

Research Report on Knowledge, Attitudes and Practices of Parents of Missed and Default Children Regarding Immunization



**District Jhelum, Punjab Province &
District Skardu, Gilgit-Baltistan Province of
Pakistan**

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**Undertaken by
Civil Society Human and Institutional Development Programme
CHIP House # 1, Street # 9, G.8/2, Islamabad, Pakistan
Phone: 92-51-111-111-920
Fax #: 92-51-2280081
Email: info@chip-pk.org**

Table of Contents

LIST OF ABBREVIATIONS.....	3
CHAPTER 1: INTRODUCTION AND METHODOLOGY.....	4
1.1 CONTEXT.....	4
1.2 RATIONALE FOR THE RESEARCH.....	4
1.3 RESEARCH OBJECTIVES.....	5
1.4 RESEARCH LOCATION.....	6
1.5 RESPONDENT TYPES.....	6
1.6 SAMPLING.....	6
1.7 DATA COLLECTION INSTRUMENTS.....	6
1.8 DATA COLLECTION AND ANALYSIS.....	7
1.9 RESEARCH TEAM.....	7
1.10 RESEARCH TIME FRAME.....	7
1.11 LIMITATIONS OF RESEARCH.....	7
CHAPTER 2: MAIN FINDINGS.....	8
2.1 RELATIONSHIP OF RESPONDENT WITH CHILDREN.....	8
2.2 AGE WISE DISTRIBUTION OF CHILDREN.....	8
2.3 GENDER WISE DISTRIBUTION OF CHILDREN.....	8
2.4 RANK OF CHILD IN RELATION TO SIBLINGS.....	9
2.5 CURRENT VACCINATION STATUS.....	9
2.6 NUMBER OF VACCINATION DOSES GIVEN.....	9
2.7 PROPORTION OF CHILDREN WITH VACCINATION CARDS.....	9
2.8 DECISION MAKER IN HOUSEHOLD FOR VACCINATION OF CHILD.....	10
2.9 PERCEPTIONS ABOUT THE IMPORTANCE OF VACCINATION FOR CHILD HEALTH.....	10
2.10 PERCEPTION ABOUT THE EFFECTS OF VACCINATION.....	10
2.11 AVAILABILITY OF LADY HEALTH WORKERS IN VILLAGES.....	11
2.12 AVAILABILITY OF VACCINATORS IN VILLAGES.....	11
2.13 AVAILABILITY OF INFORMATION REGARDING VISITS BY VACCINATORS.....	11
2.14 DISTANCE OF HEALTH FACILITIES WITH VACCINATION SERVICES IN VILLAGES.....	12
2.15 LIMITATIONS OF VACCINATION SERVICES OFFERED BY HEALTH FACILITIES IN VILLAGES.....	12
2.16 CAUSES FOR NOT VACCINATING CHILD PRE-INTERVENTION.....	12
2.17 AGE WISE DISTRIBUTION OF MOTHERS.....	13
2.18 EDUCATION LEVEL OF MOTHERS.....	13
2.19 PROFESSION OF MOTHERS.....	13
2.20 EDUCATION LEVEL OF FATHERS.....	14
2.21 PROFESSION OF FATHERS.....	14
2.22 AVERAGE MONTHLY INCOME OF FATHER.....	14
2.23 ADDITIONAL SOURCE OF INCOME OF FATHER.....	15
2.24 RESIDENCE STATUS OF FATHER.....	15
2.25 TYPE OF HOUSE LIVED IN.....	15
2.26 NUMBER OF FAMILY MEMBERS LIVING IN HOUSEHOLD.....	15
2.27 MOTHER-IN-LAW LIVING WITH PARENTS OF CHILDREN.....	16
2.28 DISABLED PERSON IN IMMEDIATE FAMILY.....	16
2.29 NUMBER OF LIVING CHILDREN OF MOTHER.....	16
2.30 NUMBER OF CHILDREN OF MOTHER THAT DIED BEFORE AGE 2.....	17
2.31 PROPORTION OF MOTHERS THAT HAVE UNDERGONE MISCARRIAGE OR ABORTION.....	17
2.32 STATUS AND TYPE OF SERIOUS HEALTH ISSUE FACED BY MOTHERS.....	17
2.33 FINDINGS PERTAINING TO MISSED/DEFAULT WHO HAVE NOT RE-BEGUN THE VACCINATION.....	18
CHAPTER 3: ANALYSIS.....	20
3.1 DISTRICT JHELUM.....	20
3.2 DISTRICT SKARDU.....	21
CHAPTER 4: CONCLUSION & RECOMMENDATIONS.....	23
4.1 MAJOR BARRIERS TO VACCINATION.....	23
4.2 RECOMMENDATIONS FOR FUTURE PROGRAMMES.....	23

List of Abbreviations

BCG	Bacille Calmette Guérin
BHU	Basic Health Unit
CHIP	Civil Society Human and Institutional Development Programme
DPT	Diphtheria, Pertussis and Tetanus
HP	Health Promoter
LHW	Lady Health Worker
MDG	Millennium Development Goals
OPV	Oral Polio Vaccine
TT	Tetanus Toxoid
UC	Union Council
UNICEF	United Nations Children Emergency Fund
VHC	Village Health Committee
WHO	World Health Organisation

Chapter 1: Introduction and Methodology

1.1 CONTEXT

According to the World Health Organisation Pakistan Representative, Pakistan's routine immunization coverage is estimated at 65%, which is well below the optimal immunization rate of 80% (WHO, 2013).¹ Furthermore, the World Bank reported that 61% of children in Pakistan aged 12-23 months had been immunised against measles while 72% of children in the same age bracket had been adequately immunised against diphtheria, pertussis (or whooping cough) and tetanus (DPT) after receiving three doses of vaccines (World Bank, 2014).² Furthermore, research findings by the United Nations Children's Fund (UNICEF) revealed that the infant mortality rate is 59 per 1,000 live births³ (UNICEF, 2011) and the maternal mortality rate is about 276 per 100,000 live births⁴ (UNICEF, 2003).

These figures demonstrate how far behind Pakistan is lagging in achieving its Millennium Development Goals (MDG) in particular, MDG 4 which aims to reduce child deaths by two-thirds by 2015 and MDG 5, which aims to reduce maternal deaths by three quarters by 2015. Pursuant to the Pakistan One UN Programme I, the first Strategic Priority Area of the UN is providing 'equitable access and use of quality services' to 'vulnerable and marginalized populations' which includes providing access to routine immunization and vaccination services as one of its components.⁵ Despite this, vaccination coverage remains well below the desired rates. It should be noted that there are significant variations with the overall country rates in the different provinces.

Punjab has relatively better health indicators as compared to other provinces but despite this only 75% of the province's population has access to a health facility within half an hour's distance. There are 41 Basic Health Units (BHUs) in district Jhelum catering to total population of 1,048,000 as per the 1998 Census Report. Of this, 17 are non-functional due to lack of trained personnel and doctors. Although the district is reported to be first amongst all districts of Pakistan in the field of health, the cumulative figures of large areas often hide the stark realities of small but marginalized clusters of villages such as those in Union Council (UC) Sanghoi of district Jhelum. The area has a rough geographical terrain, which proves to be an additional hindrance especially for women seeking access to health facilities.

In contrast to Punjab, the province of Gilgit Baltistan has one of the poorest routine immunization rates in the country. District Skardu is one of the largest districts of the province with a total population of 219,000 as per the 1998 Census Report. Although limited official data is publicly available for District Skardu, but as per District Health Profile by District Health Department of Skardu, only 15% women are covered for tetanus toxoid (TT) vaccination, while only 47% children are fully immunized. Some of the biggest barriers to vaccination are the lack of knowledge amongst mothers and family decision makers, poor outreach of health care facilities, lack of human resources and the difficult terrain, which only serves to exacerbate the existing barriers.

1.2 RATIONALE FOR THE RESEARCH

Civil Society Human and Institutional Development Programme (CHIP) in partnership with Federal EPI and UNICEF designed 'health system strengthening' project being implemented in 15 villages of district Jhelum, Punjab Province and 20 villages of district Skardu, Gilgit Baltistan Province of Pakistan. The financial support for the project comes from GAVI, the Vaccine Alliance. Although

¹World Health Organisation Pakistan, *Official Statement: Suboptimal Routine Immunization Coverage causing Measles Outbreaks*. 2013: WHO. <http://www.irinnews.org/pdf/who_statement_jar2013.pdf> [accessed: 17 December, 2014].

²The World Bank, *World Development Indicators: Disease Prevention Coverage and Quality*. 2014: World Bank. <Wdi.worldbank.org/table/2.16> [accessed: 17 December, 2014]

³UNICEF, *Pakistan: Statistics*. 2013: UNICEF <www.unicef.org/infobycountry/pakistan_pakistan_statistics.html> [accessed: 17 December, 2014].

⁴UNICEF, *Pakistan: Background*. 2013: UNICEF <www.unicef.org/infobycountry/pakistan_pakistan_background.html> [accessed: 17 December, 2014].

⁵*Pakistan One UN Programme II, Pakistan One United Nations Programme 2013-2017*. 2012: UNICEF <[www.unicef.org/about/execoard/files/PAK_One_UN_Programme_II_\(2013_-_2017\)_Document_12_June_2012.pdf](http://www.unicef.org/about/execoard/files/PAK_One_UN_Programme_II_(2013_-_2017)_Document_12_June_2012.pdf)> [accessed: 17 December, 2014].

the project objectives and approach remained consistent, the project has had multiple phases since June 2009. The present phase of the project being implemented is for 12 months starting from December 15, 2013 and concluding on December 14, 2014. The overall objectives of the project are:

- a. Establishing functional village health committees (VHCs) that will monitor services of first level care facilities for extending quality healthcare to communities;
- b. Providing improved quality of services of first level care facilities for mother child health care and routine vaccination;
- c. Training local human resources available for extending improved mother and child health services;
- d. Enhancing awareness level of mothers and decision makers regarding safe delivery and immunization for children and expecting mothers; and
- e. Increasing routine vaccination coverage of children and pregnant mothers.

The project made its efforts that children received all six-vaccination doses as per schedule. These include: (1) Bacille Calmette-Guérin (BCG) and Oral Polio Vaccine-0 (OPV) at birth; (2) Penta-1 & OPV-1 at 6 weeks or 1.5 months; (3) Penta-2 & OPV-2 at 10 weeks or 2.5 months; (4) Penta-3 & OPV-3 at 14 weeks or 3.5 months; (5) measles-1 at 9 months; and (6) measles-2 at 12 – 24 months.

At the time of the baseline study in January 2014:

- a. District Jhelum had total 1009 children and out of the total 167 were default/missed children. As a result of mobilization and awareness raising activities during January-December 2014, all of them have re-begun/begun vaccination.
- b. District Skardu had 709 children and out of the total 477 were default/missed children. As a result of mobilization and awareness raising activities during January-December 2014, 83% of them have re-begun/begun vaccination.

The present research was designed to capture the profile and perspective of parents of the following two categories of children:

- a. Missed and default children that have begun or re-begun the vaccination;
- b. Missed and default children that have not begun or re-begun the vaccination.

The percentage of missed and default children was 67% in Skardu and 17% in Jhelum. As per records of December 2014, the percentage of missed/default children is 9.4 % in Skardu and 0% in Jhelum. The research report under review was designed to generate knowledge about the factors that help to remove the barriers to immunization as reported by parents of those default children who have re-begun the vaccination and identify barriers to immunization for children who have not begun the vaccination. It is envisaged that research findings will be useful for improving the strategies for increasing immunization coverage.

1.3 RESEARCH OBJECTIVES

The research was designed to compile perspective of parents of default and missed children who have re-begun and not begun the vaccination as a result of mobilization and awareness raising activities. It is envisaged that the research will reveal factors that helps in increasing the immunization coverage. It will also highlight inter relationship between social status of parents of missed and default children and access to vaccination. For example, it will highlight if low literacy levels, poor economic status, geographical remoteness and genders play any role in the having access to immunization or not. The specific objectives of this research report are as follow:

- To assess the knowledge of parents about the vaccination doses and their respective schedules and perceptions of the effects of vaccination on children.
- To identify the specific causes behind respondent parents deciding against vaccination of child.

- To determine the level of availability, access and quality of services provided by nearby health facilities, vaccinators and LHWs operating in the two districts.

1.4 RESEARCH LOCATION

The research was conducted in 35 villages of two districts namely Jhelum, Punjab Province and Skardu, Gilgit Baltistan Province.

Districts	Jhelum	Skardu	Total
Villages	15	20	35

1.5 RESPONDENT TYPES

In view of the research objectives, only mothers or fathers of missed and default children who have and have not begun or re-begun the vaccination were interviewed who so ever was available at the time of the interview

1.6 SAMPLING

District Jhelum had 167 default/missed children at the time of baseline conducted in January, 2014 while District Skardu had 477 default/missed children at the time of baseline. All of the 167 default children have re-begun vaccination in 15 villages of Jhelum while 83% of 477 default/missed children have re-begun or will begin their vaccination in 20 villages of Skardu. In order to capture the pre and post perspective of parents of default and missed children 36% (60) of 167 default children were taken as a sample from 15 villages of Jhelum while 13% (60) of 477 default/missed children were taken as a sample from 20 villages of Skardu. All these children have re-begun or begun their vaccination after mobilization and awareness raising efforts by CHIP. There are 80 children in some villages of Skardu who have not begun or re-begun their vaccination. About 25% of 80 missed/default children who have not begun or re-begun the vaccination were also interviewed to understand actual barriers to immunization.

#	Type of Children	Jhelum	Skardu
A	No. of children under 23 months old in Dec 2013	1009	709
B	No. of default or missed children under 23 months old in Dec 2013	167	477
C	No. of children being immunized as of Dec 2014	1009	769 ⁶
D	No. of default or missed children as of Dec 2014	0	80
E	Research Sample from Column C	60	80
F	New Born	159	140
Grand Total		1168	849

This research was conducted with parents of target children aged 0-23 months of age and focuses on the reasons behind lack of immunization coverage in the two target districts. It considers factors such as knowledge levels and perceptions of the parents, the socioeconomic and educational backgrounds of the parents and decision makers and the availability and quality of services provided by health facilities, lady health workers (LHWs) and vaccinators in the villages.

1.7 DATA COLLECTION INSTRUMENTS

Questionnaires were developed for children who have begun or re-begun the vaccination and children who have not begun or re-begun the vaccination. A checklist was developed for collecting case studies for some default and missed children as an example. The questionnaires were piloted prior to data collection via a pre-testing in District Skardu after which certain changes were made and the questionnaires were finalised. Enumerators attended a training session focusing on the research background, objectives, research ethics, data confidentiality and cultural norms of Skardu and Jhelum. Role-play exercises were also performed to develop a common understanding of research variables, instrument, ethics and importance of reliability of data. After the questionnaires were filled by the enumerators, they were reviewed for cleaning by Research Supervisor and passed on for entry and analysis.

⁶This number includes 140 new born as well.

1.8 DATA COLLECTION AND ANALYSIS

Data collection from default and missed children was done simultaneously. Mothers or fathers of children under 23 months old were interviewed on the availability basis. Data entry model was developed according to the finalised variables. Data analysis was presented in tabulated form after completion of data entry. This report was written after data validation was completed.

1.9 RESEARCH TEAM

Local data enumerators were identified based on prior experience of administering community-based surveys. They were fluent in the local languages spoken in the province and were non-residents of the community.

1.10 RESEARCH TIME FRAME

The research time frame was two weeks. Interviews were conducted during first week of December, 2014 followed by data entry, analysis and validation and reporting over the following week.

1.11 LIMITATIONS OF RESEARCH

Since the time for the research was only two weeks therefore the scope of research was also reduced to capture the perspective of only default and missed children. A different perspective might have emerged if parents of fully immunized children were studied and correlation between the personal profiles of parents of fully immunized and default missed children is made.

At the time of the interviews, majority of the fathers were at work hence could not be interviewed. Mothers have provided most of the information, and it is recognized that there might have been a difference in findings if there would be a gender balance of respondents.

The project villages in Skardu are very scattered and located on high peaks. The month of December, 2014 was very tough because of harsh winter and geographical remoteness of the area.

Chapter 2: Main Findings

This chapter discusses the main findings from the research survey that was conducted in districts Jhelum and Skardu. It provides a basic overview of the demographic information pertaining to default children alongside the current vaccination statuses of the children and the educational backgrounds and socioeconomic positions of the respondent parents and the rest of the household. It also considers the available vaccination facilities in villages in the two districts and the knowledge and perceptions of the respondent parents regarding vaccination, its importance and effects.

It should be noted that the findings for default children who have re-begun the vaccination in district Jhelum and district Skardu have been presented in sections 2.1 to 2.32. The findings of missed children in district Skardu have been presented in one consolidated table at the end of the chapter.

2.1 RELATIONSHIP OF RESPONDENT WITH CHILDREN

Interviews for the purposes of this research report were conducted only with the mothers or fathers of the default children who have re-begun the vaccination. Table 1 below considers the distribution of respondents in terms of their relationship with the children:

District	Father	Mother	Total
Jhelum	2%	98%	100%
Skardu	22%	78%	100%

District Jhelum: an overwhelming 98% of the interviewees in the district were mothers.

District Skardu: the majority of respondents, approximately 78%, in the district were mothers while the remaining 22% were fathers.

2.2 AGE WISE DISTRIBUTION OF CHILDREN

Age of children has been analysed to determine how many of them have completed their immunization and how many still needs close follow up to continue their vaccination.

District	1.5 months	9 months	15 months	Total
Jhelum	2%	22%	76%	100%
Skardu	10%	18%	72%	100%

District Jhelum: 76% children in question were 15 months old with 22% being 9 months old and only 2% being 1.5 months old.

District Skardu: the findings were very similar to district Jhelum above with 72% of children being 15 months old while the remaining 18% and 10% were 9 months and 1.5 months old respectively.

2.3 GENDER WISE DISTRIBUTION OF CHILDREN

Although the research aimed to interview equal numbers of children from both gender, it could not be done because the proportion of girls was higher in default children across the two districts.

District	Boy	Girl	Total
Jhelum	35%	65%	100%
Skardu	34%	66%	100%

District Jhelum: well over half, approximately 65%, of the target children were girls.

District Skardu: 66% were girls and 34% were boys in Skardu.

2.4 RANK OF CHILD IN RELATION TO SIBLINGS

The information about the rank of child amongst siblings was collected to determine whether first child has better chances of getting vaccine or middle child or last child.

District	1	2	3	4	5	6	7	8	11	Total
Jhelum	20%	28%	30%	18%	2%	2%	0%	0%	0%	100%
Skardu	24%	29%	14%	9%	14%	3%	2%	5%	0%	100%

District Jhelum: the greatest proportion of target children was the third child of the family (30%). However, a significant proportion of the target children were also the first or second child (20% and 28% respectively) or the fourth child (18%).

District Skardu: the spread was more varied in district Skardu and the number of children per family was greater in comparison to district Jhelum above. While 53% of the children were the first or second children of the family, 14% of children were the third child of the family, 9% fourth child, 14% fifth child and 3% sixth, 2% seventh and 5% eighth child.

2.5 CURRENT VACCINATION STATUS

This information was collected to ensure if any of the children have dropped out from continuing the regular vaccination cycle again.

District	Vaccinated	Not Vaccinated	Total
Jhelum	100%	0%	100%
Skardu	100%	0%	100%

District Jhelum: all of the target default children have been vaccinated.

District Skardu: all of the target default children have been vaccinated.

2.6 NUMBER OF VACCINATION DOSES GIVEN

This information was asked to determine, the duration required for the targeted default children for completing their all doses of vaccination. It should be noted that for the purposes of this table: dose 2 comprises vaccines Penta-1 & OPV-1 given at 6 weeks or 1.5 months; dose 3 comprises Penta-2 & OPV-2 given at 10 weeks or 2.5 months; dose 4 comprises Penta-3 & OPV-3 given at 14 weeks or 3.5 months; dose 5 comprises measles-1 given at 9 months; and dose 6 comprises measles-2 given between 12 – 24 months.

District	2	3	4	5	6	Total
Jhelum	2%	0%	18%	20%	60%	100%
Skardu	8%	14%	13%	28%	37%	100%

District Jhelum: 60% of the children have been given all 6-vaccination doses while 40% are yet to complete their vaccination.

District Skardu: only 37% of the default children have received 6 doses while remaining 63% are yet to complete the vaccination.

2.7 PROPORTION OF CHILDREN WITH VACCINATION CARDS

This information was collected to provide feedback to the Department of Health about the availability of vaccination records of the parents. In some cases, vaccination card was lost while in some cases vaccination card was never given to the parents.

District	Yes	No	Total
Jhelum	100%	0%	100%
Skardu	76%	24%	100%

District Jhelum: all of the children in the district had vaccination cards.

District Skardu: 24%, children did not have any vaccination cards.

2.8 DECISION MAKER IN HOUSEHOLD FOR VACCINATION OF CHILD

This information was collected to determine the real decision maker for the vaccination of child in the family.

District	Mother	Father	Mother-in-Law	Father-in-Law	Total
Jhelum	48%	21%	22%	9%	100%
Skardu	74%	14%	3%	9%	100%

District Jhelum: in 48% of cases mothers, 21% fathers, 22% mother-in-law (paternal grandmother of default child) and 9% father-in-law (paternal grandfather of default child) made the decision about the vaccination of the child.

District Skardu: 74% of the respondent mothers made the decision of getting their child vaccinated. Of those remaining, 14% of fathers had made the decision. In the remaining 3% of cases, mother-in-law and 9% father-in-law made the decision for the vaccination of the child.

2.9 PERCEPTIONS ABOUT THE IMPORTANCE OF VACCINATION FOR CHILD HEALTH

This information was collected to assess the attitude of parents of children after undergoing awareness raising campaign.

District	Yes	No	Total
Jhelum	100%	0%	100%
Skardu	84%	16%	100%

District Jhelum: all the respondent parents in the district considered vaccine to be of importance for the protection of child health.

District Skardu: most of the respondent parents in the district regarded vaccination as important for the child's health; however, there were still 16% of parents of default children that did not think so.

2.10 PERCEPTION ABOUT THE EFFECTS OF VACCINATION

This information was collected to identify the knowledge level of parents of children after undergoing the mobilization and awareness raising campaign on importance of vaccination.

District	Causes Disability	Causes Fever	Causes Infertility	Protects from Deadly Diseases	No Effects	Total
Jhelum	5%	47%	5%	43%	0%	100%
Skardu	4%	19%	2%	59%	16%	100%

District Jhelum: 43% of respondent parents considered vaccination as protecting from deadly diseases while 47% regarded it as the cause of fever. However, it should be noted that there are still 5% of parents that regarded vaccination as cause of disability and infertility each.

District Skardu: a significant proportion of respondent parents perceived vaccination as protecting their child from deadly diseases. However, of those remaining, 20% regarded vaccination as causing fever, 10% causing disability and 9% causing infertility.

2.11 AVAILABILITY OF LADY HEALTH WORKERS IN VILLAGES

This information was collected to understand complementarities played by Lady Health Workers if any.

Table 2.11A: Availability of Lady Health Workers in Villages			
District	Yes	No	Total
Jhelum	100%	0%	100%
Skardu	55%	45%	100%

Table 2.11B: Dissemination of Information about Vaccination by Lady Health Workers			
District	Yes	No	Total
Jhelum	100%	0%	100%
Skardu	60%	40%	100%

District Jhelum: LHWs were available in all the villages

District Skardu: 45% of the respondents stated that they did not have any LHWs available in their village.

2.12 AVAILABILITY OF VACCINATORS IN VILLAGES

This information was collected to assess the sustainability of the mobilization efforts for children to complete their vaccination beyond project period. This also informs about the access of vaccination services to default children.

Table 2.12: Availability of Vaccinators in Villages			
District	Yes	No	Total
Jhelum	100%	0%	100%
Skardu	72%	28%	100%

District Jhelum: all the respondent parents in the district stated that vaccinators were available in their respective villages.

District Skardu: in contrast to district Jhelum, only 62% of respondent parents in district Skardu answered that vaccinators were available in their villages.

2.13 AVAILABILITY OF INFORMATION REGARDING VISITS BY VACCINATORS

This information was collected to determine if information about the visits of vaccinators is made available to parents of default children.

Table 2.13A: Availability of Information regarding Visits by Vaccinators				
District	Yes	No	Total	
Jhelum	100%	0%	100%	
Skardu	88%	12%	100%	

Table 2.13B: Sources of Information regarding Visits by Vaccinators				
District	Health Promoters	Lady Health Workers	Mosque Announcements	Total
Jhelum	40%	31%	29%	100%
Skardu	43%	25%	32%	100%

District Jhelum: all respondents in district Jhelum had access to information regarding visits by vaccinators. 40% received information through health promoters, 31% received information through lady health workers and 29% received information through mosque announcement.

District Skardu: in comparison, 43% received information through health promoters, 25% received information through lady health workers and 32% received information through mosque announcement.

2.14 DISTANCE OF HEALTH FACILITIES WITH VACCINATION SERVICES IN VILLAGES

This information was collected to assess level of access of vaccination services to parents of default children.

District	<1 km	<2 km	<3 km	<4 km	<6 km	<7 km	8 km +	Total
Jhelum	30%	22%	15%	7%	7%	2%	18%	100%
Skardu	21%	11%	16%	19%	14%	11%	8%	100%

District Jhelum: all respondent parents in district Jhelum considered that health facilities with vaccination facilities were available. For 67% of the respondents, the health facilities were within a 3 km radius from the homes of the parents. Only 18% of respondents answered that the distance of the health facilities from their homes was greater than 8 km.

District Skardu: in contrast 48% of respondents had access to the health facilities with vaccination services within a 3 km distance from their homes. An overwhelming 44% of respondent parents noted that the health facilities were located at a distance 4-7 km distance from their homes. Only 8% respondents have distances of health facilities more than 8 kms.

2.15 LIMITATIONS OF VACCINATION SERVICES OFFERED BY HEALTH FACILITIES IN VILLAGES

This information was collected to know the real barriers to vaccination for parents and children.

District	Shortage of Vaccines	Unavailability of Vaccinator	Bad Attitude of Vaccinator	Distance to Health Facility	FAP Non functional	No Issues	Total
Jhelum	2%	20%	0%	0%	0%	78%	100%
Skardu	4%	24%	1%	5%	2%	64%	100%

District Jhelum: 22% of respondent parents reported issues with vaccination services offered by the health facilities in the village of which almost all the complaints pertained to the unavailability of the vaccinator and shortage of vaccine.

District Skardu: in contrasts, 28% of the respondent parents had issues with the vaccination services available most of which centred on the unavailability of vaccinator and shortage of vaccines available at the health facilities and 5% reported distance of health facility as an issue. 1% reported bad attitude of vaccinator and 2% respondents reported that the health facility is not functional.

Majority of the respondents that did not think there were any issues with the vaccination services offered by health facilities.

2.16 CAUSES FOR NOT VACCINATING CHILD PRE-INTERVENTION

This information was also collected to know the real barriers to vaccination.

District	Lack of Information about Vaccinator	Vaccination Card Lost	Vaccinator Unavailable	Father does not allow	Parents-in-Law do not Allow	Total
Jhelum	55%	0%	20%	10%	15%	100%
Skardu	62%	12%	24%	2%	0%	100%

District Jhelum: the biggest cause for lack of vaccination prior to intervention measures by CHIP was lack of information about the vaccinators (55%). The second biggest cause was unavailability of vaccinator and third biggest issue was prohibitions by parents-in-law (15%) and father does not allow (10%).

District Skardu: the two major barriers to vaccination for default children were the lack of information about vaccinators (62%) and the unavailability of the vaccinator (24%). 12% respondents reported that their vaccination card was lost; therefore, they discontinued the vaccination.

2.17 AGE WISE DISTRIBUTION OF MOTHERS

This information was collected to understand the profile of mothers and determine if this factor has any correlation with the decision of not getting their children vaccinated.

District	Under 18	18-25	26-30	31-35	36-40	41-45	Total
Jhelum	0%	15%	47%	33%	5%	0%	100%
Skardu	2%	45%	26%	21%	7%	0%	100%

District Jhelum: a large proportion of the respondent mothers (80%) were 26-35 years of age. The remaining 15% fell within the 18-25 years bracket and 5% within 36-40 years bracket.

District Skardu: a significant 45% of the respondent mothers were 18-25 years old with 26% of respondents falling within the 26-30 years age bracket and 21% fell within the 31-35 years bracket. 2% respondents were under 18 years old. 7 % respondents were 36-40 years old.

2.18 EDUCATION LEVEL OF MOTHERS

With respect to the education levels given in table 18 below, primary denotes grades 1-5, middle grades 6-9, matriculation grade 10, intermediate grade 12, undergraduate grade 14 and postgraduate grade 16.

District	Illiterate	Primary	Middle	Matriculation	Intermediate	Undergraduate	Postgraduate	Total
Jhelum	22%	37%	15%	17%	5%	3%	2%	100%
Skardu	86%	4%	4%	6%	0%	0%	0%	100%

District Jhelum: almost half of the respondent mothers (52%) had completed either primary or middle school. Nevertheless, 22% of the respondents were illiterate. On the other end of the spectrum, 22% had attained matriculation or intermediate level, 3% had completed undergraduate degree and 2% had completed postgraduate level education.

District Skardu:in stark contrast to district Jhelum, 86% of the respondent mothers in district Skardu were illiterate. Of those remaining, 8% had completed primary or middle school and 6% had matriculated.

2.19 PROFESSION OF MOTHERS

This information was collected to know the workload on mothers and assess if this factor has any correlation with the children not getting the full doses of vaccines.

District	Domestic Worker	Religious Leader	Teacher	Total
Jhelum	97%	2%	1%	100%
Skardu	96%	2%	2%	100%

District Jhelum:almost all of respondent mothers were domestic workers (97%). Of those that were employed, 2% were religious leaders and 1% was a teacher.

District Skardu: in similar vein, 96% of the respondent mothers were domestic workers, 2% comprised religious leaders and 2% teachers.

2.20 EDUCATION LEVEL OF FATHERS

This information was collected to understand the education and awareness level of father.

District	Illiterate	Primary	Middle	Matriculation	Intermediate	Undergraduate	Postgraduate	Total
Jhelum	22%	8%	31%	27%	7%	3%	2%	100%
Skardu	55%	4%	10%	12%	12%	3%	4%	100%

District Jhelum: the most significant proportion of respondent fathers had completed middle school (31%); this was followed by 27% of fathers who had matriculated from school. However, it should be noted that a significant 22% were illiterate.

District Skardu: an overwhelming 55% of fathers were illiterate in district Skardu. Of those remaining, 10% had completed middle school, 12% had matriculated and 12% had completed intermediate level. 3% had their post graduation completed.

2.21 PROFESSION OF FATHERS

This information was collected to know the economic engagement of father and its correlation with the vaccination of children.

District	Army	Daily Wage Worker	Driver	Farmer	Mason	Shop Keeper	Other	Unemployed	Total
Jhelum	13%	13%	18%	17%	5%	22%	8%	3%	100%
Skardu	9%	48%	5%	9%	6%	5%	8%	10%	100%

District Jhelum: the greatest proportion of respondent fathers was shopkeepers followed by 18% who were drivers and 17% were farmers. A further 13% each were army workers and daily wageworkers. Only 3% were unemployed.

District Skardu: in contrast 48% of the respondent fathers were daily wageworkers with 9% working as farmers and 9% each working in the army and 6% as masons. It should also be noted that a significant 10% were unemployed.

2.22 AVERAGE MONTHLY INCOME OF FATHER

This factor was explored to assess if economic status of the family has any correlation with the vaccination of children.

District	No Income	Less than PKR 5,000	PKR 5,001 – 10,000	PKR 10,001 – 15,000	PKR 15,001 – 20,000	More than PKR 20,000	Total
Jhelum	0%	15%	37%	20%	8%	20%	100%
Skardu	17%	31%	14%	8%	13%	17%	100%

District Jhelum: the most significant proportion of respondent fathers had an average monthly income of PKR 5001-10,000 (37%). Furthermore, 20% each had incomes falling in the PKR 10,001-15,000 and PKR 20,000 plus income brackets.

District Skardu: similarly, the most significant proportion of respondents had an average monthly income of less than PKR 5,000 (31%). However, 17% of respondent fathers had no income at all and 14% had income ranging between PKR 5,001-10000. In contrast, 17% earned more than PKR 20,000.

2.23 ADDITIONAL SOURCE OF INCOME OF FATHER

This information was collected to specify the economic standing of the parents of default children.

Table 2.23A: Status of Additional Source of Income			
District	Yes	No	Total
Jhelum	17%	83%	100%
Skardu	29%	71%	100%

Table 2.23B: Type of Additional Source of Income						
District	Agriculture	Orchard	Livestock	Shop	None	Total
Jhelum	17%	0%	0%	0%	83%	100%
Skardu	14%	3%	9%	3%	71%	100%

District Jhelum: 17% of respondent fathers had additional income. In all cases, this additional income accrued from agriculture.

District Skardu: 29% of respondent fathers had additional income derived from a range of sources namely, livestock (9%), shops (3%), orchards (3%) and agriculture (14%).

2.24 RESIDENCE STATUS OF FATHER

This information was collected to assess if the father is playing lead decision-making role for the vaccination of his children or is completely removed from the main decision making process in the household.

Table 2.24: Residence Status of Father			
District	At Home	Outside Village	Total
Jhelum	80%	20%	100%
Skardu	67%	33%	100%

District Jhelum: most of the fathers lived at home (80%).

District Skardu: similar to the findings in district Jhelum, a majority of fathers (67%) lived at home.

2.25 TYPE OF HOUSE LIVED IN

The type of construction of the house informs about the economic standing of the family. This factor was assessed to identify the relationship between lifestyle of decision-maker for getting children vaccinated.

Table 2.25: Type of House Lived in				
District	Kacha	Pakka	Both	Total
Jhelum	2%	70%	28%	100%
Skardu	71%	3%	26%	100%

District Jhelum: 70% of the families of the default children were living in *pakka* houses that is, houses that are designed to be full and solid in construction. Of those remaining, 28% were living in houses that were mixed both *kacha* (mud houses) and *pakka*.

District Skardu: in stark contrast to district Jhelum, most of the respondent families lived in *kacha* houses (71%). 26% lived in mixed houses and only 3% lived in *Pakka* houses.

2.26 NUMBER OF FAMILY MEMBERS LIVING IN HOUSEHOLD

This factor was explored to assess the workload on the mother and also level of interference by other family members regarding vaccination of children.

Table 2.26: Number of Family Members Living in Household													
District	4	5	6	7	8	9	10	11	12	13	14	15+	Total
Jhelum	5%	15%	15%	18%	12%	7%	10%	5%	3%	2%	3%	5%	100%
Skardu	11%	9%	12%	17%	10%	8%	8%	9%	6%	0%	4%	6%	100%

District Jhelum: the findings under this head varied considerably but most families had a large number of members living in the same household with families with 7 or more member families accounting for 68% of the interviewees.

District Skardu: similarly, most of the families had a large number of family members with 62% of interviewees living in 7 or more member households. This figure comprised 6% of respondents that had 15 or more family members living in the same house. 32% had family members ranging 4-6.

2.27 MOTHER-IN-LAW LIVING WITH PARENTS OF CHILDREN

This information was collected to assess interference of mother-in-law (grandmother of default child) in the vaccination of their grand children.

District	Yes	No	Total
Jhelum	58%	42%	100%
Skardu	69%	31%	100%

District Jhelum: more than half of the respondent parents were living with their in-laws with 58% living with their mother in laws.

District Skardu: this figure was even higher for respondent parents in Skardu with 69% living with their mother in laws.

2.28 DISABLED PERSON IN IMMEDIATE FAMILY

This table identifies cases of disability in the immediate family caused by incomplete vaccination.

District	Yes	No	Total
Jhelum	17%	83%	100%
Skardu	17%	83%	100%

District Jhelum: 17% of the respondents stated that they had at least one disabled family member living in the same household.

District Skardu: the results under this head were exactly the same as district Jhelum with 17% disabled family members living in the same household.

2.29 NUMBER OF LIVING CHILDREN OF MOTHER

This information was collected to know the number of children borne by the mother and to assess their health status as a result of baby delivery.

District	1	2	3	4	5	6	7	8	11	Total
Jhelum	15%	32%	28%	17%	3%	3%	2%	0%	0%	100%
Skardu	21%	19%	18%	16%	12%	6%	3%	4%	1%	100%

District Jhelum: almost 60% of the respondent mothers had 2 to 3 living children with 17% with 4 children, 3% with 5 and 6 children each and a further 2% with 7 children.

District Skardu: as noted in table 29 above, the number of children in the families of default children was larger in district Skardu. 58% of respondent mothers had 1 to 3 living children with 16% with 4 children, 12% with 5 children, 6% with 6 children and 7% each with 7 and 8 children. Only 1% had 11 children.

2.30 NUMBER OF CHILDREN OF MOTHER THAT DIED BEFORE AGE 2

This table assesses the mother's emotional health in relation to the child's vaccination status.

Table 2.30: Number of Children that Died before Age 2				
District	1	2	None of the Child Died before Age 2	Total
Jhelum	7%	5%	88%	100%
Skardu	13%	15%	72%	100%

District Jhelum: 88% of the respondent mothers did not have any children that had died before age 2. Of the remaining, 7% had one child and 5% had two children that had died before age 2.

District Skardu: in comparison to district Jhelum above, 28% of respondent mothers answered that they had children that had died before age 2. This figure comprised 13% mothers with 1 child and 15% mothers with 2 children that had died before age 2.

2.31 PROPORTION OF MOTHERS THAT HAVE UNDERGONE MISCARRIAGE OR ABORTION

This information was collected to assess the health status of mothers of default children and the trauma faced by them. This information will be used to assess if the mother has become overprotective or biased after losing previous babies.

Table 2.31A: Proportion of Mothers that have undergone Miscarriage or Abortion			
District	Yes	No	Total
Jhelum	13%	87%	100%
Skardu	22%	78%	100%

Table 2.31B: Frequency of Miscarriages or Abortions					
District	1	2	3	No Miscarriage/Abortions	Total
Jhelum	10%	3%	0%	87%	100%
Skardu	10%	2%	10%	78%	100%

District Jhelum: only 13% of the respondent mothers had undergone a miscarriage or abortion. Of this figure, 10% had 1 miscarriage or abortion.

District Skardu: the proportion of respondent mothers undergoing a miscarriage or abortion was higher with 10% mothers with 1, 2% with 2 and 10% with 3 miscarriages or abortions.

2.32 STATUS AND TYPE OF SERIOUS HEALTH ISSUE FACED BY MOTHERS

This information was collected to assess the medical condition of mothers of default children and analyse the correlation between medical condition and vaccination status of children.

Table 2.32A: Status of Serious Health Issue Faced by Mother			
District	Yes	No	Total
Jhelum	20%	80%	100%
Skardu	41%	59%	100%

Table 2.32B: Type of Serious Health Issue Faced by Mother							
District	Blood Pressure	Cardiac Problems	Hepatitis	Stomach Acidity	Depression	No Issues	Total
Jhelum	13%	0%	0%	2%	5%	80%	100%
Skardu	2%	2%	2%	31%	4%	59%	100%

District Jhelum: 20% of respondent mothers facing serious health issues, which comprised 13% suffering from blood pressure issues and 5% from depression.

District Skardu: this figure was considerably higher in district Skardu with 41% mothers facing serious health issues. The most common types of health issues were: stomach acidity (31%), blood pressure (2%) and cardiac problems (2%).

2.33 FINDINGS PERTAINING TO MISSED/DEFAULT WHO HAVE NOTRE-BEGUN THE VACCINATION

The following table presents all the findings for missed/default children who have not re-begun the vaccination even after mobilization and awareness raising activities by CHIP. It should again to be noted that all of the default children in district Jhelum have re-begun the vaccination and therefore, the findings under this head are applicable to missed/default children in district Skardu only.

Table 2.33A: Profile of Children	
Age Wise Distribution of Missed Children	50% children were 15 months old, 45% children were 9 months old and 5% children were only 1.5 months old.
Gender Wise Distribution of Missed Children	70%-missed children were girls and 30%-missed children were boys.
Rank of Child in Relation to Siblings	35% children were first child and 25% fifth child and 15% second child, 10% fourth child, 5% seventh child and only 5% were third child.
Table 2.33B: Profile of Parents of Children	
Age Wise Distribution of Mothers	30% mothers were 18-25 years of age and 31-35 years of age. 25% were 26-30 years of age while only 15% were 36-40 years of age.
Education Level of Mothers	95% were illiterate and 5% were 6-7 grade passed.
Profession of Mothers	80% mothers were housewife, 15% were teachers and 5% were religious leaders.
Education Level of Fathers	75% fathers were illiterate, 15% were grade 10 passed, 5% were 6-7 grades passed and another 5% were grade 11 passed.
Profession of Fathers	15% fathers were unemployed, 40% fathers were daily wagers, 15% farmers and 10% masons, 10% were working as a driver, and 5% fathers were employed in the Army while the remaining 5% were working as carpenters.
Residence Status of Father	75% fathers were living in the village with the family while only 25% were living away from their family due to nature of the work.
Type of House Lived In	80%-missed children were living in completely muddy (<i>kacha</i>) houses and only 20% were living in semi cemented (<i>pakka</i>) houses.
Average Monthly Income of Father	15% fathers did not have any income, 30% fathers had income less than PKR 5000 only 25% fathers had income ranging between PKR 5001-10000 only, 15% had 10100-15000 and another 15% had 15100-20,000 incomes.
Status and Type of Additional Source of Income	Only 15 % had additional income. The additional income of fathers was 12% of the additional income was from livestock while 5% fathers had additional income from agriculture.
Table 2.33C: Health Status of Mothers of Children	
Number of Living Children of Mother	30% mothers had two living children, 25% mothers had only one living child, 15% mothers had six living children, 10% had seven living children while another 10% mothers had 5 living children, 5% mothers had eight living children and another 5% mothers had three children.
Number of Children of Mother that Died Before Age 2	35% mothers' had one or two children that had passed away before their second birthday.
Proportion of Mothers that have Undergone Miscarriage or Abortion	15% mothers had undergone miscarriage and or abortions. Out of these 15%, 10% undergone one miscarriage/abortion and 5% mothers had undergone two miscarriages/abortions.
Status and Types Of Serious Health Issue	60% mothers have medical issues and they are not physically fit. Out of these, 45% mothers were suffering from stomach problems,

Faced By Mother	10% mothers were suffering from cardiac issues and 5% mothers were suffering from high blood pressure.
Table 2.33D: Status of Joint Family System in Households of Children	
Mother-In-Law Living With Parents Of Missed Children	75% mothers were living with their mother in law.
Number Of Family Members Living In Household	45% mothers had 10-15 plus family members, 40% mothers had 6-8 family members, another 10% mothers had five family members and only 5% mothers had 4 family members.
Disabled Person In Immediate Family	25%-missed children had disabled in their immediate family.
Table 2.33E: Access of Children to First Level Care Facilities & Vaccination Services	
Availability of Lady Health Workers and Dissemination of Information by them in Villages	55% mothers reported that LHW is present in their village and she disseminates information about vaccination while 45% mothers reported that LHW is not present in their village hence they do not get information about vaccination through LHW.
Availability of Vaccinators in Villages	70% respondents reported that vaccinator visit their village regularly and make announcement of their visit to gather children for vaccination while 30% respondents reported that vaccinator does not visit their village.
Distance of Available Health Facilities with Vaccination Services in Villages	55% respondents reported that the distance of first level health care facility is greater than 6 kms from their house in a tough hilly terrain. The area suffers from harsh winter for approximately six months and more, which makes it more difficult for people to take their children to the health facility for vaccination. There is no regular transport from village to the health facility and people have to hire private vehicles for travelling from village to different places. The transport cost in private vehicle is very high and often unaffordable. Only 25% respondents live within one km radius of health facility, 5% respondents live within two kms radius and 15% respondents live with 3-4 kms radius.
Specific Limitations of Vaccination Services Offered by Health Facilities in Villages	65% respondents stated that there is no issue in the nearest health facility related to vaccination. 25% respondents complained that the distance of health facility from their house is great and it is unaffordable for them to take one child for vaccination. 5% respondents complained that there is a shortage of vaccine in the health facility while 5% respondents complained that the health facility is non-functional.
Table 2.33F: Perceptions of Parents of Children about Vaccination	
Perception about Effects of Vaccination	65% respondents perceived vaccination negatively. 25% respondents believed that it causes infertility, while another 25% believed that it causes fever and 15% respondents believed that it causes disability. Although 35% respondents believed that it protects children from deadly diseases but even then they are not getting their children vaccinated.
Table 2.33G: Decision Maker in Household for Vaccination of Children	
Decision Maker in Household for Vaccination	70% children were not vaccinated because of the decision of their grandparents and father. Only 30% children were not vaccinated because of the decision of mother.

Chapter 3: Analysis

3.1 DISTRICT JHELUM

Almost all of the respondents of the research survey were mothers with almost three-quarters of the target children in the district aged 15 months. 65% of them were girls. The most significant proportion of default children was the second or third child of the family. A notable proportion of the children were also first child of the family. All of these children had restarted vaccination with 60% having completed all six doses, while the remaining 18% and 20% children had been given 4 and 5 vaccination doses, respectively. All of the target children had vaccination cards available.

In almost 50% of the cases, the decision maker in the household was the mother and therefore, it was critical to examine the status, educational background and mindset of the mother with respect to vaccination. It should also be noted that this point that 98% of the respondents in the district were mothers and therefore, the overall findings closely reflect their knowledge and perceptions of vaccination. Most of the mothers of the default children were 26-35 years of age with little or no education. All the mothers recognised the importance of vaccination for child health now. However, it is alarming that 57% did not know that vaccines protect from deadly diseases and 53% did not know that it causes fever for the child. Furthermore, there are still 5% of mothers that regarded vaccination as a cause of disability and infertility.

Almost all of them were stay-at-home mothers responsible for everyday domestic chores in households usually comprising 7 or more family members. This suggests that it is likely that they were so engrossed in managing the households that they often subconsciously failed to consider the long-term well being of their child. In 50% of the cases, the mother had 2-3 living children and 12% of mothers had had a child that passed away before age 2. 13% of the mothers had also experience 1 or 2 miscarriages. In 17% of cases, there was at least one disabled family member living in the same household. This may suggest that in some cases, the unstable emotional health of the mother caused by frequent deaths of her young children and miscarriages coupled with disability in the family may make her overprotective of her living children and consequently biased against vaccines particularly, given the widespread lack of awareness regarding the importance and effects of vaccines.

In 22% of the cases, the mother-in-law, that is the paternal grandmother of the child, had been the decision maker for vaccination of the child. Well over half of the respondent parents were living with their mother-in-laws and in almost 15% of the cases, the main reason for not vaccinating child before CHIP intervention was because parents-in-law of the respondent mothers, mostly mothers-in-law, did not allow it.

In the remaining 21% of cases, the decision maker for vaccination of the child was the father. In almost 10% of the cases, the father was the main reason behind not vaccinating the child. More than three-quarters of the fathers had completed either primary or middle school or had never had any formal education. The average monthly income of a large majority of fathers was under PKR 15,000 or less and this was often the main household income. The fathers often did not have any additional source of income. In 80% of the cases, the fathers lived at home and played their respective roles as head decision makers of the household. These factors seem to suggest that lack of education of the fathers and extremely limited financial resources were also barriers to greater vaccination coverage in the district.

The research survey also potentially highlights some of the barriers that were external to the household of the default children. In 55% of the cases, lack of information about the visits of the vaccinator was the main cause behind not vaccinating child prior to CHIP intervention. One of the most important sources of information about vaccinator visits was flagged as CHIP health promoters. In a further 20% of the cases, the vaccinator had been unavailable. Unavailability of vaccinators was also identified as a limitation of health facilities in the villages. Shortage of vaccines was also identified as one of the reasons in a limited number of cases.

3.2 DISTRICT SKARDU

In contrast to district Jhelum, 78% of the respondents were mother while the remaining 22% were fathers. In an overwhelming majority of cases, the target children were 15 months old although 18% of the default children were 9 months old as well. Similar to default children in Jhelum, 66% of the target children were girls more than half of whom were first or second child of the family. All of these children had restarted vaccinations of which 37% had completed the entire course while 28% had been given 5 doses. It should be noted however, that 76% of the target children had vaccination cards available.

The mother was the decision maker with respect to vaccination of the default child in an overwhelming 74% of the cases. The mothers of default children in district Skardu were younger than those in district Jhelum most of whom fell within the 18-30 age bracket. A shocking 86% of the mothers were illiterate. 84% of the respondents recognised the importance of vaccination for child health but 41% of respondents did not recognise that vaccination protects from deadly diseases. Furthermore, 81% of the respondent parents did not know that vaccination causes fever. A very small proportion of respondent parents thought that it caused disability and infertility.

Similar to district Jhelum, all of the mothers were unemployed and spent their day completing domestic chores with more than 60% of families comprising 7 or more members. It should be noted that this figure comprised 6% of families with over 15 members. 71% of the families lived in small *kacha* houses within extremely limited financial resources. This points to the fact that in such families economic standing and lifestyle of the decision maker was an important factor against vaccination perhaps because mothers in such families were extremely preoccupied with family responsibilities and financial difficulties.

The emotional health of mothers may also point towards lower rates of vaccination and vaccination in district Skardu in comparison to district Jhelum. Both the proportions of mothers whose children had died before age 2 and undergone miscarriage were higher for district Skardu. Moreover, the proportion of mothers suffering from serious health issues by mothers was almost double in district Skardu (41%) as compared to those in district Jhelum. Stomach acidity was the most common health issue faced by these mothers. This may suggest that this may be a more prevalent reason in district Skardu as compared to district Jhelum.

The mother-in-law had a less prominent decision making role as to the vaccination of children in the district despite the fact that a higher proportion of mother in laws were living with the respondent parents as compared to district Jhelum. In 14% of the cases, the decision maker in the family was the father. However, in only 2% of the cases was lack of permission by the father was the main reason behind not vaccinating the child. A significant proportion of the fathers had not had any formal education or had completed only primary school. The average monthly income in a vast majority of cases was less than PKR 5,000, which made the financial position of most households even more difficult than in district Jhelum. The lesser role that fathers in district Skardu are playing could perhaps also result from the fact that 33% of fathers (as compared to 20% in district Jhelum above) lived outside the village.

The external barriers in terms of limited access to health facilities, LHWs and vaccinators were more prominent in district Skardu as well. Lack of information about visits of the vaccinator was flagged as an issue by 62% of the parents. Unavailability of the vaccinator was also raised as a barrier. Distance to health facilities exacerbated by the rough geographical terrain was also a barrier to routine vaccination. In 64% of the case, health facilities were located a distance greater than 2 km from the village. It should also be noted that 45% of respondents did not have access to LHWs and 40% considered that they did not disseminate important information about vaccination.

3.2.1 MISSED/DEFAULT CHILDREN WHO HAVE NOT BEGUN/RE-BEGUN VACCINATION

Each of the factors discussed in relation to default/misplaced children who have re-begun the vaccination as a result of mobilization and awareness raising above was exacerbated in the case of missed/default children who have not begun/re-begun vaccination even after mobilization and

awareness raising interventions in Skardu. The education levels of both parents were shockingly low with 95% of mothers and 75% of fathers being illiterate. The most prominent decision makers in the case of missed children were grandparents and the father (70% of cases). This stemmed largely from a lack of awareness regarding vaccination and 65% of the respondents viewed it negatively. A quarter of the respondents believed that vaccination causes infertility and fever and a further 15% consider it to be the cause of disability. It is surprising that 35% of those that recognise the importance of vaccination are also unwilling to get their children immunised. Other important factors included the presence of mother-in-laws in the household (75%); the large family sizes with almost 45% of the mothers living in a household with 10-15 family members; and prevalence of higher rates of disabled family members with 25% of respondents having at least one disabled person living in the same household.

The financial difficulties faced by the parents of the missed children also appeared to be a strong indicator. 20% of fathers had no income at all while 25% had an income of less than PKR 5,000. With so many mouths to feed, often the cost associated with taking the child to a health facility for vaccination was unaffordable and not worth it. It should be noted that 25% of respondents complained that the distance of the health facility from their house was a lot and it was unaffordable for them to take one child for vaccination as there was no regular transport to and from the village to the health facilities and the people would have to hire private vehicles which were expensive especially given the strict budget that these families lived in. Unsurprisingly, 80% of the children were living in *kacha* houses.

In 30% of the cases, the mother was the main decision maker against vaccination of the child. While the educational level of the mothers, which was extremely poor, is one factor, emotional instability of the mother coupled with lack of awareness is also a strong indicator. The number of children that had died before age 2 was higher amongst mothers of missed children (35%), which may have made them overprotective of their children and against vaccination generally. Also, 60% of mothers of missed children reported medical issues mostly stomach problems, cardiac issues and high blood pressure.

Access to First Level Care Facilities and vaccination services was also poorer in district Skardu with 45% of mothers reporting that LHW is not present in their village. Similarly, 30% of respondents reported that the vaccinator does not visit their village. With relation to the health facilities, almost 55% of the respondents complained that the distance of the health facility offering vaccination services was greater than 6 km from their house in a touch hilly terrain and usually in conditions involving extremely harsh winters. Apart from complaints of the distance of the health facilities, the respondent parents also complained of shortage of vaccines in the health facilities as well.

Chapter 4: Conclusion & Recommendations

The research findings conclude that social mobilization and awareness raising activities are helpful in improving vaccination coverage but these cannot be fully successful until other factors such as illiteracy, poverty, poor health of mothers, unavailability of vaccinators, shortage of vaccines and weak information dissemination is addressed through an integrated approach. The findings of research conclude that only 11% children have not begun or re-begun the vaccination.

4.1 MAJOR BARRIERS TO VACCINATION

The parents of default/missed children who have begun/re-begun and not begun/re-begun the vaccination reported about the following factors as major barriers of vaccination.

4.1.1 AVAILABILITY OF VACCINATION SERVICES AND ITS INFORMATION

- Availability of vaccinator in the first level care facility was infrequent and shortage of vaccine was common.
- Distance of first level care facility from the house of default/missed children was more than 3 kilometers which in mountainous region is very significant. It has also been reported that poor transport systems and high travel expenses also discourage parents from getting their children vaccinated.
- Visits of outreach teams of vaccinators to distant villages are infrequent and information dissemination about the visit of vaccinator is weak.
- LHWs are not available in some areas therefore information dissemination through them is weak.

4.1.2 AWARENESS AND KNOWLEDGE

- There are myths and biases about vaccination;
- There is also a lack of knowledge and understanding about importance of vaccination in parents and other decision makers.

4.1.3 PERSONAL PROFILE OF PARENTS OF MISSED/DEFAULT CHILDREN

- Families are extremely poor with no or very low-income level, and live in muddy or semi muddy houses.
- The health condition of mothers is bad; in most of the cases they have undergone miscarriages and or abortions and in some case they have also lost a child under 24 months of age.
- Education of parents of default/missed children is very low.
- Family size is large and there are too many family members interfering in the decision making process.

4.2 RECOMMENDATIONS FOR FUTURE PROGRAMMES

4.2.1 CONCENTRATED EFFORTS FOR RAISING AWARENESS AND KNOWLEDGE

- One-on-one sensitisation sessions with each potential decision maker in the household should be conducted that directly address the particular issues raised by them and dispel any myths that they have against vaccination;
- Community level awareness raising sessions on mother and child health including the importance of vaccination and TT injections during pregnancy should be conducted through group talks, banners and advertisement, etc.
- Since majority of mothers, fathers and other decision makers are illiterate therefore all awareness raising mediums should be designed according to their educational levels.
- A very close follow up should be done with children over 15 months old to ensure that they get their last vaccination dose as soon as possible.
- Loss of vaccination card has been used as one of the excuse for not continuing the vaccination. Therefore, parents should be facilitated in getting lamination of vaccination card and helping them understand its importance.

4.2.2 AVAILABILITY OF VACCINATION SERVICES AND ITS INFORMATION

- VHCs should have a direct link with the district health department for reporting about the availability of vaccinator, shortage of vaccine and any other issues related to the quality or outreach of their respective health care facility.
- Strong linkages should be established between the VHCs and health facilities available at Union Council levels to ensure improved flow of information regarding vaccination services available.
- LHWs should be trained in areas where they do not exist. In case eligible females are not available, then Skilled Birth Attendants should be trained and used as an information dissemination channel for vaccination services.
- Local human resource in the form of VHCs and HPs should be utilised in improving accessibility of parents to vaccinators particularly by ensuring that information about vaccinator visits to the village is readily available and communicated as far in advance as possible.

4.2.3 INTERVENTIONS FOR IMPROVING SOCIAL, ECONOMIC AND EDUCATIONAL STATUS OF PARENTS OF MISSED/DEFAULT CHILDREN

- Dedicated programmes for improving livelihoods of parents of default children should be designed and implemented. This can be done either by adding complementary activities in ongoing health programmes or through establishing linkages between VHCs and micro finance institutions.
- Vaccination programmes should always be combined with the interventions for improving mother and child health care. Helping mothers in improving their health condition will enable them to take good care of their children as well.
- Adult literacy programmes should be designed by developing an exclusive curriculum that contains topics like importance of vaccination, maternal and child health. This will achieve double objectives i.e. not only increase the literacy level but also increase the knowledge and awareness about vaccination and maternal child health related topics.
- In most of the cases, the number of reported miscarriages and abortions amongst mother was too high. This had two damages i.e. weakening health of mothers and high frequency of miscarriages which subsequently resulted in a lower interest and distrust for vaccination of children. Introducing complementary interventions on family planning combined with awareness raising on importance of maternal and child health care would help counter this situation.