0%	0.0%
Gasabo	34.1%	16.5%	0.0%	4.7%	63.5%	14.1%	75.3%	17.6%	2.4%
Burera	33.3%	24.2%	2.0%	6.1%	71.7%	21.2%	73.7%	23.2%	3.0%
Kayonza	30.9%	28.4%	3.7%	7.4%	75.3%	25.9%	65.4%	19.8%	0.0%
Gicumbi	29.6%	18.4%	3.1%	6.1%	87.8%	16.3%	69.4%	17.3%	2.0%
Rwamagana	29.6%	32.4%	1.4%	5.6%	74.6%	21.1%	63.4%	19.7%	5.6%
Kamonyi	29.0%	16.8%	0.0%	0.0%	62.6%	3.7%	64.5%	4.7%	0.0%
Muhanga	24.8%	22.9%	0.0%	0.0%	49.5%	1.9%	73.3%	2.9%	0.0%
Rutsiro	24.7%	24.7%	1.0%	0.0%	57.7%	5.2%	71.1%	19.6%	0.0%
Average	32.4%	22.0%	1.6%	3.5%	63.5%	13.3%	67.2%	15.6%	1.4%

Regarding current sources of information for adolescents, more than half of adolescents mentioned community health workers (67.2%), followed by health workers (63.5%), radio (32.4%), neighbour (22%), and religious leader (15.6%). The least mentioned current sources of information were posters in HC (13.3%), road shows (3.5%), Newspapers (1.6%) and traditional healer (1.4%).

Table 13 presents the preferred source of information which was similar to the current source of information. The community health worker is the most preferred source of information (68%) followed by Umuganda - community events (42%) and parents' evenings (34.5%) The least mentioned preferred sources of information were: road show (5.9%) and newspaper (2%).as presented in Table 13.

Table 13: Preferred sources of information

	Radio	Neighbour	Newspaper	Road show	Umuganda	Parents Evenings	CHW	Health Centre	Mobile phone
Burera	35.4%	21.2%	0.0%	7.1%	59.6%	49.5%	65.7%	44.4%	22.2%
Gasabo	24.4%	24.4%	1.2%	8.1%	34.9%	24.4%	70.9%	43.0%	39.5%
Gicumbi	24.5%	17.3%	2.0%	5.1%	61.2%	48.0%	63.3%	38.8%	29.6%
Kamonyi	29.0%	14.0%	2.8%	2.8%	25.2%	22.4%	72.9%	42.1%	27.1%
Karongi	38.5%	13.5%	1.0%	2.9%	34.6%	30.8%	59.6%	33.7%	16.3%
Kayonza	28.4%	33.3%	3.7%	13.6%	53.1%	40.7%	82.7%	44.4%	33.3%
Muhanga	22.9%	21.0%	3.8%	3.8%	29.5%	31.4%	68.6%	37.1%	32.4%
Rutsiro	20.8%	25.0%	0.0%	0.0%	34.4%	31.3%	64.6%	39.6%	27.1%

Rwamagana	35.2%	31.0%	0.0%	8.5%	42.3%	35.2%	76.1%	31.0%	49.3%
Total	29.6%	21.2%	2.0%	5.9%	42.0%	34.5%	68.0%	39.0%	29.6%

3.7 Immunisation and COVID-19

5% of caregivers believe caregivers have **STOPPED** visiting clinics for immunizations during the COVID-19 pandemic.



A total of 95% of the respondents are of the opinion that caregivers are still going to clinics to immunize their children despite the COVID-19 pandemic: Only 5% thought that people are not going to immunize their children as a result of the pandemic. Furthermore, feedback from KII and FGDs suggest that after lockdown social mobilised through mass media to continue to encourage caregivers to bring children for vaccinations as

the services were being made available at the usual centres of service provision.

A challenge which was noted during vaccine centre observations in Karonga District was that vaccination rooms were too small. This resulted in caregivers having to queue outside in the sun and at times in the rain. At times they were forced to squeeze into the small area to seek shelter from the rain. This resulted in them flouting social distancing requirements for prevention of the spread of COVID-19.

Communication Needs Assessment

Knowledge, Attitudes, Practices and Behaviours for
Immunisation in Rwanda



1. National Pride in Immunization

Build a collective responsibility and make completion of immunization as a "national norm". Engrain completion as a key milestone to be celebrated.



2. Targetting the laggards

Target the 20% of parents and caregivers (laggards) facing considerable barriers to immunization. Understand and address their unique needs.



3. Communication Channels

IPC channels are the biggest and most preferred source of information about immunization. This should be used to reach the laggards.



4. Client Experience

Improve infrastructure for immunization service to enhance the experience of caregivers during immunization.

4. COMMUNICATION NEEDS ASSESSMENT

4.1 Highlights of Findings with implications for C4D/ SBCC programming

The findings of the KAPB highlighted the following key finding with implications for the Communication for development and the Social Behaviour Communication change.

Approximately a third of the respondents did not have comprehensive knowledge about immunization: This was reported in the 5 Districts of Burera, Gucumbi, Kayonza and Rutsiro that had results lower than the average of 80%. This implies that it is important to tailor communication interventions informed by human centered design principles that address this specific group of respondents who have low comprehensive knowledge levels.

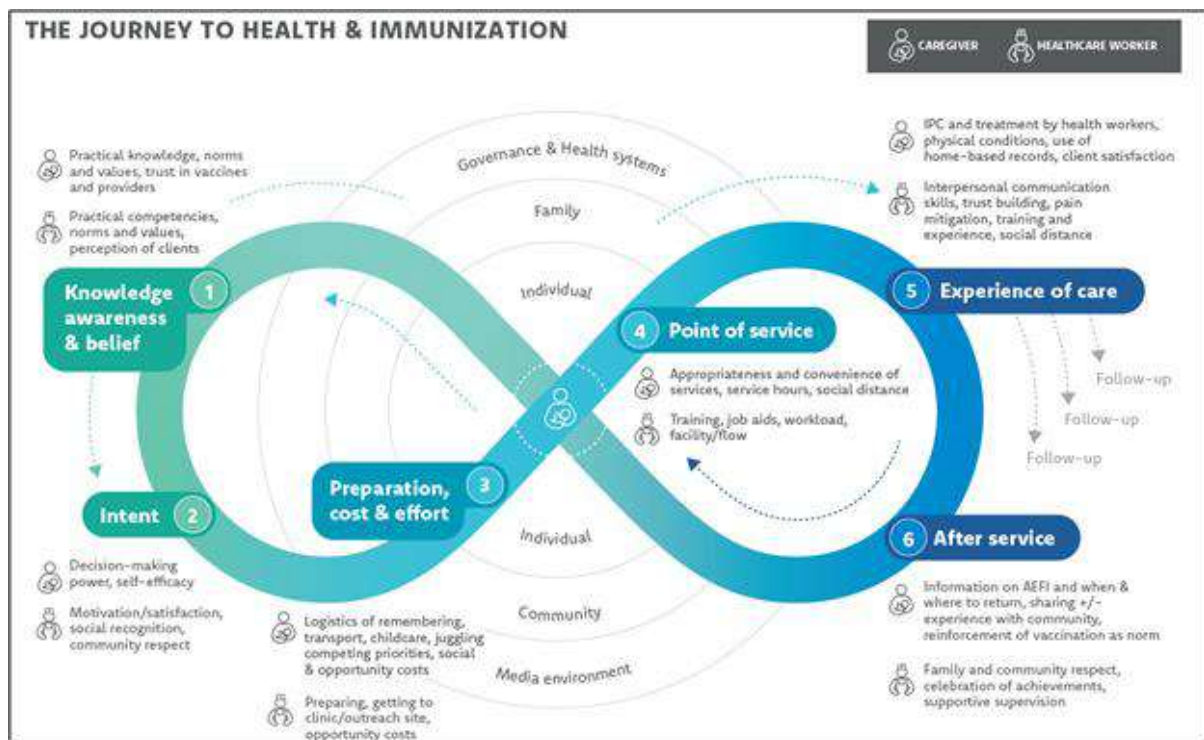
Generally, there is low risk perception about the Vaccine Preventable Diseases: Communication efforts should be designed towards heightening the levels of risk perceptions amongst both those caregiver's uptake the services and those who do not uptake the services. There is a need to focus communication campaigns on risk awareness especially concerning the possible dangers of losing all the gains from the national immunization efforts.

Traditional leaders hold negative beliefs against immunisation thereby requiring an audience for communication: The Traditional leaders were highlighted as an audience that had a bearing on the uptake of immunization services, yet they have negative attitudes towards the vaccines. As an audience, they should not be ignored but they should be specifically engaged for them to appreciate the benefits of immunization to the community members. Traditional leaders can be engaged alone and trained on the benefits of immunization and how they can support health programs. They should also be involved in community engagements targeted at parents and caregivers.

According to the study findings immunization is largely still seen as a woman's role: This given the fact that majority of the processes still centre around the "female" e.g. care for the majority of the children who are below two years is a preserve of the mothers, majority of the nurses who immunize are also female. This over time has created a gender construct of the roles around immunization. While the delays by the women at the health facility drew negative responses by the men. Despite the low male involvement, the men attached an economic benefit to the immunization. It saves the family resources that would be spent in the treatment of preventable diseases of their children. Programming needs to employ behavioural economics approaches working with men to define gender sensitive doable actions that they can play to contribute to the promotion of immunization for their children e.g. transport and forgetting the immunization dates were cited as challenges. These two examples can be used as a start to define roles that men can take on to ensure immunization. Communications needs to use positive deviant men to model male involvement around roles men should be playing in the promotion of immunization agenda e.g. joint decision-making, facilitation of the immunization process and peer-to-peer advocacy.

On the communication front, while community health workers, health workers, radio and neighbours were very effective in disseminating information on immunization, there are gaps with the other social structure channels that were not utilized such as the Umuganda and the parent evenings. These need to be enhanced to effectively manage the misconceptions and also address the male involvement as a gender issue. Relatedly, the mobile phone represented an opportunity growth to address the gaps in the adherence in terms of reminders.

4.2 Theoretical recommendations for the C4D Strategy



The study results identify determinants to immunization at individual, interpersonal, community and structure level. Therefore, to have synergized C4D/SBCC interventions, there is need for immunization programming to apply itself to a theoretical framework. The identified determinants (enablers and barriers) fit within the Journey to Health and Immunization Framework which is based on the ecological framework and includes elements of behavioural science and human centred design (HCD). The framework places the caretaker and health worker who are critical in making the rights decisions about the child's immunization. Given the that the missing 20% are normally the hardest to understand and therefore, program for; the use of HCD approaches goes a long way in unparking barriers from their perspective and giving a chance to design C4D interventions thar are responsive to their needs and realities.

The **diffusion of innovations theory** seeks to explain how and why new ideas, products, technologies, and practices are adopted, in a society with timelines potentially spread out over long periods. Key to note is that since the different groups (from innovators to laggards)

have different characteristics, they must be reached through different demand generation/communication channels and interventions to maximize results.

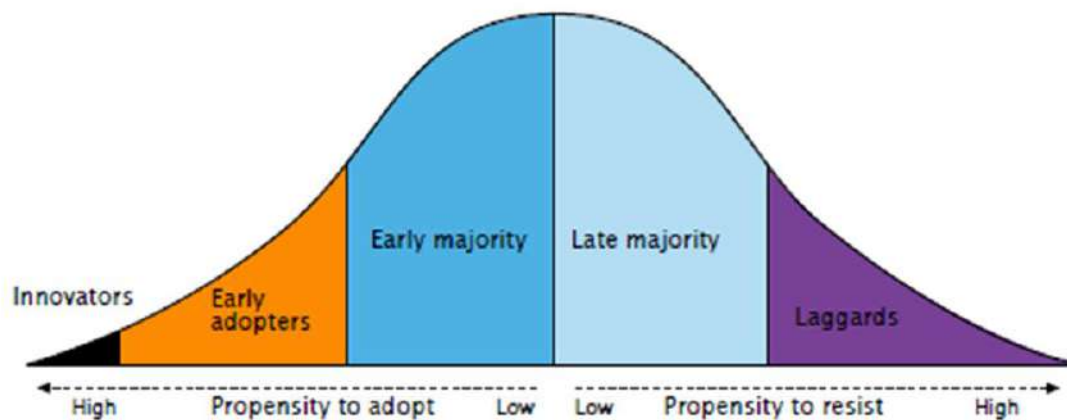


Figure 15: Everett Rogers: Diffusion of Innovation theory representation

The C4D strategy should use the **diffusion of innovations theory** to analyse the contexts of the current immunization situation and how to diffuse amongst the target audience that is still lagging to the adoption of immunization services. These are referred to as Laggards.

Laggards: As the name indicates, laggards lag the general population in adopting innovative products and new ideas. This is primarily because they are risk-averse and set in their ways of doing things. But the sweep of an innovation through mainstream society makes it impossible for them to conduct their daily life (and work) without it. As a result, they are forced to begin using it. This group will, therefore, include the 10 - 20% of the people who are not willing to take the children for immunization due to various reasons or even those who take but largely due to peer pressure or at the probing of the leaders as revealed by the KAPB study.

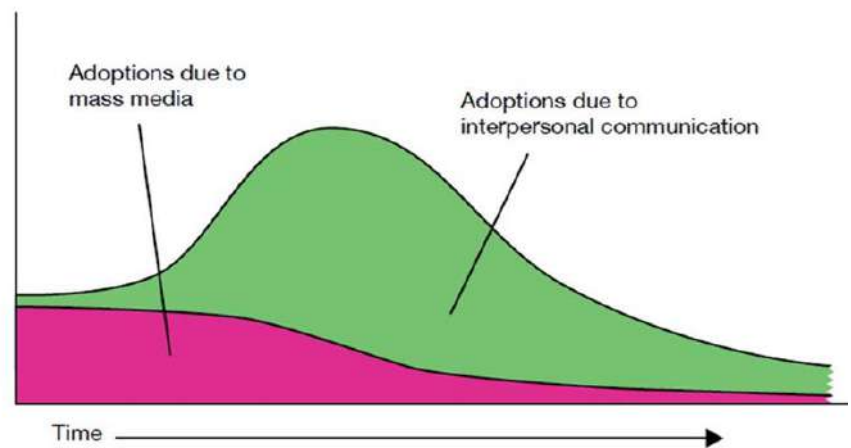
4.3 Thematic strategic recommendations

- i. **Design of C4D/SBCC interventions:** Whereas immunization levels in Rwanda are well above 90% the KAPB study identified about 20% of parents and caregivers of children as facing considerable barriers that need to be addressed. To build on the registered success to date there is a need for design of new SBCC interventions that:
 - Understand and address the unique needs of the 20% (laggards). Given the documented profiles of this group there is a need to adopt more participatory approaches in the design of approaches for this audience. Approaches such as human centred design should be deployed.
 - Seek to sustain the momentum gained with those who have already adopted the promoted immunization related practices. There's a need to refresh, adapt or repackage the messaging around immunization so that they do not relapse. The approximately two thirds who are practicing the behaviours need to be used to position immunization as a new norm that every proud Rwandese parent should easily promote.

- ii. **Position completion of immunization as a “national pride”:** The study results reveal that community members consider completion of immunization as one’s contribution to national development and therefore are willing participants in the process. This presents a great opportunity to build this collective responsibility and make completion of immunization as a “*national norm*”. The community leaders were identified as critical players in achieving results thus their continued involvement is critical moving forward.
- iii. **Recognition/ celebration of completion of immunization:** Given the great momentum already gained with the current immunization program there is a need to engrain “completion” as a key milestone in the growth of children as well as the health workers' contribution. Therefore, celebration of this milestone could go a long way in ensuring compliance to schedules and attracting those who fail to get their children immunized. Consider using HCD and behavioural economics principles to determine a reward system within the local settings.

- iv. **Communication channels:** The study results reveal IPC channels are the biggest and preferred sources of information about immunization. The most preferred channels are Community health workers, Umuganda (community events), community health workers, health workers at the health facility and lastly radio and mobile phone. This trend is further supported by the Diffusion of Innovation theory that prescribes a bias towards use of IPC in reaching the laggards who most likely make up the biggest percentage of those that are faced with various barriers to immunization.

The mobile phone as identified above represents an opportunity for more tailored engagement with the audiences and could be deployed to address immediate needs like reminding parents the due – dates for



The Bass Forecasting Model.

Source: Mahajan, Muller and Bass (1990) as reproduced in Rogers, E.M. (2003) p210.

immunization. It could also be used in providing support to the parents whose children are affected by side – effects. An SMS service on mobile phone can be effectively used to send immunization related information to parents/caregivers. It can also be used to send reminders to parents/caregivers with children who are due for vaccination and about actions to be taken in case of side effects of immunization excluding use of herbal and other harmful remedies.

- v. **Improving client experience during immunization at the facility/ outreach:** The study results reveal several barriers that make the demand for immunization services less attractive more so to the men. It is therefore recommended that advocacy efforts are focused on policy, and resource mobilization to make gender sensitive.

5. CONCLUSION AND RECOMMENDATIONS

This section provides the overall conclusion of the KAPB for the immunization study in Rwanda and recommendations for further improvements are provided.

This section provides the overall conclusion of the KAPB for the immunization study in Rwanda and recommendations for further improvements are provided.

5.1 Conclusion

Overall, knowledge on immunization among care givers is relatively high. Female caregivers reported higher knowledge levels about child immunisation compared to their male counterparts. To a larger extent, attitudes towards immunization are positive as majority of caregivers see values in immunising their children (reduce risks of diseases or deaths). Study participants indicated that there is a supportive enabling environment for immunisation. Findings revealed that Rwanda has a strong health system from national to sub-national level that encourages immunization. Outreach visits improved access to immunisation. Free vaccination services as well as an understanding of the importance of immunisation was a driver of utilisation of vaccination services. However, lack of knowledge, gender norms, having a child with disability, distance to the nearest health facilities and waiting time at health facilities were noted as key barriers to accessing immunization services. In low coverage immunization districts, Caregivers had long waiting times at the health centres for immunization. Almost all except 5% of the respondents were of the opinion that caregivers are still going to clinics to immunize their children amid the COVID 19 pandemic. Approximately a third of the respondents did not have comprehensive knowledge about immunization, and there is low risk perception about the Vaccine Preventable Diseases. Immunisation is largely still seen as a woman's role.

5.2 Key Recommendations

- i. The country should continue to maintain the momentum for the high uptake of immunization services across the country government of Rwanda should consider narrowing barriers to access to immunization services particularly targeting remote villages by outreach immunization services especially in low immunization coverage districts such as in Rutsiro and Kayonza districts.
- ii. In order to enhance efficiency and effectiveness in immunization coverage, there is need to target the 20% of the population with limited knowledge to immunization and negative attitudes towards it. Use of SMS notifications or reminders to caregivers could also

enhance uptake of immunization services. Greater effort should be placed to enhance male participation in immunization issues and targeting religious leaders who hold negative attitudes towards immunization.

- iii. Advocacy and communication messages to target households with children living with disabilities for inclusion in immunization programs. In addition to social norms programming to address the determinants that include fear of stigma and accessibility of services.
- iv. We recommend that the above interventions should predominantly rely on the Interpersonal communication approaches which include the community events like the Umuganda and parents' evenings, home visits and lastly health education at the health facilities. These will be supplemented with mass media communication through the radio and mobile phones. Health officials can use SMS service to send immunization related to parents/caregivers with children who need vaccinations. This can be done to remind parents/caregivers when their children are due for vaccination.
- v. To reduce the distance travelled by parents/caregivers, Health officials can set up other centres in areas where parents are travelling long distances. The ministry can also establish mobile clinics which can visit areas which are far from health centres and vaccinate children in their areas as well as increase outreach sessions. [Mobile clinics and outreach sessions will also help in reaching caregivers without enough social support and caregivers in low-income households and communities.](#)
- vi. To reduce the waiting time spent by parents/caregivers at health facilities, immunization supervisors should consider increasing health workers responsible for child immunization. This can be done by allowing other health workers to help in immunization tasks.

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7. ANNEXES

Annex 1 Terms of Reference



-Request for
Proposal - LRPS - 20

Annex 2 KAPB Household Survey

Informed verbal consent and confidentiality of interviews

Good morning/afternoon, Mr/Mrs We are from Primson Management Services. My name isWe are working on a project concerned with child immunization for UNICEF in which you could participate. Now, the project is just starting, and we are completing a survey among parents/caregivers to know more about their knowledge, attitudes and practices to do immunization of children. The interview will take about 20 minutes. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to and you may stop the interview at any time. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and do not feel shy if you do not know the answer to a question. I would like you to answer the questions honestly, telling me about what you know, how you feel, the way you live and how you make sure your children are healthy. Feel free to answer questions at your own pace. Your response would be used for improvement of service provision.

Do you agree to participate YES/ NO (*If yes, continue to the next question; if no, stop the interview*).

Date	
Name of interviewer	
Province	
District	
Sector	
Cell	
Village	

SECTION A: DEMOGRAPHICS AND SOCIO ECONOMIC		
1.	Sex of parent or care giver	1. Male 2. Female 3. Other (specify)_____
2.	Sex of the last-born child	1. Male 2. Female 3. Other (specify
3.	Marital status	1. Never married 2. Cohabitation 3. Married 4. Divorced 5. Widowed
4.	Relationship with child	1. Father 2. Mother 3. Grandfather 4. Grandmother 5. Other (specify)-----
5.	Are you the Household Head	1. Yes 2. No

6.	What is the highest level of school you attended?	1. None 2. Primary (state Grade) P1 P2 P3 P4 P5 3. Secondary (state form) S1 S2 S3 S4 S5 S6 4. Tertiary (State level) _____
7.	Time taken to travel to the nearest health centre in minutes	_____ (in km)
8.	Mode of transport when going to health centre	1. Walk 2. Bus 3. Other (Specify)-----
9.	Are you formally employed	1. Yes 2. No 3. Self employed 4. Unemployed
10.	What is the status of employment? (if yes in 9)	1. Casual 2. Fulltime 3. Seasonal 4. Other (Specify)-----
11.	What is the main source of your income	
12.	What are your other sources of income	
13.	How much money do you get per month	
14.	a) What is your age in completed years (Parent/caregiver)? b) Date of birthdd/mm/yyyy
15.	How many children do you have?	
16.	How many of them are under 5 years of age	
17.	On those under 5 years, how many are boys and how many are girls	a) Boys _____ b) Girls _____
18.	Date of birth of your last-born child	_____dd/mm/yyyy
19.	Is any of your child living with disability	1. Yes 2. No

ASSET OWNERSHIP

20.	ASSET	Number owned
	a) Arable land size in ha	
	b) House in urban area	
	c) Number of TVs owned	
	d) Number of radios owned	
	e) Does the house have electricity	1. Yes. 2. No
	f) Number of Solar Battery/devices	
	g) Cell phone	
	h) Car	
	i) Motorbike	
	j) Tractor	
	k) Cattle	
	l) Sheep	

m)	Goats	
n)	Pigs	
o)	Chicken	
p)	Other (specify)	

SECTION B: KNOWLEDGE

B1. Have you heard of each of the following diseases? (Read out the item each row, then read answer categories.)

DISEASES	YES	NO	Not sure [DO NOT READ]
A. Measles	1	2	98
B. Whooping cough	1	2	98
C. Tuberculosis/TB	1	2	98
D. Polio	1	2	98
E. pneumonia	1	2	98
F. diarrhoea	1	2	98

B2. What is the effect of all these diseases to children?

<ol style="list-style-type: none"> 1. Causes sickness 2. Disability 3. Death 4. Others (Specify)----- 5. I don't know

B3. Do you think your child(ren) are at risk of contracting these diseases.?

YES	NO	DON'T KNOW [DO NOT READ]
1	2	98

B4. What immunization is?

Correct	Incorrect	No response [DO NOT READ]
1	2 (skip to B5)	98

Definition. This is when children are injected with *Vaccines to prevent diseases. They may be given at health clinics or health centres, hospitals, community centres or other places.*

B5. Do you know the immunization schedule?

YES	NO	Not sure [DO NOT READ]
1	2	98

SECTION C: ATTITUDES AND PRACTICES

C1. Do you think giving immunization of children is a good or a bad idea? (do not Read out items and select one only)

Very good idea	1	Skip to C3
Somewhat good idea	2	
Somewhat bad idea	3	

Very bad idea	4	
Don't know [<i>do not read</i>]	98	

C2 (a). Why do you think immunisation is a good idea? list all reasons?

C2 b. Why do you think immunisation is a bad idea? list all reasons?

Immunization can give a child a fever	1
Immunization can give a child other side effect (not fever)	2
Immunization can make boys unable to father children later in life	3
Immunization can make girls unable to have children later in life	4
Immunization are very likely to give a child polio	5
Immunization can give a child HIV/AIDS	6
Others Specify	

C3. Did all your children get any injectable vaccines? *Select one only.*

YES	1	Skip C5
NO	2	
Don't Know	98	Skip to C5

C4. How many vaccine injections did he/ she receive so far? (Confirm with clinic card if possible)

--

C5. What are all the reasons why he/she did not receive any injectable vaccines after he/she was born and before their first birthday? (Select all Applicable, do not read the answers)

Responses	
Child was too young	1
Child/parent travelled to another area after birth	2
Person who usually goes was sick/weak	3
Person who usually goes was busy or working	4
Did not believe it was very important	5
Child is not likely to get sick with relevant illnesses	6
Do not believe vaccines prevent illnesses	7
Do not have family support	8
Religion prevents me from getting vaccines	9
Concern about side effects/harm to child	10
Do not know where/when to get vaccines	11
Too difficult/far to get to facility/place to get vaccines	12
Child was sick	13
Vaccines not available at facility/place to get vaccines	14
Service at facility was poor	15
Medical staff not available at facility/place to get vaccines	16

Other specify	17
Don't know	98

C6. How do you ensure that your child does not get diseases like Measles, polio, TB, etc.

C7. (If yes in C1) At your most recent visit, did you trust the quality of the injectable vaccines your child was offered? Would you say you trusted the quality...? (Read out items and select one only)

A great deal	1
Somewhat	2
Neutral	3
Not very much	4
Not at all	5
Don't know / Refused [do not read]	98

C8. How much do you think the health workers in your area care about the well-being of your child Would you say they cared? (Read out items and select one only)

Very knowledgeable	1
Somewhat knowledgeable	2
Not very knowledgeable	3
Not knowledgeable at all	4
Don't know [do not read]	98

C9. Based on your experience or what you have heard, how would you rate the overall quality of the health care delivered?

Excellent	1
Good	2
Fair	3
Poor	4
Very poor	5
Don't know [do not read]	98

SECTION D BEHAVIOUR AND PERCEPTIONS, MYTHS AND MISCONCEPTIONS

D1. So that we can develop a fuller understanding, what do each of the following people think of the idea of injecting vaccines into children in your village/neighbourhood?

	Very good idea	good idea	bad idea	Very bad idea	Not applicable [do not read]	Don't know [do not read]
--	-----------------------	------------------	-----------------	----------------------	-------------------------------------	---------------------------------

D1A.grandparents	1	2	3	4	5	98
D1B.Most of Your friends	1	2	3	4	5	98
D1C. Most of your neighbours	1	2	3	4	5	98
D1D. Most community leaders e.g. councillor, headman etc	1	2	3	4	5	98
D1E. Your religious leaders	1	2	3	4	5	98
D1F. Most health workers	1	2	3	4	5	98
D1G. Traditional birth attendants	1	2	3	4	5	98
D1H. Your traditional healer	1	2	3	4	5	98
D1I spouse/co parent	1	2	3	4	5	98

D2. What do other people in the community say about the effects of immunisation to children? (do not read answers but check all that applies)

Immunization can give a child a fever	1
Immunization can give a child other side effect (not fever)	2
Immunization can make boys unable to father children later in life	3
Immunization can make girls unable to have children later in life	4
Immunization are very likely to give a child polio	5
Immunization can give a child HIV/AIDS	6
Immunization are fatal	7
Others Specify	

D3. Do you believe that the following is true or false? (read question and then read response categories in each row).

	Completel y true	Mostly True	Mostly false	Completel y false	Don't know [do not read]
A. Immunization can give a child a fever	1	2	3	4	98
B. Immunization can give a child other side effect (not fever)	1	2	3	4	98
C. Immunization can make boys unable to father children later in life	1	2	3	4	98
D. Immunization can make girls unable to have children later in life	1	2	3	4	98
E. Immunization are very likely to give a child polio	1	2	3	4	98
F. Immunization can give a child HIV/AIDS	1	2	3	4	98
G. Immunization are made with urine or blood	1	2	3	4	98

D4. Besides immunisation what else do people do to make sure their children are healthy?

D5. What other beliefs/practices have you heard about immunization?

D6. In this COVID-19 pandemic, do you think people are still going to clinic to immunise their children.

Yes	1	
No	2	
Don't know / Refused [<i>do not read</i>]	98	Skip C 12

D7 Explain more your answer.

SECTION E: ENABLERS AND BARRIERS

E1. Based on your experience or what you have heard, how often would you say the following problems occur? (*Read out each item in rotating order, starting each interview with a different item*)

	Very frequently	Somewhat frequently	Not very frequently	Never	Don't know [<i>do not read</i>]
A. Injectable vaccines are out of stock	1	2	3	4	98
B. Medical staff, such as doctors or nurses, are unavailable to administer injectable vaccines	1	2	3	4	98
C. Needed health services other than injectable vaccines are unavailable	1	2	3	4	98

E2 What challenges are you facing when trying to immunise your children.

Transport	1
Domestic/multiple roles	2
Fear that my child will be sick	3

Was denied permission. Specify who denied it.....	4
Other (Specify).....	5

E3. In regard to your child/children living with disability, what are the challenges/barriers you are facing when immunizing your child? Probe for more (For children living with disability)

E4. What are the things that are making it easy for you to participate in child immunization?

SECTION F: COMMUNICATION NEEDS ASSESSMENT

F1. How did you learn about immunisation programmes in your area?

Radio	1
Neighbour	2
Newspaper	3
Road show	4
Health worker	5
Posters in Health Clinics	6
Community Health worker	7
Religious leader	8
Traditional Healer	9
Others specify	10

F2. How is information on immunization communicated to people in your area?

Radio	1
Neighbour	2
Newspaper	3
Road show	4
Health worker	5
Posters in Health Clinics	6
Community Health worker	7
Religious leader	8
Traditional Healer	9
Mobile phone text messages	10
Others specify	11

F3. How would like to receive information regarding immunisation programmes (*Tick all possible means*)

Radio	1
Neighbour	2
Newspaper	3
Road show	4
<i>Umuganda</i>	5
Parents Evenings	6
Community health worker	7
Health Centre	8
Mobile Phone text messages	9
Others specify	10

F4. What are the challenges you are facing in receiving this information? List all

F5. How best should information be communicated to you and people in your area?

F6 What do you think can be done in the community to increase immunization uptake?

F7. What other recommendations can you give to the Ministry about child immunisation?

Annex 3 KII guide for Health Care Providers

Good morning/afternoon, Mr/Mrs We are from Primson Management Services. My name isWe are working on a project concerned with child immunization for UNICEF in which you could participate. Now, the project is just starting and we are completing a survey to know more about their knowledge, attitudes and practices regarding immunization of children. The interview will take about 20 minutes. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to, and you may stop the interview at any time. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and feel free to pass any question you do not know. I would like you to answer the questions honestly, telling me about what you know, how you feel, the way you live and how you make sure your children are healthy. Feel free to answer questions at your own pace. Your responses will be used for improvement of service provision.

Do you agree to participate YES/ NO (*If yes, continue to the next question; if no, stop the interview*).

Date	
Province	
District	
Sector	
Cell	
Village	
Hospital/ health centre	
Department.	
Official position	
Gender	
Qualification	
Years of Experience	

INTRODUCTION AND KAPB

1. How would you briefly describe the role of your institution in the process of immunization of children?
2. Please explain your own role in immunization process.
3. Is immunization your major “service delivery” issue at present? Yes / No
 - Do you foresee it to be one?
 - Why?
4. Based on the 3-5-year data, what is the population trend in uptake of immunization programmes?
Hint: declining, staying the same, increasing.
 - Identify the main reason?
5. In your own opinion do you think immunization is a good thing.
Explain in detail
6. How would you weigh the risks and benefits of immunization? Describe in detail.

7. What else besides immunisation do people do to protect their children from Vaccine Preventable Diseases

IMMUNIZATION SERVICE DELIVERY

8. What you think is the strongest and the weakest link in immunization processes within the public health system in Rwanda (public, media, leadership, public health institutes, legislation, or something else?) **Probe:**
- Community engagement / roles defaulter tracing*
 - Link with traditional /religious leaders*
9. *Why do you say so?*
10. Is the legal framework regarding immunization flexible enough?
11. Are the guidelines and protocols flexible enough?
12. Do you think that current vaccine supply is sufficient to meet the needs of target population?
13. Have you had any vaccine stockouts /shortages?
14. In case of vaccine shortage, can parents buy vaccines from
- local pharmacy?
 - Private institutions?
15. What is the weakest link in the chain of immunization (if any)?
- Probe:**
- vaccine supply
 - cold chain (“refrigeration equipment to keep vaccines safe”) distribution.
 - financing (inadequate resources for outreaches)
 - communication with parents
 - ability for outreach (going from Heath Centre to community) are outreaches budgeted.
 - conditions in the room where immunisation is performed which ensure safe immunisation and the least stress for the child and health workers? Please explain in detail
16. Do you think your institution/team is doing its part well enough to make sure population is immunized? Yes/ No
- Explain why.
17. What are the areas for improvement?
18. How would you compare the whole process of immunization: legislation, procedures, their implementation, and communication with the public in Rwanda in comparison other countries?
- What are the main differences?
 - What changes in the system would you recommend based on that?

MYTH AND MISCONCEPTIONS

19. What have you heard from parents/ caregivers or others in the community about the impact of immunisation on children? Positive and negative
20. What misconceptions about immunization have you heard?
21. What is the major misconception?
22. What do you think are sources of these misconceptions?
23. How can they be addressed?
24. When was the last time you heard any misconception from a parent mother/father of the eligible child?

Probe:

- What was the issue specifically?
- Have you discussed it with them?
- If yes, Where you successful?

25. What are other myths that people believe regarding the impact of child immunisation?

BARRIERS AND ENABLERS

26. Which are the most vulnerable groups less likely to have their children immunized in your area?

- Why do you think so?
- What is their major obstacle for vaccinating?

For Each Group Probe for availability, accessibility, passiveness, active decision not to vaccinate.

27. Have you heard of any organized or informal anti-vaccination group/individual in your area?

Probe:

- If yes, which ones? Nurses, Doctors, Other health workers, Religious leaders, Faith based organisations or communities.
 - What do you think of their impact on parents bringing their children for immunisations?
 - Which groups in particular? Why?
 - What are the challenges/barriers that people are facing when immunizing their children?
- Probe for more.**
- *Distance to Health Facility*
 - *Health Workers attitude*
 - *Waiting Periods*
 - *Availability of vaccines*
 - *Specific vaccine days (BCG/MR)*

28. What solutions can you suggest to solve these challenges?

29. What are the factors enabling people to participate in child immunization?

COMMUNICATION NEEDS ASSESSMENT

30. Is there communication between institutions of public health and the general public?

- Who is primarily responsible for communication?
- Is there room for improvement? Yes/No
- If yes How should it be done?
- Is there a public trust in public health system? yes/no? Why

31. What is the basic information that you supply the parents with regarding vaccination of their children? (Tick appropriate)

- The immunisation schedule,
- Benefits of immunisation.
- Vaccine the child is receiving.
- AEFI
- When to return for next visit
- Importance of good nutrition

32. Is this a routine part of your job or it involves some advisory component as well? Please provide an example

33. Have you heard about any activities directed towards increase of awareness about the need for immunisation in the general population or among parents?

If no skip to 37.

34. What do you think about the effectiveness of such activities? Explain.

35. How often do you carry out these activities?

36. Do you have any suggestions for improvement?

37. Have you ever had any problems in communicating with parents? Can we have any examples?

38. What methods do you use to send information to the public?

39. How often do you send information?

40. What are the challenges are people facing in receiving this information?

41. How do you think information should be communicated to people?

42. What would you suggest as the best way of communication with parents and public in general? Is it necessary to pay special attention to vulnerable groups? Why and how?

RECOMMENDATIONS

43. What recommendations can you give about the way information is communicated?

44. What other recommendations can you give to the Ministry about child immunisation?

45. What do you think can be done in the community to increase immunization uptake?

Annex 4 FGD Guide for Parents and caregivers of under five children

Good morning/afternoon, Mr/Mrs We are from Primson Management Services. My name isWe are working on a project concerned with child immunization for UNICEF in which you could participate. Now, the project is just starting and we are completing a survey to know more about their knowledge, attitudes and practices regarding immunization of children. The interview will take about 20 minutes. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to and you may stop the interview at any time. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and feel free to pass any question you do not know. I would like you to answer the questions honestly, telling me about what you know, how you feel, the way you live and how you make sure your children are healthy. Feel free to answer questions at your own pace. Your responses will be used for improvement of service provision.

Do you agree to participate YES/ NO (*If yes, continue to the next question; if no, stop the interview*).

Date	
Province	
District	
Sector	
Cell	
Village	

KNOWLEDGE

1. Does/Do your child/children have a regular health care provider (regular – meaning primary care physician or doctor that the child sees consistently for routine health care)?
2. In your own understanding, what is immunization?
3. Do you know against which illnesses a child gets immunized (what vaccines receives) before he/she goes to school? Name VPD.
4. Do you think your child(ren) are at risk of contracting these diseases if not vaccinated?
5. Do you know the immunisation schedule? Give immunisation schedule of children from birth to <5years

ATTITUDES AND PRACTICES

6. Did you immunise your child(ren)?
 - Probe: if not why?
7. Do you think immunisation of a good thing? Y/N
 - **Probe**
why do you say so?
8. In your opinion what are the effects of immunisation to your child?

- **List as many as possible?**

9. What do you think would happen to your child if you immunise him/her?

- **Probe for more**

PERCEPTIONS MYTHS AND MISCONCEPTIONS

10. What have you heard from others in the community about immunisation? Positive and negative

11. What do people say about the effects of immunization on the children? (positive and negative)

12. What do people say about the side effects of immunization? (positive and negative)

13. If you have immunized your child, what motivated you to do so?

- **Probe for more?**

14. What else besides immunisation do you do to protect your children from diseases like measles?

ENABLERS AND BARRIERS

15. What are the challenges/barriers you are facing when immunizing your child?

- Probe for more
- Give reasons

16. How can these challenges be solved?

17. What are the things making it easy for you to participate in child immunization?

COMMUNICATION NEEDS ASSESSMENT

18. How did you learn about immunisation programmes in your area?

19. How is information on immunization is communicated to you?

20. What are the challenges you are facing in receiving this information?

21. How do think information should be communicated to you?

22. What recommendations can you give about the way information is communicated?

23. What other recommendations can you give to the Ministry about child immunisation?

24. What do you think can be done in the community to increase immunization uptake?

Annex 5 Health facilities Immunization Observation checklist

Date	
Province	
District	
Sector	
Cell	
Hospital/ health centre	

Please observe a vaccination session for 3 to 5 children being vaccinated. If possible, try and observe a MR vaccination.

1. How many health workers were present during the session? _____
2. Are the following present during the session?
Child health card __yes __no
3. Are there any immunization posters displayed in the room? If so specify and take pictures

Observations	Child 1	Child 2	Child 3	Child 4	Child 5
4. Is the child receiving appropriate vaccines (check card, ask age)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. Is the mother /caregiver told which vaccine the child is receiving?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. Is the mother or care giver told the specific disease/s the child is protected against?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
7. Is the mother/caregiver informed of possible AEFI?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
8. Is parent/guardian told when to come for the next scheduled vaccination, if applicable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. Is vaccinator polite to the parent/guardian (using an acceptable tone of voice etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
10. Was health education conducted during the immunization session	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

11. Is vaccination recorded on child health card?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
12. If MR was due was the child given MR	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

13. Are there any additional observations you noted?

Annex 7 Sampled Consent Forms

Informed Consent for Key Informants, Caregivers, and Health workers

District	
Ward/village	
Sex of participant	
Age of participant	
Name of Participant (optional)	

Introduction: Hello! My name is _____ and I am part of an international team conducting a study entitled: “Knowledge, Attitudes, Practices and Behaviours” (KAPB) Study on Immunization in Rwanda” implemented by UNICEF in collaboration with the Ministry of Health (MOH) and Rwanda Biomedical Center (RBC).

The aim of this study is to inform the social and behaviour change communication (SBCC) interventions and policy advice around vaccination and ensure that all children irrespective of gender and health status equally enjoy their right to health.

The study will be done with both parents of children under 5 years, health providers, and community leaders from nine districts selected in all 5 Provinces of Rwanda. Interviews will take about 40 to 60 minutes.

You will not be paid monetarily for taking part in this study. You should not have any negative effects from being a part of this study. You may find it a positive experience because you will contribute to immunization uptake of children in your community.

Deciding to answer these questions is entirely up to you. You can stop at any time, for any reason. You can also decide not to answer any question you do not want to answer. If you decide not to take part, it will not change your relationship with the community leaders or service providers, or any of the people involved in this research project. If you decide you want to stop, we will delete any information we have about you.

Everything you tell us during the project will be kept private. Your name will not be used in any report of the study unless you tell us that you wish it to be used. Your answers to these questions will be entered into a computer that is protected by a password. We will keep this information for 7 years and then destroy all the information we collected. Your privacy and the confidentiality of your information will be protected as much as is legally possible.

Contacts and Questions:

- If you have questions about the research in general or about your role in the study, please contact Prof. Laetitia NYIRAZINYOYE (Tel: 0788 683 209) or Mr. Hassan SIBOMANA (Tel: 0788 484 811).
- If you have any questions about this process, or about your rights as a participant in the study, please contact the current Chair of the National Ethical Committee of Rwanda (RNEC), Dr Jean Baptiste MAZARATI at 0788 309 807 or the RNEC Secretary Prof. David TUMUSIIME at 0788 749 398.

Statement of Consent: I understand that I am not coerced to participate in this project. It is entirely up to me whether I participate. I also understand that I can decide not to answer any question, and that I can stop at any time if I want to.

 Signature Participant

 Date
OR

 Signature Witness (only if participant is illiterate)

 Date
AND

 Signature of Data Collector

 Date

Annex 8 Binary Logistic Regression Model

Factors affecting the decision to immunize children were analysed using Binary Logistical Regression Model. The dependent variable, Immunization Status of the child, was dichotomous variable

$$Y = \{0 = \textit{Otherwise} \quad 1 = \textit{Child was Immunized}$$

The Explanatory variables affecting the decision of parent/caregiver to immunize his/her child were hypothesised to be Household demographic factors, household social factors, knowledge and a care giver or parent's attitude towards immunization are determinants for a child's immunization status.

The model was specified as follows

$$\ln\left(\frac{P_i}{1-P_i}\right) = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + \dots + B_{10}X_{10} + e$$

Where $\ln\left(\frac{P_i}{1-P_i}\right)$ = is the Logit for the Immunization status of the child

X_i = independent variables

B_i = parameters to be estimated

e = error term

Table 9 shows the results of the Binary Logistical Regression Model.

Table 10: Results of The Binary Logistic Regression Model

Variable	B	S.E.	Sig.	Exp(B)	95% C.I for EXP(B)	
					Lower	Upper
Household Head	.414	.402	.303	1.514	.688	3.328
Child living with disability	1.524	.469	.001*	4.590	1.832	11.501
Sickness is an effect of these diseases on children	1.229	.491	.012*	3.418	1.306	8.943
Perceived Risk	.775	.383	.043*	2.171	1.025	4.600
Knowledge of Immunization	1.242	.572	.030*	3.463	1.128	10.630
knowledge of immunization schedule	-.279	.572	.626	.757	.247	2.320
Constant	-5.989	.896	.000	.003		

The logistic regression model was statistically significant, ($\chi^2 (7) = 28.52, p = 0.000$) and explained 10% (Nagelkerke R^2) of the variance in the risk of a child not being immunized and correctly classified 95% of cases.