

Population Based Prevalence Survey of Hepatitis B & C Punjab

2018



Bureau of Statistics
Planning & Development Department
Government of Punjab.

FORWARD

Government of the Punjab has been focusing to health sector to improve service delivery for the citizens. There is dire need to focus on controlling chronic and fatal diseases. Hepatitis is one of the most dangerous and common fatal diseases around the world and high prevalence of Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) in our country is one of the major health issues that needs to be addressed. The World Health Organization (WHO) is pushing for prevention & control of HCV and for its elimination by the Year 2030. In view of the severity of the problem, Government of the Punjab established Pakistan Kidney and Liver Institute (PKLI) and introduced a comprehensive Hepatitis Control Programme in the province. Several steps have been taken for controlling this disease and to save valuable lives through sustained interventions.



The Government is cognizant of the fact that evidence based initiatives for elimination of Hepatitis from the province is key to success of policies and interventions. In order to base the policy on credible data, **Hepatitis Prevalence Survey in Punjab, 2017**, was conducted in the province, providing data of selected households on many key indicators and benchmark estimates for prevalence of Hepatitis. The current report provides a picture of existing situation for assessment of the efficiency/outcome of government interventions for eradication of Hepatitis. The report contains highly useful data for policy formation for the future and way forward for resource allocation in various regions of the Punjab to achieve the eventual goal of Hepatitis free Punjab.

Planning & Development Board, Hepatitis Control Programme Punjab, PKLI, Apex Consulting Pakistan and other stakeholders at the provincial and district level deserve credit for delivering well on this challenging task. Special appreciation goes to the team of Bureau of Statistics (BoS), Punjab for their efforts in making it possible.

I am confident that this report will prove to be a valuable source for planning efforts of Government of the Punjab and development partners, and a reference for academia and research organizations to serve the noble cause of elimination of Hepatitis from Punjab.

HABIB-UR-REHMAN GILANI

Chairman P&D Board, Punjab

ACKNOWLEDGEMENT

Population Based Prevalence Survey of Hepatitis B&C Punjab, 2018 is a collaborative initiative, carried out by the Bureau of Statistics (BoS), Punjab and Hepatitis Control Program. The project received funding from the ADP of Government of the Punjab. The PKLI and Hepatitis Control Program provided technical assistance and support for implementation of the project. The key substantive support and technical input for development of indicators, questionnaires, survey & training manuals, tabulation plan and report writing was provided by the Bureau of Statistics Punjab. The PKLI gave insightful feedback and comments for finalizing all the survey tools. Pakistan Bureau of Statistics (PBS) provided the sample design for the survey. Data collection from the field and onward activities were outsourced to APEX Consulting Pakistan. The BoS, Punjab and PKLI reviewed and monitored the field work, data processing & analysis and final report of the survey.



This really was an exceptional achievement and the staff involved displayed extraordinary sense of responsibility. The district functionaries, administrative departments and law enforcement agencies deserve applause for their vigilance and their role in ensuring the safety of Hepatitis Survey Punjab, 2018 field teams.

The Chairman, Planning and Development Board extended fullest guidance and support to make this survey a success. Dr. Zahida Sarwar (Program Manager, Hepatitis Control Program) and Dr. Amer Yar Khan (Medical Director, PKLI), along with their team, also played vital role for the successful completion of project.

I congratulate all officers of core technical team of BoS Punjab; Mr. Shamas Ul Huda (Deputy Director), Ms. Shaista Ashraf (Statistical Officer) and Mr. Isaac Shahzad (Statistical Officer), who in addition to their routine office work, extended full support towards this important endeavour. I also extend my gratitude to Dr. Ahsan Ahmad (Consultant, BoS Punjab) who always remained available for hunting down the issues and delivered technical support with much relevance. Special thanks goes to Pakistan Bureau of Statistics for providing the sample design and sample weights. The efforts of CHUGHTAI LAB, in performing Hepatitis screening test on collected blood samples, are acknowledged.

The fieldwork for data collection and blood sample collection was adequately handled by the core team of APEX Consulting Pakistan and members of field teams. I specially appreciate the contribution and support of local communities and members of selected households, who devoted their precious time to be included in the survey. The respondents need to be applauded for their confidence in sharing their personal information and enriching the survey with data that will be crucial for planning for Government of the Punjab.

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List of Abbreviations

Anti HBc	Antibodies to Hepatitis B core antigen
Anti HBs	Antibodies to Hepatitis B surface antigen
Anti HDV	Antibodies to Hepatitis D Virus
APEX	APEX Consulting Pakistan
BoS-Punjab	Bureau of Statistics Punjab
E.Bs	Enumeration Blocks
EDTA	Ethylenediaminetetraacetic acid
ELISA	Enzyme Linked Immunosorbent Assay
GHSS	Global Health Sector Strategy
GPS	Global Positioning System
HAV	Hepatitis A Virus
Hba1c	Glycated Hemoglobin
HBeAg	Hepatitis B e antigen
HBsAg	Hepatitis B Surface Antigens
HBV	Hepatitis B Virus
HBV-PCR	Hepatitis B Virus Polymerase Chain Reaction
HCP	Hepatitis Control Program
HCV	Hepatitis C Virus
HCV By RNA	Hepatitis C Virus by Ribonucleic Acid
HCV Genotyping	Hepatitis C Virus Genotyping
HDV	Hepatitis D Virus
HEV	Hepatitis E Virus
HH	Household
HIV	Human Immunodeficiency Virus
KPK	Khyber Pakhtun Khwa
LHW	Lady Health Worker
LPG	Liquefied Petroleum Gas
MOS	Measure of Size
ODK	Open Data Kit
PBS	Pakistan Bureau of Statistics
PCR	Polymerase Chain Reaction
PKLI & RC	Pakistan Kidney Liver Institute and Research Center
PMRC	Pakistan Medical Research Council
PSU	Primary Sampling Units
RNA	Ribonucleic Acid
SDG	Sustainable Development Goals
SOPs	Standard Operating Procedures
TRF+	Technical Resource Facility Plus
UC	Union Council
UNODC	United Nations Office on Drugs and Crime
UK	United Kingdom
WHO	World Health Organization

EXECUTIVE SUMMARY

Commissioned by the Bureau of Statistics, Punjab (BoS-Punjab), this survey is a cross-sectional study on epidemiology, prevention, care and treatment of Hepatitis B, Hepatitis D and Hepatitis C in the province. Specifically, it provides estimates about the proportion of the provincial population aware and unaware of its HBV and HCV status, the proportion with active infection and those seeking care, and infected individuals treated for HBV and HCV. It also estimates the proportion of population with end-stage liver disease identifies and describes risk factors associated with HBV and HCV to inform prevention program, and the prevalence of diagnosed chronic kidney disease, hypertension, diabetes and cancers in the surveyed population. Diabetes prevalence was also assessed through HbA1c.

With all households' (HH's) entire population in the rural and urban areas of Punjab considered as the sampling universe, the updated sampling frame for the Population census 2017 was used for this survey. Keeping in view, the variability for characteristics for which estimates were to be derived, requirements of BoS-Punjab, population distribution and main objectives of the survey, an estimated sample of 4,800 HH's was considered appropriate. This sample was distributed across 240 Primary Sampling Units/clusters apportioned by, with reference to the rural-urban population ratio based stratum, that resulted in 84 and 156 selected enumeration blocks which were covered in urban and rural Punjab. The fieldwork was carried out from 28 April to 15 May 2018. All 27 trained teams were deployed in the field simultaneously. Each team completed one cluster in a day and electronically transferred data to the central office. For monitoring and quality assurance purposes, the APEX had deployed the teams in the field for spot checks. The data received was checked for the consistency on regular basis. More over the Focal persons from BoS-Punjab and Pakistan Kidney Liver Institute (PKLI) also sent their staff members for the spot check, data collection, biological samples handling and transportation regularly but without prior intimation to the field teams.

Though 4,800 HHs were to be visited but because of security, individual/community lack of cooperation and other issues, 4,593 (95.7%) were approached with 3,073 (66.9%) in rural and 1,520 (33.1%) in urban areas. Out of 23,764 (79.9%) approached respondents from these 4,593 HHs, 18,883 (79.5%) gave complete interview (i.e. questionnaires and blood samples). Rest of the respondents were either not available at home or refused to give interview/complete interview.¹

Blood samples² were collected after receiving written approval from the HH head and verbal consent of each respondent. Each team had a phlebotomist, who was responsible for obtaining blood samples. A total of 14,459 (76.6%) respondents provided blood samples.

Main Findings

The overall weighted prevalence of HBV and HCV in Punjab was 309 (2.2%) and 1,272 (8.9%) respectively. The overall prevalence of Hepatitis B virus is almost equally distributed in rural and urban areas. However, its prevalence is higher in males (2.9%) than in females (1.6%). The prevalence is also higher in older than the younger population. Similarly, overall

¹ Un-weighted values

² For details, please see the section 2.8 – Blood Sample Collection, Storage and Transportation

prevalence of Hepatitis Delta Virus in HBV positive cases is (17.7%), with (19.6%) in the urban and (17.0%) in rural areas. However, prevalence of Hepatitis Delta Virus is more in males (19.4%) than in females (15.1%).

One-third of the Hepatitis B negative population (33.2%) was found to be immune to HBV – more in urban population (34.9%) than in rural (32.5%). A higher proportion of males were immune than females. Although, the presence of anti-hepatitis B virus core antibody is considered a sensitive life time marker of HBV infection. Of the 304 HBsAg reactive samples, (82.1%) males and (84.4%) females had HBV viremia. Further, quantification of the viral load and its stratification according to the age of HBsAg positive respondents were also tested, that shows viral load is highest (with above 20,000) in the age group of 1-4 years. Across the age stratum, it was inferred that the lower the age the higher is viral load among the hepatitis B patients. Prevalence of HBeAg virus in HBV positive population was (13.6%) - more in rural (17.5%) areas than in urban (1.9%) and was observed to be more prevalent among females (17.1%) than in males (11.2%). While in risk of being infected by the injections was more in the respondents, who had received injections in the past, (60.5%), as compared to the one who had not received any injection in the past. Use of illicit drugs was reported by (7.9%) of the HBV positive population.

HCV prevalence was higher in rural population. Out of the 14,234 samples tested for anti-HCV 1,272 were found to be reactive – (9.3%) and (7.8%) in rural and urban areas respectively. More females were found to be HCV positive – (9.1%) as compared to (8.8%) males. Similarly, PCR was also conducted for RNA testing in 1,261 HCV positive samples. Chronic Hepatitis C was prevalent in (59.8%) of the HCV positive cases. It was more prevalent in males (63.8%) than females (56.7%). 125 respondents knew about their previous status of being Hepatitis C positive and they were asked about their previous history of treatment. HCV-RNA level was ascertained in both the cases. The number of respondents (52.3%) who said they had no treatment was found to be more and reactive to RNA level test than (47.7%) who were on treatment. Of the overall population, (89.2%) had genotype 3, which was the most prevalent genotype in HCV positive cases. Tests were applied for the genotype of HCV in 234 samples – (7.8%) were found un-typed, (1.6%) with type 1b. Multiple risk factors for acquiring HCV were studied including injection drug use, history of receiving a blood product transfusion, surgical operations, dental treatment including replacing tooth, piercing, body tattooing, and others. Infection risk by injections was more compared to others. Of 1,272 HCV reactive respondents, (66%) informed about using injection. (9.6%) of the respondents informed that they are currently using the illicit drugs.

The respondents were asked about their current known status of having diabetes. 18,774 respondents answered to this question. (2.8%) of the respondents said that they were presently having diabetes. Blood pressure being another very important factor affecting the magnitude of various diseases and their treatment was analyzed. Present overall reported status of high blood pressure (hyper-tension) (6.4%). The respondents 18,732 were asked about the current status about knowledge of suffering from any heart disease. Overall (1.4%) knew about their current status of having some type of heart disease. (1.4%) of the respondents affirmed that they have chronic kidney disease. Only (0.1%) of the respondents have history and knowledge of any type of cancer. 14,249 blood samples been tested for

diabetes. (5.0%) were found to be currently suffering from diabetes, (19.8%) were found to be having pre-diabetic values and (75.2%) were found to be non-diabetic. The gap in vaccination was alarmingly high as (12.8%) of the respondents informed that they have been vaccinated for Hepatitis B vaccination.

As the vaccination for HBV is observed to very low, it is recommended that vaccination programme may be initiated.

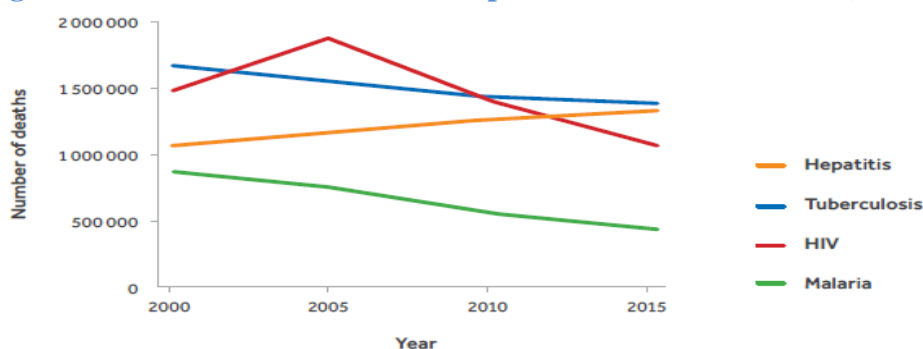
The prevalence of HCV is on the higher side, therefore mass awareness programmes and behavior change strategies should be taken up. Treatment of HCV should be provided to all those, who are found to be responsive to treatment.

1. INTRODUCTION

Hepatitis is a tenacious public health problem across the globe. Hepatitis is commonly a viral infection of the liver known with different types as A, B, C, D and E backed up with different viral causes and seriousness. Viral Hepatitis, especially Hepatitis B & C, is a disease of public health importance, which is considered to be one of the major causes of death across the globe. According to the World Health Organization (WHO) Report of 2017³, viral Hepatitis caused 1.34 million deaths in 2015, a number comparable to deaths caused by tuberculosis and higher than those caused by Human Immunodeficiency Virus (HIV). However, the number of deaths due to viral Hepatitis is increasing over time, while mortality caused by tuberculosis and HIV is declining. Most viral Hepatitis deaths in 2015 were due to chronic liver disease (720,000 deaths due to cirrhosis) and primary liver cancer (470,000 deaths due to hepatocellular carcinoma).

Globally, in 2015, an estimated 257 million people were living with chronic HBV infection, and 71 million people with chronic HCV infection. The epidemic caused by HBV affects mostly the WHO African Region and the Western Pacific Region, whereas by HCV, it affects all regions, with major differences between and within countries. The WHO Eastern Mediterranean Region and the European Region have the highest reported prevalence of HCV. Global incidence rate of HCV is 23.7 per 100,000 persons with 1,572,000-2,120,000 in 2015. HIV-HCV co-infection has been evident in 2.3 million people of 36.7 million living with HIV. HIV co-infection doubles the risk of mother to child infection. In case of HBV, mortality occurs due to acute Hepatitis (lowest), cirrhosis and hepatocellular carcinoma (highest). In case of HCV highest mortality occurs due to cirrhosis and lesser due to Hepatocellular carcinoma. In case of HAV and HEV acute Hepatitis is the only cause of mortality. Overall mortality rate from viral Hepatitis is reported to be 18.3 deaths per 100,000 globally. Trend of mortality due to Hepatitis across the globe is increasing as compared to the diseases of Public Health importance including Tuberculosis, HIV and Malaria. Same is depicted in the figure copied below;

Figure 1: Number of Deaths from Hepatitis and other Diseases (2000-15)⁴



³ Global Hepatitis Report 2017, WHO

⁴ Source: WHO global health estimates (Global Health Estimates 2015: deaths by cause, age, sex, by country and by region, 2000-2015. Geneva: World Health Organization; 2016.)

1.1. Situation of Asia

WHO South-East Asian Region has estimated prevalence of (2%) of HBV (HBsAg) with uncertainty intervals of (95%) and an estimate of 39 million persons are living with HBV. Estimated prevalence of (0.5%) of HCV (HCV RNA Positive) with uncertainty intervals of (95%) and an estimate of 10 million persons are living with HCV. Incidence rate estimates of HCV for 2015 are 14.8 per 100,000 in general population with a range of 243,000-524,000 persons in 2015. The mortality rate in South-East Asia Region due to viral Hepatitis is reported to be 21.2 per 100,000 infected persons 408,000 deaths. Central Asia account for the largest proportion of the HIV-infected persons, who have serological evidence of past or present HCV infection because of injection drug use.

South-East Asian countries are experiencing highly varied viral Hepatitis prevalence, which are due to a number of factors including differential levels of risk behaviors such as multiple sexual partnerships and injecting drug use. Additionally, because Asia consists of both developing and developed countries with a variety of religious and cultural backgrounds, these risk behaviors are situated in highly varied socioeconomic and cultural environments that can either help or hinder the spread of Hepatitis. The risky behavior and vulnerability, which promote fuel and facilitate the rapid transmission of Hepatitis, are present in virtually all countries of the region. Based on evidence from various sources, behaviors that produce the highest risk of infection in this region is needle sharing among injection drug users. As per United Nations Office on Drugs and Crime (UNODC) World Drug Report 2017, 0.56 million of people inject drugs in 82 countries of South-East Asian Region with a prevalence of (0.04%) in 15-64 years of aged population⁵.

1.2. Situation in Pakistan

According to statistics compiled by the WHO, (2 – 5%) of the Indian sub-continent is affected by Hepatitis B. HBV and HCV together make 12 million infected people in the Pakistan⁶. Almost one-third HBV-infected population in Pakistan was shown to be co-infected with Hepatitis D virus, a defective RNA virus that requires the presence of HBV for replication⁷. The prevalence of HCV in the general population in Pakistan is the second highest with (6.7%) and a viraemic rate of more than (80%). The most common genotype is G3 which is (79%) followed by G1 and G2 respectively⁸. Pakistan also ranks second highest country after Egypt in the world in terms of absolute numbers of people living with viral Hepatitis. First National Hepatitis Prevalence Survey was conducted in 2007-08 in Pakistan⁹ by Pakistan Medical Research Council (PMRC). According to the report prevalence of Hepatitis B and C in all over Pakistan was (2.5%) of Hepatitis B and (4.9%) of Hepatitis C in general population. Province wise break up showed that the Hepatitis B was high in

⁵ https://www.unodc.org/wdr2017/field/WDR_2017_presentation_launch_version.pdf

⁶ Pakistan's National Hepatitis Strategic Framework (NHSF) 2017-21; poster 5 a; authors Hassan Mahmood, Huma Qureshi, Hamida Khattabi, Nancy Glass, Francisco Averhoff, Mohammad Assai

⁷ Viral Hepatitis in Pakistan, Past, Present & Future, Amna Subhan Butt, Agha Khan University, 2016, 10.5005/JP Journal, 10018- 1172

⁸ Global epidemiology of hepatitis C virus infection: An update of the distribution and circulation of hepatitis C virus genotypes; Arnolfo Petruzzello, Samantha Marigliano, Anna Cozzolino, Carmela Cacciapuoti, World Journal of Gastroenterology 2016 September 14; 22(34): 7824-7840

⁹ Prevalence of Hepatitis B & C in Pakistan 2008

Baluchistan (4.3%) while it was (2.5%) in Sindh, (2.4%) in Punjab and (1.3%) in Khyber Pakhtun Khwa (KPK). For HCV the disease was highest in Punjab (6.7%) followed by Sindh (5.0%), Baluchistan (1.5%) and KPK (1.1%). A recent study conducted by University of Bristol, United Kingdom (UK) on Hepatitis C, reveals that as per target of WHO for achieving elimination of Hepatitis C by 2030, Pakistan is to treat 1.1 million Hepatitis C cases annually for which the share of Punjab comes 812,900 (73.9%)¹⁰.

The Global Health Sector Strategy (GHSS) on viral Hepatitis 2016-2021 and its high prevalence from previous 2007-2008 survey calls for taking concrete steps towards elimination of viral Hepatitis as a public health threat by 2030. Epidemiological realities and social needs of the population must be assessed for planning of better control strategies. Cross-sectional studies are a relatively quick way of getting an estimate of disease burden in a community at a particular moment in time. Importance of early case detection or diagnosis cannot be denied in prompt treatment. If this remains unchecked and no response in terms of prevention and cure is established, the number is likely to increase. Being the large and more populated province, Punjab carries more burden of the disease. This calls for conduct of the survey under reference to identify the situation and take efficient remedial measures.

The 194 Member States (including Pakistan) of WHO committed to eliminating viral Hepatitis as a public health threat by 2030 (defined as a 65% reduction in mortality and a 90% reduction in incidence compared with the 2015 baseline). Elimination can be achieved through sufficient service coverage of five synergistic prevention and treatment interventions¹¹. WHO also developed a monitoring and evaluation framework for the GHSS on viral Hepatitis. These are;

- i. Immunization against Hepatitis B;
- ii. Prevention of mother-to-child transmission of HBV;
- iii. Blood and injection safety;
- iv. Prevention of transmission of HBV and HCV among persons who inject drugs through comprehensive harm reduction services; and
- v. Testing and treatment.

1.3. Justification and Objectives

Based on the existing data, Screening, Vaccination, Treatment and Prevention efforts should be initiated briskly to provide effective coverage for HBV and HCV. The previous Hepatitis Prevalence Survey in all provinces of Pakistan was carried out in 2008; hence no current exact estimates are available. After 18th amendment, health facilities and both vertical and horizontal programmes are responsibilities of the provinces. Pakistan is a signatory of the resolution 70/1 of the United Nations General Assembly; Global Goals of Sustainable Development commonly known as Sustainable Development Goals (SDG). According to the Goal 3 is to ensure good health and well-being for all people at all ages by 2030. For initiating the services, it is essential to ascertain the current disease burden.

¹⁰ Background section in Term of Reference for Hepatitis Survey by Bureau of Statistics, Government of Punjab

¹¹ Global Hepatitis Report 2017, WHO

The survey is therefore designed to conduct a cross-sectional survey on epidemiology, prevention, care and treatment of Hepatitis B and Hepatitis C virus in Punjab province. Following were the specific objectives of the survey;

- To construct a baseline cascade of prevention and care among those diagnosed with HBV and HCV to inform care and treatment program.
 - To estimate the proportion of population unaware of their HBV and HCV infection status;
 - To estimate the proportion with active infection (prevalence of active infection).
 - To estimate the proportion of people who are aware of their infection status and seeking care;
 - To estimate the proportion of infected individuals who have been treated for their HBV or HCV infection;
 - To estimate the proportion of treated individuals who achieved sustained virologic response for HCV or viral suppression for HBV.
- To estimate proportion of population with end stage liver disease including decompensated cirrhosis, hepatocellular carcinoma or liver related mortality.
- To identify and describe risk factors associated with HBV and HCV to inform prevention program.
- To estimate the prevalence of diagnosed chronic kidney disease, hypertension, diabetes and cancers in the surveyed population.

1.4. Viral Hepatitis

Viral Hepatitis is infection of the liver occurring due to viral transmission. It causes hepatic inflammation which is followed by the classic icteric symptoms of jaundice and release of liver enzymes. The virus strains are classified as following;

Table 1: Hepatitis Virus Characteristics

Virus	Family	Nucleic acid	Envelope	Virus Characteristics
HAV	Picornaviridae	ss +RNA	No	1 stable serotype
HBV	Hepadnaviridae	Incomplete circular ds –DNA	Yes	Surface antigen (HBsAg) Core antigen (HBcAg) HBeAg, HBsAg
HCV	Flaviviridae	ss +RNA	Yes	14 Genotypes
HDV	Genus Delta virus	ss –RNA	Yes	3 Genotypes
HEV	Hepeviridae	ss +RNA	No	4 Genotypes
HGV	Flaviviridae	ss +RNA	Yes	5 Genotypes
TTV	Circinioviridae	ss –DNA	No	16 Genotypes
SEN virus	Circoviridae	ss –DNA	No	8 Genotypes

Hepatitis A and E are transmitted by contaminated food and water and causes acute type of viral Hepatitis while B, C, D are blood borne and transmitted through the same and causes both acute and chronic viral Hepatitis. Usual symptoms on onset of Hepatitis are fever, chills, fatigue, nausea, vomiting, loss of appetite (anorexia) and abdominal pain. In later stages Jaundice, icteric sclera commonly in children, dark urine, pale stools, fulminant Hepatitis (ascites, bleeding and death). Hepatitis B, C or D may also cause skin rash, arthralgia and weight loss.

Risk factors for Hepatitis C are transfusion of infected blood, sharing of unsterilized injecting equipment, sexual intercourse, infected dental equipment, hemodialysis, occupational exposure to blood particularly in the staff working in surgical theaters, tattoos, sharing of personal hygiene and care kits including razors, toothbrushes, scissors etc. and vertical transmission from infected mother to child.

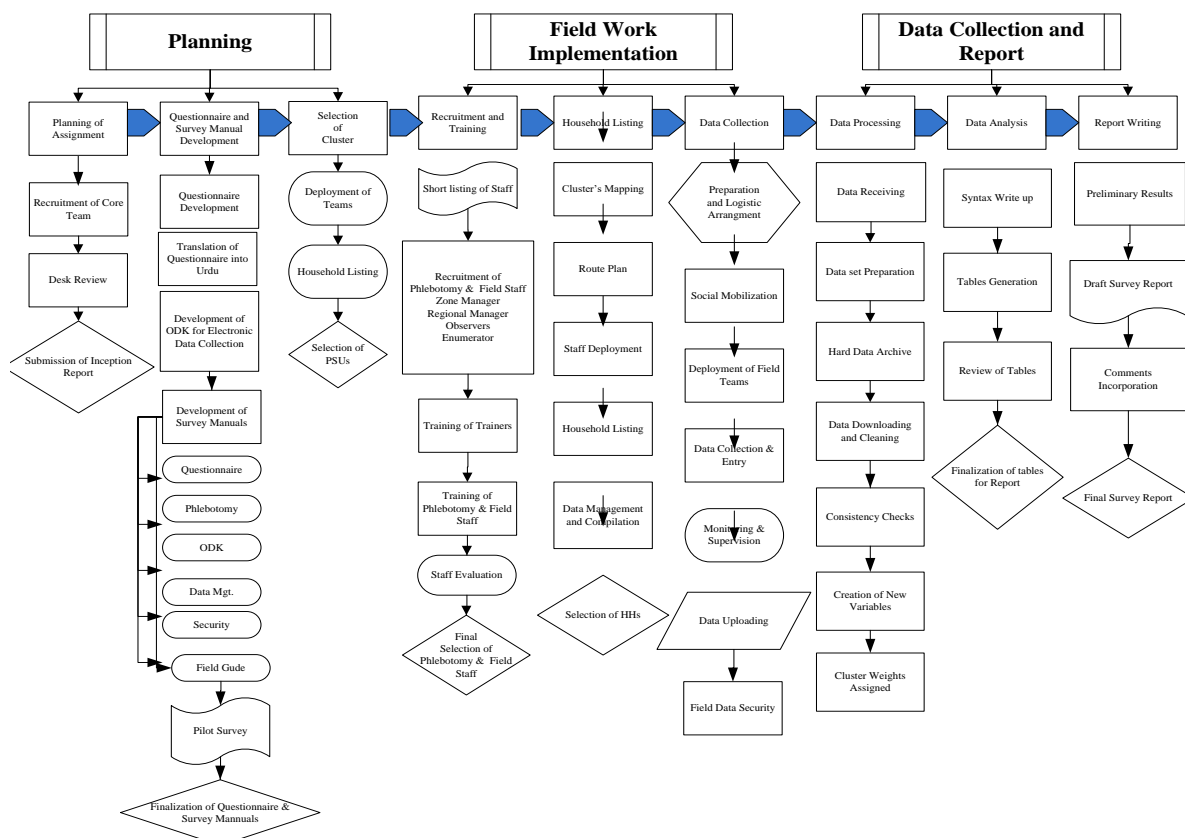
2. METHODOLOGY

The survey was executed in three phases: (i) planning phase, (ii) field work implementation, and (iii) data analysis and report writing. During the planning phase, we went through, shortlisting and recruitment of core team, preparation of Standard Operating Procedures (SOPs), finalization of sampling methodology, development of questionnaire and designing of Open Data Kit (ODK) for electronic data collection. HH listing in all selected clusters was also conducted in this phase. All preparation in first phase was tested through a pilot survey at two locations. In second phase, APEX hired and trained teams of enumerators and Phlebotomist and same were deployed to collect data and blood sample from selected HHs. This phase was monitored in the field by the technical teams of APEX, BoS-Punjab and PKLI. In the last phase, data was analyzed in two stages:

- Behavioral Data; and
- Integrating Blood samples report and cross tabulation for HBV & HCV study separately.

The report was written by APEX in consultation with key stakeholders including BoS-Punjab, PKLI and Punjab Hepatitis Control Programme.

Figure 2: Phases of Hepatitis Prevalence Survey



2.1. Sampling Methodology

The sampling of Hepatitis prevalence survey was the responsibility of BoS-Punjab that was completed in consultation of Pakistan Bureau of Statistics (PBS). Detail of final sampling methodology is give below.

Universe: The universe of the survey consists of HH-based entire population in all urban and rural areas of Punjab.

Sampling Frame: The sampling frame used for this survey was latest updated frame which has been used for the Population Census 2017.

Urban Areas: PBS has updated urban area frame in 2013. Each city/town has been divided into a number of small compact areas called Enumeration Blocks (E.Bs). Each E.Bs consists of on average of 200-250 houses, with well-defined boundaries in the prescribed forms and maps, thereof with physical features. Urban area maps are digitized with Global Positioning System (GPS) coordinates.

Rural Areas: The rural area frame consists of list of mauzas/dehs/villages. An E.Bs may be a whole village or part of a village. The rural area frame has been updated during Housing Census 2011 and also updated in 2015. Each E.B of urban and rural areas has well defined geographical boundaries described on a specified form along with map. The total numbers of E.Bs in urban and rural areas of Punjab are as follows:

Table 2: Number of Enumeration Blocks

Name of Province	Total number of blocks in sampling Frame		
Punjab	Urban	Rural	Total
	26,917	59,914	86,831

Sample Size Estimation and its Allocation: Sample size has been computed using the following parameters;

Table 3: Sample Size Estimation

S.No.	Name of Indicator	Value	Source
1	Hepatitis B, HCV	Provincial Value	PMRC Report
2	Margin of Error	15%	Provided by BoS-Punjab
3	Level of confidence	95%	Provided by BoS-Punjab
4	Population at risk	ALL population	
5	Domain of Estimation	Punjab with Urban and Rural	Provided by BoS-Punjab
6	Design Effect	2.0	Provided by BoS-Punjab
7	HHs Response Rate	95%	Provided by BoS-Punjab
8	Cluster Size (take)	20 HHs per block	Provided by BoS-Punjab

Keeping in view of the variability for the characteristics for which estimates are to be prepared, requirements of BoS-Punjab, population distribution and main objectives of the survey, an estimated sample of 4,800 HHs has been considered appropriate. APEX was provided with 240 Primary Sampling Units/clusters with the division of rural and urban strata. Total selected urban enumeration blocks to be covered in the survey were 84 and rural segments/clusters were 156. The district wise sample allocation is given in Table 20 below.

Stratification Plan: Each administrative district in Punjab Province has been treated as independent and explicit stratum. Urban and Rural part of an administrative district has been considered urban and rural domain respectively.

Two Stage Stratified Sampling: A two-stage stratified sample design has been adopted for this survey. At first stage, sample PSUs from each stratum have been selected with probability proportionate to size method. Total number of HHs inside a PSU have been considered as measure of size (MOS) pertaining to urban and rural domains respectively. At second stage, list of all HH gathered through fresh listing activity was used and 20 HHs were selected from each PSUs adopting systematic sampling technique with a random start.

Sampling Weights: By using provided necessary information including number of listed HHs, sampled HHs, approached HHs and completed HHs, sampling weights were computed by the PBS. Later on these weights were used for data analysis. Cluster wise weights are given in Annex I below.

Interview and Blood Sample Collection Results: The targeted HH sample size for the survey was calculated as 4800, to be approached for the data collection. However due to the security concerns, lack of individual/community cooperation and other issues, 4,593 HHs were successfully approached, i.e. (95.7%) of the targeted HH number. 3,073 (66.9%) of these HHs were in rural areas whereas 1,520 (33.1%) belonged to the urban areas.

The number of individuals who were approached for the survey was 23,764, out of which 18,883 (79.5%) gave complete interviews. The rest of the individuals were refused to give complete interview. Blood samples were collected from 14,459 individuals which are (76.6%) of the approached population, after re-taking the consent¹².

Table 4: Respondents Approached, Interviewed and Blood Samples Collected

Category	N (%)
Targeted HH to be Interviewed	4,800
Total HH approached	4,593 (95.7%)
HH approached in Rural Area	3,073 (66.9)
HH approached in Urban Area	1,520 (33.1%)
HH interview completed	3,666 (79.8%)
Targeted Individuals to be Interviewed (approx.)	30,653
Individual actual Approached	23,764 (79.9%)
Male individual approached	11,839 (49.8%)
Female individual approached	11,925 (50.2)
Completed Interviews	18,883 (79.5%)
Blood Samples Collected after Consent	14,459 (76.57%)
Blood Samples tested for Hepatitis B & C Reactivity	14,435
Blood samples tested for Diabetes	14,450

2.2. Questionnaires Development

Data collection questionnaire was developed under the leadership of BoS-Punjab by PKLI with inputs from the Punjab Hepatitis Control Program-HCP, Technical Specialist – TRF +. The developed tool was adapted by APEX under the supervision of BoS-Punjab. Once questionnaire was finalized, it was translated into Urdu, back-translated into English, and compared with the original tool to ascertain any differences in the original and back-translated versions. APEX developed an electronic version of this questionnaire using ODK built software. Data collection was done on Android based tablet devices.

¹² Un-weighted values

The questionnaire comprised of two forms and log sheet for blood sample details;

- Form A that was administered to the head of HH or any adult member and comprised of HH information, respondent details, age in completed years, gender, education & employment level, marital status, relationship with head of HH, mother tongue and consent form for individual HH members. HH characteristics, socio-economic variables and a section for family members with Hepatitis history were also part of it;
- Form B to be filled by all the available members of the HH. It comprised of sections on respondent's personal information, characteristics, Hepatitis B and C related information, history of Hepatitis vaccinations, risk factors, health and injection use, illicit drugs use and other health related issues.; and
- Log sheets were maintained at each HH for blood sample collection details.

Development of Data Entry Software for Handheld Devices: For the electronic data collection, APEX designed the data entry software using ODK according to final HH data collection survey questionnaire. The tablets were installed with ODK software and final survey tool to digitize the data in soft.

Inclusion criteria for various sections of the report are given below: All the members of the HH of all ages meet the inclusion criteria for the survey. However, guardians gave interviews on behalf of children under 15 years of age. “marital status” and “employment” questions were asked from participants of age greater than 10 years. Education question was asked with reference to the sub-group of those aged three years and above. Children under the age of one year were not included for the section of health, as they were related with dental procedures. Questions concerning the exposure to blood were only asked for the people of age greater than 10. Only females were asked questions requiring information relevant to pregnancy and visit to salon/barber relevant questions were only asked from males. Illicit Drug Use questions were only asked from people of age higher than 13 years.

2.3. Household Listing

BoS-Punjab had identified and finalized the targeted enumeration blocks in urban areas and segments/clusters in rural areas. From BoS-Punjab APEX received all 240 targeted clusters' maps to be completed during the survey. These targeted clusters were provided to the listing teams as reference to complete the HH listing activity. APEX developed route plans for the listing teams during the training session keeping in mind the geographical spread and calculating the distance in between clusters to be covered in the survey. For the listing exercise, one lister was deployed in each cluster to complete it in two days. A total of 43 lister and 11 supervisors were deployed in their assigned clusters to complete the listing exercise in 15 days.

All the listers used the HH Listing Form (received from BoS Punjab) to record all HHs' information found in the cluster. During the field it was ensured that listers followed the following protocols:

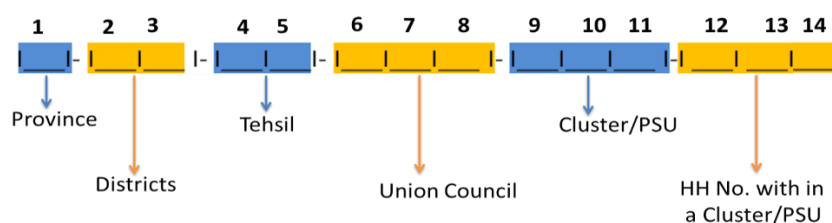
- HH listing information on hard (Paper based) according to the listing form provided by BoS-Punjab;
- Other references for e.g. Masjid name, shop name, clinics etc. must be noted down on form that would be helpful for survey team for the identification of HH;

- Cluster map as reference to identify the exact location and area of the cluster to be covered were updated during the activity;
- Selection of starting point and complete the whole cluster/enumeration block by using right hand rule;
- Marking of ID number on the HH listing form and same number was put on the entrance gate/door of each HH by permanent marker;

2.4. Data Management during Listing Phase

During the field following steps were carried out to manage the data:

Data Receiving, Coding and Entering: After completion of each cluster (200-250 HHs + reference maps), the lister sent hard data to APEX head office Islamabad through courier service. For identification point of view, proper coding for locations was necessary. For this, APEX developed a unique serial number of 14 digits for each HH. Following is sample where each digit have its own identity with respect to level of location i.e. province, district, etc.



For the digitization the hard data in soft, data entry software was also designed according to the HH listing form by using CSpPro. After completion of data entry of all HH listing data in soft, the data was converted into MS Excel and SPSS for further process and selection of HHs for the survey.

Preparation of Cluster wise Lists and Selection of Secondary Sampling Units: All HHs data and reference maps of one cluster (20 HHs listing forms) were managed in a separate clear bag with pasted unique ID of clusters. List of clusters were entered in excels with unique ID for the identification of clusters. APEX technical team selected 20 HHs from each cluster by using systematic random sampling technique for the data collection of HH survey.

2.5. Pilot Survey

Before the roll-out of the main survey a pilot survey was conducted at two locations – one urban and one rural. All the procedures, techniques, forms, and logistics arrangements, considered for this survey were thoroughly tested and refined/finalized through this activity. At the end of pilot survey, a detailed feedback session was conducted in BoS-Punjab Lahore office, which was attended by all the stakeholders. Following were the key findings and decisions were taken to condense the refusals during the main survey;

- Regarding blood sample collection, people were reluctant with four tubes as well as 12ml blood. After this finding it was decided to collect 9ml blood.

- Most of the parents refused to permit collection of blood sample from their children just because of volume of blood. Therefore, also agreed to reduce volume of blood upto 6 ml from children.
- Some respondents inquired about the utilization of the blood. They were provided the answers accordingly and knowledge pamphlets were also distributed during survey.
- Some of them were concerned about the quantity of the blood being collected, as the HBV and HCV tests need lesser quantity. They were informed about the type of tests to be performed on each sample.

2.6. Recruitment and Training of Field Staff

Competent field staff was engaged with requisite qualifications and experience. Selection was conducted through a two stage process. After screened out initial lot of field supervisors, enumerators, and phlebotomists, APEX conducted interviews and tests for further scrutiny to ensure the selection of best suitable staff. A total of 27 field teams were deployed by APEX. Each team consisted of one male supervisor, three female enumerators, and two phlebotomists (one male and one female).

Four days training of enumerators was conducted by technical team of BoS-Punjab, APEX, PKLI and Technical resource Facility Plus (TRF +) team members in Islamabad, Lahore and Multan districts. For the phlebotomists, one day training session was conducted in Lahore and Multan. The Islamabad team of phlebotomists was also trained in Lahore. The training was conducted on the blood sample collection techniques, procedures to be followed to maintain the temperature of the collected blood, and the method of coding and labeling of the samples.

Mock exercises for data and blood sample collection were also done and observed by PKLI and BoS-Punjab.

2.7. Data Collection and Monitoring

The fieldwork was carried out from April 28 to May 15 2018. All 27 trained teams were deployed in field simultaneously. Each team completed one cluster in a day and electronically transferred the data to the central office. A debrief session was also organized to share the experiences of the teams. The team of experts provided necessary feedback on all aspects of the fieldwork, including field management and rapport building with respondents.

2.8. Ethical Consideration

Protocols were put in place to ensure and maintain confidentiality of all respondents. The team members were sensitized to ethical issues related to confidentiality during their training. Consent forms clearly explaining the objectives of the study and procedures involved for participants were read out and signed by all the study participants.

Team members were also trained to take precautionary measures for prevention of blood borne viral infections especially HIV, Hepatitis B & C to safeguard against exposure through accidental needle-stick injury. Though the Phlebotomists were already trained in the blood collection but they were specifically provided with the guidelines for handling the blood from collection to the transportation. The post exposure guidelines were also provided to the

persons handling the blood or the blood products. Care was particularly exercised and protocols were followed during blood collection and sampling. The same is annex in the annexure section.

2.9. Approaches to mitigate Refusals

Various measures were adopted to minimize refusal rate. PKLI developed educational pamphlets that were also distributed during the field work. APEX teams were provided with official letters from the BoS-Punjab to allay the fears of the respondents. Trained and certified phlebotomists were deployed to avoid mistakes and multiple pricks during blood sample collection. Staff was required to dress appropriately (lab coats, caps and bags) to convey the image of professionalism. All instruments had Government of Punjab logo printed. This helped to gain the confidence of the respondent. Assistance was also sought from the Lady Health Workers (LHW) and community notables for mobilization purposes as well.

2.10. Blood Sample Collection, Storage and Transportation

The most important and critical part of the survey was the collection of blood samples from all family members of the sampled HH. The blood samples were collected and transported by the phlebotomists to the nearest CHUGHTAI LAB. The preparation and testing of the samples for various diagnostic tests was responsibility of the CHUGHTAI LAB.

A comprehensive coding and labeling procedures was developed. That played vital role to identify any district, cluster, HH and its member serum sample throughout the survey.

APEX developed a complete coding scheme to track and find survey information about any HH member in a cluster, Union Council (UC), Tehsil or in district regarding blood sample. Each HH was given a unique identification number throughout the province (1 to 4800).

- Keeping in mind the importance of labeling activity APEX defined standard protocols for labeling process. For the reconciliation these codes were incorporated on Log sheets and three vacutainers. Log sheet was consisting of three leaves, i.e. Lab, APEX and respondent copy for the collection of report.
- Each sample was also labeled using a unique ID and bar code generated by phlebotomists for each family member. Enumerators and phlebotomists moved and worked together to avoid any confusion in generating the identification bar code. Other than bar code, temporary identification number on each tube was also written with permanent marker;
- Collected blood was centrifuged at 2000-4000 rpm. Centrifuge machines were provided to each team for completion of process prior to transportation. In almost all cases the centrifuge was conducted in the field except in the areas, where electricity was not available. In such cases the sample was carefully taken to the nearest collection point of CHUGHTAI LAB for centrifuge at end of field. Collection points exist at a maximum distance of 2 hours' drive from any of the clusters;
- Samples from one HH were packed in one zip-lock bag after removing all the air from the bag. Multiple samples were stored in one cold storage box;

- All samples are properly packed in dry ice pack boxes for transportation. The temperature of the same was maintained between 4° C and 18° C. A thermometer was placed in each container to check the temperature after opening in the laboratory prior to running of the diagnostic process;
- Maximum care was taken to avoid Hemolysis of the samples during transportation;
- All samples were transported to nearest designated lab point by phlebotomists via provided vehicle. Where lab point was not available, samples were transported by the courier service trained in handling and transportation of biological materials;
- Time span between collection of sample and completion of diagnostic process was 72-96 hours; and
- Quality of samples were maintained from collection to processing as per given protocols.

2.11. Diagnostic Methods

Sample testing was one of the major tasks of the assignment. Following methods were adopted by CHUGHTAI LAB in this regard;

- Chemiluminescent Micro Particle Immunoassay method was used to diagnose HBs Ag, anti HCV, anti HBs, anti-HBc & HBeAg;
- Enzyme Linked Immunosorbent assay (ELISA) method used for Anti HDV and DIA pro reagent kit;
- Real Time PCR diagnostic method used for HCV RNA, HBV DNA & HCV Genotyping.

2.12. Diagnostic Machines and Criteria

Latest machinery for the listed blood tests was used and diagnostic criteria as per kit literature were adopted. Reagents were purchased in bulk for all tests and had same LOT number. Test wise details of machines are as under;

Table 5: Sample Diagnostic Machines

Principle of testing	Tests	Laboratory Gadgets	Reagent Used	Sensitivity
Chemiluminescent Micro particle Immunoassay	HBsAg	Abbott Alinity	HBsAg Reagent Kit	20.87 mIU/ml
Chemiluminescent Micro particle Immunoassay	Anti HCV	Abbott Alinity	Anti-HCV Reagent Kit	100%
Chemiluminescent Micro particle Immunoassay	Anti HBs	Abbott Alinity	Anti-HBs Reagent Kit	0.77 mIU/ml
Chemiluminescent Micro particle Immunoassay	Anti HBc	Abbott Alinity	Anti-HBc Reagent Kit	0.56 mIU/ml
Chemiluminescent Micro particle Immunoassay	HBeAg	Abbott Alinity	HBeAg Reagent Kit	0.157 IU/ml
Enzyme Linked Immunosorbent Assay (ELISA)	Anti-HDV	Manual	HDV Ab	> 98 %
Real Time PCR diagnostic method	HCV RNA	Abbott m2000sp and m2000rt	Real Time HCV assay	< 12 IU/ml
Real Time PCR diagnostic method	HBV DNA	Abbott m2000sp and m2000rt	Real Time HBV assay	< 10 IU/ml
Real Time PCR diagnostic method	HCV Genotyping	Abbott m2000sp and m2000rt	Real Time HCV Genotyping assay	< 500 IU/ml

Using the above machines, following number of diagnostic tests was performed (Un-weighted values);

Table 6: Blood Samples Tested for Various Tests with Proportion of Total Received

Test's	Sample Tested	Total Number of Samples received for Testing	Samples Discarded	Percent of Samples tested
HBsAg	14,435	14,459	24	99.8
Anti HBc (Every 10th -ve of HBsAg)	1,413	1,413	-	100
Anti HBs (Every 10th -ve of HBsAg)	1,413	1,413	-	100
HBeAg (Each +ve of HBsAg)	304	305	1	99.7
ANTI HDV (Each +ve of HBsAg)	301	305	4	98.7
HBV PCR (Each +ve of HBsAg)	301	305	4	98.7
Anti HCV	14,435	14,459	24	99.8
HCV BY PCR (Each +ve of anti HCV)	1,220	1,234	14	98.9
HCV Genotyping (Every 3rd of HCV PCR +ve	230	233	3	98.7
HbA1C	14,450	14,459	9	99.9

Of the total 14,459 samples collected, 14,435 were found to be biologically suitable for testing for HBsAg and Anti HCV. 14,450 were found to be suitable for diabetes test (HbA1C). Few tests were not performed on some of the samples were due to following reasons;

- Quantity of sample was not sufficient;
- Clotted sample not received;
- EDTA sample was not received.

As per study design it was decided that every 10th non-reactive sample for HBsAg was to be tested for Anti HBc and HBs. For example out of 14,435 samples found to be negative for HBsAg, 1,413 samples were tested for Anti HBc and Anti HBs. Furthermore 304 HBsAg positive samples were tested for HBeAg. 301 HBsAg samples were also tested for anti HDV and HBV PCR. 1,220 Anti HCV reactive were further tested by PCR. Every 3rd (230) of 1,220 HCV, PCR test positive was further investigated for genotype.¹³

2.13. Results Preparation and Communication

Bidirectional interface (bar-coding system) was used for scanning of unique participant I.D. Results of same I.D from instrument were sent to reporting software through Laboratory Information System. After verification results are stored in reporting software.

The result analysis was done based on reactive and non-reactive results. The results were tabulated for rural/urban, age ranges, marital status, education and wealth quintile for each of the indicator. However in the report section the same are discussed for reactive results, while all relevant tables are annex for detailed results.

2.14. Monitoring of Field Work Activities

A number of activities at all levels were carried out during field work. In order to monitor these activities, a set of indicators has been developed and monitored during the field. APEX deployed a dedicated team of monitors to observe the field activities as per set indicators.

¹³ Un-weighted values

Core team of APEX, BoS-Punjab and PKLI also visited field teams for monitoring. Data was uploaded at the end of each field day on APEX's server. APEX prepared and maintained a dashboard to monitor the progress of field work and to keep the other stakeholders informed.

2.15. Challenges and Constraints during Field Work

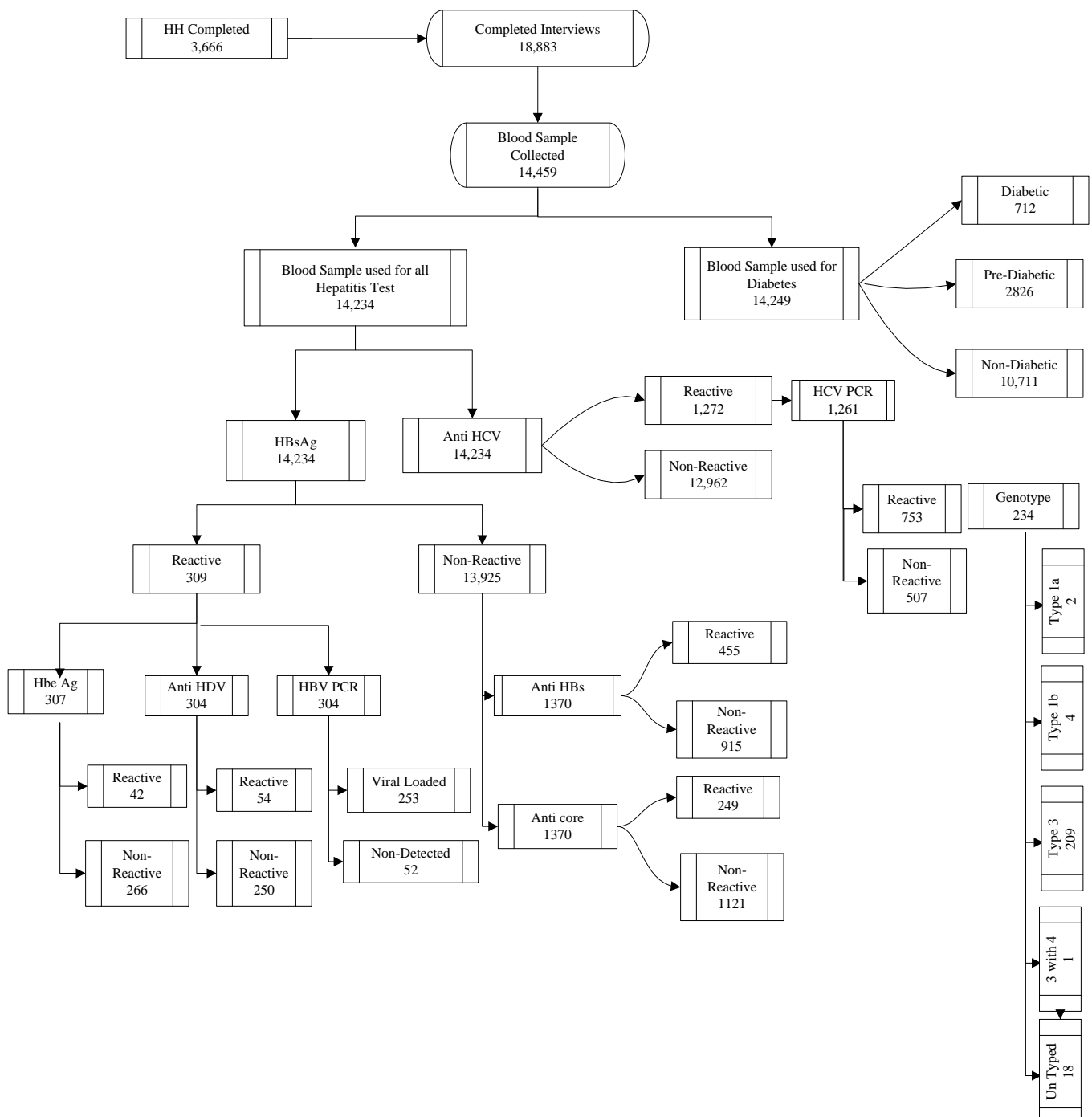
A number of challenges were faced during the study. We came across the resistance of the people for undertaking interview and in obtaining blood samples. Rumors were spread in the field which resulted in high refusal rate. One of the rumors that put APEX team in difficulty was a message in community that teams of some non-state actors were visiting HHs and injecting HIV-Aids viruses, etc.

For mitigation purposes, the district office of the BoS-Punjab was kept informed about the entire field work plan to facilitate where ever the issue is observed. Moreover, local police stations of the respective areas were informed about the work on daily basis before the start of field. Basic Health Units were engaged where ever necessary especially in the rural areas. Local notables including councilors and influentials were also informed prior to initiations of the field work in their respective areas.

3. STUDY FINDINGS AND DISCUSSIONS

The findings of population based prevalence survey of Hepatitis B and C in Punjab are discussed for the data analysis results of reactive samples in this section. The HH data, respondents' data regarding Hepatitis B & C and related indicators and biological results were analyzed comparatively to ascertain major similarities and differences in trends, practices and risk behavior. The analysis of data mainly consisted of frequency and percentage tables to ascertain the information about Hepatitis B & C. This includes demographic characteristics such as age, sex, education, marital status, rural/ urban, status.

Figure 3: Blood Sample Testing Flow Chart



3.1. Demographic Profile of the Respondents

In this section respondents profile is presented by their gender, age, marital status, educational level, employment status, ethnicity, and wealth quintile distribution. The details are annex in **Table 30** and explained in figures below.

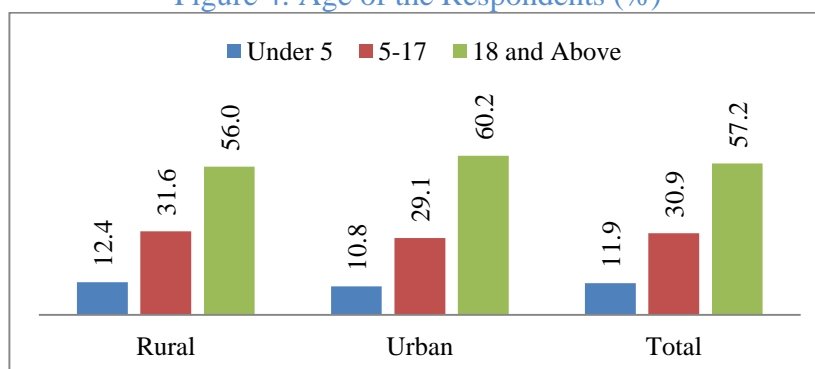
3.1.1. Gender of the Respondents

Out of total of 23,764 respondents 16,778 (70.6%) were from the rural areas and 6,986 (29.4%) were from the urban areas. The number of male to female ratio was almost 50% in both urban and rural areas.

3.1.2. Age of Respondents

In rural areas, 9,391 (56.0%) of the respondents were above 18 years while 5,308 (31.6%) of the respondents were between age group of 5-17 years. 2,079 (12.4%) of the respondents were below the age of 5 years. In urban areas, 4,203 (60.2%) of the respondents were above 18 years while 2,030 (29.1%) of the respondents were between age group of 5-17 years. 7531 (10.8%) of the respondents were below the age of 5 years.

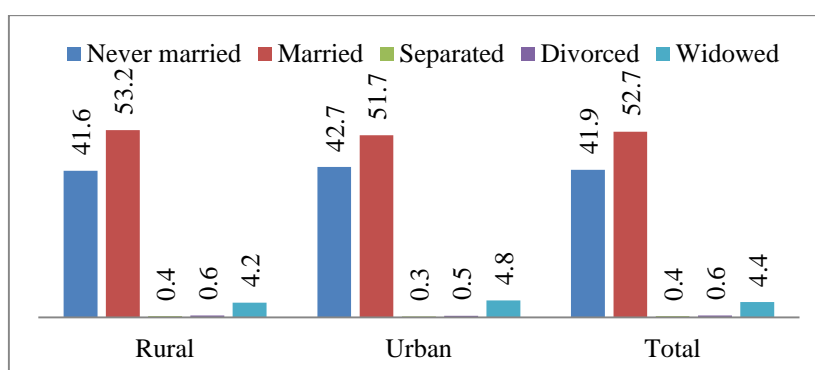
Figure 4: Age of the Respondents (%)



3.1.3. Marital Status

In rural areas, 5,170 (41.6%) of the respondents were never married, 6,604 (53.2%) were currently married, 522 (4.2%) were widows/widower, 78 (0.6%) were divorced and 51 (0.4%) were separated. Similarly, in urban areas, 2,293 (42.7%) of the respondents were never married, 2,777 (51.7%) were currently married, 260 (4.8%) were widows/widower, 26 (0.5%) were divorced and 17 (0.3%) were separated.

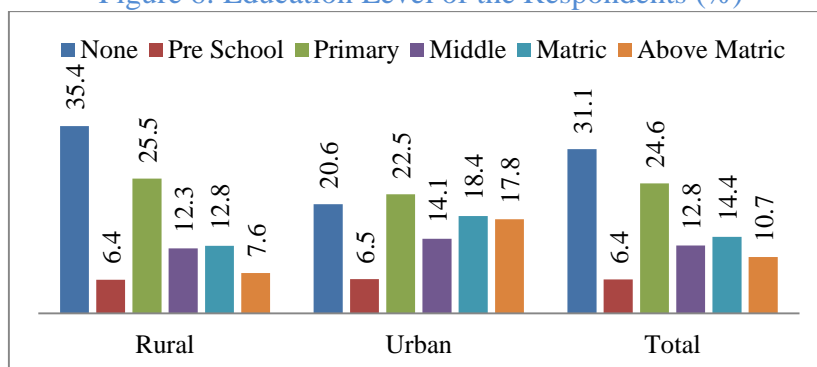
Figure 5: Marital Status of the Respondents (%)



3.1.4. Educational Level

In rural areas, 5,530 (35.4%) of the respondents had no education, 995 (6.4%) were in pre-school or katchi, 3,973 (25.5%) were primary, 1,921 (12.3%) were middle, 1,993 (12.8%) were matriculates and 1,193 (7.6%) were above matric and. While in urban areas, 1,352 (20.6%) have no education, 424 (6.5%) were in pre-school or Katchi, 1,477 (22.5%) of the respondents were primary passed, 924 (14.1%) were middle, 1,208 (18.4%) were matriculates and 1,167 (17.8%) were above matric.

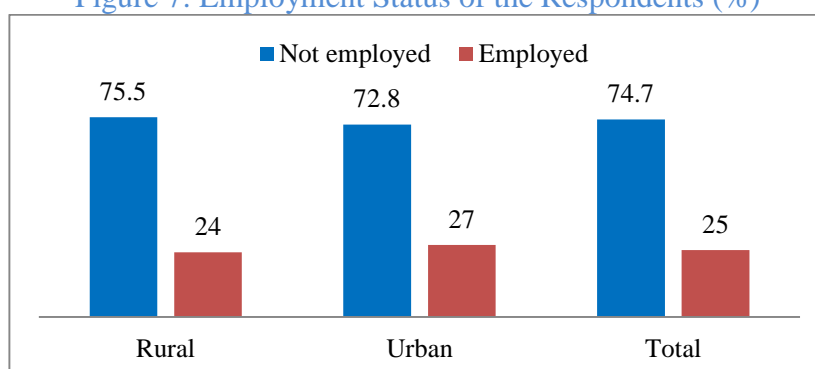
Figure 6: Education Level of the Respondents (%)



3.1.5. Employment Status

In rural areas, 7,074 (75.5%) were not employed at the time of interviews, while 961 (10.3%) were self-employed, 844 (9.0%) were daily wagers, 279 (3.0%) were employed in private firms, 154 (1.6%) were employed with Government/semi government, 38 (0.4%) with employer and 16 (0.2%) with others. In urban areas, 2,951 (72.8%) were not employed at the time of interviews, while 453 (11.2%) were self-employed, 289 (7.1%) were employed privately, 216 (5.3%) were employed on daily wages, and 131 (3.2%) were employed with Government / semi government, 13 (0.3%) with employer and 3 (0.1%) with others. Overall 10,025 (74.7%) of the respondents were unemployed.

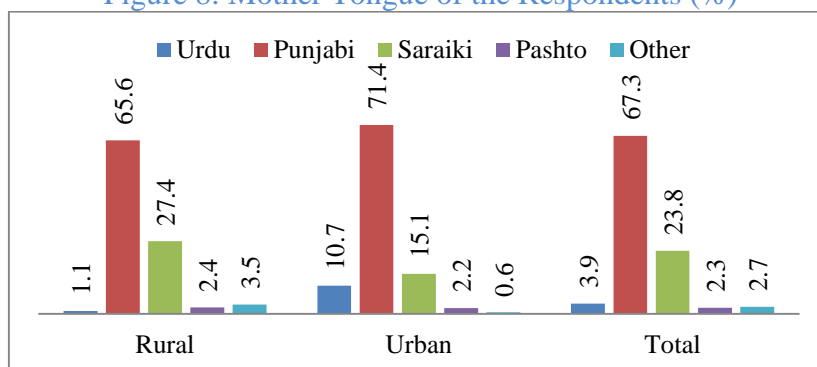
Figure 7: Employment Status of the Respondents (%)



3.1.6. Mother Tongue of the Respondents

In rural areas, the mother tongue of 8,814 (65.6%) was Punjabi, 3,685 (27.4%) was Saraiki, 320 (2.4%) was Pashto, 146 (1.1%) was Urdu and 475 (3.5%) have other languages. While in urban areas, the mother tongue of 3,971 (71.4%) was Punjabi, 842 (15.1%) was Saraiki, 593 (10.7%) was Urdu, 122 (2.2%) was Pashto and 33 (0.6%) have other languages.

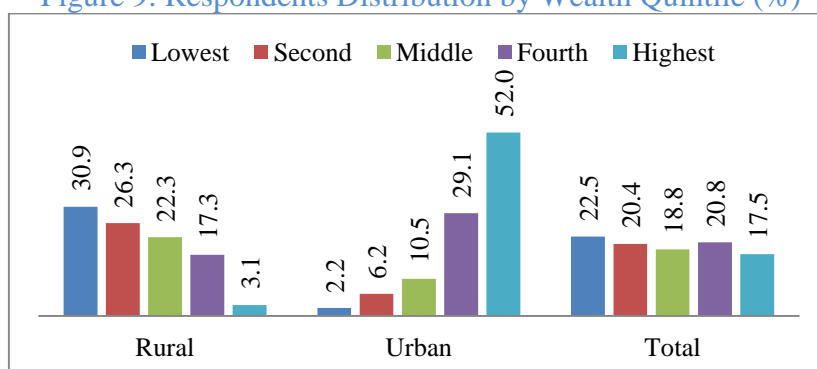
Figure 8: Mother Tongue of the Respondents (%)



3.1.7. Wealth Quintile Distribution

The wealth quintile is also measured based on the livelihood assets of the respondents. Based on the same, in rural areas 411 (3.1%) were ranked in the highest, 2,310 (17.3%) in the fourth rank, 2,974 (22.3%) in the middle, 3,507 (26.3%) second and 4,122 (30.9%) in the lowest ranking. In urban areas, 123 (2.2%) were placed in the lowest rank, followed by 344 (6.2%) in the second, 585 (10.5%) in the middle, 1,616 (29.1%) in fourth and 2,891 (52.0%) in the highest.

Figure 9: Respondents Distribution by Wealth Quintile (%)



3.2. Household Characteristics

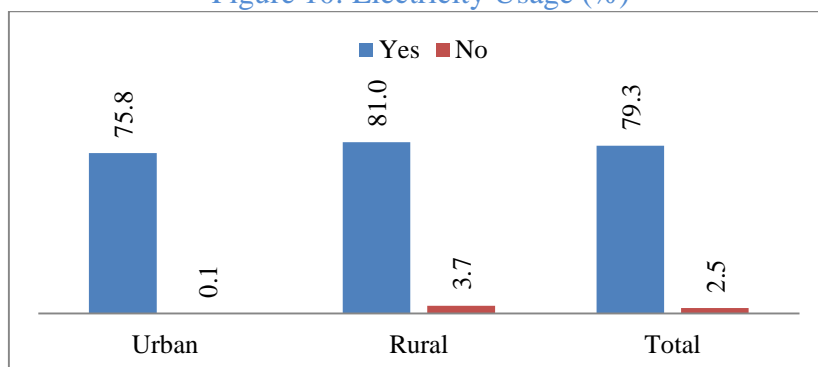
The HH characteristics of 4,593 houses were asked from the heads of the family. It was reported by the 2,112 (46.0%) heads of the families that their ceilings/roof were of metal/tin/T-iron and girders. 1,097 (23.9%) informed that their ceilings/roof is of cement. In urban areas 646 (42.5%) of the ceilings/ roof are of cement, 410 (27.0%) of the families that their ceilings/ roof are of metal/tin/T-iron and girders. Details are annex in [Table 27](#)

Overall walls of the 1,900 (41.4%) of the HH were of cement with 850 (55.9%) in the urban areas and 34.2% in the rural areas. 1,077 (23.4%) houses are made of bricks with 226 (14.9%) in urban areas and 851 (27.7%) in rural areas.

Overall 1,623 (35.3%) houses have floor of cement with 39.5% in the urban houses and 33.3% in the rural areas. 759 (16.5%) of the houses have earth/ sand floors with 23.6% of the same in the rural areas. 7.7% of the houses have dung plastered floors. 11.2% of the HHs have cement tiles/ marble and chips flooring in the houses. Overall 1,552 (41.3%) houses have two rooms for sleeping and 1,446 (38.5%) have one room for sleeping.

Overall 3,641 (79.3%) of the houses have supply of electricity while only 2.5% have no facility of electricity. Overall 1,339 (29.2%) respondents use piped natural gas with 63.4% in urban areas and 12.2% in the rural areas. 1,522 (33.1%) use traditional solid fuel stove with 46.8% in the rural areas and 5.6% in the urban areas. Liquefied Petroleum Gas (LPG) is used as fuel by 6.7% of the houses.

Figure 10: Electricity Usage (%)



Overall 1,756 (38.2%) have separate kitchens with 52.1% in urban houses and 31.4% in the rural areas. 1,447 (31.5%) cook inside room but doesn't have separate kitchens with 37.3% in rural areas and 19.8% in urban areas. 9.8% have outdoor cooking places.

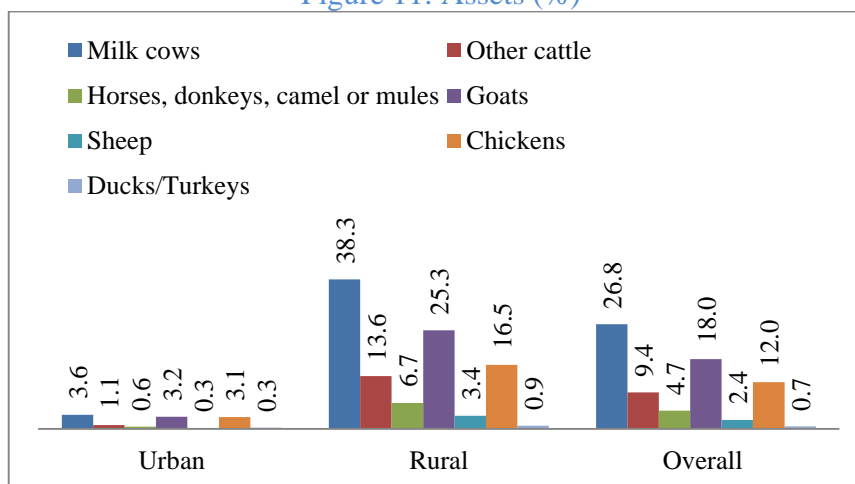
Overall 1,462 (31.8%) of the houses use motorized pumps for the water with 27.3% in urban houses and 34.1% in rural houses. 879 (19.1%) fetch water through hand pump.

Overall 1,827 (39.8%) houses have flush attached to septic tank types of toilets with 23.6% in the urban areas and 47.8% in the rural areas. 47.2% of the houses in the urban areas have flush attached to the piped sewerage system while only 8.5% of the houses in the rural areas have such facility. 10% have flush attached to pit latrine in the rural areas. 12.2% of the houses doesn't have such facilities in rural areas and practice open defecation. Details are annex in [Table 27](#)

3.3. Household Assets

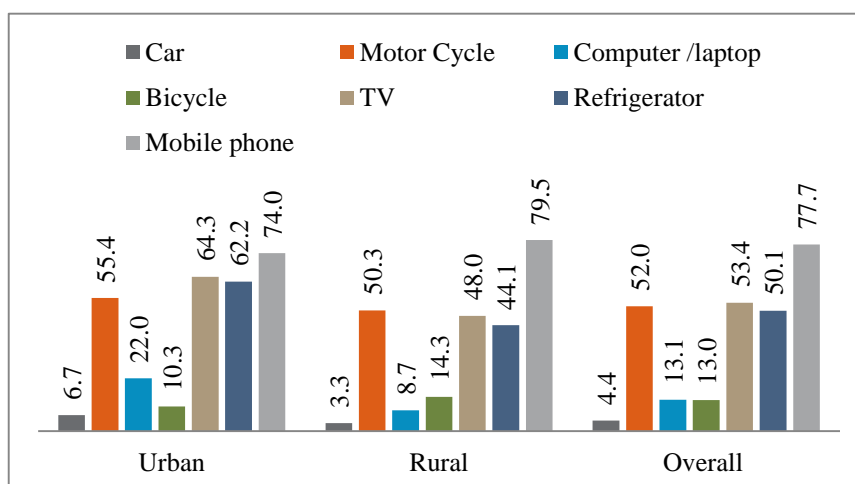
The head of families were asked about the various types of assets. 26.8% of the heads informed that they have cows, buffalos or bulls with 38.3% of the some from rural areas and 3.6% from urban areas. 13.6% of the rural areas informed that they have other types of cattle too. 6.7% of the rural areas have horses, donkeys, camels or mules. 25.3% of the rural respondents have goats. 16.5% of the rural respondents have ducks/ turkeys. Average number of cattle's owned to 7.4 cattle's per house having the same. Chicken or birds owned average at 3.8 per house.

Figure 11: Assets (%)



Average land hoarding is 4.78 acres by the population. 52.0% have motorcycles as mean of transportation. 4.4% have cars as mean of transportation. 13% still use bicycle. 13.1% of the respondents own a laptop or computer. 53.4% have television at their houses. 50.1% have refrigerator facility at their houses. 77.7% of the respondents own a mobile.

Figure 12: Transportation Means (%)



3.4. Prior knowledge of Hepatitis

Overall 19,225 respondents answered to the question related with the ever been diagnosed for Hepatitis B & C in the past. 1,543 (8.0%) of the respondents with 7.9% being males and 8.1% female said that they know about their status of being positive or not. 11.4% of the same belonged to urban area and 6.5% to the rural area.

Table 7: Ever been diagnosed with Hepatitis B or C n (%)

Area Type	Yes		No		Don't Know		Total	
	N	%	N	%	N	%	%	N
Urban	680	11.4	5215	87.5	63	1.1	100.0	5958
Rural	863	6.5	12295	92.7	109	0.8	100.0	13267
Total	1543	8.0	17509	91.1	173	0.9	100.0	19225
Gender								
Male	674	7.9	7769	91.3	65	0.8	100.0	8509
Female	868	8.1	9740	90.9	108	1.0	100.0	10716
Total	1543	8.0	17509	91.1	173	0.9	100.0	19225

Of the 1543 respondents, 114 (7.4%) respondents said that they are Hepatitis B positive, 274 (17.7%) said that they are Hepatitis C positive, 56 (3.6%) that they are positive for Hepatitis B and C and 6 (0.4%) said that they have B & D. 257.

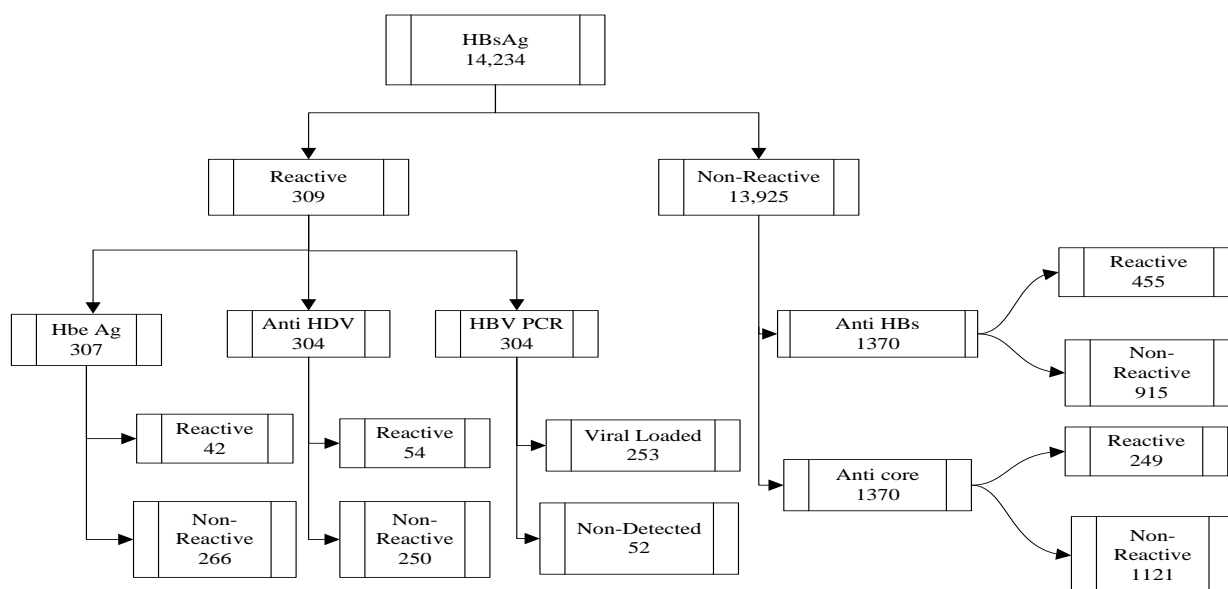
Table 8: Prior knowledge of viral disease in n (%)

	Hepatitis B	Hepatitis C	Hepatitis B&C	Hepatitis B&D	Hepatitis B,C & D	Hepatitis but not sure	Negative	Others	No response	Don't know	Total
	n	n	n	n	n	n	n	n	n	n	N
Yes	114(7.4)	274(17.7)	56(3.6)	6(0.4)	0	36(2.3)	257(62)	12(0.8)	3(0.2)	85(5.5)	1543(100)

3.5. HBV Results and Discussions

14,234 samples were tested for the Hepatitis B Surface Antigens (HBsAg). 309 were found to be reactive. 307 reactive samples were further tested for HbeAg and 42 were found to be reactive to the same. 304 reactive samples were further tested for Anti HDV and 54 were found to be reactive. PCR was conducted on 304 samples for viral load. 253 have sufficient quantity of virus to be detectable while in 52 samples the same was not detected. Of 13,925 non-reactive samples, each of 1370 was further tested for Anti HBs and Anti core. 455 were found to be reactive to Anti HBs and 249 Anti core.

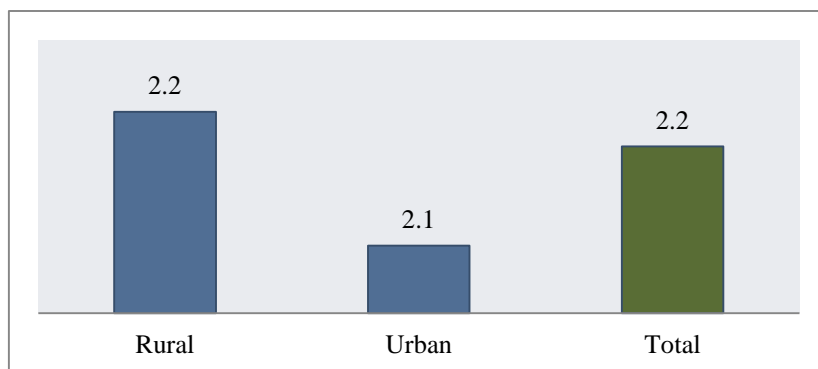
Figure 13: Hepatitis B Testing



3.5.1. Current HBs Ag Prevalence

The detailed study and weighted analysis showed that out of 309 (2.2%) HBsAg positive samples, 231 (2.2%) were in the rural areas and 78 (2.1%) were in urban areas. 184 (2.9%) of the males and 125 (1.6%), whose blood was tested, were found to be HBsAg positive.

Figure 14: Area wise Prevalence of Hepatitis B (%)



Of the males, whose blood was tested, 184 (2.9%) were positive while of the females 125 (1.6%).

Figure 15: Gender wise Prevalence of Hepatitis B (%)



Highest rate of prevalence was found to be in the persons aged 70 years and above with 20 being reactive out of 434 (4.6%) while it is lowest in the 1-4 years of age with 3 being reactive out of 1,274 samples (0.3%). (See detailed analysis in Annex Table 31.)

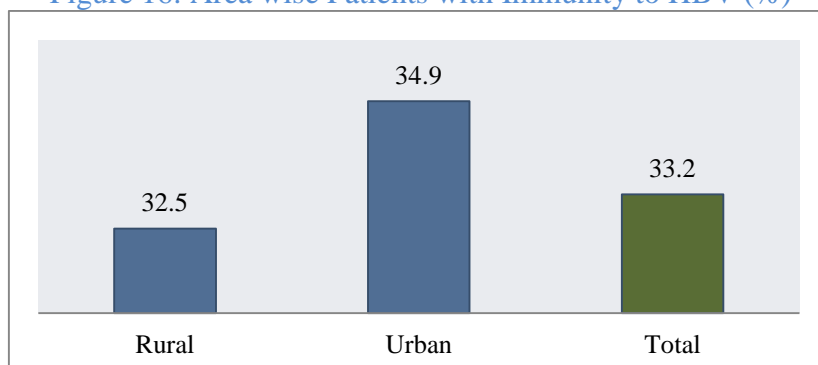
Table 9: Age wise Patients with HBs Ag n (%)

	Prevalence of Hepatitis B surface antigen					
	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Under 1 year	0	0.0	131	100.0	131	100
1 -4	3	0.3	1270	99.7	1274	100
5 -9	13	0.7	2008	99.3	2022	100
10 – 14	13	0.7	1771	99.3	1784	100
15 – 19	24	1.6	1449	98.4	1473	100
20 – 29	69	3.1	2122	96.9	2191	100
30 - 39	66	3.4	1879	96.6	1945	100
40- 49	52	3.8	1308	96.2	1360	100
50 - 59	30	3.0	977	97.0	1007	100
60 - 69	20	3.3	594	96.7	614	100
70 and above	20	4.6	414	95.4	434	100
Total	309	2.2	13925	97.8	14234	100

3.5.2. Immunity to Hepatitis B in the HBsAg Non-reactive Respondents

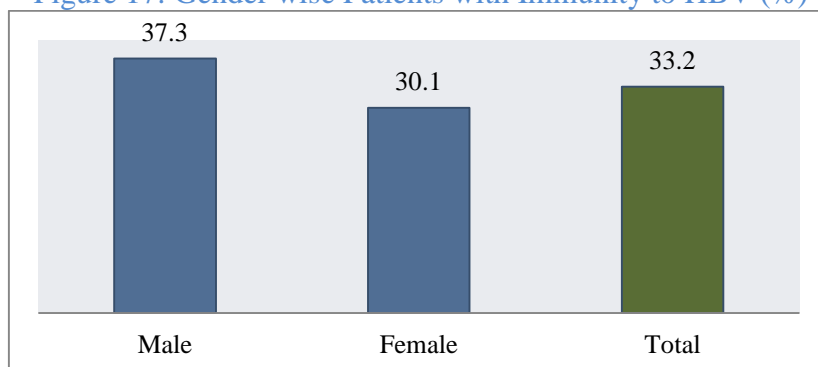
The immunity was further tested among 10% of the non-reactive respondents reflecting the vaccination status against Hepatitis B as a proxy indicator. 325 samples (32.5%) in rural areas and 129 samples (34.9%) in urban areas were found to be immune in the reactive samples.

Figure 16: Area wise Patients with Immunity to HBV (%)



Total of 1,370 samples were tested. 455 (33.2%) of the samples were found to be immune to Hepatitis B 219 (37.3%) of the males and 236 (30.1%) of the females were found to be having immunity to Hepatitis B.

Figure 17: Gender wise Patients with Immunity to HBV (%)



455 (33.2%) of the Hepatitis reactive were further analyzed for age wise distribution for reactive and non-reactive status in each age range. Of 9 respondents in the age under the age of 1 year, 59.6% were reactive being highest and 224 respondents in the age range of 5-9 years, 16.5% were found to be reactive.

Table 10: Age wise Patients with Immunity to Hepatitis B n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Under 1 year	5	59.6	4	40.4	9	100
1 -4	83	58.7	58	41.3	141	100
5 -9	67	36.9	114	63.1	180	100
10 - 14	66	39.2	103	60.8	170	100
15 - 19	26	20.0	104	80.0	130	100
20 - 29	37	16.5	187	83.5	224	100
30 - 39	40	23.4	130	76.6	170	100
40- 49	55	37.2	92	62.8	147	100
50 - 59	33	35.0	62	65.0	95	100
60 - 69	21	36.6	35	63.4	56	100
70 and above	22	46.6	26	53.4	48	100
Total	455	33.2	915	66.8	1370	100

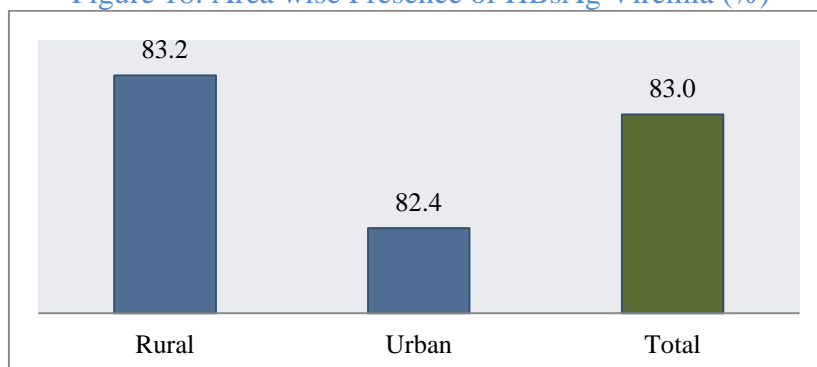
The marital status was also analysed for immunity to Hepatitis B. Highest immunity was analysed in widowed/widower respondents as of 29 reactive respondents, 11 (37.6%) were found to be immune and lowest was analysed in the divorced as 1 (24.3%) of 5 reactive respondents was found to be reactive.

The details of Hepatitis B immunity related with marital status, education level, employment level, and quintile can be seen in annex [Table 36](#).

3.5.3. Viremia in HBsAg Reactive Respondents

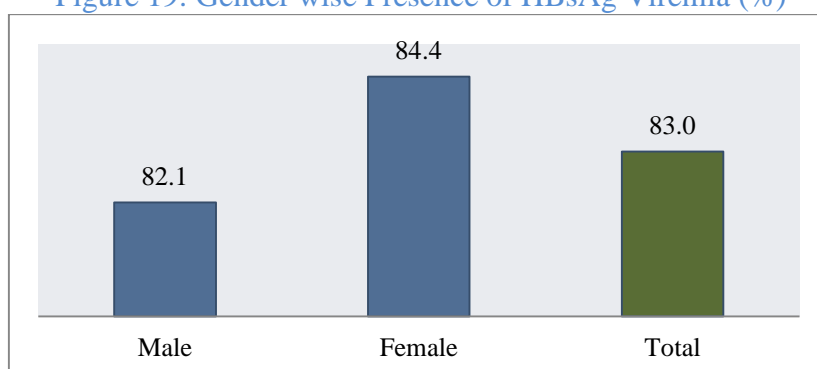
304 of the 309 HBsAg reactive were further tested for diagnosis of HBV viremia in patients with Hepatitis B infection. Viral load was more detectable in the rural area with 188 (83.2%) of 226 samples and lesser detectable in the urban area with 64 (82.4%) of the 78 tested samples and overall 253 (83.0%) of 304 samples have viremia with detectable viral load.

Figure 18: Area wise Presence of HBsAg Viremia (%)



Overall 253 (83%) had viremia. 149 (82.1%) of the males and 103 (84.4%) females were found to be having HBV viremia.

Figure 19: Gender wise Presence of HBsAg Viremia (%)



Viremia was found to be more prevalent in the age group of 40-49 years as 46 (89.7%) and lowest 12 (85.6%) in 5-9 years with detectable viral load.

Table 11: Age wise Quantification of HBV viremia n (%)

	Viral Loaded Detected		Not-Detected		Total	
	N	%	N	%	N	%
Under 1 year	0	0.0	0	0.0	0	0
1 -4	3	100.0	0	0.0	3	100
5 -9	12	85.6	2	14.4	13	100
10 - 14	11	83.7	2	16.3	13	100
15 - 19	20	85.1	3	14.9	23	100
20 - 29	49	71.8	19	28.2	68	100
30 - 39	59	89.4	7	10.6	66	100
40- 49	46	89.7	5	10.3	52	100
50 - 59	23	86.5	4	13.5	26	100
60 - 69	18	91.7	2	8.3	20	100
70 and above	12	61.7	8	38.3	20	100
Total	253	83.0	52	17.0	304	100

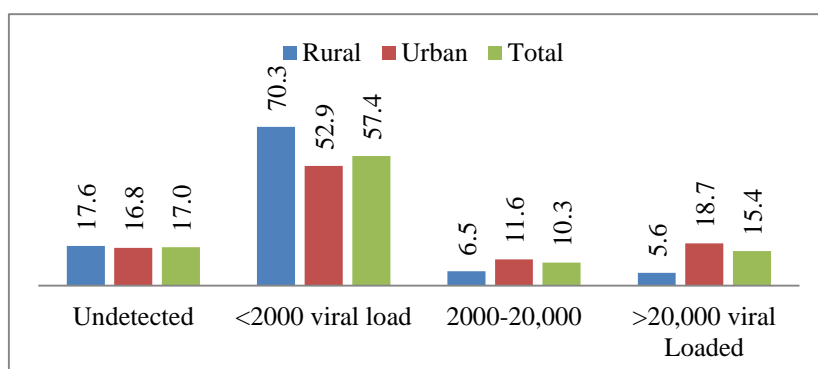
Viral load was more detectable in the widowed/widower respondents as 9 (84.4%) had highest proportion and was least detectable in the never married respondents with 105 (80.4%) of the 131 tested samples.

The details of Hepatitis B viremia related with marital status, education level, employment level and quintile can be seen in annex [Table 34](#)

3.5.4. Quantification of HBV Viremia

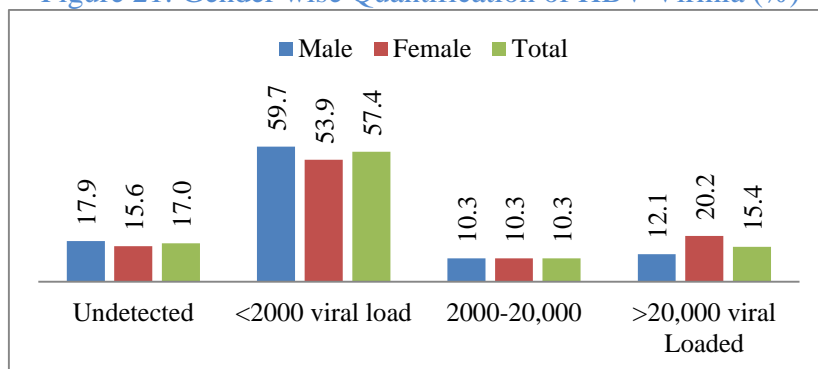
The viral load was quantified in the 304 HBsAg reactive respondents. The viral load was undetected overall in 52 (17.0%) of the total tested 304. Quantification was more undetectable in the urban area with 38 (16.8%) of 226 samples and lesser undetectable in the urban area with 14 (17.6%) of the 78 tested samples. Similarly, in urban 42 (18.7%) were found with viral load >20,000 while only 4 (5.6%) were found with >20,000 viral load in rural area.

Figure 20: Area wise Quantification of HBV Virmia (%)



175 (57.4%) of the respondents had <2000 viral load with 109 (59.7%) males and 66 (53.9%) females. 31 (10.3%) of the respondents had viral load ranging from 2,000 – 20,000 with 19 (10.3%) in males and 13 (10.3%) females. 47 (15.4%) had more than 20,000 viral load with 22 (12.1%) males and 25 (20.2%) females.

Figure 21: Gender wise Quantification of HBV Virmia (%)

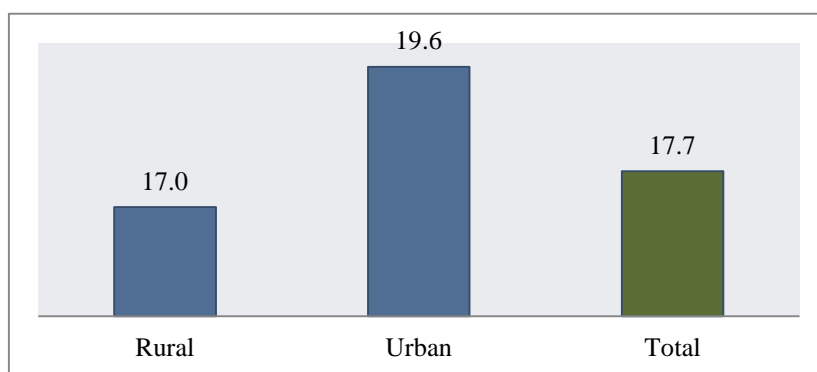


The details of viremia reactivity related with marital status, education level, employment level and quintile can be seen in annex

3.5.5. Prevalence of Hepatitis Delta Antibody in HBsAg Positive Patients

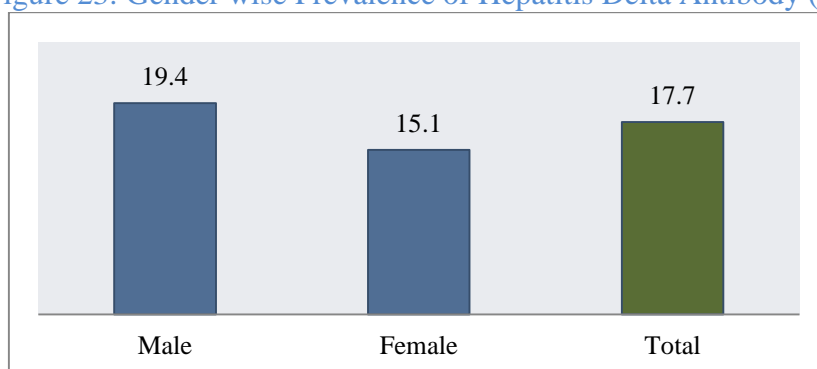
It was found that overall 54 (17.7%) were reactive to Hepatitis Delta antibody with 38 (17%) in the rural areas and 15 (19.6%) in urban areas.

Figure 22: Area wise Prevalence of Hep Delta Antibody (%)



Reactivity to Hepatitis Delta Antibody was tested in the 304 HBsAg reactive cases. 35 (19.4%) of the males and 19 (15.1%) females were found to be Hepatitis Delta antibodies reactive.

Figure 23: Gender wise Prevalence of Hepatitis Delta Antibody (%)



The age wise prevalence of Hepatitis Delta antibody in the Hepatitis B patients was found to be non-reactive in the ages below 9 years. While it was found to be highest 8 (42.5%) of 20, in the ages above 70 years.

Table 12: Age wise Prevalence of Hepatitis Delta antibody in Hepatitis B n (%)

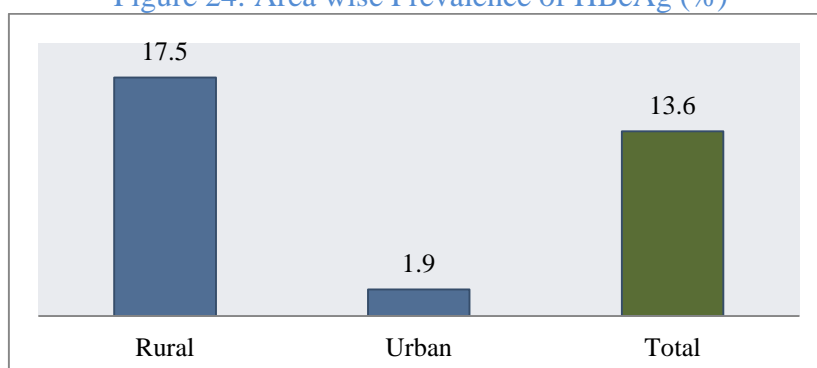
	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Under 1 year	0	0.0	0	0.0	0	0
1 -4	0	0.0	2	100.0	2	100
5 -9	0	0.0	13	100.0	13	100
10 - 14	0	3.6	12	96.4	13	100
15 - 19	3	13.9	21	86.1	24	100
20 - 29	10	15.1	57	84.9	67	100
30 - 39	11	16.0	55	84.0	66	100
40- 49	11	21.2	41	78.8	52	100
50 - 59	3	12.2	24	87.8	28	100
60 - 69	6	31.7	14	68.3	20	100
70 and above	8	42.5	11	57.5	20	100
Total	54	17.7	250	82.3	304	100

The prevalence of HDV antibody was analysed to be lesser in the never married as compare to married population as the same is found to be there in 19 (14.7%) of the 131 tested respondents. The details of reactivity to Hepatitis Delta antibody related with marital status, education level, and employment level and wealth quintile can be seen in annex [Table 33](#).

3.5.6. Prevalence of HBeAg in HBsAg Positive Respondents

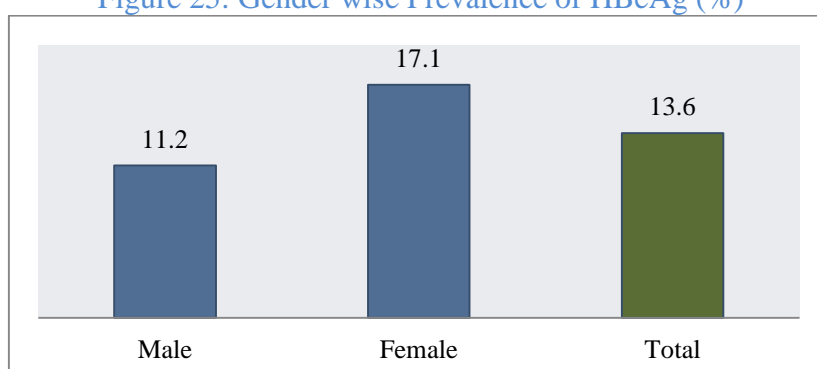
It was found that overall 42 (13.6%) were HBeAg positive. With 40 (17.5%) in the Rural areas and 2 (1.9%) in the urban areas.

Figure 24: Area wise Prevalence of HBeAg (%)



Reactivity to HBeAg was tested in the 307 HBsAg. 21 (11.2%) males and 21 (17.1%) females were HBeAg were reactive.

Figure 25: Gender wise Prevalence of HBeAg (%)



The age wise reactivity of HBeAg among HBsAg positive patients was also analyzed. The highest being in the age range of 1-4 years as 3 (84.3%) out of 4 were found to be reactive and lowest in the age range of 40-49 years, as 1 (1.1%) out of 52 was found to be reactive.

Table 13: Age wise Prevalence of HBeAg among HBsAg positive n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Under 1 year	0	0.0	0	0.0	0	0
1 -4	3	84.3	1	15.7	3	100
5 -9	9	68.1	4	31.9	13	100
10 - 14	4	30.3	9	69.7	13	100
15 - 19	9	39.4	15	60.6	24	100
20 - 29	8	11.3	61	88.7	69	100
30 - 39	5	8.1	61	91.9	66	100
40- 49	1	1.1	51	98.9	52	100
50 - 59	1	3.2	27	96.8	28	100
60 - 69	1	4.7	19	95.3	20	100
70 and above	1	5.1	19	94.9	20	100
Total	42	13.6	266	86.4	307	100

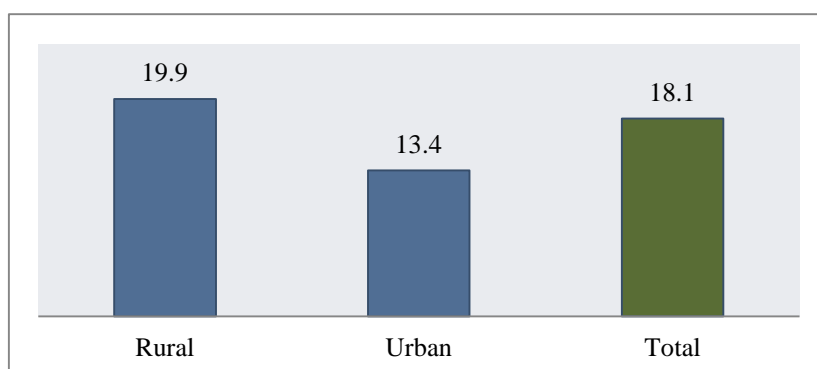
Of the 131 never married tested respondents 20 (15.0%) were HBeAg positive.

The details of HBeAg reactivity related with marital status, education level, employment level and quintile can be seen in annex **Table 32**.

3.5.7. Testing for Previous Exposure to Hepatitis B

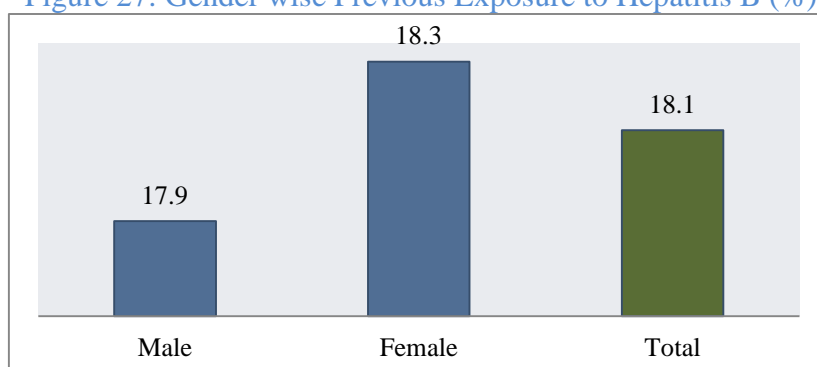
Ten percent (1370) of the Hepatitis non-reactive blood samples were tested for the previous exposure to Hepatitis B. It was found that of the 1,370 tested samples, 249 (18.1%) were previously exposed to Hepatitis B with 199 (19.9%) in rural areas and 49 (13.4%) in urban areas.

Figure 26: Area wise Previous Exposure to Hepatitis B (%)



105 (17.9%) of the samples from males and 144 (18.3%) of the females were found to be having previous exposure to Hepatitis B with overall being 249 (18.1%).

Figure 27: Gender wise Previous Exposure to Hepatitis B (%)



Age wise analysis showed that it was highest in the age group of 70 and above with 31 (63.9%) of 48 being reactive. Lowest exposure was observed in the age group of 5-9 years with 1 (0.4%) of the 180 tested samples.

Table 14: Age Wise Previous Exposure to Hepatitis B n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Under 1 year	2	26.6	6	73.4	9	100
1 -4	1	0.9	139	99.1	141	100
5 -9	1	0.4	180	99.6	180	100
10 - 14	2	0.9	168	99.1	170	100
15 - 19	19	14.7	111	85.3	130	100
20 - 29	29	12.9	195	87.1	224	100
30 - 39	37	22.0	133	78.0	170	100
40- 49	56	38.3	91	61.7	147	100
50 - 59	45	47.7	50	52.3	95	100
60 - 69	25	43.9	31	56.1	56	100
70 and above	31	63.9	17	36.1	48	100
Total	249	18.1	1121	81.9	1370	100

Of the 538 never married tested population, 63 (11.6%) have previous exposure to Hepatitis B.

The details of previous exposure to Hepatitis B related with marital status, education Level, employment level and quintile can be seen in annex [Table 37](#).

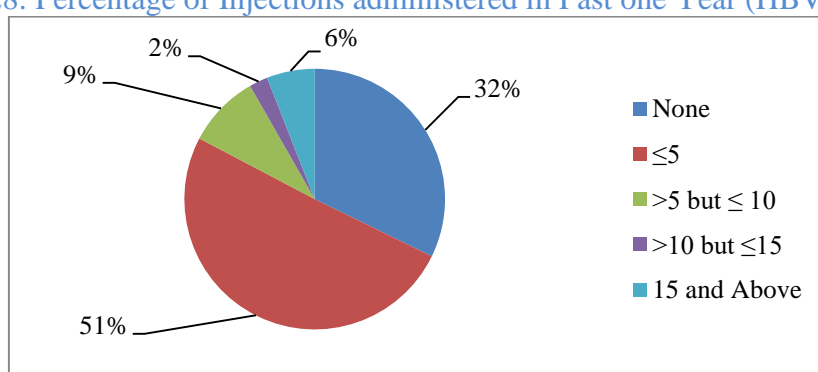
3.6. Risk Factors for Acquiring HBV

Multiple risk factors for acquiring HBV were studied including: injection drug use, history of receiving a blood product transfusion, surgical operations, dental treatment including replacing tooth, piercing, body tattooing, and others.

3.6.1. Use of Injections

The 187 (60.5%) of the 309 HBV reactive respondents have informed of ever using the injection for therapeutic purposes. While 9,674 of the non-reactive to HBV testing said that they have ever been using the injection for therapeutic purpose. Of the 187, 127 (67.9%) received injections in the past one year, while 60 (32.1%) have not used any injectable in the past one year in the reactive respondents. 95 (50%) used less than five injections during the past one year based on the analysis.

Figure 28: Percentage of Injections administered in Past one Year (HBV +ve) (%)

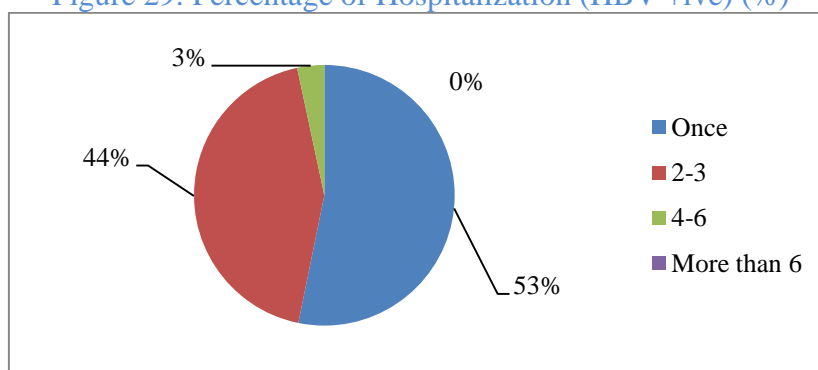


3.6.2. Hospitalization

The respondents were asked about ever been hospitalized for any injury or problem requiring surgical treatment in a hospital/ clinic. This question was responded by 271 of the reactive respondents. 28 of the HBV reactive respondents informed that they were hospitalized during the lifetime. When asked for the past one year from the 28 respondents received surgical treatment once during the past one year. (See [Table 38](#) in Annex).

Of the 12,672 HBV negative respondents, 1,434 informed that they had such injuries, needing the surgical procedures. 920 (97.0%) have such procedures once in the past one year while 26 (2.7%) had such procedures 2-3 times in the past one year.

Figure 29: Percentage of Hospitalization (HBV +ive) (%)



The respondents were also asked about the history of being hospitalized. 28 of the HBV reactive respondents and 1,434 of the non-reactive respondents informed that they had to be hospitalized for one or another reason other than for injuries needing surgical procedures. 15 (53.2%) of the HBV reactive respondents were hospitalized one time during the past one year, while 12 (43.4%) of the respondents were hospitalized 2-3 times during past one year. 1,021 (71.2%) of the HBV non-reactive respondents were hospitalized one time during the past one year, while 341 (23.8%) of the respondents were hospitalized 2-3 times during past one year. (See **Table 38** in Annex)

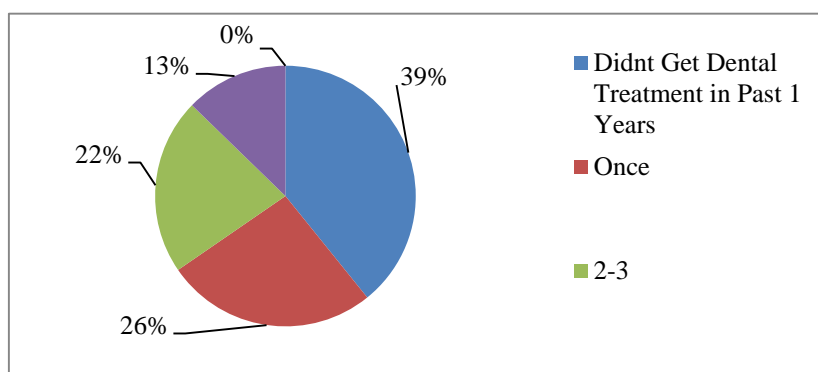
3.6.3. Blood Transfusion

The respondents were asked about ever received blood transfusion. 23 (8%) of the HBV reactive respondents informed that they have received blood transfusion on the past. Of the 12,672 HBV non-reactive, 749 (6%) responded in yes regarding blood transfusion. 8 (33.4%) of the reactive respondents informed that they had received blood 2-3 times while 15 (66.6%) received at least once in past one year. 20 (2.7%) of the non-reactive respondent, informed that they had received transfusion 6 times during the past one year, 53 (7.1%) informed that they had it 4-6 times, 188 (25.2%) informed that they had received blood 2-3 times while 486 (65.0%) received at least once in past one year. (See **Table 38** in Annex)

3.6.4. Dental Care and Treatment

A number of questions were asked about the dental care and treatment related risky behaviors such as ever treated, tooth extraction, and tooth filling. The ever treated 42 (15%) of the HBV reactive (271 respondents, who answered to this question) were further asked for the type of treatment within the last one year and also within the last 10 years. Of the 185 respondents, 40 respondents informed that they had received dental treatment in the past ten years. 42 of the respondents informed that they had treatment in the past one year. Of the 40 treated HBV reactive, 4 (10.3%) had one time tooth extraction, 8 (19.2%) had 2-3 time tooth extraction and 27 (63.9%) had no tooth extraction in past 1 year.

Figure 30: Percentage of Dental Treatment Past 1 year (HBV +ive) (%)



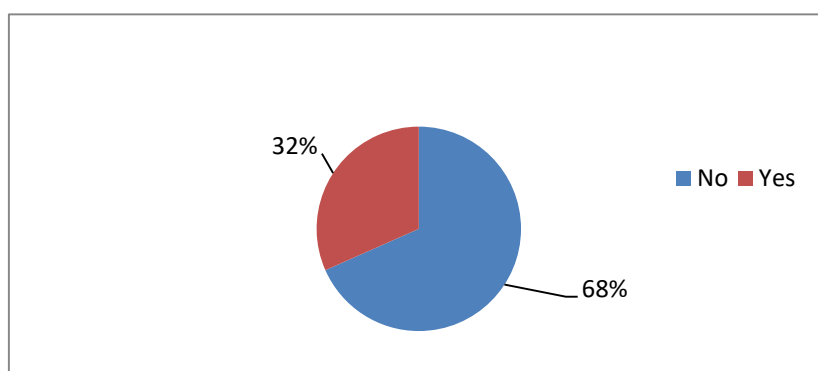
The ever treated 1057 of the HBV non-reactive, who answered to this question, were further asked for the type of treatment within past one year and during the past 10 years. 579 of the respondents informed that they had treatment in the past one year. Of the 579 treated HBV non-reactive, 186 (17.6%) have one-time tooth extraction, 89 (8.5%) had 2-3-time tooth extraction, 25 (2.4%) had 4-6 times tooth extraction, while 4 (0.4%) had more than 6 times. 641 (60.6%) had no tooth extraction.

The respondents were asked about the tooth filling procedures in the past one year. Of the 38 treated HBV reactive, 32 (76.4%) had no such procedures, 4 (8.9%) had one-time tooth filling procedure, 1 (2.3%) had 2-3 time tooth filling procedure. 193 of the ever treated HBV non-reactive informed that they had tooth filling. 728 (68.9%) of the respondents had no filling procedures at all during past one year. 139 (13.1%) had one time tooth filling, 48 (4.6%) had 2-3 times procedure, 4 had 4-6 times and 2 had more than 6 times. (See **Table 38** in Annex)

3.6.5. *Body pricking, Tattooing, Religious Rituals and Barber visits*

The respondents were asked for ever been pricked/ pierced, had tattooing and ever visited a barber. 85 (31.4%) of the reactive respondents said that they had been pricked on various parts of the body. They were further asked about the body part pierced through and None of the HBV reactive respondents (271) informed that they had skin tattooing while 35 (0.3%) of the HBV non-reactive respondents (12,617) also informed of having the same procedure. (See **Table 38** in Annex)

Figure 31: Percentage of Body Parts Pricked (HBV +ive) (%)

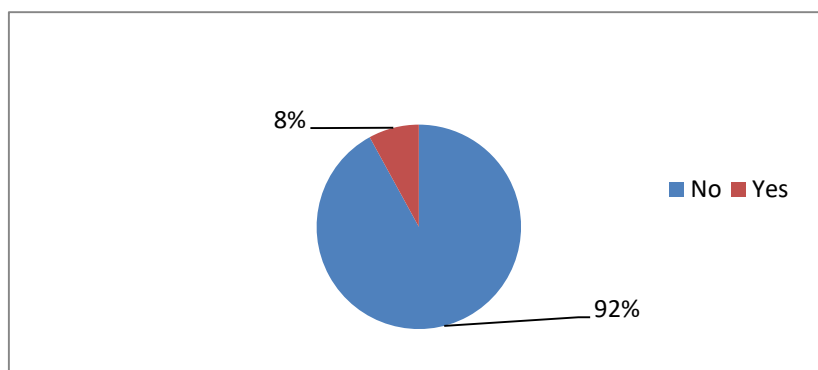


The respondents were asked about the visiting to the barber. 33 (12.3%) of the HBV reactive informed that they had visited the barber. 127 (46.8%) informed that the new blade had always been used while 10 (7.4%) informed that sometimes new blade is used. None of the respondent informed that they had taken his own blade, scissor, or machine. 924 (7.3%) of the HBV non- reactive informed that they had visited the barber. 4,292 (33.9%) informed that the new blade had always been used while 155 (1.2%) informed that sometimes new blade is used. (See **Table 38** in Annex)

3.6.6. Use of Illicit Drugs

The respondents were asked about the current use of illicit drugs, by illicit drugs, it is meant that use of stimulants, depressants, hallucinogens including opioids, cocaine etc. 12 (7.9%) of the respondents from 145 HBV reactive respondents informed that they are currently using the illicit drugs. None of the respondent was found to be injecting the same. 181 (5%) of the HBV non-reactive respondents informed that they are currently using the illicit drugs and none of them is injecting the same. (See **Table 38** in Annex)

Figure 32: Percentage of Use of Illicit Drugs (HBV +ive) (%)



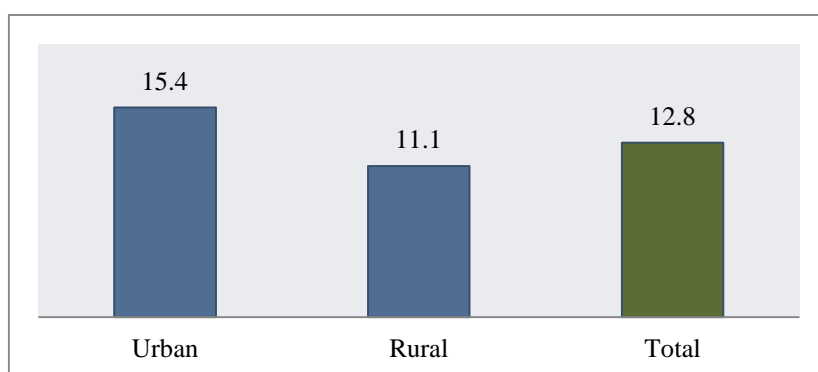
3.6.7. The Significance of Various Risk Factors in Acquiring HBV

Pearson's chi-square test was applied with 1 degree of freedom to statistically analysis the significance of various risks in reactive and non-reactive tests, including Use of injection, Hospitalization, Blood Transfusion, Dental Care and Treatment, Body Pricking, Tattooing and use of illicit drugs. The chi square values of Number of injection during last 1 year (0.045), body part pricking (0.013), number of pregnancies (0.02) are found to be equal to or less than 0.05. Thus the same routes of acquiring the HBV are significant. All other routes are found to be above 0.05 and thus found to be non-significant. Details can be seen in the **Table 38** Annex)

3.7. Ever Vaccinated for Hepatitis B

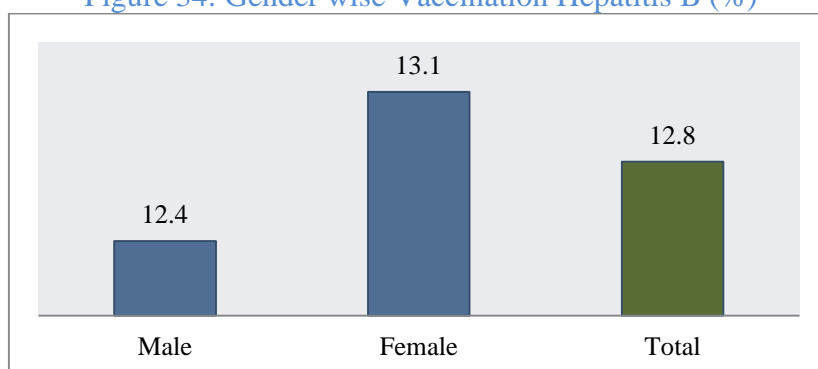
Respondents were asked about vaccination of the Hepatitis B vaccine. 274 (12.8%) of the respondents from 2,145 responded in yes to the same. 163 (65.6%) had all three doses. For most (89.2%) of those who received all three doses, the source of vaccination was initiated by government. From the total of 274 vaccinated respondents urban scores higher number i.e.143 (11.1%) as compare to rural that is 131(15.4%).

Figure 33: Area wise Vaccination Hepatitis B (%)



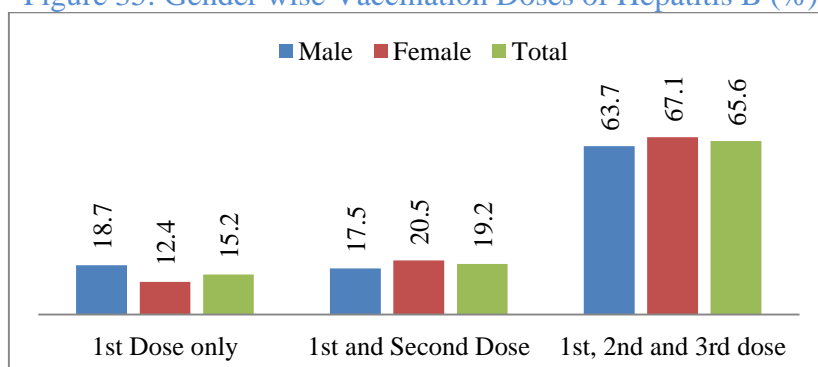
Similarly, percentage of females were found to be more vaccinated 150 (13.1%) comparatively males 125 (12.4%).

Figure 34: Gender wise Vaccination Hepatitis B (%)



Number of doses was also analyzed among gender wise distribution. Males were found with higher in percentage i.e. (18.7%) in terms of 1st dose comparatively females (12.4%). While percentage of 1st & second and 1st, 2nd and 3rd doses females have the higher percentage i.e. 20.5 and (67.1%) respectively comparatively males (17.5%) and (63.7%)

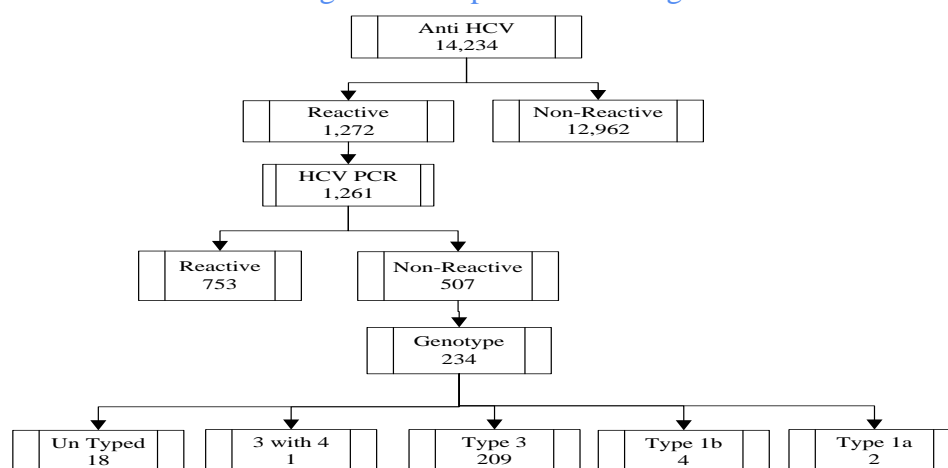
Figure 35: Gender wise Vaccination Doses of Hepatitis B (%)



3.8. HCV Results & Discussion

14,234 samples were tested for the Hepatitis C (HCV). 1,272 were found to be reactive. 1,261 reactive samples were further tested for HCV PCR and 753 were found to be reactive to the same. Of 507 non-reactive samples, 234 were further tested for genotype.

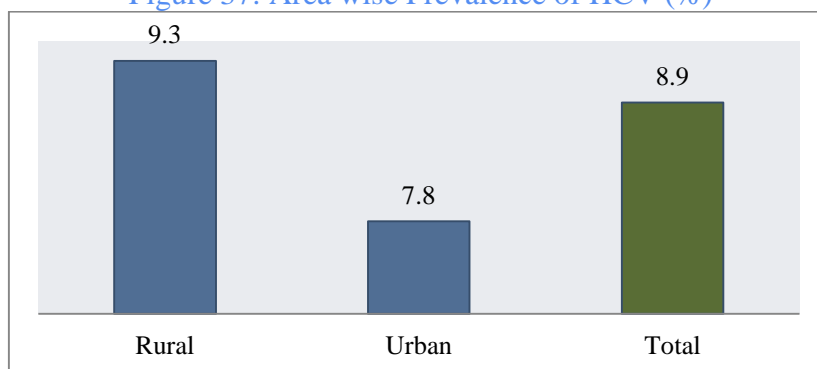
Figure 36: Hepatitis C Testing



3.8.1. Current HCV Prevalence

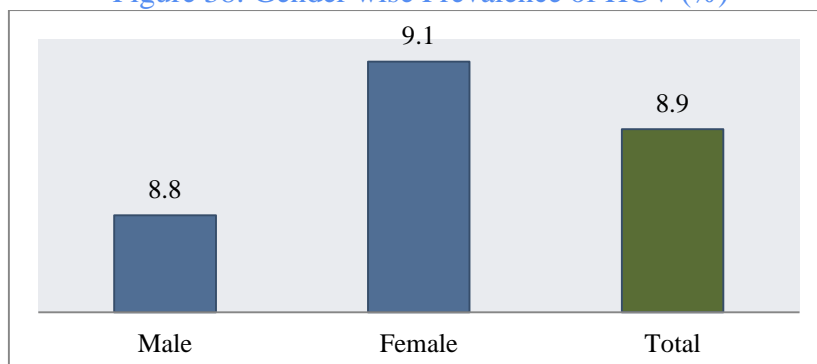
Of the 1,272 (8.9%) reactive samples 981 (9.1%) were found to be reactive in the rural areas and 291 (7.8%) in the urban areas.

Figure 37: Area wise Prevalence of HCV (%)



Out of 14,234 blood samples tested for Anti HCV, 1,272 (8.9%) samples were found to be reactive with 548 (8.8%) in males and 724 (9.1%) in the females being positive.

Figure 38: Gender wise Prevalence of HCV (%)



The older men and women in the age ranges of 70 years and above 105 (24.3%) of 434, 50-59 years 207 (20.6%) of 1,007, 60-69 years 124 (20.2%) of 614, 40-49 years 273 (20.1%) of 1360 and 30-39 years 291 (15%) of 1945 were found to be HCV positive as compared to younger ages. HCV was prevalent in 4 (2.8%) of 131 infants below the age of one year.

Table 15: Age Group wise Prevalence of HCV n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Under 1 year	4	2.8	128	97.2	131	100
1 -4	11	0.9	1262	99.1	1274	100
5 -9	13	0.6	2009	99.4	2022	100
10 - 14	36	2.0	1747	98.0	1784	100
15 - 19	45	3.0	1428	97.0	1473	100
20 - 29	162	7.4	2028	92.6	2191	100
30 - 39	291	15.0	1654	85.0	1945	100
40- 49	273	20.1	1087	79.9	1360	100
50 - 59	207	20.6	800	79.4	1007	100
60 - 69	124	20.2	490	79.8	614	100
70 and above	105	24.3	329	75.7	434	100
Total	1272	8.9	12962	91.1	14234	100

Of the 5,736 never married tested respondents, 363 (6.3%) were found to be positive for HCV. Of the 4,086 currently married respondents, 759 (18.6%) were found to be positive. The analysis was done based on the answer in the population 18 years and above and thus overall of 10,208 respondents. 1,201 (11.8%) were found to be positive.

HCV prevalence in the illiterate population or the population which has never attended the school 4,392 (85.4%) is found to be higher with 643 (14.6%) being HCV positive.

The presence was also analyzed on the basis of the type of employment. The prevalence in daily wagers 834 (84.6%) and self-employed 1,017 (83.5%) was found to be reactive 15.4% and 16.5% overall respectively.

HCV Prevalence based on the mother tongue was also analyzed. Of the 8,560 Punjabi/Potohari speaking respondents, 847 (9.9%) had acquired HCV. in 3,231 Saraiki speaking persons, the prevalence was found to be 8.2% while 39 of the 496 Urdu speaking respondents were found to be having a prevalence of 7.9%.

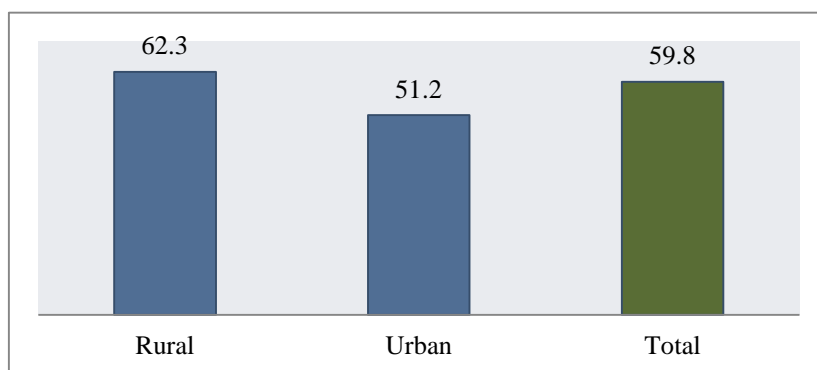
HCV prevalence based on the wealth quintile was also analyzed. Of the 3,162 persons living in the lowest category, 305 (9.7%) were found to be HCV positive. Of the 2,952 persons living in the second lowest category, 268 (9.1%) were found to be HCV positive. Of the 2398 persons living in the middle category, 233 (9.7%) were found to be HCV positive. Of the 2,426 persons living in the fourth category, 224 (9.2%) were found to be HCV positive. Of the 2,004 persons living in the highest quintile, 157 (7.8%) were found to be HCV positive.

Detailed analyzed prevalence of HCV is annex as **Table 39**.

3.8.2. Confirmation of the Chronic Hepatitis

PCR was conducted for RNA reactivity in 1,261 HCV positive samples for chronic HCV patients. 753 (59.8%) of the tested samples were found to be RNA test reactive and translated to be chronic Hepatitis C patients. 607 (62.3%) were found to be in the rural areas and 147 (51.2%) were found to be in the urban areas.

Figure 39: Area wise Prevalence of Confirmation Chronic Hepatitis (%)



346 (63.8%) of the HCV positive males were found to be having chronic Hepatitis C and 407 (56.7%) of the HCV positive females were found to be having Chronic Hepatitis.

Figure 40: Gender wise Chronic HCV (%)

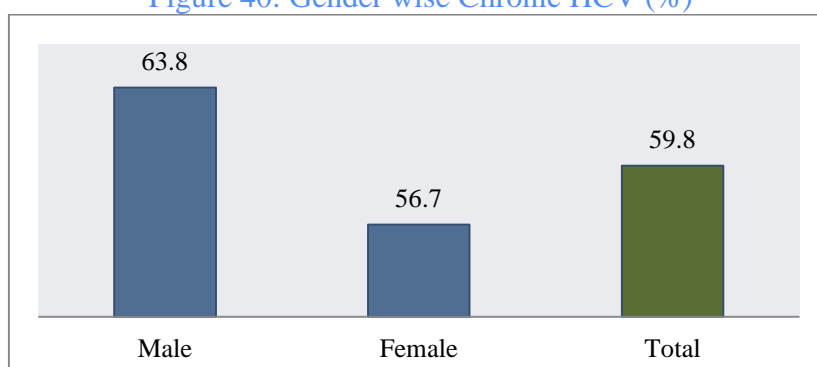


Table 16: Age wise Prevalence of Chronic Hepatitis C confirmed through RNA testing n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Under 1 year	0	0.0	3	100.0	3	100
1 -4	4	41.0	6	59.0	10	100
5 -9	5	38.9	7	61.1	12	100
10 - 14	10	29.5	24	70.5	35	100
15 - 19	16	35.8	29	64.2	45	100
20 - 29	92	56.8	70	43.2	161	100
30 - 39	168	57.6	124	42.4	291	100
40- 49	159	58.5	113	41.5	272	100
50 - 59	132	64.4	73	35.6	204	100
60 - 69	89	72.6	34	27.4	123	100
70 and above	79	75.6	25	24.4	104	100
Total	753	59.8	507	40.2	1261	100

Prevalence of Chronic Hepatitis in the 754 married persons was found to be quite high as 472 (62.6%) (See [Table 40](#) in Annex).

Prevalence of Chronic Hepatitis in the 637 illiterate population or the population which has never attended the school is found to be significantly high with 400 (62.7%) having Chronic Hepatitis C. The prevalence of Chronic Hepatitis C was also analyzed on the basis of the type of employment. The prevalence in self-employed 114 and daily-waged 86 was found to be 67.8% and 66.7% respectively.

Prevalence of Chronic Hepatitis C based on the mother tongue was also analyzed. Of the 840 Punjabi/Potohari speaking respondents, 517 (61.6%) had Chronic Hepatitis C. in 263 Saraiki speaking persons, the prevalence was found to be 61.9% while 19 of the 39 Urdu speaking respondents were found to be having a prevalence of 49.2% .

Chronic Hepatitis C prevalence based on the wealth quintile was also analyzed. Of the 301 persons living in the lowest quintile, 199 (66%) had chronic hepatitis C. Of the 266 (62.6%) persons living in the second category, 167 (62.6%). Of the 232 persons living in the middle category, 144 (62.2%). Of the 224 persons living in the fourth category, 133 (59.5%). Of the 154 persons living in the highest quintile, 72 (46.8%) had chronic hepatitis C (See [Table 40](#) in Annex).

3.8.3. RNA Level in Prior Known HCV Cases

The 125 respondents, who knew about their previous status of being Hepatitis C positive, were asked about their previous history of treatment. HCV RNA level was ascertained in both the cases. 60 (47.7%) of the respondents, who were on treatment were found to be reactive to RNA level test while 65 (52.2%) of the respondents, who said that they had no treatment were found to be reactive.

Table 17: Prior knowledge n (%)

Ever taken treatment for Hepatitis C	Reactive	Non-Reactive
Total	125 (100)	117 (100)
Yes	60 (47.7)	94 (80.2)
No	65 (52.3)	23 (19.8)

3.8.4. Genotype of HCV in Punjab

Tests were applied for genotype of HCV in 234 samples and it was found that 209 (89.2%) have Type 3 genotype, 18 (7.8%) were un-typed, 4 (1.6%) had type 1b, 2 (1%) have Type 1a and 1 has both Type 3 and 4.

Table 18: Distribution of Genotypes across Punjab n (%)

	Genotype 1a	Genotype 1b	Genotypes 3	Genotype 4	Mixed Genotype	Total (N)
Total	2 (1)	4 (1.6)	209 (89.2)	1 (0.3)	18 (7.8)	234
Male	2 (1.4)	0	105 (92.8)	1 (0.7)	6 (5)	114
Female	1(0.7)	4 (3.2)	104 (85.8)	0	13 (10.4)	121

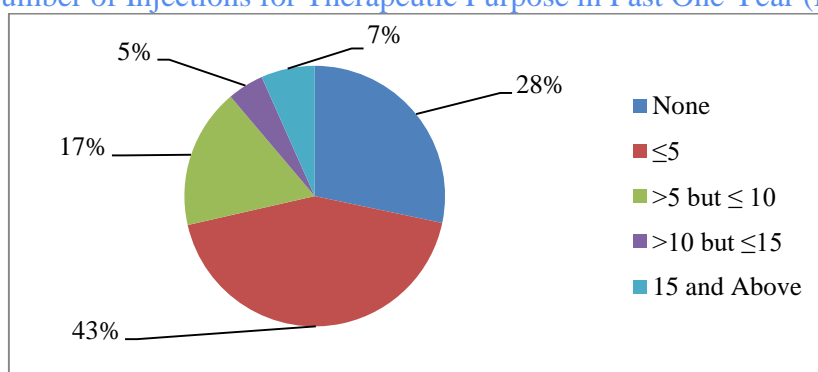
3.9. Risk Factors for Acquiring HCV

Multiple risk factors for acquiring HCV were studied including: injection drug use, history of receiving a blood product transfusion, surgical operations, dental treatment including replacing tooth, piercing, body tattooing, and others.

3.9.1. Use of Injections

The 838 (66%) of the 1,272 HCV reactive respondents have informed of ever using the injections for therapeutic purposes. While 9,023 (70%) of the non-reactive to HCV testing said that they have ever been using the injection for therapeutic purpose. Of the 838, 601 (72%) received injections in the past one year, while 237 (20.0%) have not used any injectable in the past one year in the reactive respondents. 362 (30.5%) used less than 5 injections during the past one year based on the analysis (See Table 42 in Annex).

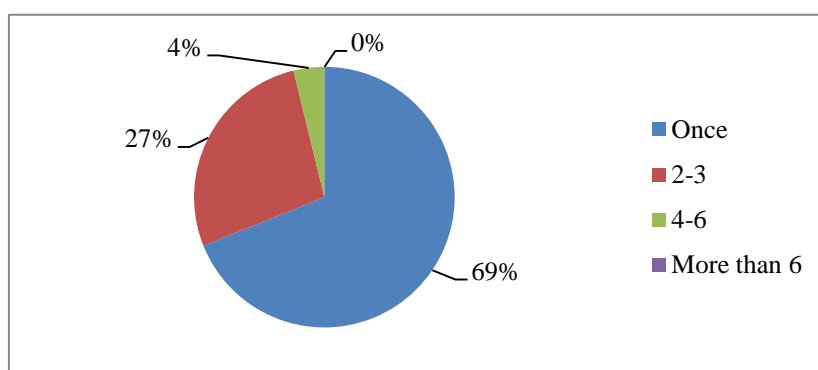
Figure 41: Number of Injections for Therapeutic Purpose in Past One Year (HCV +ve) (%)



3.9.2. Hospitalization

The respondents were asked about ever been hospitalized for any injury or problem requiring surgical treatment in a hospital/ clinic. This question was responded by 1,187 of the 1,272 reactive respondents. 114 of the HCV reactive respondents informed that they have ever received the treatment. When asked for the past one year from the 114 respondents, 111 (97.4%) informed that they have received surgical treatment ones during the past one year, 3 (2.6%) informed that they had 2-3 surgical treatments in the past one year. Of the 11,756 HCV negative respondents, 967 informed that they had such injuries, needing the surgical procedures. 938 (97%) have such procedures once in the past one year while 23 (2.7%) had such procedures 2-3 times in the past one year. (See Table 42 in Annex)

Figure 42: Number of Hospitalization (HCV +ve) (%)

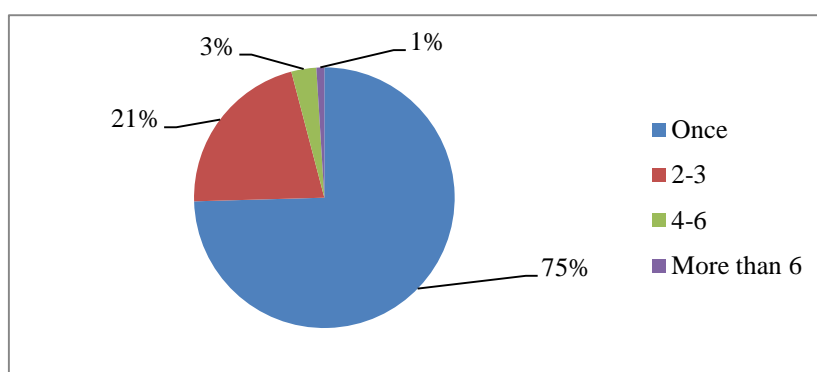


The respondents were also asked about the history of being hospitalized. 216 (18%) of the HCV reactive respondents and 1,246 (11%) of the non-reactive respondents informed that they had to be hospitalized for one or another reason other than for injuries needing surgical procedures. 149 (68.9%) of the HCV reactive respondents were hospitalized one time during the past one year, while 59 (27.3%) of the respondents were hospitalized 2-3 times during past one year. 887 (71.2%) of the HCV non-reactive respondents were hospitalized one time during the past one year, while 295 (23.6%) of the respondents were hospitalized 2-3 times during past one year (See Table 42 in Annex).

3.9.3. Blood Transfusion

The respondents were asked about ever received blood transfusion. 133 (11%) of the HCV reactive respondents informed that they have received blood transfusion. Of the 11,756 HCV non-reactive, 650 (6%) responded in yes regarding blood transfusion. 1 (1%) of the reactive respondent, informed that he has received transfusion more than 6 times during the past one year, 4 (3%) informed that they had it 4-6 times, 28 (21%) informed that they had received blood 2-3 times while 99 (75%) received at least ones in past one year. 19 (3%) of the non-reactive respondent, informed that he had received transfusion more than 6 times during the past one year, 49 (8%) informed that they had it 4-6 times, 169 (26%) informed that they had received blood 2-3 times while 403 (62%) received at least once in past one year. (See Table 42 in Annex).

Figure 43: Number of Blood Transfusion (HCV +ve) (%)

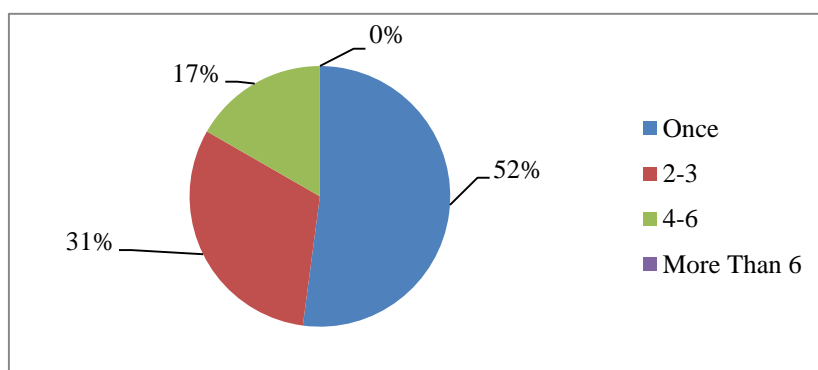


3.9.4. Dental Care and Treatment

A number of questions were asked about the dental care and treatment related risky behaviors such as ever treated, tooth extraction, tooth filling (See Table 42 in Annex). The ever treated 185 (16%) of the HCV reactive (1,187 respondents, who answered to this question) were further asked for the type of treatment within one year and 10 years. Of the 185 respondents, 180 respondents informed that they had dental treatment in the past ten years. 172 of the respondents informed that they had treatment in the past one year. Of the 185 who had dental treatment during the last one year and were HCV reactive, 30 (16.2%) have one time tooth extraction, 18 (9.7%) had 2-3 time tooth extraction, 10 (5.2%) had 4-6 times tooth extraction. The ever treated 894 (7%) of the HCV non-reactive (11,756 respondents, who answered to this question) were further asked for the type of treatment within one year and 10 years. Of the 894 respondents, 813 respondents informed that they had dental treatment in the past ten years. 914 of the respondents informed that they had treatment in the past one year. Of the

914 treated HCV non-reactive, 161 (17.6%) had one-time tooth extraction, 80 (8.7%) had 2-3 time tooth extraction, 16 (1.7%) had 4-6 times tooth extraction. 556 (60.8%) had no tooth extraction.

Figure 44: Number of Tooth Extraction (HCV +ve) (%)

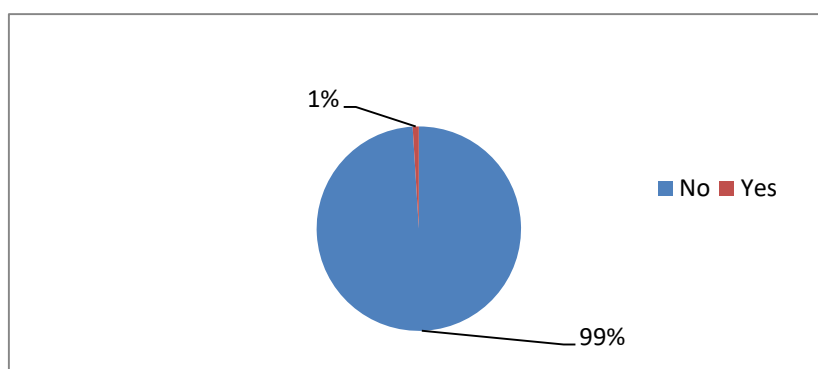


The respondents were asked about the tooth filling procedures in the past one year. Of the 185 treated HCV reactive, 136 (73.7%) had no such procedures, 9 (4.6%) had one-time tooth filling procedure, 8 (4.4%) had 2-3-time tooth filling procedure, 1 (0.4%) had 4-6 times tooth filling and 1 respondent had more than 6 times tooth filling procedure. 179 of the ever treated 914 of the HCV non-reactive informed that they had tooth filling. 624 (68.3%) of the respondents had no filling procedures at all. 134 (14.7%) had one-time tooth filling, 41 (4.5%) had 2-3 times procedure, 4 had 4-6 times and 1 had more than 6 times.

3.9.5. Body pricking, Tattooing, Religious Rituals and Barber visits

The respondents were asked for ever been pricked/ pierced, tattooed and ever visit to the barber (See Table 42 in Annex). Of the 1,187 HCV reactive respondents 598 (50.4%) said that they had been pricked on various parts of the body. They were further asked about the body part pierced/ tattooed through and 11 (1.0%) of the HCV reactive respondents (1,187) informed that they had skin tattooing while 24 (0.2%) of the HCV non-reactive respondents (11,711) also informed of having the same procedure. (See in Table 42 Annex).

Figure 45: Number of Skin Tattooing (HCV +ve) (%)



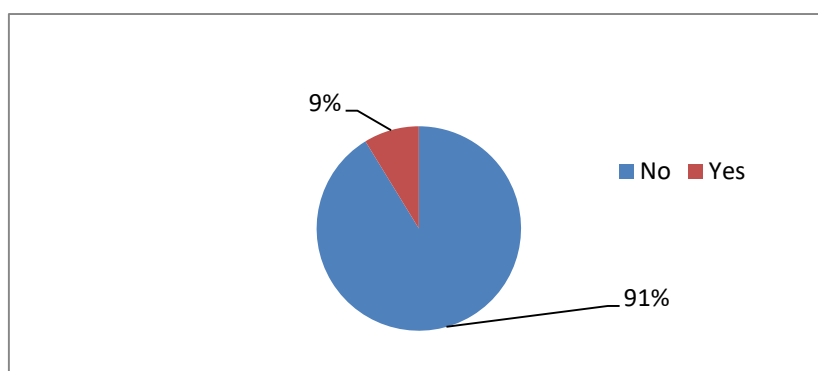
The respondents were asked about the hair cut at the barber shop. 129 (10.8%) of the HCV reactive informed that they had hair cut at the barber shop. For shaving purpose 412 (34.7%). A significant number of 35 had not given any answer to this question. 4,779 (95.1%) of the HCV non-reactive informed that they had visited the barber. 4,007 (34.1%) informed that the

new blade had always been used. 555 respondents of the non-reactive didn't respond to this question.

3.9.6. Use of Illicit Drugs

The respondents were asked about the current use of illicit drugs, by illicit drugs, it is meant that use of stimulants, depressants, hallucinogens including opioids, cocaine etc. 44 (9.6%) of the respondents from 458 HCV reactive respondents informed that they are currently using the illicit drugs. None of the respondent was found to be injecting the same. 149 (4.9%) of the HCV non-reactive respondents informed that they are currently using the illicit drugs and none of them is injecting the same (See Table 42 in Annex).

Figure 46: Number of Use of Illicit Drugs (HCV +ve) (%)



3.9.7. The Significance of Various Risk Factors in Acquiring HCV

Pearson's chi-square test was applied with 1 degree of freedom to statistically analysis the significance of various risks in reactive and non-reactive tests, including Use of injection, Hospitalization, Blood Transfusion, Dental Care and Treatment, Body Pricking, Tattooing and use of illicit drugs. The chi square values of Number of injection during last 1 year (0.000), hospitalization (0.000), Transfusion (0.000), tooth extraction last 1 year (0.039), Tooth filling during last 10 years (0.019), Professionals dealing with blood (0.006), religious rituals (0.039) body part pricking (0.000), skin tattooing (0.000), number of pregnancies (0.006), cut on barber shop (0.000 and current use of illicit drugs (0.000) are found to be equal to or less than 0.05. Thus the same routes of acquiring the HBV are significant. This shows that HBV transmission is more risky through all the routes by which blood is infected through infected person. Details can be seen in Table 42 Annex.

3.10. Health Condition and Associated Issues

Secondary health conditions which could have led to acquiring of HBV and/or HCV transmission or may affect the treatment were also studied and diagnosed.

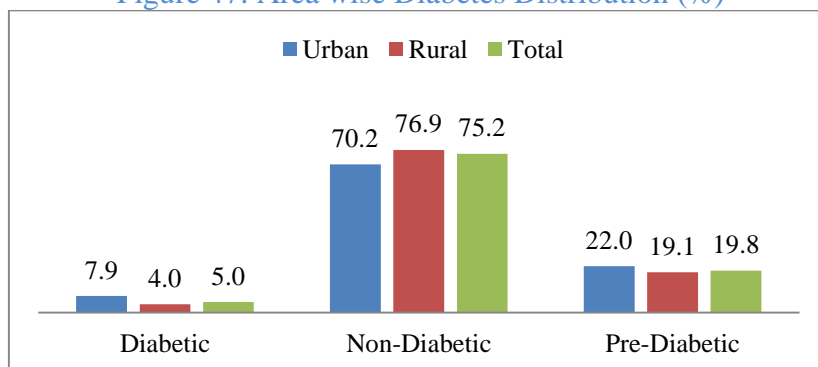
3.10.1. Prevalence of Diabetes Tested

14,249 blood samples were tested for HbA1C diabetes. 712 (5.0%) were found to be currently suffering from diabetes, 2,826 (19.8%) were found to be having pre-diabetic values and 10,711 (75.2%) were found to be non-diabetic. Following are the cut off values for each;

- Diabetic 6.5 thru highest;
- Non-diabetic 0 thru 5.6;
- Pre-diabetic 5.7 thru 6.4.

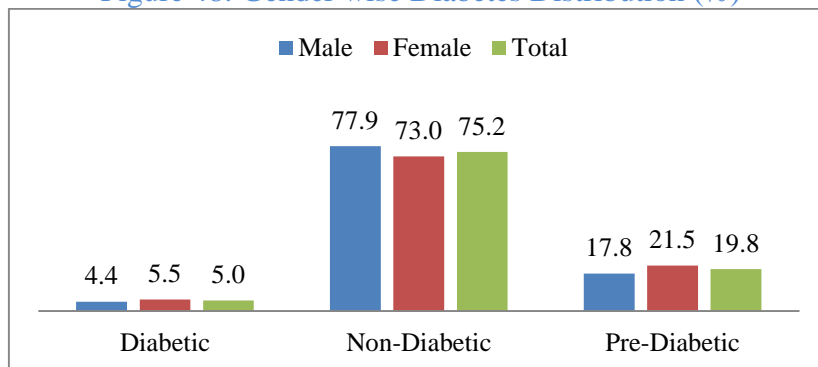
Prevalence in urban area of having diabetes was 291 (7.9%) while in rural population 420 (4%) was found to be currently suffering from Diabetes. However, prevalence of non-diabetic among rural was high comparatively urban while in case of pre-diabetic prevalence almost equal among rural and urban area.

Figure 47: Area wise Diabetes Distribution (%)



The females have slightly higher prevalence of currently suffering from HbA1C diabetes 440 (5.5%) comparatively to males 272 (4.4%). While in case of non-diabetic cases males prevalence was high 4,870 (77.9%) comparatively females. However, in case of pre-diabetic cases females prevalence was high 1,716 (21.5%) comparatively males 1,110 (17.8%).

Figure 48: Gender wise Diabetes Distribution (%)



The population living in the age group of 35 and above is found to be having higher prevalence of HbA1C being 15.6% and 50.3% & 34.1% respectively.

Table 19: Prevalence of Tested Diabetes n (%)

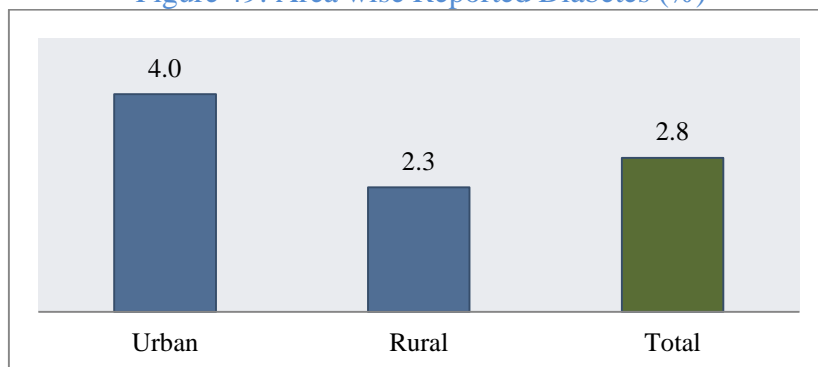
	Diabetic		Non-Diabetic		Pre-Diabetic		Total	
	N	%	N	%	N	%	%	N
13-19	5	0.3	1775	85.5	295	14.2	100.0	2075
20-25	8	0.6	1251	87.3	174	12.2	100.0	1433
26-35	76	3.5	1593	74.1	481	22.4	100.0	2150
More than 35	620	15.6	2000	50.3	1355	34.1	100.0	3975
Total	710	7.4	6619	68.7	2305	23.9	100.0	9634

Other details of prevalence based on the education level, employment, mother tongue and wealth quintile are annex in **Table 46**

3.10.2. Current Status of Self-Reported Diabetes

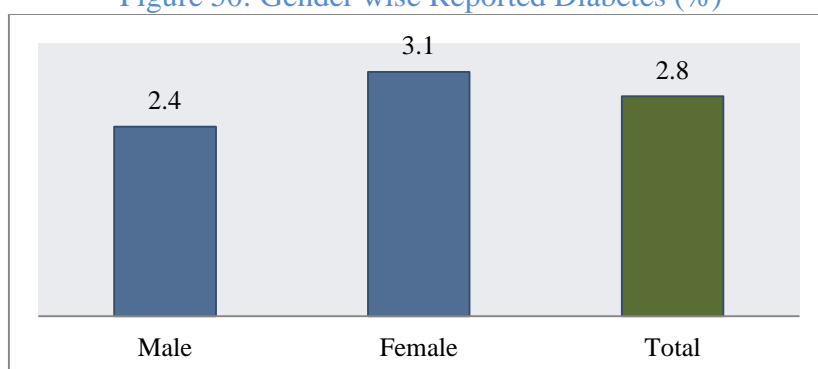
The respondents were asked about their current known status of having diabetes. 18,774 respondents answered to this question. 530 (2.8%) of the respondents said that they are presently having diabetes. 236 (4.0%) of the urban population and 293 (2.3%) of the rural population knew about their status of having diabetes.

Figure 49: Area wise Reported Diabetes (%)



Overall 328 (3.1%) of the females and 201 (2.4%) of the males knew their diabetes status.

Figure 50: Gender wise Reported Diabetes (%)



486 (10.3%) of the respondents above the age of 35 years and above were found with higher percentage knew that they have diabetes at the time of interview.

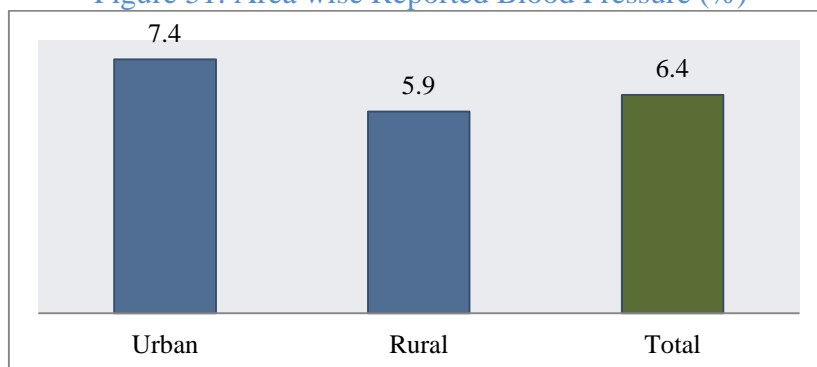
Other details of prevalence based on the education level, employment, mother tongue and wealth quintile are annex in [Table 45](#)

3.10.3. High Blood Pressure (hyper-tension)

Blood pressure being another very important factor affecting the magnitude of various diseases and their treatment was analyzed. Present known status of high blood pressure (hyper-tension) was asked from the 18,770 respondents. Overall 1,200 (6.4%) of the respondents said that they have high blood pressure problem.

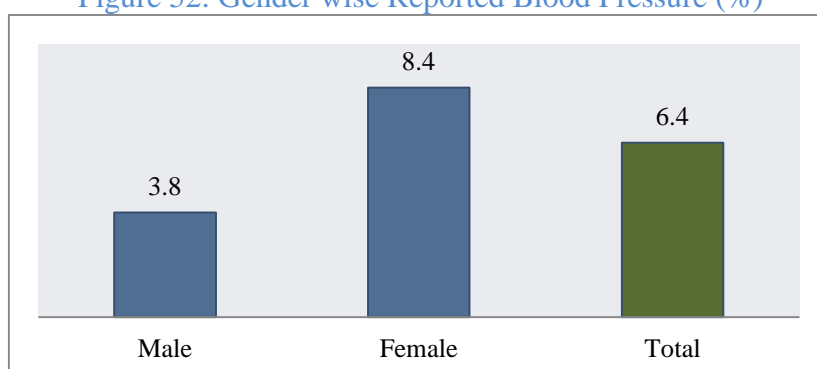
7.4% of the respondents living in urban areas and 5.9% of the respondents informed of having high blood pressure.

Figure 51: Area wise Reported Blood Pressure (%)



High blood pressure was reported to be more prevalent in the females with 8.4% complain of the same while lesser in the males with 3.8% complain to be suffering from the same.

Figure 52: Gender wise Reported Blood Pressure (%)



The blood pressure in the age groups of more than 35 years and above and 26-35 years is found to be higher with 19.2% and 7.7% were analyzed of the same respectively.

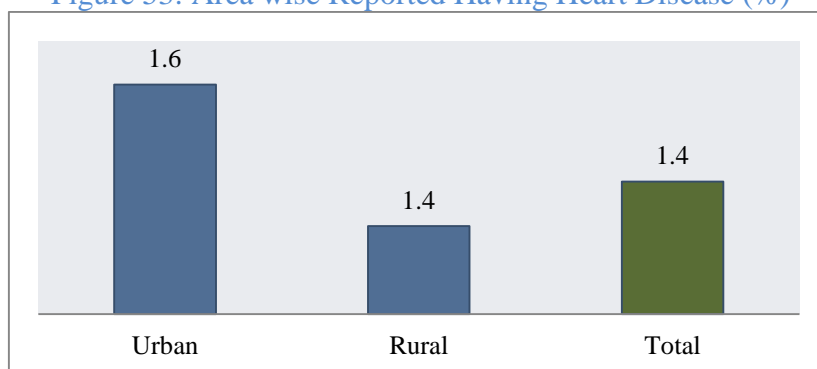
Other details of prevalence based on the education level, employment, mother tongue and wealth quintile are annex in [Table 47](#)

3.10.4. Current status of Heart Disease

The respondents 18,732 were asked about the current status about knowledge of suffering from any cardiac/ heart disease. Overall 270 (1.4%) knew about their current status of having some type of heart disease.

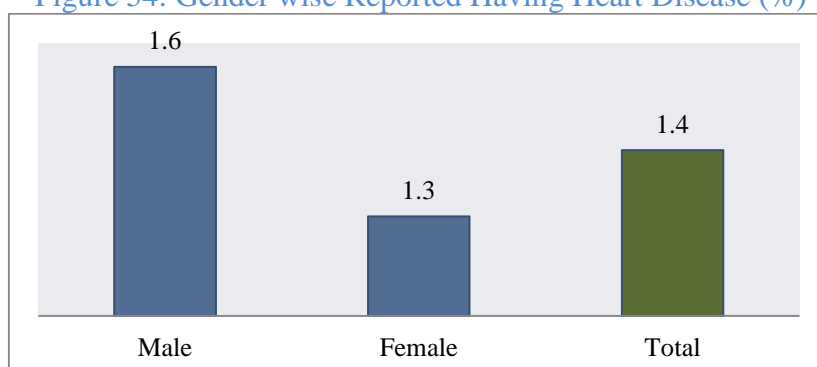
1.6% of the urban population and 1.4% of the rural population knew about their current status.

Figure 53: Area wise Reported Having Heart Disease (%)



1.6% of the males and 1.3% of the females knew about their status of heart disease. The respondents having higher heart disease in the age group of more than 35 years.

Figure 54: Gender wise Reported Having Heart Disease (%)



Other details of current knowledge about heart disease based on the education level, employment, mother tongue and wealth quintile are annex in [Table 48](#)

3.10.5. Renal Diseases

The respondents were asked about the present status of having any chronic renal disease which requires dialysis, current status of being on dialysis and knowledge of having any kidney stones. Section below gives details about the same.

Prevalence of Kidney Stones: 18,772 respondents were asked about current status of having any kidney stones. 270 (1.4%) of the respondents affirmed that they have kidney stones with 1.3% of the females and 1.6% of the males suffering from such disease. 3.3% of the respondents in the age group of more than 35 years have such disease.

Figure 55: Gender wise Reported Kidney Stones Patients (%)

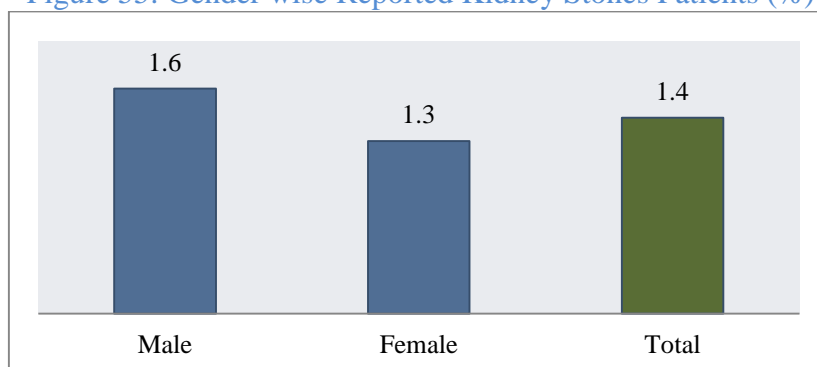
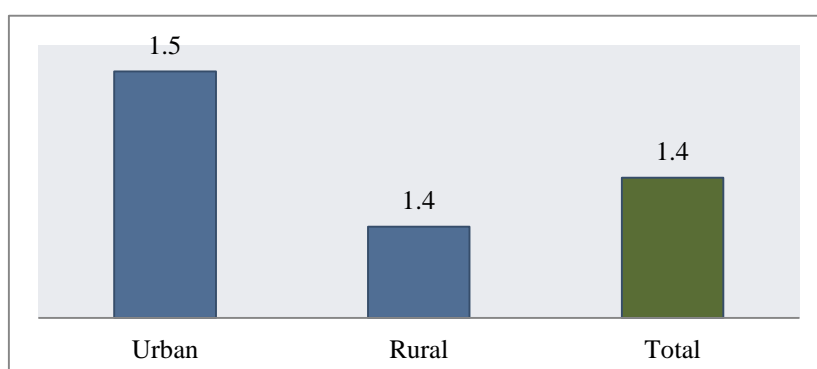


Figure 56: Area wise Reported Kidney Stones Patients (%)

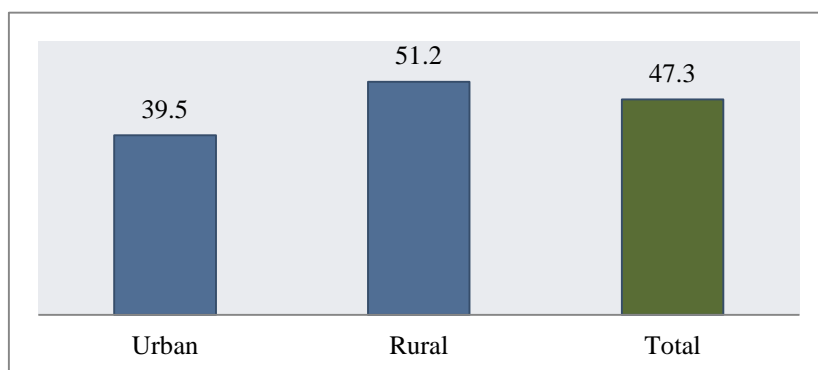


Other details of current status of kidney stones based on the education level, employment, mother tongue and wealth quintile are annex in [Table 49](#)

Patients having Chronic Renal Disease Requiring Dialysis: 262 respondents who were suffering with chronic renal disease were asked about current status of kidney disease requiring dialysis.

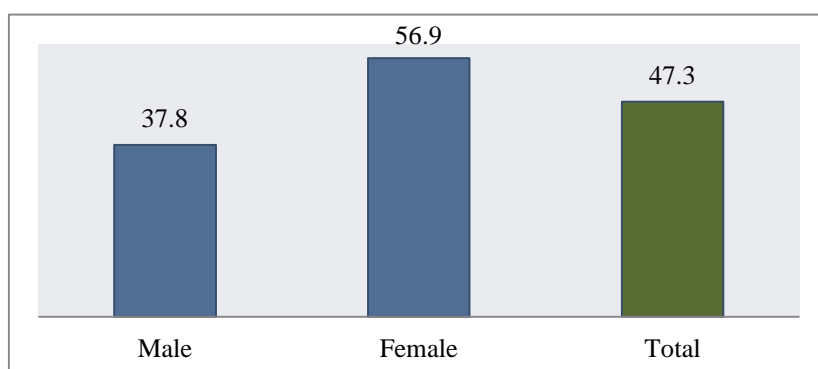
124 (47.3%) of the respondents affirmed that they have such chronic kidney disease with 39.5% in the urban areas and 51.2% in the rural areas.

Figure 57: Area wise Reported Renal Disease Requiring Dialysis (%)



37.8% of the males and 56.9% of the females informed that they need dialysis of current chronic kidney disease.

Figure 58: Gender wise Reported Renal Disease Requiring Dialysis (%)



54.0% of the respondents in the age group of more than 35 years, 38.7% of the respondents in the age group of 26-35 years, 37.2% of the respondents in the age group of 20-25 years and 41.5% of the respondents in the age group of 13-19 years have such chronic disease needing dialysis.

Other details of current status of chronic renal diseases needing dialysis based on the education level, employment, mother tongue and wealth quintile are annex in [Table 50](#)

Renal (Kidney) Disease Requires Dialysis: The respondents were asked about current status of having kidney disease. 121 respondents answered this question and 4 (3.1%) informed of requires dialysis. 5.5% of the urban population and 2.3% of the rural population. 5.8% of the males and 1.3% of the females were found to be suffering from kidney dialysis treatment. 3.6% of the respondents having age of more than 35 years and 9.7% of the respondents in the age group of 20-25 years were analyzed to be suffering higher from kidney dialysis.

Figure 59: Gender wise Reported Requires Dialysis (%)

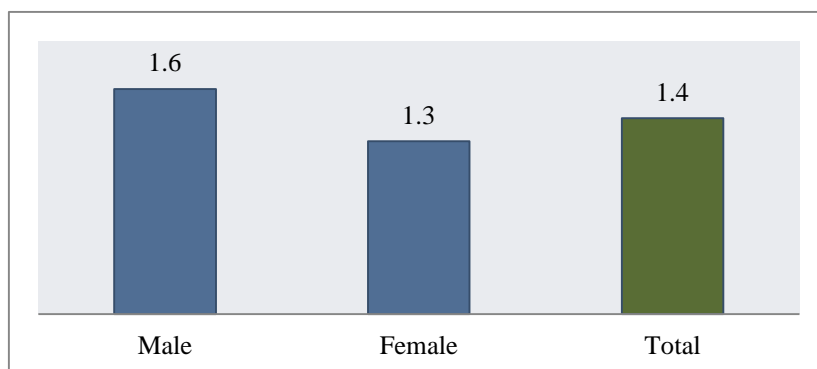
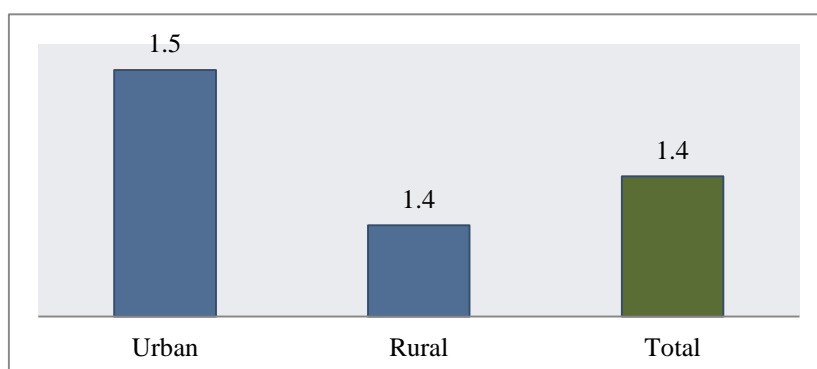


Figure 60: Area wise Reported Requires Dialysis (%)



Other details of current status of having kidney dialysis based on the education level, employment, and mother tongue and wealth quintile are annex in [Table 51](#)

3.10.6. History of Having Any Type of Cancer

The respondents were asked about having any type of cancer. 12 (0.1%) of the 18,811 respondents informed that have history and knowledge about having cancer. 0.2% of such respondents were in the age group of more than 35 years and 0.1% in the age group of 20-25 years.

Figure 61: Gender wise Reported Cancer (%)

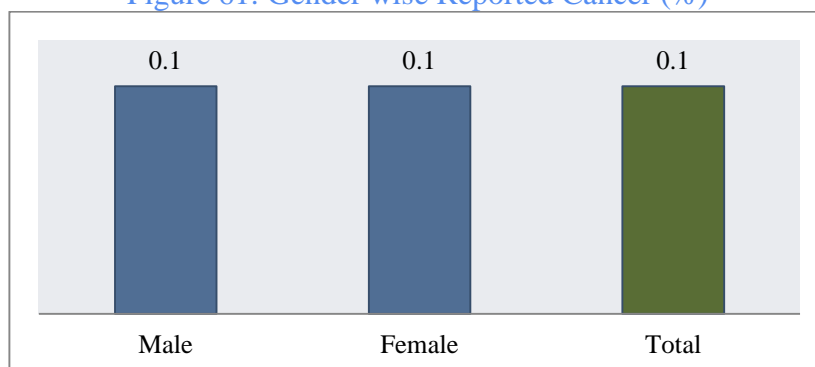
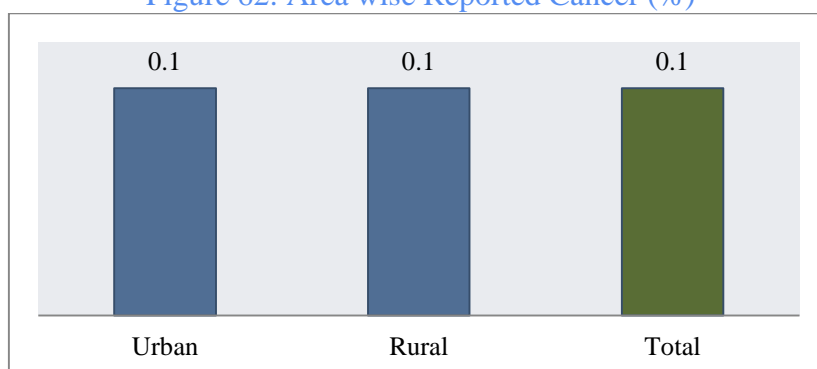


Figure 62: Area wise Reported Cancer (%)



Other details of current status of chronic renal diseases needing dialysis based on the education level, employment, mother tongue and wealth quintile are annex in [Table 52](#)

4. CONCLUSION

Hepatitis B

- The weighted prevalence of Hepatitis B virus (HBsAg positive) is 2.2%. Equal distribution was observed in rural and urban areas. Prevalence in males was greater when compared to females (2.9% vs 1.6%). HBV was found to be more prevalent in older age groups as compared to the younger populations.
- Of those with HBV, 82.1% of the males and 84.4% of the females had HBV viremia. The most viremic group is that of children, between the ages of 1-4.
- Prevalence of HBeAg in HBV positive population was found to be 13.6% with 17.5% of the rural population and 1.9% in the urban areas. Overall HBeAg is more prevalent in females with 17.1% of the HBV positive females and 11.2% in the HBV positive males.
- Testing for previous exposure to HBV (anti-HBs positive) showed that 18.1% had and exposure to HBV with 19.9% from the rural areas and 13.4% from the urban areas.
- 33.2% of the HBsAg negative, were found to be immune (anti-HBs positive) to HBV. More people were immune in urban areas when compared to the rural population 34.9% vs 32.5% respectively.
- Prevalence of Hepatitis Delta Virus (anti-HDV positive) in HBV positive cases is found to be 17.7% with 19.6% in the urban and 17% in the rural areas. Prevalence of anti-HDV is found more in males compared to females, 19.4% vs 15.1% respectively.
- 12.8% of the respondents have been vaccinated for Hepatitis B vaccination, with 65.6% of those that received vaccination completing all three doses.

Hepatitis C

- The weighted prevalence of HCV (anti-HCV positive) in Punjab is 8.9%. WHO 2017 report covers the estimates of 2007 showing an estimated prevalence of 7%. This represents an increase in the prevalence since 2007 (reported 6.7% by PMRC survey). The rural population infected with HCV is 9.3%, compared to 7.8% in urban Punjab.
- HCV is more prevalent in 40 years and above compared to the younger populations.
- Chronic Hepatitis C is found to be prevalent in 59.8% of the HCV positive cases. The same was found to be more prevalent in the urban areas with 63.8% males are more infected with Chronic Hepatitis as compared to the females 56.7%.
- 125 (47.7%) of the respondents, who took treatment, were still found to have chronic infection.
- 89.2% of the overall population had genotype 3 which confirms most of the reports that in Pakistan, Type 3 is the most prevalent genotype in HCV positive cases.

ANNEXES

Annex I:
Sample Size Allocation and Cluster Weight

Annex II:
Analysed Tables

Annex III:
Survey Team

Annex IV:
Questionnaire

Annex I: Sample Size Allocation And Cluster Weights

Table 20: Sample Size Allocation

Sr.no	District	Sample PSU			Sample HHs		
		Rural	Urban	Total	Rural	Urban	Total
1	Attock	3	1	4	60	20	80
2	Bahawalnagar	5	1	6	100	20	120
3	Bahawalpur	6	2	8	120	40	160
4	Bhakkar	3	1	4	60	20	80
5	Chakwal	3	1	4	60	20	80
6	Chiniot	2	1	3	40	20	60
7	Dera Ghazi Khan	5	1	6	100	20	120
8	Faisalabad	9	7	16	180	140	320
9	Gujranwala	4	5	9	80	100	180
10	Gujrat	5	2	7	100	40	140
11	Hafizabad	2	1	3	40	20	60
12	Jhang	5	1	6	100	20	120
13	Jhelum	3	1	4	60	20	80
14	Kasur	6	2	8	120	40	160
15	Khanewal	5	1	6	100	20	120
16	Khushab	3	1	4	60	20	80
17	Lahore	0	21	21	0	420	420
18	Layyah	3	1	4	60	20	80
19	Lodhran	3	1	4	60	20	80
20	Mandi Bahauddin	3	1	4	60	20	80
21	Mianwali	3	1	4	60	20	80
22	Multan	5	5	10	100	100	200
23	Muzaffargarh	7	2	9	140	40	180
24	Nankana Sahib	3	1	4	60	20	80
25	Narowal	4	1	5	80	20	100
26	Okara	5	2	7	100	40	140
27	Pakpattan	3	1	4	60	20	80
28	Rahim Yar Khan	8	2	10	160	40	200
29	Rajanpur	3	1	4	60	20	80
30	Rawalpindi	7	6	13	140	120	260
31	Sahiwal	4	1	5	80	20	100
32	Sargodha	6	2	8	120	40	160
33	Sheikhupura	5	2	7	100	40	140
34	Sialkot	6	2	8	120	40	160
35	Toba Tek Singh	4	1	5	80	20	100
36	Vehari	5	1	6	100	20	120
Total		156	84	240	3120	1680	4800

Table 21: Cluster Weights

Cluster #	Weights Applied	Cluster #	Weights Applied	Cluster #	Weights Applied	Cluster #	Weights Applied
1	1.23	61	1.5	121	0.69	181	0.62
2	1.07	62	0.8	122	0.74	182	0.53
3	2	63	0.52	123	1.4	183	1.19
4	0.92	64	0.73	124	0.93	184	0.69
5	0.85	65	0.53	125	0.26	185	0.9
6	1.21	66	0.52	126	0.69	186	0.31
7	1.06	67	1.05	127	1.2	187	0.31
8	0.93	68	0.87	128	3.9	188	0.94
9	0.96	69	1.79	129	0.33	189	1.16
10	0.91	70	0.99	130	0.4	190	1.87
11	1.41	71	0.92	131	1.04	191	1.35
12	0.84	72	1.83	132	1.22	192	0.63
13	0.83	73	0.96	133	1.14	193	0.8
14	0.8	74	0.85	134	0.91	194	1.09
15	0.7	75	1.43	135	1.27	195	0.84
16	0.3	76	0.96	136	1.2	196	0.84
17	0.85	77	0.39	137	0.99	197	0.39
18	0.3	78	0.76	138	0.77	198	1.23
19	0.67	79	0.28	139	0.76	199	0.91
20	0.47	80	0.72	140	0.99	200	0.87
21	2.19	81	1.12	141	0.37	201	0
22	0.85	82	1	142	1.41	202	1.58
23	0.96	83	0.6	143	2.03	203	1.12
24	2.07	84	1.05	144	1.09	204	0.78
25	0.8	85	1.17	145	1.08	205	2.62
26	0.86	86	1.52	146	0.55	206	0.69
27	1.74	87	1.21	147	0.22	207	0.97
28	0.74	88	0.78	148	1.09	208	0.84
29	0.91	89	0.86	149	0.39	209	3.55
30	1.39	90	0.79	150	0.8	210	1.22
31	0.72	91	0.5	151	0.57	211	1.3
32	0.79	92	0.91	152	0.97	212	0.7
33	0.52	93	0.95	153	2.32	213	0.59
34	0.59	94	0.97	154	0.73	214	1.3
35	1.02	95	1.59	155	0.8	215	2.93
36	1.86	96	0.79	156	0.38	216	1.1
37	1.08	97	0.57	157	1.07	217	0.43
38	2.06	98	0.7	158	1.08	218	1.62
39	0.94	99	1.46	159	0.27	219	0.75
40	0.66	100	0.7	160	0.66	220	2.93
41	1.01	101	7.03	161	0.52	221	1.21
42	1.03	102	0	162	0.61	222	2.02
43	0.81	103	0.94	163	0.26	223	0
44	0.6	104	1.16	164	0.28	224	1
45	0.94	105	1.21	165	2.13	225	1.35
46	0.5	106	0.25	166	0.55	226	1.54
47	0.89	107	0	167	1.04	227	1
48	0.68	108	4.38	168	0.64	228	0.8
49	1.14	109	1.64	169	0.83	229	0.77
50	0.65	110	1.03	170	1.02	230	1.19
51	1.67	111	1.56	171	0.52	231	0.77
52	2.29	112	1.87	172	0.51	232	0.6
53	0.92	113	2.01	173	0.37	233	0.7
54	0.47	114	1.35	174	0.55	234	0.87
55	1.5	115	1.18	175	1.34	235	0.72
56	1.52	116	1.9	176	0.46	236	0.67
57	0.6	117	1.96	177	0.95	237	1.15
58	0.59	118	1.61	178	1.08	238	0.79
59	0.84	119	1.96	179	0.98	239	1.08
60	0.84	120	1	180	0.44	240	2.25

Annex II: Analyzed Tables

Table 22: Response/refusal rate – Participation and samples provision n (%)

	%	Total N
Urban	84.4	1353
Rural	91.6	2772
Total	89.2	4125

Table 23: Completion rate for important variables: HH Level n (%)

	%	N
Urban	75.1	1520
Rural	82.6	3073
Total	80.1	4593

Table 24: Overall Response rate at Individual Level n (%)

	Urban	Rural	Overall	Total N
	%	%	%	
Total	79.54	80.03	79.89	23764
Gender				
Male	71.06	71.13	71.11	11839
Female	87.96	88.87	88.60	11925
Age (Years)				
Under 5	89.51	88.17	88.52	2832
5-17	88.82	88.55	88.62	7338
18 & above	73.28	73.42	73.38	13594

Table 25: Proportion of collected samples that are viable for testing

Test's	Expected Test	Viable Test	Non-Viable	Viable %	Reasons
HBsAg	14459	14435	24	99.8	Clotted sample not received, EDTA sample not received, Quantity not sufficient
Anti HBc (Every 10th -ve of HBsAg)	1413	1413	-	100	
Anti HBs (Every 10th -ve of HBsAg)	1413	1413	-	100	
HBeAg (Each +ve of HBsAg)	305	304	1	99.7	
ANTI HDV (Each +ve of HBsAg)	305	301	4	98.7	
HBV PCR (Each +ve of HBsAg)	305	301	4	98.7	
Anti HCV	14459	14435	24	99.8	
HCV BY PCR (Each +ve of anti HCV)	1234	1220	14	98.9	
HCV Genotyping (Every 3rd of HCV PCR +ve	233	230	3	98.7	
HbA1C	14459	14450	9	99.9	

Table 26: Distribution for Survey n (%)

	Rural		Urban		Total	
	N	%	N	%	%	N
Total	16778	100	6986	100	100	23764
Gender						
Male	8359	49.8	3480	49.8	49.8	11839
Female	8419	50.2	3506	50.2	50.2	11925
Age in years						
Under 5	2079	12.4	753	10.8	11.9	2832
5-17	5308	31.6	2030	29.1	30.9	7338
18 and Above	9391	56.0	4203	60.2	57.2	13594

Table 27: HH Characteristics n (%)

	Urban		Rural		Total	
	N	%	N	%	%	N
Material for Roof						
No Roof	0	0.0	1	0.0	0.0	1
Thatch/Palm leaf	0	0.0	14	0.5	0.3	14
Sod	8	0.5	71	2.3	1.7	79
Rustic mat	1	0.1	11	0.4	0.3	12
Palm/Bamboo	1	0.1	25	0.8	0.6	26
Wood planks	37	2.4	171	5.6	4.5	208
Metal/Tin/T-Iron/Girders	410	27.0	1702	55.4	46.0	2112
Wood/Wooden Beams	26	1.7	130	4.2	3.4	156
Calamine/Cement fiber	14	0.9	17	0.6	0.7	31
Ceramic tiles	7	0.5	6	0.2	0.3	13
Cement	646	42.5	451	14.7	23.9	1097
Other	4	0.3	5	0.2	0.2	9
No Response	0	0.0	1	0.0	0.0	1
Not Applicable (NA)	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593
Material for Wall						
No walls	2	0.1	106	3.4	2.4	108
Cane/Palm/Trunks	1	0.1	5	0.2	0.1	6
Dirt	2	0.1	216	7.0	4.7	218
Bamboo with mud	0	0.0	5	0.2	0.1	5
Stone with mud	1	0.1	32	1.0	0.7	33
Uncovered adobe	2	0.1	72	2.3	1.6	74
Plywood	1	0.1	0	0.0	0.0	1
Cardboard	0	0.0	0	0.0	0.0	0
Reused wood	4	0.3	5	0.2	0.2	9
Cement	850	55.9	1050	34.2	41.4	1900
Stone with lime/cement	15	1.0	28	0.9	0.9	43
Bricks	226	14.9	851	27.7	23.4	1077
Cement blocks	39	2.6	62	2.0	2.2	101
Covered adobe	11	0.7	168	5.5	3.9	179
Other	0	0.0	4	0.1	0.1	4
Not Applicable	366	24.1	469	15.3	18.2	835
Total	1520	100.0	3073	100.0	100.0	4593
Material for Floor						
Earth/Sand	35	2.3	724	23.6	16.5	759
Dung	18	1.2	335	10.9	7.7	353
Parquet or Polished Wood	0	0.0	8	0.3	0.2	8
Ceramic Tiles/Marble/Chips	329	21.6	187	6.1	11.2	516
Cement	601	39.5	1022	33.3	35.3	1623
Carpet	27	1.8	16	0.5	0.9	43
Bricks Floor	143	9.4	310	10.1	9.9	453
Other	1	0.1	2	0.1	0.1	3
No Response	0	0.0	1	0.0	0.0	1
Not Applicable	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593
Rooms for Sleeping						
One	385	33.4	1061	40.7	38.5	1446
Two	511	44.3	1041	40.0	41.3	1552
Three or more	258	22.4	503	19.3	20.2	761
Not Applicable	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593
Electricity						
Yes	1152	75.8	2489	81.0	79.3	3641
No	2	0.1	114	3.7	2.5	116
No Response	0	0.0	2	0.1	0.0	2
Not Applicable (NA)	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593
Fuel used for cooking						
Electric Stove	0	0.0	12	0.4	0.3	12
Solar cooker	0	0.0	2	0.1	0.0	2
Liquefied Petroleum Gas (LPG)/Cooking Gas Stove	66	4.3	240	7.8	6.7	306
Piped Natural Gas Stove	964	63.4	375	12.2	29.2	1339

Biogas Stove	12	0.8	33	1.1	1.0	45
Liquid Fuel Stove	0	0.0	18	0.6	0.4	18
Manufactured Solid Fuel Stove	6	0.4	285	9.3	6.3	291
Traditional Solid Fuel Stove	85	5.6	1437	46.8	33.1	1522
Three Stone Stove/Open Fire	15	1.0	190	6.2	4.5	205
No Food Cooked in HH	3	0.2	8	0.3	0.2	11
Other	3	0.2	3	0.1	0.1	6
No Response	0	0.0	2	0.1	0.0	2
Not Applicable	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593
Place for Cooking						
In the House, Separate Kitchen	792	52.1	964	31.4	38.2	1756
In the House, no Separate Kitchen	301	19.8	1146	37.3	31.5	1447
In a Separate Building	8	0.5	81	2.6	1.9	89
Outdoors	50	3.3	401	13.0	9.8	451
Other (specify)	3	0.2	8	0.3	0.2	11
No Response	0	0.0	5	0.2	0.1	5
Not Applicable (NA)	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593
Source of Water in HH						
Piped into Dwelling	98	6.4	207	6.7	6.6	305
Piped to Compound/Yard/Plot	45	3.0	73	2.4	2.6	118
Piped to Neighbor	7	0.5	31	1.0	0.8	38
Public Tap/Standpipe	139	9.1	125	4.1	5.7	264
Tube Well	26	1.7	47	1.5	1.6	73
Motorized Pump	415	27.3	1047	34.1	31.8	1462
Hand Pump	74	4.9	805	26.2	19.1	879
Protected Well	1	0.1	19	0.6	0.4	20
Unprotected Well	0	0.0	4	0.1	0.1	4
Protected Spring	0	0.0	5	0.2	0.1	5
Unprotected Spring	0	0.0	6	0.2	0.1	6
Rainwater	0	0.0	0	0.0	0.0	0
Tanker-Truck	6	0.4	2	0.1	0.2	8
Cart With Small Tank/Drum/Cane	298	19.6	165	5.4	10.1	463
Water Kiosk	22	1.4	16	0.5	0.8	38
Surface Water	6	0.4	32	1.0	0.8	38
Bottled Water	9	0.6	7	0.2	0.3	16
Other	8	0.5	12	0.4	0.4	20
No Response	0	0.0	2	0.1	0.0	2
Not Applicable	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593
Kind of Toilet						
Flush to Piped Sewer System	718	47.2	262	8.5	21.3	980
Flush to Septic Tank	358	23.6	1469	47.8	39.8	1827
Flush to Pit Latrine	17	1.1	308	10.0	7.1	325
Flush to Open Drain	32	2.1	111	3.6	3.1	143
Flush to DK Where	8	0.5	13	0.4	0.5	21
Ventilated Improved Pit Latrine	2	0.1	14	0.5	0.3	16
Pit Latrine With Slab	2	0.1	19	0.6	0.5	21
Pit Latrine Without Slab/Open Pit	0	0.0	13	0.4	0.3	13
Bucket	4	0.3	10	0.3	0.3	14
No Facility/Bush/Field	7	0.5	374	12.2	8.3	381
Other	4	0.3	7	0.2	0.2	11
No Response	2	0.1	5	0.2	0.2	7
Not Applicable	366	24.1	468	15.2	18.2	834
Total	1520	100.0	3073	100.0	100.0	4593

Table 28: Household possessions and assets

Categories	Urban %	Rural %	Overall %	Total N
Milk cows, buffaloes or bulls	3.6	38.3	26.8	1233
Other cattle	1.1	13.6	9.4	433
Horses, donkeys, camel or mules	0.6	6.7	4.7	215
Goats	3.2	25.3	18.0	825
Sheep	0.3	3.4	2.4	109
Chickens	3.1	16.5	12.0	553
Ducks/Turkeys	0.3	0.9	0.7	32
Number of cattle owned				
Median	8	8	8	
Mean	7.9	7.2	7.4	
Range	3	4	4	
Number of chickens/birds owned				
Median	4	4	4	
Mean	3.9	3.7	3.8	
Range	2	2	2	
Car	6.7	3.3	4.4	203
Motor Cycle	55.4	50.3	52.0	2387
Computer /laptop/ tablet	22.0	8.7	13.1	601
Bicycle	10.3	14.3	13.0	595
TV	64.3	48.0	53.4	2451
Fridge/ Refrigerator/D-Freezer	62.2	44.1	50.1	2299
TV cable	57.0	24.5	35.2	1618
Telephone	4.0	1.6	2.4	111
Mobile phone	74.0	79.5	77.7	3567
Tractor trolley	0.5	5.1	3.6	165
Rickshaw/Chingchi	2.7	2.2	2.4	109
Acre of rural land				
Median	2	2	2	
Mean	5.23	4.73	4.78	
Interquartile range	39	79	79	

Table 29: Socioeconomic status index using household utilities and assets n (%)

	Urban		Rural		Total
	N	%	N	%	N
Lowest	22	1.9	738	29.2	760
Second	60	5.3	634	25.1	694
Middle	124	10.9	623	24.7	747
Fourth	325	28.5	450	17.8	775
Highest	611	53.5	79	3.1	690
Total	1142	100.0	2524	100.0	3666

Table 30: Participants Profile n (%)

	Rural		Urban		Total	
	N	%	N	%	%	N
Total	16778	100.0	6986	100.0	100.0	23764
Gender						
Male	8359	49.8	3480	49.8	49.8	11839
Female	8419	50.2	3506	50.2	50.2	11925
Total	16778	100.0	6986	100.0	100.0	23764
Age in years						
Under 5	2079	12.4	753	10.8	11.9	2832
5-17	5308	31.6	2030	29.1	30.9	7338
18 and Above	9391	56.0	4203	60.2	57.2	13594
Total	16778	100.0	6986	100.0	100.0	23764
Marital Status						
Never married	5170	41.6	2293	42.7	41.9	7463
Married	6604	53.2	2777	51.7	52.7	9381
Separated	51	0.4	17	0.3	0.4	68
Divorced	78	0.6	26	0.5	0.6	104
Widowed/Widower	522	4.2	260	4.8	4.4	782
Total	12425	100.0	5373	100.0	100.0	17798
Education Level						
None	5530	35.4	1352	20.6	31.1	6882
Pre School/Kachi/ECE	995	6.4	424	6.5	6.4	1419
Primary	3973	25.5	1477	22.5	24.6	5450
Middle	1921	12.3	924	14.1	12.8	2845
Matric	1993	12.8	1208	18.4	14.4	3201
Above Matric	1193	7.6	1167	17.8	10.7	2360
Total	15605	100.0	6552	100.0	100.0	22157
Employment Level						
Not employed	7074	75.5	2951	72.8	74.7	10025
Govt/Semi Govt Employee	154	1.6	131	3.2	2.1	285
Private Employee	279	3.0	289	7.1	4.2	568
Self Employed	961	10.3	453	11.2	10.5	1414
Daily Wages	844	9.0	216	5.3	7.9	1060
Employer	38	0.4	13	0.3	0.4	51
Other	16	0.2	3	0.1	0.1	19
Total	9366	100.0	4056	100.0	100.0	13422
Mother Tongue						
Urdu	146	1.1	593	10.7	3.9	739
Punjabi/Potohari	8814	65.6	3971	71.4	67.3	12785
Saraiki	3685	27.4	842	15.1	23.8	4527
Pashto	320	2.4	122	2.2	2.3	442
Other	475	3.5	33	0.6	2.7	508
Total	13440	100.0	5561	100.0	100.0	19001
Wealth Quintile						
Lowest	4122	30.9	123	2.2	22.5	4245
Second	3507	26.3	344	6.2	20.4	3851
Middle	2974	22.3	585	10.5	18.8	3559
Fourth	2310	17.3	1616	29.1	20.8	3926
Highest	411	3.1	2891	52.0	17.5	3302
Total	13324	100.0	5559	100.0	100.0	18883

Table 31: Prevalence of Hepatitis B surface antigen n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Area Type						
Rural	231	2.2	10300	97.8	10531	100
Urban	78	2.1	3625	97.9	3703	100
Total	309	2.2	13925	97.8	14234	100
Gender						
Male	184	2.9	6058	97.1	6242	100
Female	125	1.6	7867	98.4	7993	100
Total	309	2.2	13925	97.8	14234	100
Age in Years						
Under 1 year	0	0.0	131	100.0	131	100
1 - 4	3	0.3	1270	99.7	1274	100
5 - 9	13	0.7	2008	99.3	2022	100
10 - 14	13	0.7	1771	99.3	1784	100
15 - 19	24	1.6	1449	98.4	1473	100
20 - 29	69	3.1	2122	96.9	2191	100
30 - 39	66	3.4	1879	96.6	1945	100
40 - 49	52	3.8	1308	96.2	1360	100
50 - 59	30	3.0	977	97.0	1007	100
60 - 69	20	3.3	594	96.7	614	100
70 and above	20	4.6	414	95.4	434	100
Total	309	2.2	13925	97.8	14234	100
Marital Status						
Never married	131	2.3	5605	97.7	5736	100
Married	126	3.1	3961	96.9	4086	100
Separated	1	2.2	30	97.8	31	100
Divorced	4	8.4	43	91.6	47	100
Widowed/Widower	10	3.4	297	96.6	308	100
Total	272	2.7	9936	97.3	10208	100
Education Level						
None	146	3.3	4246	96.7	4392	100
Pre School	7	0.9	797	99.1	804	100
Primary	37	1.2	3169	98.8	3207	100
Middle	29	1.8	1550	98.2	1579	100
Matric	48	3.0	1537	97.0	1585	100
Above Matric	19	1.6	1154	98.4	1172	100
Total	286	2.2	12454	97.8	12739	100
Employment Level						
Govt/Semi Employee	8	3.9	201	96.1	210	100
Private Employee	16	3.9	385	96.1	400	100
Self Employed	32	3.1	985	96.9	1017	100
Daily Wages	47	5.6	788	94.4	834	100
Employer	2	4.8	38	95.2	40	100
Other	2	3.0	69	97.0	71	100
Total	106	4.1	2465	95.9	2571	100
Mother Tongue						
Urdu	2	0.4	494	99.6	496	100
Punjabi/Potohari	156	1.8	8405	98.2	8560	100
Saraiki	97	3.0	3134	97.0	3231	100
Pashto	5	1.7	270	98.3	274	100
Other	11	2.9	370	97.1	381	100
Total	271	2.1	12672	97.9	12943	100
Wealth Quintile						
Lowest	81	2.6	3081	97.4	3162	100
Second	71	2.4	2881	97.6	2952	100
Middle	42	1.8	2356	98.2	2398	100
Fourth	47	1.9	2379	98.1	2426	100
Highest	29	1.5	1974	98.5	2004	100
Total	271	2.1	12672	97.9	12943	100

Table 32: Prevalence of HBeAg among HBsAg positive patients n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Area Type						
Rural	40	17.5	189	82.5	229	100
Urban	2	1.9	76	98.1	78	100
Total	42	13.6	266	86.4	307	100
Gender						
Male	21	11.2	163	88.8	184	100
Female	21	17.1	102	82.9	123	100
Total	42	13.6	266	86.4	307	100
Age in Years						
Under 1 year	0	0.0	0	0.0	0	0
1 -4	3	84.3	1	15.7	3	100
5 -9	9	68.1	4	31.9	13	100
10 - 14	4	30.3	9	69.7	13	100
15 - 19	9	39.4	15	60.6	24	100
20 - 29	8	11.3	61	88.7	69	100
30 - 39	5	8.1	61	91.9	66	100
40- 49	1	1.1	51	98.9	52	100
50 - 59	1	3.2	27	96.8	28	100
60 - 69	1	4.7	19	95.3	20	100
70 and above	1	5.1	19	94.9	20	100
Total	42	13.6	266	86.4	307	100
Marital Status						
Never married	20	15.0	111	85.0	131	100
Married	7	5.5	117	94.5	124	100
Separated	0	0.0	1	100.0	1	100
Divorced	0	0.0	4	100.0	4	100
Widowed/Widower	1	9.7	9	90.3	10	100
Total	27	10.2	242	89.8	270	100
Education Level						
None	16	10.7	129	89.3	144	100
Pre School	5	73.4	2	26.6	7	100
Primary	9	23.1	29	76.9	37	100
Middle	1	4.0	28	96.0	29	100
Matric	4	8.7	43	91.3	48	100
Above Matric	4	20.3	15	79.7	19	100
Total	38	13.5	245	86.5	284	100
Employment Level						
Govt/Semi Employee	0	0.0	8	100	8	100
Private Employee	0	0.0	16	100.0	16	100
Self Employed	2	5.2	30	94.8	32	100
Daily Wages	3	7.3	43	92.7	47	100
Employer	0	0.0	2	100.0	2	100
Other	0	0.0	2	100.0	2	100
Total	5	4.8	101	95.2	106	100
Mother Tongue						
Urdu	0	0.0	2	100	2	100
Punjabi/Potohari	12	8.1	141	91.9	154	100
Saraiki	21	22.0	76	78.0	97	100
Pashto	1	20.8	4	79.2	5	100
Other	2	14.9	9	85.1	11	100
Total	36	13.6	232	86.4	269	100
Wealth Quintile						
Lowest	13	15.6	68	84.4	81	100
Second	14	20.1	57	79.9	71	100
Middle	3	6.5	38	93.5	40	100
Fourth	5	11.6	42	88.4	47	100
Highest	2	5.1	28	94.9	29	100
Total	36	13.6	232	86.4	269	100

Table 33: Prevalence of Hepatitis Delta antibody in Hepatitis B patient's n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Area Type						
Rural	38	17.0	188	83.0	226	100
Urban	15	19.6	63	80.4	78	100
Total	54	17.7	250	82.3	304	100
Gender						
Male	35	19.4	146	80.6	181	100
Female	19	15.1	104	84.9	123	100
Total	54	17.7	250	82.3	304	100
Age in Years						
Under 1 year	0	0.0	0	0.0	0	0
1 -4	0	0.0	2	100.0	2	100
5 -9	0	0.0	13	100.0	13	100
10 - 14	0	3.6	12	96.4	13	100
15 - 19	3	13.9	21	86.1	24	100
20 - 29	10	15.1	57	84.9	67	100
30 - 39	11	16.0	55	84.0	66	100
40- 49	11	21.2	41	78.8	52	100
50 - 59	3	12.2	24	87.8	28	100
60 - 69	6	31.7	14	68.3	20	100
70 and above	8	42.5	11	57.5	20	100
Total	54	17.7	250	82.3	304	100
Marital Status						
Never married	19	14.7	112	85.3	131	100
Married	26	21.1	98	78.9	124	100
Separated	0	0.0	1	100.0	1	100
Divorced	0	0.0	4	100.0	4	100
Widowed/Widower	4	34.3	7	65.7	10	100
Total	49	18.2	221	81.8	270	100
Education Level						
None	28	19.7	115	80.3	143	100
Pre School	1	12.1	6	87.9	7	100
Primary	8	21.0	29	79.0	37	100
Middle	5	18.1	23	81.9	29	100
Matric	5	9.6	43	90.4	48	100
Above Matric	2	13.2	16	86.8	19	100
Total	49	17.4	233	82.6	282	100
Employment Level						
Govt/Semi Employee	2	23.4	6	76.6	8	100
Private Employee	0	0.0	16	100.0	16	100
Self Employed	10	32.8	21	67.2	32	100
Daily Wages	9	19.8	37	80.2	47	100
Employer	1	74.0	0	26.0	2	100
Other	0	18.7	2	81.3	2	100
Total	23	22.0	83	78.0	106	100
Mother Tongue						
Urdu	0	0.0	2	100.0	2	100
Punjabi/Potohari	22	14.4	132	85.6	154	100
Saraiki	22	22.8	74	77.2	96	100
Pashto	0	0.0	5	100.0	5	100
Other	4	37.4	7	62.6	11	100
Total	48	18.0	219	82.0	267	100
Wealth Quintile						
Lowest	20	25.4	60	74.6	81	100
Second	12	16.7	58	83.3	69	100
Middle	7	16.7	33	83.3	40	100
Fourth	7	15.1	40	84.9	47	100
Highest	2	7.2	27	92.8	29	100
Total	48	18.0	219	82.0	267	100

Table 34: Presence of HBV viremia in paints with hepatitis B infection n (%)

	Viral Loaded Detected		Not-Detected		Total	
	N	%	N	%	N	%
Area Type						
Rural	188	83.2	38	16.8	226	100
Urban	64	82.4	14	17.6	78	100
Total	253	83.0	52	17.0	304	100
Gender						
Male	149	82.1	33	17.9	182	100
Female	103	84.4	19	15.6	122	100
Total	253	83.0	52	17.0	304	100
Age in Years						
Under 1 year	0	0.0	0	0.0	0	0
1 -4	3	100.0	0	0.0	3	100
5 -9	12	85.6	2	14.4	13	100
10 - 14	11	83.7	2	16.3	13	100
15 - 19	20	85.1	3	14.9	23	100
20 - 29	49	71.8	19	28.2	68	100
30 - 39	59	89.4	7	10.6	66	100
40- 49	46	89.7	5	10.3	52	100
50 - 59	23	86.5	4	13.5	26	100
60 - 69	18	91.7	2	8.3	20	100
70 and above	12	61.7	8	38.3	20	100
Total	253	83.0	52	17.0	304	100
Marital Status						
Never married	105	80.4	26	19.6	131	100
Married	101	83.4	20	16.6	121	100
Separated	0	0.0	1	100.0	1	100
Divorced	4	100.0	0	0.0	4	100
Widowed/Widower	9	84.4	2	15.6	10	100
Total	219	82.0	48	18.0	268	100
Education Level						
None	122	85.2	21	14.8	143	100
Pre School	7	100.0	0	0.0	7	100
Primary	35	94.3	2	5.7	37	100
Middle	18	63.8	10	36.2	29	100
Matric	33	70.9	13	29.1	46	100
Above Matric	17	90.0	2	10.0	19	100
Total	232	82.5	49	17.5	281	100
Employment Level						
Govt/Semi Employee	8	100.0	0	0.0	8	100
Private Employee	11	72.7	4	27.3	16	100
Self Employed	25	78.8	7	21.2	32	100
Daily Wages	42	91.3	4	8.7	47	100
Employer	0	26.0	1	74.0	2	100
Other	2	100.0	0	0.0	2	100
Total	90	84.5	16	15.5	106	100
Mother Tongue						
Urdu	2	100.0	0	0.0	2	100
Punjabi/Potohari	124	81.6	28	18.4	152	100
Saraiki	83	85.3	14	14.7	97	100
Pashto	4	100.0	0	0.0	4	100
Other	11	100.0	0	0.0	11	100
Total	224	84.1	42	15.9	266	100
Wealth Quintile						
Lowest	70	87.3	10	12.7	80	100
Second	58	81.8	13	18.2	71	100
Middle	33	85.7	6	14.3	39	100
Fourth	40	83.9	8	16.1	47	100
Highest	23	78.9	6	21.1	29	100
Total	224	84.1	42	15.9	266	100

Table 35: Quantification of HBV viremia among hepatitis B patients n (%)

	Undetected		<2000 viral load		2000-20,000		>20,000 viral Loaded		Total	
	N	%	N	%	N	%	N	%	N	%
Area Type										
Rural	14	17.6	55	70.3	5	6.5	4	5.6	78	100
Urban	38	16.8	120	52.9	26	11.6	42	18.7	226	100
Total	52	17.0	175	57.4	31	10.3	47	15.4	304	100
Gender										
Male	33	17.9	109	59.7	19	10.3	22	12.1	182	100
Female	19	15.6	66	53.9	13	10.3	25	20.2	122	100
Total	52	17.0	175	57.4	31	10.3	47	15.4	304	100
Age in Years										
Under 1 year	0	0.0	0	0.0	0	0.0	0	0.0	0	0
1 -4	0	0.0	1	15.7	0	0.0	3	84.3	3	100
5 -9	2	14.4	2	12.4	1	5.1	9	68.1	13	100
10 - 14	2	16.3	6	47.6	1	5.8	4	30.3	13	100
15 - 19	3	14.9	11	45.1	1	2.3	9	37.7	23	100
20 - 29	19	28.2	30	44.7	9	13.4	9	13.8	68	100
30 - 39	7	10.6	45	67.9	8	11.6	7	10.0	66	100
40- 49	5	10.3	38	72.5	7	13.7	2	3.4	52	100
50 - 59	4	13.5	17	63.9	2	9.0	4	13.7	26	100
60 - 69	2	8.3	16	81.0	1	6.0	1	4.7	20	100
70 and above	8	38.3	10	51.5	2	10.2	0	0.0	20	100
Total	52	17.0	175	57.4	31	10.3	47	15.4	304	100
Marital Status										
Never married	26	19.6	70	53.7	12	9.2	23	17.5	131	100
Married	20	16.6	79	65.3	13	11.0	9	7.1	121	100
Separated	1	100.0	0	0.0	0	0.0	0	0.0	1	100
Divorced	0	0.0	2	58.1	0	0.0	2	41.9	4	100
Widowed/Widower	2	15.6	9	84.4	0	0.0	0	0.0	10	100
Total	48	18.0	161	60.1	25	9.5	33	12.4	268	100
Education Level										
None	21	14.8	90	62.5	12	8.5	21	14.3	143	100
Pre School	0	0.0	2	26.6	0	0.0	5	73.4	7	100
Primary	2	5.7	21	57.7	5	13.1	9	23.6	37	100
Middle	10	36.2	11	38.2	5	17.8	2	7.8	29	100
Matric	13	29.1	25	54.9	3	6.7	4	9.2	46	100
Above Matric	2	10.0	13	68.4	1	4.5	3	17.0	19	100
Total	49	17.5	162	57.6	26	9.3	44	15.7	281	100
Employment Level										
Govt/Semi Employee	0	0.0	7	89.7	1	10.3	0	0.0	8	100
Private Employee	4	27.3	10	64.9	1	7.8	0	0.0	16	100
Self Employed	7	21.2	21	65.8	2	6.5	2	6.5	32	100
Daily Wages	4	8.7	31	65.8	6	11.9	6	13.5	47	100
Employer	1	74.0	0	26.0	0	0.0	0	0.0	2	100
Other	0	0.0	1	66.4	1	33.6	0	0.0	2	100
Total	16	15.5	71	66.8	10	9.8	8	7.9	106	100
Mother Tongue										
Urdu	0	0.0	2	100.0	0	0.0	0	0.0	2	100
Punjabi/Potohari	28	18.4	96	62.9	11	7.3	17	11.4	152	100
Saraiki	14	14.7	49	50.5	10	10.5	24	24.3	97	100
Pashto	0	0.0	3	73.7	0	0.0	1	26.3	4	100
Other	0	0.0	6	57.4	2	22.4	2	20.2	11	100
Total	42	15.9	156	58.6	24	8.9	44	16.6	266	100
Wealth Quintile										
Lowest	10	12.7	43	53.4	13	15.8	14	18.1	80	100
Second	13	18.2	36	50.0	6	8.3	17	23.5	71	100
Middle	6	14.3	27	69.6	1	2.6	5	13.6	39	100
Fourth	8	16.1	31	66.4	3	6.7	5	10.8	47	100
Highest	6	21.1	19	66.1	1	3.9	3	8.9	29	100
Total	42	15.9	156	58.6	24	8.9	44	16.6	266	100

Table 36: Patients with Immunity to hepatitis B n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Area Type						
Rural	325	32.5	674	67.5	1000	100
Urban	129	34.9	241	65.1	370	100
Total	455	33.2	915	66.8	1370	100
Gender						
Male	219	37.3	368	62.7	586	100
Female	236	30.1	548	69.9	783	100
Total	455	33.2	915	66.8	1370	100
Age in Years						
Under 1 year	5	59.6	4	40.4	9	100
1 -4	83	58.7	58	41.3	141	100
5 -9	67	36.9	114	63.1	180	100
10 - 14	66	39.2	103	60.8	170	100
15 - 19	26	20.0	104	80.0	130	100
20 - 29	37	16.5	187	83.5	224	100
30 - 39	40	23.4	130	76.6	170	100
40- 49	55	37.2	92	62.8	147	100
50 - 59	33	35.0	62	65.0	95	100
60 - 69	21	36.6	35	63.4	56	100
70 and above	22	46.6	26	53.4	48	100
Total	455	33.2	915	66.8	1370	100
Marital Status						
Never married	140	26.0	398	74.0	538	100
Married	140	34.0	272	66.0	412	100
Separated	0	0.0	2	100.0	2	100
Divorced	1	24.3	4	75.7	5	100
Widowed/Widower	11	37.6	18	62.4	29	100
Total	292	29.6	693	70.4	985	100
Education Level						
None	147	33.3	294	66.7	440	100
Pre School	22	31.5	47	68.5	69	100
Primary	103	33.7	203	66.3	306	100
Middle	50	37.3	85	62.7	135	100
Matric	38	23.5	122	76.5	160	100
Above Matric	28	25.9	80	74.1	108	100
Total	387	31.8	831	68.2	1218	100
Employment Level						
Govt/Semi Employee	6	30.1	15	69.9	21	100
Private Employee	8	19.6	32	80.4	40	100
Self Employed	29	34.0	57	66.0	86	100
Daily Wages	20	22.8	67	77.2	87	100
Employer	1	22.1	3	77.9	4	100
Other	7	60.7	4	39.3	11	100
Total	71	28.4	179	71.6	249	100
Mother Tongue						
Urdu	14	28.6	36	71.4	50	100
Punjabi/Potohari	262	31.2	577	68.8	839	100
Saraiki	122	40.5	179	59.5	300	100
Pashto	3	15.8	17	84.2	21	100
Other	15	39.7	24	60.3	39	100
Total	416	33.3	833	66.7	1249	100
Wealth Quintile						
Lowest	99	34.2	191	65.8	290	100
Second	88	32.0	186	68.0	274	100
Middle	83	35.4	152	64.6	236	100
Fourth	73	29.8	172	70.2	245	100
Highest	73	35.8	132	64.2	205	100
Total	416	33.3	833	66.7	1249	100

Table 37: Previous Exposure to hepatitis B n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Area Type						
Rural	199	19.9	801	80.1	1000	100
Urban	49	13.4	321	86.6	370	100
Total	249	18.1	1121	81.9	1370	100
Gender						
Male	105	17.9	482	82.1	586	100
Female	144	18.3	640	81.7	783	100
Total	249	18.1	1121	81.9	1370	100
Age in Years						
Under 1 year	2	26.6	6	73.4	9	100
1 -4	1	0.9	139	99.1	141	100
5 -9	1	0.4	180	99.6	180	100
10 - 14	2	0.9	168	99.1	170	100
15 - 19	19	14.7	111	85.3	130	100
20 - 29	29	12.9	195	87.1	224	100
30 - 39	37	22.0	133	78.0	170	100
40- 49	56	38.3	91	61.7	147	100
50 - 59	45	47.7	50	52.3	95	100
60 - 69	25	43.9	31	56.1	56	100
70 and above	31	63.9	17	36.1	48	100
Total	249	18.1	1121	81.9	1370	100
Marital Status						
Never married	63	11.6	475	88.4	538	100
Married	155	37.7	256	62.3	412	100
Separated	0	0.0	2	100.0	2	100
Divorced	1	24.3	4	75.7	5	100
Widowed/Widower	17	60.5	11	39.5	29	100
Total	236	24.0	749	76.0	985	100
Education Level						
None	139	31.6	301	68.4	440	100
Pre School	3	5.0	65	95.0	69	100
Primary	28	9.0	278	91.0	306	100
Middle	22	16.3	113	83.7	135	100
Matric	27	17.0	133	83.0	160	100
Above Matric	19	17.2	90	82.8	108	100
Total	238	19.5	980	80.5	1218	100
Employment Level						
Govt/Semi Employee	3	14.5	18	85.5	21	100
Private Employee	7	17.6	33	82.4	40	100
Self Employed	30	34.9	56	65.1	86	100
Daily Wages	21	24.2	66	75.8	87	100
Employer	2	47.6	2	52.4	4	100
Other	6	58.4	5	41.6	11	100
Total	70	27.9	180	72.1	249	100
Mother Tongue						
Urdu	7	14.7	43	85.3	50	100
Punjabi/Potohari	142	16.9	697	83.1	839	100
Saraiki	71	23.5	230	76.5	300	100
Pashto	3	14.9	18	85.1	21	100
Other	7	17.7	32	82.3	39	100
Total	230	18.4	1019	81.6	1249	100
Wealth Quintile						
Lowest	58	20.2	231	79.8	290	100
Second	57	21.0	216	79.0	274	100
Middle	51	21.5	185	78.5	236	100
Fourth	37	15.3	207	84.7	245	100
Highest	26	12.5	179	87.5	205	100
Total	230	18.4	1019	81.6	1249	100

Table 38: Distribution of Risk Factors for HBV Patients n (%)

		Reactive		Non-Reactive		Total		Chi Square P-values
		N	%	N	%	N	%	
Number of Injection Last 1 Year	None	60	22.3	3439	27.1	3499	27.0	0.045
	≤5	95	35.0	4324	34.1	4419	34.1	
	>5 but ≤10	17	6.3	1238	9.8	1255	9.7	
	>10 but ≤15	4	1.6	346	2.7	351	2.7	
	15 and Above	11	4.1	327	2.6	338	2.6	
	No Response	13	4.9	669	5.3	683	5.3	
	Do not Know	70	25.9	2328	18.4	2398	18.5	
Total		271	100	12672	100	12943	100	
Surgical Treatment	Once	19	100.0	920	97.0	938	97.0	0.721
	2-3	0	0.0	26	2.7	26	2.6	
	4-6	0	0.0	3	0.3	3	0.3	
	More than 6	0	0.0	0	0.0	0	0.0	
	No Response	0	0.0	0	0.0	0	0.0	
	Do not Know	0	0.0	0	0.0	0	0.0	
	Total	19	100	948	100	967	100	
Hospitalization	Once	15	53.2	1021	71.2	1036	70.8	0.700
	2-3	12	43.4	341	23.8	354	24.2	
	4-6	1	3.4	72	5.0	73	5.0	
	More than 6	0	0.0	0	0.0	0	0.0	
	No Response	0	0.0	0	0.0	0	0.0	
	Do not Know	0	0.0	0	0.0	0	0.0	
	Total	28	100	1434	100	1463	100	
Transfusion	Once	15	66.6	486	65.0	502	65.0	0.494
	2-3	8	33.4	188	25.2	196	25.4	
	4-6	0	0.0	53	7.1	53	6.9	
	More than 6	0	0.0	20	2.7	20	2.6	
	Total	23	100	749	100	771	100	
Dental Treatment Last 1 Year	Did not Get Dental Treatment in Past 1 Years	16	37.8	426	40.3	441	40.2	0.942
	Once	11	25.3	311	29.4	322	29.3	
	2-3	9	21.1	194	18.3	203	18.4	
	4-6	5	12.3	55	5.2	60	5.5	
	More Than 6	0	0.0	12	1.2	12	1.1	
	No Response	2	3.6	59	5.6	61	5.5	
	Do not Know	0	0.0	0	0.0	0	0.0	
Total		42	100	1057	100	1099	100	
Tooth Extraction last 1 Year	Didn't Tooth Extracted in Past One Year	27	63.9	641	60.6	668	60.7	0.601
	Once	4	10.3	186	17.6	190	17.3	
	2-3	8	19.2	89	8.5	97	8.9	
	4-6	0	1.0	25	2.4	25	2.3	
	More Than 6	0	0.0	4	0.4	4	0.3	
	No Response	2	5.6	112	10.6	114	10.4	
	Do not Know	0	0.0	0	0.0	0	0.0	
Total		42	100	1057	100	1099	100	
Tooth Filling last 10 Year	Did not Tooth Filling in Past 10 Year	32	76.4	728	68.9	760	69.2	0.48
	Once	4	8.9	139	13.1	143	13.0	
	2-3	1	3.2	48	4.6	49	4.5	
	4-6	1	2.3	4	0.4	5	0.5	
	More Than 6	0	0.0	2	0.1	2	0.1	
	No Response	4	9.3	136	12.9	140	12.8	
	Do Not Know	0	0.0	0	0.0	0	0.0	
Total		42	100	1057	100	1099	100	
Profession deal with human blood	No	253	93.4	9454	74.6	9707	75.0	0.339
	Yes	1	0.4	48	0.4	49	0.4	
	No Response	0	0.0	12	0.1	12	0.1	
	Do not Know	1	0.4	17	0.1	18	0.1	
	Not Applicable	16	5.8	3141	24.8	3157	24.4	
Total		271	100	12672	100	12943	100	
Religious Ritual	No	263	97.2	12313	97.2	12576	97.2	0.405
	Yes	1	0.4	47	0.4	48	0.4	
	No Response	4	1.6	29	0.2	33	0.3	
	Do not Know	0	0.0	20	0.2	20	0.2	
	Not Applicable	2	0.7	263	2.1	265	2.1	
Total		271	100	12672	100	12943	100	
Body Part	No	183	67.8	7500	59.2	7683	59.4	0.013

Pricked	Yes	85	31.4	5129	40.5	5214	40.3	
	No Response	2	0.9	10	0.1	12	0.1	
	Do not Know	0	0.0	34	0.3	34	0.3	
	Total	271	100	12672	100	12943	100	
Skin Tattooing	No	270	99.9	12582	99.3	12852	99.3	0.874
	Yes	0	0.1	35	0.3	35	0.3	
	No Response	0	0.0	14	0.1	14	0.1	
	Do not Know	0	0.0	41	0.3	41	0.3	
	Total	271	100	12672	100	12943	100	
Number of Pregnancies	Never Get Pregnant	15	17.2	415	11.0	430	11.2	0.02
	Once	3	3.4	337	9.0	340	8.8	
	2-3	28	32.2	950	25.3	978	25.4	
	4-6	18	20.1	1439	38.3	1456	37.8	
	More Than 6	24	27.1	619	16.5	643	16.7	
	Total	88	100	3761	100	3848	100	
Use of New Blades	No	10	3.7	155	1.2	165	1.3	0.123
	Yes	127	46.8	4292	33.9	4419	34.1	
	Other	1	0.4	49	0.4	50	0.4	
	No Response	1	0.4	24	0.2	25	0.2	
	Do not Know	10	3.7	580	4.6	590	4.6	
	Not Applicable	122	44.9	7572	59.8	7694	59.4	
	Total	271	100	12672	100	12943	100	
Cut at Barber Shop	No	112	41.4	4007	31.6	4119	31.8	0.55
	Yes	33	12.3	924	7.3	957	7.4	
	No Response	0	0.0	3	0.0	3	0.0	
	Do not Know	4	1.4	165	1.3	169	1.3	
	Not Applicable	122	44.9	7572	59.8	7694	59.4	
	Total	271	100	12672	100	12943	100	
Currently use illicit drugs	No	133	49.3	3196	25.2	3329	25.7	0.064
	Yes	12	4.3	170	1.3	182	1.4	
	Using before	0	0.0	11	0.1	11	0.1	
	No Response	0	0.0	3	0.0	3	0.0	
	Do not Know	0	0.0	1	0.0	1	0.0	
	Not Applicable	126	46.4	9291	73.3	9416	72.8	
	Total	271	100	12672	100	12943	100	

Table 39: Prevalence of HCV Antibody n (%)

	Reactive		Non-Reactive		Total	
	N	%	N	%	N	%
Area Type						
Rural	981	9.3	9550	90.7	10531	100
Urban	291	7.8	3412	92.2	3703	100
Total	1272	8.9	12962	91.1	14234	100
Gender						
Male	548	8.8	5694	91.2	6242	100
Female	724	9.1	7269	90.9	7993	100
Total	1272	8.9	12962	91.1	14234	100
Age in Years						
Under 1 year	4	2.8	128	97.2	131	100
1 -4	11	0.9	1262	99.1	1274	100
5 -9	13	0.6	2009	99.4	2022	100
10 - 14	36	2.0	1747	98.0	1784	100
15 - 19	45	3.0	1428	97.0	1473	100
20 - 29	162	7.4	2028	92.6	2191	100
30 - 39	291	15.0	1654	85.0	1945	100
40- 49	273	20.1	1087	79.9	1360	100
50 - 59	207	20.6	800	79.4	1007	100
60 - 69	124	20.2	490	79.8	614	100
70 and above	105	24.3	329	75.7	434	100
Total	1272	8.9	12962	91.1	14234	100
Marital Status						
Never married	363	6.3	5373	93.7	5736	100
Married	759	18.6	3328	81.4	4086	100
Separated	5	14.8	26	85.2	31	100
Divorced	7	15.1	40	84.9	47	100
Widowed/Widower	67	21.8	241	78.2	308	100
Total	1201	11.8	9008	88.2	10208	100
Education Level						
None	643	14.6	3749	85.4	4392	100
Pre School	22	2.7	782	97.3	804	100
Primary	207	6.5	2999	93.5	3207	100
Middle	128	8.1	1451	91.9	1579	100
Matric	145	9.1	1441	90.9	1585	100
Above Matric	77	6.6	1095	93.4	1172	100
Total	1222	9.6	11517	90.4	12739	100
Employment Level						
Govt/Semi Employee	25	12.1	184	87.9	210	100
Private Employee	42	10.6	358	89.4	400	100
Self Employed	168	16.5	849	83.5	1017	100
Daily Wages	128	15.4	706	84.6	834	100
Employer	7	18.3	32	81.7	40	100
Other	9	12.9	62	87.1	71	100
Total	381	14.8	2191	85.2	2571	100
Mother Tongue						
Urdu	39	7.9	456	92.1	496	100
Punjabi/Potohari	847	9.9	7713	90.1	8560	100
Saraiki	265	8.2	2966	91.8	3231	100
Pashto	21	7.8	253	92.2	274	100
Other	14	3.6	367	96.4	381	100
Total	1187	9.2	11756	90.8	12943	100
Wealth Quintile						
Lowest	305	9.7	2857	90.3	3162	100
Second	268	9.1	2685	90.9	2952	100
Middle	233	9.7	2165	90.3	2398	100
Fourth	224	9.2	2203	90.8	2426	100
Highest	157	7.8	1847	92.2	2004	100
Total	1187	9.2	11756	90.8	12943	100

Table 40: Prevalence of Chronic Hepatitis C confirmed through RNA testing n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Rural	607	62.3	367	37.7	974	100
Urban	147	51.2	140	48.8	287	100
Total	753	59.8	507	40.2	1261	100
Gender						
Male	346	63.8	197	36.2	543	100
Female	407	56.7	311	43.3	718	100
Total	753	59.8	507	40.2	1261	100
Age in Years						
Under 1 year	0	0.0	3	100.0	3	100
1 -4	4	41.0	6	59.0	10	100
5 -9	5	38.9	7	61.1	12	100
10 - 14	10	29.5	24	70.5	35	100
15 - 19	16	35.8	29	64.2	45	100
20 - 29	92	56.8	70	43.2	161	100
30 - 39	168	57.6	124	42.4	291	100
40- 49	159	58.5	113	41.5	272	100
50 - 59	132	64.4	73	35.6	204	100
60 - 69	89	72.6	34	27.4	123	100
70 and above	79	75.6	25	24.4	104	100
Total	753	59.8	507	40.2	1261	100
Marital Status						
Never married	195	53.8	167	46.2	362	100
Married	472	62.6	282	37.4	754	100
Separated	2	38.8	3	61.2	5	100
Divorced	6	87.1	1	12.9	7	100
Widowed/Widower	48	73.0	18	27.0	66	100
Total	723	60.6	471	39.4	1193	100
Education Level						
None	400	62.7	238	37.3	637	100
Pre School	17	80.3	4	19.7	21	100
Primary	124	60.3	82	39.7	206	100
Middle	70	55.0	58	45.0	128	100
Matric	84	59.1	58	40.9	143	100
Above Matric	33	43.2	44	56.8	77	100
Total	729	60.1	484	39.9	1213	100
Employment Level						
Govt/Semi Employee	12	48.8	13	51.2	25	100
Private Employee	30	70.1	13	29.9	42	100
Self Employed	114	67.8	54	32.2	168	100
Daily Wages	86	66.7	43	33.3	128	100
Employer	1	13.5	6	86.5	7	100
Other	3	31.9	6	68.1	9	100
Total	246	64.5	135	35.5	381	100
Mother Tongue						
Urdu	19	49.2	20	50.8	39	100
Punjabi/Potohari	517	61.6	323	38.4	840	100
Saraiki	163	61.9	100	38.1	263	100
Pashto	12	55.0	9	45.0	21	100
Other	4	32.3	9	67.7	14	100
Total	715	60.8	462	39.2	1176	100
Wealth Quintile						
Lowest	199	66.0	102	34.0	301	100
Second	167	62.6	99	37.4	266	100
Middle	144	62.2	88	37.8	232	100
Fourth	133	59.5	91	40.5	224	100
Highest	72	46.8	82	53.2	154	100
Total	715	60.8	462	39.2	1176	100

Table 41: Distribution of Genotypes across Punjab n (%)

	Genotype 1a	Genotype 1b	Genotype 3	Genotype 4	Mixed Genotype	Total (N)
Total	2(1)*	4(1.6)	209(89.2)	1(0.3)	18(7.8)	234
Male	2(1.4)	0	105(92.8)	1(0.7)	6(5)	114
Female	1(0.7)	4(3.2)	104(85.8)	0	13(10.4)	121

* Due to decimal weights applied values are rounded off

Table 42: Distribution of Ever taken treatment Hepatitis C n (%)

		Reactive	Non-Reactive	Total
Ever taken treatment for Hepatitis C	Total	125 (100)	117 (100)	242
	Yes	60 (47.7)	94 (80.2)	153
	No	65 (52.3)	23 (19.8)	88

Table 43: Distribution of Risk Factors for HCV Patients n (%)

		Reactive		Non-Reactive		Total		Chi Square P-Values
		N	%	N	%	N	%	
Number of Injection Last 1 Year	None	237	20.0	3262	27.7	3499	27.0	0.000
	≤5	362	30.5	4057	34.5	4419	34.1	
	>5 but ≤10	146	12.3	1109	9.4	1255	9.7	
	>10 but ≤15	38	3.2	313	2.7	351	2.7	
	15 and Above	56	4.7	282	2.4	338	2.6	
	No Response	49	4.1	634	5.4	683	5.3	
	Do not Know	300	25.3	2099	17.9	2398	18.5	
Total		1187	100	11756	100	12943	100	
Surgical Treatment	Once	111	97.4	827	97.0	938	97	0.869
	2-3	3	2.6	23	2.7	26	2.6	
	4-6	0	0.0	3	0.4	3	0.3	
	More than 6	0	0.0	0	0.0	0	0.0	
	No Response	0	0.0	0	0.0	0	0.0	
	Do not Know	0	0.0	0	0.0	0	0.0	
	Total	114	100	853	100	967	100	
Hospitalization	Once	149	68.9	887	71.2	1036	70.8	0.000
	2-3	59	27.3	295	23.6	354	24.2	
	4-6	8	3.8	65	5.2	73	5.0	
	More than 6	0	0.0	0	0.0	0	0.0	
	No Response	0	0.0	0	0.0	0	0.0	
	Do not Know	0	0.0	0	0.0	0	0.0	
	Total	216	100	1246	100	1463	100	
Transfusion	Once	99	74.6	403	63.1	502	65.0	0.000
	2-3	28	21.4	168	26.2	196	25.4	
	4-6	4	3.1	49	7.7	53	6.9	
	More than 6	1	1.0	19	3.0	20	2.6	
	Total	133	100	638	100	771	100	
Dental Treatment Last 1 Year	Didn't Get Dental Treatment in Past 1 Years	90	48.9	351	38.4	441	40.2	0.057
	Once	39	21.1	283	30.9	322	29.3	
	2-3	33	17.8	170	18.6	203	18.4	
	4-6	9	4.7	51	5.6	60	5.5	
	More Than 6	2	1.1	10	1.1	12	1.1	
	No Response	12	6.4	49	5.4	61	5.5	
	Do not Know	0	0.0	0	0.0	0	0.0	
Total		185	100	914	100	1099	100	
Tooth Extraction last 1 Year	Didn't Tooth Extracted in Past One Year	111	60.3	556	60.8	668	60.7	0.039
	Once	30	16.2	161	17.6	190	17.3	
	2-3	18	9.7	80	8.7	97	8.9	
	4-6	10	5.2	16	1.7	25	2.3	
	More Than 6	0	0.0	4	0.4	4	0.3	
	No Response	16	8.6	98	10.8	114	10.4	
	Do not Know	0	0.0	0	0.0	0	0.0	
	Total	185	100	914	100	1099	100	
Tooth Filling last 10 Year	Did not Tooth Filling in Past One Year	136	73.7	624	68.3	760	69.2	0.019
	Once	9	4.6	134	14.7	143	13.0	
	2-3	8	4.4	41	4.5	49	4.5	
	4-6	1	0.4	4	0.5	5	0.5	
	More Than 6	1	0.6	0	0.1	2	0.1	
	No Response	30	16.3	110	12.0	140	12.8	
	Do Not Know	0	0.0	0	0.0	0	0.0	
	Total	185	100	914	100	1099	100	
Profession deal with human blood	No	1129	95.1	8578	73.0	9707	75.0	0.006
	Yes	9	0.7	40	0.3	49	0.4	
	No Response	0	0.0	12	0.1	12	0.1	
	Do not Know	3	0.3	15	0.1	18	0.1	
	Not Applicable	45	3.8	3111	26.5	3157	24.4	
	Total	1187	100	11756	100	12943	100	
Religious Ritual	No	1157	97.5	11419	97.1	12576	97.2	0.039
	Yes	5	0.4	42	0.4	48	0.4	
	No Response	0	0.0	33	0.3	33	0.3	
	Do not Know	0	0.0	20	0.2	20	0.2	
	Not Applicable	23	2.0	242	2.1	265	2.1	
	Total	1187	100	11756	100	12943	100	
Body Part Pricked	No	588	49.6	7095	60.4	7683	59.4	0.000
	Yes	598	50.4	4616	39.3	5214	40.3	

	No Response	0	0.0	12	0.1	12	0.1	
	Do not Know	0	0.0	34	0.3	34	0.3	
	Total	1187	100	11756	100	12943	100	
Skin Tattooing	No	1165	98.2	11687	99.4	12852	99.3	0.000
	Yes	11	1.0	24	0.2	35	0.3	
	No Response	0	0.0	14	0.1	14	0.1	
	Do not Know	9	0.8	32	0.3	41	0.3	
	Total	1187	100	11756	100	12943	100	
Number of Pregnancies	Never Get Pregnant	68	10.7	362	11.3	430	11.2	0.006
	Once	45	7.0	295	9.2	340	8.8	
	2-3	136	21.2	843	26.3	978	25.4	
	4-6	269	42.0	1187	37.0	1456	37.8	
	More Than 6	123	19.2	520	16.2	643	16.7	
	Total	640	100	3208	100	3848	100	
Use of New Blades	No	21	1.8	144	1.2	165	1.3	0.394
	Yes	412	34.7	4007	34.1	4419	34.1	
	Other	2	0.1	48	0.4	50	0.4	
	No Response	0	0.0	25	0.2	25	0.2	
	Do not Know	35	2.9	555	4.7	590	4.6	
	Not Applicable	717	60.4	6977	59.3	7694	59.4	
	Total	1187	100	11756	100	12943	100	
Cut at Barber Shop	No	328	27.7	3791	32.2	4119	31.8	0.000
	Yes	129	10.8	829	7.0	957	7.4	
	No Response	0	0.0	3	0.0	3	0.0	
	Do not Know	13	1.1	156	1.3	169	1.3	
	Not Applicable	717	60.4	6977	59.3	7694	59.4	
	Total	1187	100	11756	100	12943	100	
Currently use illicit drugs	No	414	34.9	2916	24.8	3329	25.7	0.000
	Yes	40	3.3	142	1.2	182	1.4	
	Using before	4	0.4	7	0.1	11	0.1	
	No Response	0	0.0	3	0.0	3	0.0	
	Do not Know	0	0.0	1	0.0	1	0.0	
	Not Applicable	729	61.4	8687	73.9	9416	72.8	
	Total	1187	100	11756	100	12943	100	

Table 44: Source of HBV vaccination n (%)

	Have you been vaccinated against Hepatitis B?				Please specify how many doses of Hepatitis B vaccine have you received?							
	Yes		No		1st Dose only		1st and Second Dose		1st, 2nd and 3rd dose		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Area Type												
Urban	131	15.4	724	84.6	22	18.1	20	16.6	80	65.4	122	100
Rural	143	11.1	1148	88.9	16	12.4	28	21.7	84	65.8	127	100
Total	274	12.8	1871	87.2	38	15.2	48	19.2	163	65.6	249*	100
Gender												
Male	125	12.4	882	87.6	20	18.7	19	17.5	70	63.7	109	100
Female	150	13.1	990	86.9	17	12.4	29	20.5	93	67.1	139	100
Total	274	12.8	1871	87.2	38	15.2	48	19.2	163	65.6	249*	100
Age in Years												
18 - 22	32	8.8	328	91.2	2	7.3	5	19.7	20	73.0	27	100
23 - 27	27	9.0	274	91.0	2	6.6	4	15.4	20	78.0	25	100
28 - 33	62	15.0	348	85.0	8	15.5	15	28.5	30	56.0	54	100
34 - 38	41	14.3	243	85.7	11	27.1	6	14.5	23	58.4	39	100
39 - 43	33	16.7	167	83.3	5	15.7	3	9.3	24	75.0	32	100
44 - 48	21	15.4	113	84.6	2	8.9	2	9.8	14	81.2	18	100
49 - 53	25	17.3	117	82.7	0	0.9	8	32.9	16	66.2	24	100
54 - 58	11	9.9	103	90.1	3	31.2	2	16.4	5	52.4	10	100
59 and Above	24	11.8	178	88.2	5	26.4	3	16.8	11	56.8	20	100
Total	274	12.8	1871	87.2	38	15.2	48	19.2	163	65.6	249*	100
*In Total "Do not know" values are not included												

Table 45: Diabetes (Reported) n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Urban	236	4.0	5692	96.0	5929	100
Rural	293	2.3	12552	97.7	12845	100
Total	530	2.8	18244	97.2	18774	100
Gender						
Male	201	2.4	8094	97.6	8296	100
Female	328	3.1	10150	96.9	10478	100
Total	530	2.8	18244	97.2	18774	100
Age in Years						
13-19	3	0.1	2763	99.9	2766	100
20-25	5	0.3	1792	99.7	1797	100
26-35	34	1.3	2509	98.7	2543	100
More than 35	486	10.3	4239	89.7	4725	100
Total	528	4.5	11303	95.5	11830	100
Education Level						
None	257	4.7	5219	95.3	5476	100
Pre School	3	0.3	1269	99.7	1273	100
Primary	81	1.8	4406	98.2	4487	100
Middle	61	2.8	2113	97.2	2174	100
Matric	76	3.3	2204	96.7	2280	100
Above Matric	50	2.9	1655	97.1	1705	100
Total	528	3.0	16867	97.0	17395	100
Employment Level						
Govt/Semi Employee	14	4.5	302	95.5	316	100
Private Employee	12	2.0	582	98.0	593	100
Self Employed	76	5.9	1211	94.1	1287	100
Daily Wages	28	2.7	978	97.3	1005	100
Employer	6	11.0	49	89.0	55	100
Other	3	3.0	83	97.0	86	100
Total	138	4.1	3204	95.9	3342	100
Mother Tongue						
Urdu	25	3.2	772	96.8	797	100
Punjabi/Potohari	408	3.1	12566	96.9	12974	100
Saraiki	78	2.0	3897	98.0	3975	100
Pashto	12	2.2	503	97.8	515	100
Other	6	1.2	506	98.8	513	100
Total	530	2.8	18244	97.2	18774	100
Wealth Quintile						
Lowest	44	1.1	3839	98.9	3883	100
Second	67	1.8	3736	98.2	3803	100
Middle	88	2.5	3407	97.5	3495	100
Fourth	134	3.6	3638	96.4	3772	100
Highest	197	5.2	3623	94.8	3819	100
Total	530	2.8	18244	97.2	18774	100

Table 46: Prevalence of Diabetes Test n (%)

	Diabetic		Non-Diabetic		Pre-Diabetic		Total	
	N	%	N	%	N	%	%	N
Area Type								
Urban	291	7.9	2599	70.2	814	22.0	100.0	3705
Rural	420	4.0	8112	76.9	2012	19.1	100.0	10545
Total	712	5.0	10711	75.2	2826	19.8	100.0	14249
Gender								
Male	272	4.4	4870	77.9	1110	17.8	100.0	6253
Female	440	5.5	5841	73.0	1716	21.5	100.0	7997
Total	712	5.0	10711	75.2	2826	19.8	100.0	14249
Age in Years								
13-19	5	0.3	1775	85.5	295	14.2	100.0	2075
20-25	8	0.6	1251	87.3	174	12.2	100.0	1433
26-35	76	3.5	1593	74.1	481	22.4	100.0	2150
More than 35	620	15.6	2000	50.3	1355	34.1	100.0	3975
Total	710	7.4	6619	68.7	2305	23.9	100.0	9634
Education Level								
Pre School/Kachi/ECE	7	0.8	702	86.9	99	12.3	100.0	808
Primary	104	3.3	2550	79.5	552	17.2	100.0	3207
Middle	74	4.7	1184	74.9	322	20.4	100.0	1581
Matric	102	6.4	1159	73.1	325	20.5	100.0	1586
Above Matric	65	5.6	857	73.0	251	21.4	100.0	1174
None	338	7.7	3010	68.5	1048	23.8	100.0	4396
Total	691	5.4	9463	74.2	2598	20.4	100.0	12752
Employment Level								
Govt/Semi Govt Employee	25	11.7	118	56.2	67	32.0	100.0	210
Private Employee	23	5.7	292	73.0	85	21.3	100.0	400
Self Employed	118	11.5	682	66.8	221	21.6	100.0	1021
Daily Wages	30	3.6	633	75.8	172	20.6	100.0	835
Employer	2	4.7	31	77.9	7	17.4	100.0	40
Other	3	4.6	44	64.5	21	30.9	100.0	68
Total	200	7.8	1801	70.0	574	22.3	100.0	2575
Mother Tongue								
Urdu	35	7.2	342	69.4	116	23.5	100.0	493
Punjabi/Potohari	536	6.3	6243	72.8	1792	20.9	100.0	8572
Saraiki	90	2.8	2551	79.0	589	18.2	100.0	3231
Pashto	11	4.1	215	77.3	52	18.6	100.0	278
Other	6	1.6	330	86.4	46	12.0	100.0	382
Total	679	5.2	9682	74.7	2595	20.0	100.0	12956
Wealth Quintile								
Lowest	57	1.8	2599	82.1	511	16.1	100.0	3167
Second	110	3.7	2259	76.4	586	19.8	100.0	2955
Middle	135	5.6	1784	74.3	480	20.0	100.0	2399
Fourth	181	7.5	1688	69.5	561	23.1	100.0	2431
Highest	195	9.7	1353	67.5	456	22.8	100.0	2004
Total	679	5.2	9682	74.7	2595	20.0	100.0	12956

Table 47: Prevalence of High Blood Pressure (Reported) n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Urban	440	7.4	5479	92.6	5919	100
Rural	760	5.9	12091	94.1	12851	100
Total	1200	6.4	17570	93.6	18770	100
Gender						
Male	319	3.8	7978	96.2	8297	100
Female	881	8.4	9591	91.6	10473	100
Total	1200	6.4	17570	93.6	18770	100
Age in Years						
13-19	16	0.6	2746	99.4	2761	100
20-25	80	4.5	1716	95.5	1797	100
26-35	195	7.7	2349	92.3	2544	100
More than 35	908	19.2	3826	80.8	4734	100
Total	1199	10.1	10637	89.9	11836	100
Education Level						
None	625	11.4	4869	88.6	5494	100
Pre School	8	0.6	1261	99.4	1269	100
Primary	185	4.1	4287	95.9	4473	100
Middle	107	4.9	2071	95.1	2178	100
Matric	153	6.7	2125	93.3	2277	100
Above Matric	122	7.2	1579	92.8	1701	100
Total	1200	6.9	16192	93.1	17392	100
Employment Level						
Govt/Semi Employee	35	11.0	280	89.0	315	100
Private Employee	40	6.8	554	93.2	595	100
Self Employed	121	9.4	1163	90.6	1284	100
Daily Wages	67	6.6	942	93.4	1009	100
Employer	9	16.6	48	83.4	57	100
Other	10	11.8	78	88.2	89	100
Total	283	8.4	3066	91.6	3349	100
Mother Tongue						
Urdu	50	6.3	748	93.7	798	100
Punjabi/Potohari	917	7.1	12077	92.9	12994	100
Saraiki	194	4.9	3760	95.1	3954	100
Pashto	23	4.5	491	95.5	514	100
Other	16	3.2	494	96.8	511	100
Total	1200	6.4	17570	93.6	18770	100
Wealth Quintile						
Lowest	165	4.2	3738	95.8	3903	100
Second	223	5.9	3575	94.1	3798	100
Middle	202	5.8	3287	94.2	3490	100
Fourth	274	7.3	3492	92.7	3766	100
Highest	335	8.8	3477	91.2	3812	100
Total	1200	6.4	17570	93.6	18770	100

Table 48: Prevalence of Heart Disease (Reported) n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Urban	96	1.6	5817	98.4	5912	100
Rural	174	1.4	12645	98.6	12819	100
Total	270	1.4	18462	98.6	18732	100
Gender						
Male	130	1.6	8159	98.4	8289	100
Female	141	1.3	10302	98.7	10443	100
Total	270	1.4	18462	98.6	18732	100
Age in Years						
13-19	9	0.3	2734	99.7	2742	100
20-25	16	0.9	1778	99.1	1794	100
26-35	27	1.1	2515	98.9	2543	100
More than 35	211	4.4	4522	95.6	4732	100
Total	262	2.2	11549	97.8	11811	100
Education Level						
None	128	2.3	5341	97.7	5469	100
Pre School	2	0.1	1266	99.9	1268	100
Primary	37	0.8	4434	99.2	4471	100
Middle	32	1.5	2148	98.5	2180	100
Matric	41	1.8	2234	98.2	2275	100
Above Matric	26	1.5	1673	98.5	1698	100
Total	265	1.5	17096	98.5	17361	100
Employment Level						
Govt/Semi Employee	11	3.3	306	96.7	317	100
Private Employee	10	1.7	584	98.3	593	100
Self Employed	38	2.9	1246	97.1	1284	100
Daily Wages	11	1.1	998	98.9	1009	100
Employer	2	4.1	55	95.9	57	100
Other	5	6.0	83	94.0	88	100
Total	77	2.3	3271	97.7	3349	100
Mother Tongue						
Urdu	12	1.5	787	98.5	799	100
Punjabi/Potohari	197	1.5	12791	98.5	12988	100
Saraiki	51	1.3	3872	98.7	3924	100
Pashto	8	1.5	504	98.5	511	100
Other	2	0.4	508	99.6	510	100
Total	270	1.4	18462	98.6	18732	100
Wealth Quintile						
Lowest	39	1.0	3829	99.0	3868	100
Second	42	1.1	3759	98.9	3801	100
Middle	54	1.6	3431	98.4	3486	100
Fourth	59	1.6	3705	98.4	3764	100
Highest	75	2.0	3737	98.0	3813	100
Total	270	1.4	18462	98.6	18732	100

Table 49: Prevalence of Kidney Stones (Reported) n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Urban	87	1.5	5827	98.5	5913	100
Rural	183	1.4	12675	98.6	12858	100
Total	270	1.4	18502	98.6	18772	100
Gender						
Male	137	1.6	8175	98.4	8312	100
Female	132	1.3	10327	98.7	10459	100
Total	270	1.4	18502	98.6	18772	100
Age in Years						
13-19	22	0.8	2729	99.2	2751	100
20-25	24	1.3	1774	98.7	1798	100
26-35	62	2.4	2490	97.6	2552	100
More than 35	157	3.3	4588	96.7	4744	100
Total	264	2.2	11581	97.8	11844	100
Education Level						
None	107	1.9	5381	98.1	5487	100
Pre School	3	0.3	1262	99.7	1266	100
Primary	38	0.9	4445	99.1	4483	100
Middle	36	1.6	2147	98.4	2183	100
Matric	46	2.0	2229	98.0	2275	100
Above Matric	38	2.2	1668	97.8	1706	100
Total	268	1.5	17132	98.5	17400	100
Employment Level						
Govt/Semi Employee	12	3.7	302	96.3	314	100
Private Employee	13	2.1	582	97.9	595	100
Self Employed	52	4.0	1238	96.0	1291	100
Daily Wages	24	2.4	989	97.6	1014	100
Employer	2	3.1	55	96.9	57	100
Other	4	4.0	85	96.0	89	100
Total	106	3.2	3253	96.8	3359	100
Mother Tongue						
Urdu	8	1.0	787	99.0	795	100
Punjabi/Potohari	206	1.6	12808	98.4	13014	100
Saraiki	46	1.2	3893	98.8	3939	100
Pashto	7	1.5	508	98.5	516	100
Other	2	0.5	506	99.5	508	100
Total	270	1.4	18502	98.6	18772	100
Wealth Quintile						
Lowest	34	0.9	3848	99.1	3882	100
Second	61	1.6	3748	98.4	3810	100
Middle	43	1.2	3450	98.8	3493	100
Fourth	71	1.9	3701	98.1	3772	100
Highest	60	1.6	3755	98.4	3815	100
Total	270	1.4	18502	98.6	18772	100

Table 50: Prevalence of Chronic Kidney Disease (Reported) n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Urban	34	39.5	52	60.5	86	100
Rural	90	51.2	86	48.8	176	100
Total	124	47.3	138	52.7	262	100
Gender						
Male	50	37.8	82	62.2	131	100
Female	74	56.9	56	43.1	131	100
Total	124	47.3	138	52.7	262	100
Age in Years						
13-19	7	41.5	10	58.5	17	100
20-25	9	37.2	15	62.8	24	100
26-35	24	38.7	38	61.3	62	100
More than 35	83	54.0	71	46.0	154	100
Total	123	47.9	134	52.1	257	100
Education Level						
None	64	60.8	41	39.2	105	100
Pre School	2	51.7	2	48.3	3	100
Primary	20	52.9	18	47.1	38	100
Middle	10	28.7	25	71.3	35	100
Matric	13	31.0	28	69.0	41	100
Above Matric	16	41.0	22	59.0	38	100
Total	124	47.7	136	52.3	260	100
Employment Level						
Govt/Semi Employee	4	38.5	7	61.5	12	100
Private Employee	5	43.2	7	56.8	13	100
Self Employed	15	28.7	37	71.3	52	100
Daily Wages	15	61.8	9	38.2	24	100
Employer	0	0.0	2	100.0	2	100
Other	2	52.2	2	47.8	4	100
Total	42	39.4	64	60.6	106	100
Mother Tongue						
Urdu	4	51.0	4	49.0	8	100
Punjabi/Potohari	88	44.0	112	56.0	199	100
Saraiki	27	59.5	18	40.5	46	100
Pashto	5	62.4	3	37.6	7	100
Other	1	35.1	1	64.9	2	100
Total	124	47.3	138	52.7	262	100
Wealth Quintile						
Lowest	21	63.4	12	36.6	33	100
Second	33	54.0	28	46.0	61	100
Middle	23	53.1	20	46.9	43	100
Fourth	25	38.5	41	61.5	66	100
Highest	22	37.1	37	62.9	58	100
Total	124	47.3	138	52.7	262	100

Table 51: Prevalence of chronic Kidney disease Requires Dialysis (Reported) n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Urban	2	5.5	30	94.5	32	100
Rural	2	2.3	87	97.7	89	100
Total	4	3.1	117	96.9	121	100
Gender						
Male	3	5.8	47	94.2	50	100
Female	1	1.3	70	98.7	71	100
Total	4	3.1	117	96.9	121	100
Age in Years						
13-19	0	0.0	7	100.0	7	100
20-25	1	9.7	8	90.3	9	100
26-35	0	0.0	23	100.0	23	100
More than 35	3	3.6	78	96.4	81	100
Total	4	3.1	116	96.9	120	100
Education Level						
None	1	0.9	61	99.1	62	100
Pre School	1	73.6	0	26.4	2	100
Primary	1	5.2	19	94.8	20	100
Middle	0	0.0	10	100.0	10	100
Matric	1	7.0	11	93.0	12	100
Above Matric	0	0.0	16	100.0	16	100
Total	4	3.1	117	96.9	121	100
Employment Level						
Govt/Semi Employee	0	0.0	4	100.0	4	100
Private Employee	0	0.0	5	100.0	5	100
Self Employed	2	14.4	13	85.6	15	100
Daily Wages	1	3.8	15	96.2	15	100
Employer	0	0.0	0	0.0	0	0
Other	0	0.0	2	100.0	2	100
Total	3	6.5	39	93.5	42	100
Mother Tongue						
Urdu	0	0.0	4	100.0	4	100
Punjabi/Potohari	2	2.9	84	97.1	86	100
Saraiki	1	4.7	26	95.3	27	100
Pashto	0	0.0	3	100.0	3	100
Other	0	0.0	1	100.0	1	100
Total	4	3.1	117	96.9	121	100
Wealth Quintile						
Lowest	0	0.0	21	100.0	21	100.0
Second	0	0.0	31	100.0	31	100.0
Middle	2	6.8	21	93.2	23	100.0
Fourth	2	8.6	23	91.4	25	100.0
Highest	0	0.0	21	100.0	21	100.0
Total	4	3.1	117	96.9	121	100.0

Table 52: Prevalence of history of Cancer (Reported) n (%)

	Yes		No		Total	
	N	%	N	%	N	%
Area Type						
Urban	4	0.1	5924	99.9	5927	100
Rural	8	0.1	12875	99.9	12883	100
Total	12	0.1	18798	99.9	18811	100
Gender						
Male	5	0.1	8310	99.9	8315	100
Female	7	0.1	10489	99.9	10496	100
Total	12	0.1	18798	99.9	18811	100
Age in Years						
13-19	1	0.0	2759	100.0	2759	100
20-25	1	0.1	1802	99.9	1803	100
26-35	0	0.0	2562	100.0	2562	100
More than 35	9	0.2	4748	99.8	4757	100
Total	10	0.1	11872	99.9	11882	100
Education Level						
None	7	0.1	5498	99.9	5505	100
Pre School	0	0.0	1273	100.0	1273	100
Primary	2	0.0	4473	100.0	4475	100
Middle	0	0.0	2189	100.0	2189	100
Matric	1	0.0	2281	100.0	2282	100
Above Matric	2	0.1	1708	99.9	1710	100
Total	12	0.1	17422	99.9	17434	100
Employment Level						
Govt/Semi Employee	0	0.0	317	100.0	317	100
Private Employee	0	0.0	597	100.0	597	100
Self Employed	1	0.1	1290	99.9	1291	100
Daily Wages	2	0.2	1013	99.8	1015	100
Employer	0	0.0	57	100.0	57	100
Other	0	0.0	86	100.0	86	100
Total	3	0.1	3361	99.9	3364	100
Mother Tongue						
Urdu	2	0.2	794	99.8	796	100
Punjabi/Potohari	6	0.0	13031	100.0	13037	100
Saraiki	4	0.1	3948	99.9	3952	100
Pashto	0	0.0	517	100.0	517	100
Other	1	0.1	509	99.9	510	100
Total	12	0.1	18798	99.9	18811	100
Wealth Quintile						
Lowest	6	0.2	3887	99.8	3893	100
Second	1	0.0	3812	100.0	3814	100
Middle	0	0.0	3504	100.0	3504	100
Fourth	4	0.1	3775	99.9	3778	100
Highest	1	0.0	3821	100.0	3822	100
Total	12	0.1	18798	99.9	18811	100

Annex III: Survey Team

Name	District	Name	District
Iqra Saeed	Kasur	Farzana	Attock
Sobia Hassan	Kasur	Shazia	Attock
Saira Bano	Kasur	Sajida malik	Attock
Saira Noreen	Sahiwal	Syed ilyas shah	Attock
Komal Sadaqat	Sahiwal	Asma rubab	Chakwal
Saheen Gulshan	Sahiwal	Hina firdous	Chakwal
Maryam	Khanewal	Madeeha manzoor	Chakwal
Batiul Moqudas	Khanewal	Khurram shehzad	Chakwal
Shagufta Kanwal	Khanewal	Nabeela khalid	Gujrat
Humera Qasim	Lahore Team 1	Sarwat fatrima	Gujrat
Bushra Husan	Lahore Team 1	Shafqat	Gujrat
Sana Safiq	Lahore Team 1	Faiza butt	Gujrat
Sana Shafqat	Sheikhupura	Waqar (jhelum)	Gujrat
Julia Shafqat	Sheikhupura	Sheikh shabir mumtaz	Rawalpindi
Fazila Talib	Sheikhupura	Ayesha bibi	Rawalpindi
Muqadas Zahra	Hafizabad	Shanzay afroz	Rawalpindi
Tahmina Jamil	Hafizabad	Maria batool	Rawalpindi
Hadia Zaheer	Hafizabad	Rashida mahsud	Rawalpindi
Fozia Ilyas	Faisalabad	Shamsa kanwal	Rawalpindi
Shazia Ilyas	Faisalabad	Hira firdous	Sargodha
Razia Sultana	Faisalabad	Zubaria mukhtar	Sargodha
Ghazala Hussain	Vehari	Asiya zulfiqar	Sargodha
Samia Yousf	Vehari	Haris mustafa	Sargodha
Sofia	Vehari	Maria naseeb	Sialkot
Farwa Ilyas	Gujranwala	Sanam sadiq	Sialkot
Sara Ehsan	Gujranwala	Faiza masood	Sialkot
Nimra Shahzadi	Gujranwala	Malik ummar ali	Sialkot
Hira Baig	Lahore Team 2	M Masoom	Gujranwala
Neelam	Lahore Team 2	M Ismail	Lahore Team 2
Aqeela Parveen	Lahore Team 2	Mubashar Raza	T.T Singh
Tabasum Zahra	Lahore Team 2	Tahir Abbas	Sahiwal
Kinza Sadaf	T.T Singh	Ahsan Basheer	Faisalabad
Iffat Khalid	T.T Singh	Krar Hussain	Lahore
Tamseela Mumtaz	T.T Singh	Munawar Bhatti	Hafizabad
M Munir Awais	Kaur	M Ahsan imtyaz	Gujranwala
Nasir Hussan	Sahiwal	M Ali khan	Lahore Team 1
Naeem Tariq	Khanewal	M Sahbaz	Sheikhupura
ikram Ahmed	Faisalabad	Nadeem Arshad	Hafizabad
Zulafqar Ali	Vehari	Mehnaz Akhtar	Layyah
Mubshira	Bahawalnagar	Aaliya Arshad	Layyah
Asifa	Bahawalnagar	Lubna Kiran	Layyah
Rana Yasmeen Ahmad	Bahawalnagar	Humaira Aslam	Lodhran
Fozia Riaz	Bahawalnagar	Ruqiya Habib	Lodhran
Mukhtiar Bibi	Bahawalpur	Amna Sadiq	Lodhran
Shaista Qaiser	Bahawalpur	Zunaira Gul	Multan
Saima Feroze	Bahawalpur	Sonia abid	Multan
Husnia Iqbal	Bhakkar	Sheren Rubab	Multan
Anum Jahangir	Bhakkar	Samra Akbar	Muzaffargarh
Ifra Batool	Bhakkar	Maria bibi	Muzaffargarh
Sara Iftikhar	DG Khan	Shazia Baloch	Muzaffargarh
Samina Rafique	DG Khan	Noshaba Khan	Muzaffargarh
Gulnaz Farooq	DG Khan	Saima Nawaz	Rahim Yar Khan
Shazia Malik	DG Khan	Fatima Ishaq	Rahim Yar Khan
Nuzhat Noor	Layyah	Sidra Noreen	Rahim Yar Khan
Sadaf javed	Rajanpur	Safoora Tufail	Rajanpur
Shahina Bashir	Rajanpur		

Annex IV: Questionnaire

Household Information

Form A

(Fill One per Household)

Section A: HOUSEHOLD INFORMATION PANEL

A01	District	
A02	Tehsil	
A03	Cluster Number	____
A04	Cluster Name	_____
A05	Area Type	1. Urban 2. Rural
A06	Household Number	____
A07	Enumerator Name	Name: _____
A07a	Enumerator Code	
A08	Supervisor Name	Name: _____
A08a	Supervisor Code	Code: ____
A09	Date of Interview	DD/MM/YYYY
A10	Household Address in Detail	

Section B: Respondent's Detail

Check that the respondent is a knowledgeable member of the household and at least 18 years old before proceeding. You may only interview a child age 15-17 if there is no adult member of the household or all adult members are incapacitated. You may not interview a child under age 15.

B01	Record Time	Minute / Hours	____ / ____
B02	<p>Assalam O Alaikum, my name is (your name). We are APEX Consulting here on behalf of the Bureau of Statistics, the Planning & Development Department and the Government of the Punjab, Lahore. The government of Punjab is conducting this survey regarding the health situation of children, families and households concerning the prevalence of Hepatitis which is also known as KALA YARQAN and can result in liver failure and death. I would like to talk to you about these subjects. This interview usually takes about 30 minutes. Following this, I may ask to conduct additional interviews with you or other individual members of your household. All the information we obtain will remain strictly confidential and anonymous. If you do not wish to answer a question or stop the interview, please let me know. With your permission, may I start now</p>		
	YES NO / NOT ASKED2	1 ⇨ Go to Section C 2 ⇨ B08	
B03	Respondent Name	Name: _____	
B04	Respondent CNIC	____ - ____ - ____	
B05	Respondent Cell No.	_____	
B06	Tel. Res.	_____	
B07	Any Other Tel.	_____	

B08: <i>Result of Household Questionnaire interview:</i> <i>Discuss any result not completed with Supervisor.</i>	COMPLETED
	NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT
	ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME
	REFUSED
	DWELLING VACANT OR ADDRESS NOT A DWELLING
	DWELLING DESTROYED
	DWELLING NOT FOUND
	PARTIALLY
	COMPLETED.....08
	OTHER (specify)_____

Section C: Household Roster

Note: Start with the head of household and make sure to probe for additional members: Those that are not currently at home, any infants or small children and any others who may not be family (such as servants, friends) but who usually live in the household.

No.	C01 Household member name	C02 * Relationship to head of household	C03 Gender	C04 Completed years of age on last birthday	C05 Marital Status (age 10 and above)
Line no	Name		1.M,2.F, 3.Trans Gender	(years)	1. Single 2. Married 3. Separated 4. Divorced 5. Widowed/Widower 8. DK
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

* Codes for B:

01 Head	05 Grandchild	09 Brother-in-law / Sister-in-law	13. Adopted /Foster / Stepchild
02 Spouse/ Wife	06 Parent	10 Uncle/Aunt	14. Servant (live in)
03 Son/ Daughter	07 Parent-in-law	11 Niece / Nephew	96. Other (Not related)
04 Son in law/ Daughter in law	08 Brother / sister	12 Other Relative	

Section D: Household Characteristics

Q#	Questions	Codes
D01	Observe: Main material used for roof construction	NATURAL ROOFING NO ROOF THATCH / PALM LEAF SOD RUDIMENTARY ROOFING RUSTIC MAT PALM / BAMBOO WOOD PLANKS FINISHED ROOFING METAL / TIN / T-IRON / GIRDERS WOOD / WOODEN BEAMS CALAMINE / CEMENT FIBRE CERAMIC TILES CEMENT OTHER (specify) 96 NO RESPONSE

D02	Observe: Main material used for the Walls	NATURAL WALLS NO WALLS CANE / PALM / TRUNKS DIRT RUDIMENTARY WALLS BAMBOO WITH MUD STONE WITH MUD UNCOVERED ADOBE PLYWOOD CARDBOARD REUSED WOOD FINISHED WALLS CEMENT STONE WITH LIME / CEMENT BRICKS CEMENT BLOCKS COVERED ADOBE OTHER (<i>specify</i>) 9 NO RESPONSE..... 9
D03	Observe: Main material used for the floor construction	NATURAL FLOOR EARTH / SAND DUNG..... FINISHED FLOOR PARQUET OR POLISHED WOOD VINYL OR ASPHALT STRIPS..... CERAMIC TILES/MARBLE/CHIPS CEMENT CARPET BRICKS FLOOR..... OTHER (<i>specify</i>) NO RESPONSE.....
D04	How many rooms are in the house that are used for sleeping? Excluding kitchen, bathroom and stores?	____ ____ NO RESPONSE 99
D05	Does this house have electricity?	Yes, Interconnected Grid 1 Yes, Off-Grid (Generator/Isolated System) 2 No 3 NO Response 9
D06	What type of stove does your household mainly use for cooking? If code 97 then go to D08 otherwise continue with D07	ELECTRIC STOVE SOLAR COOKER..... LIQUEFIED PETROLEUM GAS (LPG)/ COOKING GAS STOVE PIPED NATURAL GAS STOVE BIOGAS STOVE

		LIQUID FUEL STOVE..... MANUFACTURED SOLID FUEL STOVE..... TRADITIONAL SOLID FUEL STOVE..... THREE STONE STOVE / OPEN FIRE..... OTHER (<i>specify</i>) NO FOOD COOKED IN HOUSEHOLD.....97 NO RESPONSE..... 9
D07	Where cooking is done for this household?	IN THE HOUSE, SEPARATE KITCHEN 1 IN THE HOUSE, NO SEPARATE KITCHEN.. 2 IN A SEPARATE BUILDING..... 3 OUTDOORS 4 OTHER (SPECIFY)..... 6 NO RESPONSE..... 9

D0 8	What is the main source of drinking water?	PIPED WATER PIPED INTO DWELLING..... PIPED TO COMPOUND/ YARD / PLOT..... PIPED TO NEIGHBOUR PUBLIC TAP / STANDPIPE..... BOREHOLE TUBE WELL MOTORIZED PUMP HAND PUMP (MECHNICAL)..... DUG WELL PROTECTED WELL UNPROTECTED WELL SPRING PROTECTED SPRING..... UNPROTECTED SPRING OTHER SOURCES RAINWATER (POND)..... TANKER-TRUCK CART WITH SMALL TANK /DRUM/CANE WATER KIOSK..... SURFACE WATER (RIVER, DAM, LAKE, POND, STREAM, CANAL, IRRIGATION CHANNEL)..... PACKAGED WATER BOTTLED WATER..... OTHER (specify) _____ 96 NO RESPONSE
D0 9	What kind of toilet facility do members of your household usually use? <i>If 'Flush' or 'Pour flush', probe:</i> Where does it flush to? If not possible to determine, ask permission to observe the facility.	FLUSH / POUR FLUSH FLUSH TO PIPED SEWER SYSTEM FLUSH TO SEPTIC TANK FLUSH TO PIT LATRINE FLUSH TO OPEN DRAIN FLUSH TO DK WHERE PIT LATRINE VENTILATED IMPROVED PIT LATRINE PIT LATRINE WITH SLAB..... PIT LATRINE WITHOUT SLAB / OPEN PIT BUCKET NO FACILITY / BUSH / FIELD OTHER (specify) ----- -----96 NO RESPONSE

D10	How many of the following animals does this household have? <i>If 95 or more, record '95'. If unknown, record '98'. (if no response record 99)</i>	Yes	No	If yes, how many? Number
D10a	[A] Milk cows, buffaloes or bulls?	1	2	___
D10b	[B] Other cattle?	1	2	___
D10c	[C] Horses, donkeys, camel or mules?	1	2	___
D10d	[D] Goats?	1	2	___
D10e	[E] Sheep?	1	2	___
D10f	[F] Chickens?	1	2	___
D10g	[H] Ducks/Turkeys?	1	2	___

D11	Do you have/own any of following in your house	Yes	No	No Response
D11a	Car	1	2	99
D11b	Motor Cycle	1	2	99
D11c	Computer /laptop/ tablet	1	2	99
D11d	Bicycle	1	2	99
D11e	TV	1	2	99
D11f	Fridge/ Refrigerator/D-Freezer	1	2	99
D11g	TV cable	1	2	99
D11h	Telephone	1	2	99
D11i	Mobile phone	1	2	99
D11j	Tractor trolley	1	2	99
D11k	Rikshaw/Chingchi	1	2	99

D12	Do you own agricultural land	1. Yes 2. No (Go to D14) 9. NO RESPONSE (Go to D14)
D13	How many acre? <i>Note: If in Kanals then convert it into acre. If less than 1acre, record '00'. 1 acre = 8 kanals</i>	ACRES 95. Ninety Five or More 98. DK 99. NO RESPONSE
D14	How many times in a month do you cook/eat meat in your house?	___
D15	How many times in a month do you cook/eat chicken/fish in your house?	___
D16	Do you get newspaper at home?	1. Daily 2. Occasionally 3. Never 9. No Response

Section E. Family member with hepatitis (only to be filled one per household:)

E01	Is there any one in your [Name's] house with liver disease/Yarqan who is currently not present for interview?	1. Yes 2. No (go to E06) 8. Don't Know (go to E06)
-----	---------------------------------------------------------------------------------------------------------------	----------------------------------------------------------

		9. No Response (go to E06)
E01a	If Yes, How many persons?	____ ____
E01b	Member name?	_____

E02	What is this person diagnosed to have...	1. Hepatitis B 2. Hepatitis C 3. Hepatitis B and C 4. Hepatitis B and D 5. Hepatitis B, C and D 6. Hepatitis but Not Sure 96. Other (specify) 98. Don't know 99. No Response
E03	What is your relation with him/her? (name of person to identify him/her on household sheet)	* Codes for B: 01 = Head, 02= Husband/ Spouse, 03= Son/Daughter, 04= Parents, 05= Brother/Sister, 06= Son in law/Daughter in law, 07= Grandson/ Granddaughter, 08= Father/Mother in law, 09= brother in law /sister in law, 10= nephew/niece , 11= uncle/aunt 12 – Foster/ Adopted children, 13 – Other relatives, 14 – servant, 96 Others _____
E04	How did s/he come to know about it	1. Symptoms (fever , jaundice, decreased appetite, easy fatigability 2. Incidentally when got the lab test done for some other cause 3. When donated/received blood 6. other (specify) 9. No Response
E05	What is his /her condition now	1. Normal/no problem 2. Under treatment 3. After treatment under doctor's follow up 4. Have cirrhosis 6. other (specify) 9 No Response
E06	Did anyone in your biological family diagnosed with liver cancer?	1. Yes 2. No 8. DK 9. No Response
E07	Did anyone in your family die of kidney disease?	3. Yes 4. No 8. DK 9. No Response

Form B**HEPATITIS PREVALENCE SURVEY 2017-18, PUNJAB****Questionnaire for Household Member****Section F: Respondent Information**

F01	Date of First Visit	DD MM YY _____, _____, ____-____-____
F02	Is the intended respondent available for interview at first visit?	1. Yes (go to F06) 2. No (go to F10) 3. Required second Visit (go to F03)
F03	Date of Second Visit	DD MM YY _____, _____, ____-____-____
F04	Is the intended respondent available for interview at second visit?	1. Yes (go to F06) 2. No (go to F10) 3. Required third Visit (go to F05)
F05	Date of third Visit	DD MM YY _____, _____, ____-____-____
F05a	Is the intended respondent available for interview at third visit?	1. Yes 2. No (go to F10)
F06	Who is the respondent?	1. Self (go to F08) 2. Guardian (under age 15) 3. Guardian (For incapacitated)
F07	Guardian Name	Name: _____
F08	Self/ Guardian Line No in Roster	Line No: ____
F08a	Gender	Male..... 1 Female 2 Transgender 3
F08b	Age (In Completed years) <i>In case of 95 year or above record 95</i>	Age ____
F08c	Marital Status (For person ages ≥ 10 Years)	Never Married 1 Married 2 Separated 3 Divorced 4 Widow / Widower 5 DK 8
F08d	How old were you when you got married? (For person ages ≥ 10 Years, if married more than one time then ask about the age married for the first time)	Age in completed years ____
<i>Check that the respondent is a capable member of the household and at least 18 years old before proceeding. You may only interview a child age 15 – 17 if there is no adult member of the household or all adult members are incapacitated. You may not interview a child under age 18, In this case guardian will be the respondent for interview. In case, where even at the time of third visit household member is not available the said information is not to be acquired from</i>		F09: Record the time. HOURS: MINUTES _____ : _____

guardian. Got o F10 and record 2 and in F11 recode 4.	
-------------------------------------------------------	--

Assalam O Alaikum, my name is (*your name*). We are APEX Consulting here on behalf of **Bureau of Statistics, Planning & Development Department, Government of the Punjab, Lahore**. Government of the Punjab is conducting this survey regarding the health situation of children, families and households including the lethal disease of Hepatitis which is also known as KALA YARQAN and can be result in the destruction of liver and miserable death. I would like to talk to you about these subjects. This interview usually takes about 30 minutes. Following this, I may ask to conduct additional interviews with you or other individual members of your household. All the information we obtain will remain strictly confidential and anonymous. If you do not wish to answer a question or stop the interview, please let me know. With you permission, May I start now?

F1 0	1. YES 2. NO / NOT ASKED	1 ⇒ Go to Section G 2 ⇒ F11
F11 .Result of Household Member Questionnaire interview: Discuss any result not completed with Supervisor.	1. COMPLETED 2. REFUSED 3. PARTIALLY COMPLETED 4. NOT AT HOME 6. OTHER (<i>specify</i>) _____	

G. Personal Characteristics- From each person in the household

Q#	Questions	Responses
G01	Are you employed? <i>For person ages ≥ 10 years.</i>	1. Yes 2. No (go to G03) 9 No Response (go to G03)
G02	What is the nature of your Job? <i>Specifically probe for self-employment, and land lords etc.</i> <i>For person ages ≥10 years.</i>	1. Govt/ semi Govt Employee (go to G04) 2. Private Employee (go to G04) 3. Self Employed/ Own Account Worker (go to G04) 4. Daily Wages (go to G04) 5. Employer (go to G04) 6. Other (<i>Specify</i>) _____ (go to G04) 9 No Response (go to G04)
G03	If not employed then, what is your current status?	1. Student 2. Retired 3. Home maker 4. Un employed 6. Other (<i>Specify</i>) _____ 9 No Response
G04	What is your mother tongue?	1. Urdu 2. Punjabi/Potohari 3. Saraiki 4. Pashto 6. Other (<i>specify</i>) _____ 9 No Response

Section H. Hepatitis Vaccination

Now, I would like to ask you some questions about vaccination. Only for adults (18 years and above)

Q#	Questions	Code
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H01	Did you know a vaccine can prevent infection with Hepatitis B?	1. Yes 2. No (go to H06) 3. Not aware about vaccine (go to H06) 8. DK (go to H06) 9. No Response (go to H06)
H02	Have you been vaccinated against hepatitis B?	1. Yes → Skip H6 & H7 2. No (go to H06) 8. DK (go to H06) 9. No Response (go to H06)
H03	Please specify how many doses of hepatitis B vaccine have you received? <i>Ask for seeing immunization record if available</i>	1. 1 st dose only → Skip H06 & H07 2. 1 st & second dose → Skip H06 & H07 3. 1 st , 2 nd & 3 rd dose (go to H08) 8. DK (go to H08) 9. No Response (go to H08)
H04	What was the source of vaccination?	1. Government vaccination program 2. Employer 3. Paid out of pocket 6. Others (specify) _____ 8. DK 9. No Response
H05	Please indicate why you have not completed the three doses of Hepatitis B vaccine (Multiple answers possible)	A. Not aware that I need 3 doses of Hepatitis B vaccine. B. Not at risk for getting hepatitis B C. Never find the time to get the hepatitis B vaccine D. Vaccine cost too much E. Afraid of the side effects vaccine F. the schedule is not complete G. forgot to get vaccination X. Other (specify) _____ Y. DK Z. No Response
H06	If you were told that Hepatitis B can be prevented through vaccine would you be willing to purchase it and get vaccinated?	1. Yes (go to H08) 2. No 8. DK 9. No Response
H07	If you are offered Hepatitis B vaccine free of cost, would you be willing to get vaccinated?	1. Yes (go to H08) 2. No 8. DK 9. No Response
H07a	If No, than please state the reason	A. Not at risk for getting hepatitis B B. Never find the time to get the hepatitis B vaccine C. Afraid of the side effects vaccine E. Religious practices X. Other (specify) _____ Y. DK Z. No Response
H08	Hepatitis B vaccine is included in the Routine childhood immunization Programme. Do you agree it to be a good or a bad idea?	1. Agree 2. Strongly agree 3. Disagree 4. Strongly disagree 5. No Opinion

Section I. History of hepatitis, care and treatment

I01	Have you ever been diagnosed with hepatitis B or C (Kala Yarqaan) or both after giving blood sample for screening/testing?	1. Yes 2. No (go to Section J) 8. Don't know (go to Section J) 9. No Response (go to Section J)
I02	Where was it diagnosed?	1. Private Hospital 2. Public Hospital 6. Other, specify _____ 8. Don't know 9. No Response
I03	Which one? <i>Note: In case of dual HBV and HCV infection, start with one diagnosed first.</i>	01. Hepatitis B (go to IB01) 02. Hepatitis C (got to IC01) 03. Hepatitis B&C 04. Hepatitis B&D (go to IB) and skip IC 05. Hepatitis B,C & D 06. Hepatitis but not sure 07. Negative 96. Others, specify ____ (go to Section J) 98. Don't know 99. No Response
IB	Hepatitis B	
IB01	How long ago were you diagnosed with Hep B (Number of years)	No. of years: _ _ (2 digits)
IB02	Why you were tested for hepatitis B?	01. Symptoms 02. Surgery 03. Dental treatment 04. Blood donation/transfusion 05. Antenatal testing (pregnancy) 06. Visa requirement 07. Employment exam 08. Routine Tests 96. Others, specify _____ 99. No Response
IB03	Who ordered/requested the initial testing?	1. Doctor/General Practitioner (GP) 2. Liver Specialist 3. Medical Specialist 4. OBS / Gynae Specialist 5. Health Care Providers 6. Others, specify _____ 9. No Response
IB04	Was a test done to confirm it that virus is still present in your [Name's] body?	1. Yes 2. No (go to IB07) 8. Don't know (go to IB07) 9. No Response (go to IB07)
IB05	Which test was performed? Ask for reports if available. (multiple choice)	A. HBsAg B. Anti HBc C. Anti HBs D. HBeAg E. HBV DNA PCR Y. Don't know Z. No Response

IB06	Based on the above tests what were you told?	1. Tested and no virus (cleared) 2. Tested and active infection 8. Don't know 9. No Response
IB07	Have you ever been assessed for liver damage or liver fibrosis i.e., which is hardening or stiffness of the liver (e.g., through Ultrasound, liver biopsy or a blood test to check liver fibrosis)?	1. Yes (go to IB09) 2. No 3. Don't know 9. No Response
IB08	Have you ever been told you have cirrhosis?	1. Yes 2. No 3. Don't know 9. No Response
IB09	Has treatment been recommended for hepatitis B?	1. Yes 2. No (go to IB12) 8. Don't know (go to IB12) 9. No Response (go to IB12)
IB10	Who is responsible for managing your [Name's] hepatitis?	01. Private Hospital 02. BHU 03. RHC 04. THQ 05. DHQ /Teaching Hospital 06. Medical Specialist 07. Liver specialist 96. Other (Specify) _____ 98. No one (go to IB12) 99. No Response (go to IB12)
IB11	How many times have you visited a Doctor during the past 12 months (last year)?	No. of visits __ __ (2 digits)
IB12	Have you ever taken treatment for Hep B	1. Yes 2. No (go to IB15) 9. No Response (go to IB15)
IB13	How long ago you were received treatment last time If less than one year write 00	Number of Years: __ __
IB14	How would you best describe your [Name's] treatment?	1. Treatment was stopped/discontinued because of side effects 2. Treatment was stopped/discontinued because of financial constraints 3. Treatment was stopped/discontinued because of Non-availability of medicine 4. Treatment was completed 5. Currently taking treatment 8. I don't know/I can't remember 9. No Response
IB15	What best describes your [Name's] current health status? <i>Check all that apply</i>	A. No infection and no symptoms B. Infected but no symptoms C. Have water in my abdomen D. Have had vomiting of blood E. Have had dark black color red stools F. Liver is shrunken G. Have liver cancer X. Other (Specify) _____

		Z No Response
IB16	Have you [Name's] ever been admitted to a hospital for any of the conditions described above?	1. Yes 2. No (go to IB20) 8. I can't remember (go to IB20) 9. No Response (go to IB20)
IB17	Which hospital?	01. Private Hospital 02. BHU 03. RHC 04. THQ 05. DHQ/ Teaching Hospital 06. Not any Hospital (Specify) 96. Any other (Specify)_____ 99. No Response
IB18	What was the reason?	A. Have water in my abdomen B. Have had vomiting of blood C. Have had dark black color red stools D. Liver is shrunken E. Have liver cancer Z No Response
IB19	For how many days you Stayed in the hospital If no response then write 99	Number of Days: _ _
	For Ever Married Females	
IB20	Did you have ever gave live birth?	1. Yes 2. No (go to Section C) 9. No Response
IB20a	Did you have a known history of Hepatitis B at the time of any pregnancy?	1. Yes 2. No 8. Don't know 9. No Response
IB21	Were your children (any) given medication at the time of birth to prevent Hep B?	1. Yes 2. No 8. Don't know 9. No Response
IB22	Have your (any) children been tested for hepatitis B?	1. Yes 2. No 8. Don't know 9. No Response
IC	Hepatitis C	
IC01	Why you were tested for hepatitis C?	01. Symptoms 02. Surgery 03. Dental treatment 04. Blood donation/transfusion 05. Antenatal testing (pregnancy) 06. Visa requirement 07. Employment exam 08. Routine tests 96. Others, specify_____ 99. No Response
IC02	Who ordered/requested the initial testing?	1. Doctor/General Practitioner (GP) 2. Liver Specialist 3. Medical Specialist

		4. OBS / Gynae Specialist 5. Health Care Providers 6. Others, specify _____ 9. No Response
IC03	Was a test done to confirm it that virus is still present in your body? i.e. testing for HCV PCR	1. Yes 2. No (go to IC05) 8. Don't know (go to IC05) 9. No Response (go to IC05)
IC04	What were you told? Ask for lab reports if available.	1. Tested and no virus (cleared) 2. Tested and active infection 8. Don't know 9. No Response
IC05	Have you been told what the type of Hep C virus is?	1. Genotype 1 2. Genotype 2 3. Genotype 3 4. Genotype 4,5,6 8. Don't Know 9. No Response
IC06	Who is responsible for managing your [Name's] hepatitis?	01. Private Hospital 02. BHU 03. RHC 04. THQ 05. DHQ /Teaching Hospital 06. Medical Specialist 07. Liver specialist 96. Other (Specify) _____ 98. No one (go to IB15) 99 No Response
IC07	Have you ever been assessed for liver damage or liver fibrosis i.e., which is hardening or stiffness of the liver (e.g., through fibroscan, liver biopsy or a blood test to check liver fibrosis)?	1. Yes 2. No 8. Don't know 9 No Response
IC08	Have you ever been told you have cirrhosis?	1. Yes 2. No 8. Don't know 9 No Response
IC09	Has treatment for Hepatitis C been recommended?	1. Yes 2. No 8. Don't know 9 No Response
IC10	Have you ever taken treatment for Hepatitis C?	1. Yes 2. No (go to IC17) 8. Don't know (go to IC17) 9 No Response (go to IC17)
IC11	How long ago when you received treatment last time? If less than one year write 00 If no response then write 99	Number of Years: __ __
IC12	If received treatment, did you complete treatment?	1. Yes (go to IC14) 2. No 9 No Response

IC13	What was the reason for not completing?	1. Treatment side effects (go to IC17) 2. Cost of treatment (go to IC17) 3. Poor understanding of need for treatment completion (go to IC17) 4. Treatment is continue (go to IC17) 6. Others, specify_____ (go to IC17) 8. I don't know/I can't remember (go to IC17) 9. No Response (go to IC17)
IC14	Did you have a PCR/viral load test?	1. Yes 2. No (go to IC16) 3. Don't know (go to IC16) 4. No response (go to IC16)
IC14a	When did you have PCR/viral load test?	1. Immediately after completion 2. After 3 months of treatment completion 3. After 3 months or more 6. Other (specify) _____ 8. Don't know 9. No Response
IC15	What was the outcome of treatment?	1. I am cured (have reached Sustained Virology Response) 2. Waiting for follow up blood work to find out my response 3. Did not go for follow up testing 8. I don't know/I can't remember 9. No Response (For all options (go to IC17))
IC16	Why was testing not done after three months of completion of treatment?	1. No one told me testing was needed 2. I did not feel follow-up was needed 3. Cost other financial concerns 6. Others, please specify 8. I don't know/I can't remember 9. No Response
IC17	What best describes your current health status? <i>Check all that apply</i>	A. No infection and no symptoms B. Infected but no symptoms or mild symptoms C. Have water in my abdomen D. Have had vomiting of blood E. Have had dark black coloured stools F. Liver is shrunken G. Have liver cancer Z. No Response
IC18	Have you ever been admitted to a hospital for any of the conditions described above?	1. Yes 2. No (go to Section J) 8. I can't remember (go to Section J) 9. No Response (go to Section J)
IC19	What was the reason?	A. Infected but no symptoms or mild symptoms B. Have water in my abdomen C. Have had vomiting of blood D. Have had dark black coloured stools E. Liver is shrunken

		F. Have liver cancer Z. No Response
IC20	For how many days you stayed in the hospital If no response then write 99	Number of Days: _ _

Section J. Risk Factors

J1 - Health Care and Injection Use

Q#	Questions	Code
J11	Have you sought care from any health care provider for any reason during past three months ?	1. Yes 2. No (go to J15) 8. Don't know (go to J15) 9. No Response (go to J15)
J12	How many times went for check-ups?	No of checkups _ _
J13	Did you receive any injection during past three months?	1. Yes 2. No (go to J15) 9. No Response (go to J15)
J14	How many injections received? <i>These also include those provided other than during health care visit</i>	Number of injections _ _
Now I would like to ask information only about the last contact you had with a health care provider as outpatient service		
J15	How many days back you sought care for the last time from a health care provider? <i>Select required unit i.e. days, month and year and write the answer accordingly (if less than one month write 00, if less than one year write 00)</i>	Number of Days : _ _ Number of Months: _ _ Number of Years: _ _ 9. No response
J16	What were complaints at the time of the last visit? Multiple choice	A. Fever B. Pain C. Vomiting / nausea / diarrhea D. Any Bleeding X. Other (specify) Z. No Response
J17	Which provider you consulted for your last visit?	PUBLIC PROFESSIONALS DOCTOR/GP..... MEDICAL SPECIALIST..... NURSE/DISPENSER..... PRIVATE PROFESSIONALS DOCTOR/GP..... MEDICAL SPECIALIST..... NURSE/DISPENSER..... VICINITY CLINIC ADDENDATNT..... 07 OTHER (<i>specify</i>).....96 No Response.....
J18	What type of medication you were expecting?	1. Oral only 2. Injection only 3. Both (Oral and Injection) 9. No Response
J19	Which type of medication you asked for?	1. Oral only 2. Injection only

		3. Both (Oral and Injection) 4. Not asked /doctor's choice 9. No Response
J110	Which type of medication was provided to you [Name]?	1. Oral only (go to J117) 2. Injection only 3. Both(Oral and Injection) 4. None (go to J117) 9. No Response (go to J117)
J111	Which type of this injection was administered? <i>Multiple answers possible</i>	A. Drip B. Curative injection C. Vaccination D. Contraceptive E. Injection for weakness Z. No Response
J112	Who administered this injection? <i>Multiple answers possible</i>	HEALTH PROFESSIONAL DOCTOR..... NURSE / MIDWIFE..... LADY HEALTH VISITOR (LHV)..... COMMUNITY MID WIFE OTHER PERSON TRADITIONAL BIRTH ATTENDANT OTHER (<i>specify</i>).....X No Response.....
J113	Where it was provided?	HOME RESPONDENT'S HOME OTHER HOME PUBLIC MEDICAL SECTOR GOVERNMENT HOSPITAL GOVERNMENT MOTHER & CHILD CARE CENTRE / HEALTH CENTRE/ COMMUNITY CENTRE..... OTHER PUBLIC (<i>specify</i>) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL PRIVATE CLINIC PRIVATE MATERNITY HOME OTHER PRIVATE MEDICAL (<i>specify</i>) OTHER (<i>specify</i>).....96 Don't Know.....98 No Response..... 9
J114	Which type of syringe was used for injection?	1. Plastic disposable 2. Glass syringe 8. Don't know 9. No Response
J115	Did you buy syringe	1. Yes (go to J117) 2. No 8. Don't know

		9. No Response
J116	Where did the provider get the syringe from?	1. New syringe opened from the closed packet 2. Pot of water 3. Previously opened taken from table/tray 4. Behind the counter 6. other (specify) _____ 8. Don't know 9. No Response
J117	How many injections including IV, IM or IV infusions have you received during past one year? <i>If don't know then write 98</i> <i>If no response then write 99</i>	Number of injection _ _ (2 digits)

J2 - Injury / Surgical treatment history

J21	Have you ever been injured or had problem requiring surgical treatment in a hospital or a clinic?	1. Yes 2. No (go to J3) 8. Don't know (go to J3) 9. No Response (go to J3)
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J22 – How many visits conducted to hospital/clinic for surgical treatment?

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Instruction. List of visits to hospital/clinics for surgical treatments for which you have NOT been hospitalized during past 10 years starting from the latest (Was not admitted to ward of hospital)

	J23	J24	J25
	Year	Treatment received (<i>minor surgical</i>)	Hospital/clinic
e.g.,	1999	Stitches, Dressing etc	1. Gov hosp, 2. Gov clinic, 3 Priv hosp, 4. Priv clinic
1			
2			
3			
4			
5			

J3 - Hospitalization history

J31	Have you ever been hospitalized?	1. Yes 2. No (go to J4) 8. Don't know (go to J4) 9. No Response (go to J4)
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J32 – If Yes, How many times?

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Instruction: Can you please tell me details about the hospitalizations you had? Like in which year it happened, what was the reason and whether you had operation and in public or private hospital (Start from the latest?) hospitalization means minimum one night stay at the hospital?

	J33	J34	J35	J36	J37
	Year	Reason	Duration	Type of treatment	Hospital
e.g.,	1999	XXXXXXXX	(days)	1. Medical 2. Surgery	1. Pub 2. Private
1					
2					
3					
4					
5					

J4 - Blood transfusion

J41	Have you ever received blood transfusion?	1. Yes 2. No (go to J5) 3. Don't know (go to J5) 9. No Response (go to J5)
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J42 – If Yes, How many times?

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Instructions: Please tell the details about year, reason and whether it was screened for hepatitis B, C and HIV and who provided the blood. Start from the latest

	J43	J44	J45	J46	J47
	Year	Screened for HBV,	Screened for HCV	Screened for HIV	Source of blood
	e.g1999	1. Yes 2. No 8. DK 9. NR	1. Yes 2. No 8. DK 9. NR	1. Yes 2. No 8. DK 9. NR	1. Family/ friend 2.Paid 8. DK 9. NR
1					
2					
3					
4					
5					

NR= No Response

J5 – Other Health Related Questions (for one year and above)

J51	Have you ever received dental treatment?	1. Yes 2. No (go to J6) 8. Don't know (go to J6) 9. No Response (go to J6)
J52	How many times in total have you received dental treatment in the last ten years?	Number of dental treatments _ _ <i>If don't remember please write 98</i> <i>If not response then write 99</i>
J53	How many times have you received dental treatment during past one year?	Number of dental treatments _ _ <i>If not response then write 99</i>
J54	No. of times you had tooth extraction in the past one year	Number of tooth extraction _ _ <i>If not response then write 99</i>
J55	No. of times you had tooth filling in the past one year	Number of tooth filling _ _ <i>If not response then write 99</i>
J56	No. of times you had tooth scaling in the past one year	Number of tooth scaling _ _ <i>If not response then write 99</i>
J57	How many injections have you received during dental treatment in the past one year?	Number of injections _ _ <i>If not response then write 99</i>
J58	From where did you get your [Name's] last dental treatment? <i>Multiple answer possible</i>	PUBLIC MEDICAL SECTOR 21. GOVERNMENT HOSPITAL 22. HEALTH CENTRE/ COMMUNITY CENTRE 23. GOVERNMENT MOTHER & CHILD CARE CENTRE 26. OTHER PUBLIC (<i>specify</i>) PRIVATE MEDICAL SECTOR 31. PRIVATE HOSPITAL 32. PRIVATE CLINIC 33. PRIVATE MATERNITY HOME 36 OTHER PRIVATE MEDICAL (<i>specify</i>)

		96. OTHER (specify) _____ 99. NO RESPONSE
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J6 - Exposure to blood during work (for 10 years and above)

Q#	Questions	Code
J61	Have you ever worked in a profession in which you dealt with human blood?	1. Yes 2. No (go to J7) 8. Don't know (go to J7) 9. No Response (go to J7)
J62	For how many years? <i>If not response then write 99</i>	Number of years _ _
J63	Have you ever received needle-stick injury? (any needle using in a healthcare setup)	1. Yes 2. No (go to J7) 8. Don't know (go to J7) 9. No Response (go to J7)
J64	How long ago did you get a needle-stick injury?	Number of years _ _ <i>If not response then write 99</i>
J65	How many needle stick injuries have you received?	Number of needle stick injuries _ _ <i>If not response then write 99</i>
J66	Did you get lab test done after needle stick injury?	1. Yes 2. No (go to J7) 8. Don't know (go to J7) 9. No Response (go to J7)
J67	What was the finding?	1. No abnormal finding 2. Hepatitis B 3. Hepatitis C 4. HIV 6. Other (specify) _____ 8. Don't know 9. No Response

J7 - Personal Habits and Practices (one year and above)

Q#	Questions	Code
J71	What do you use for brushing your teeth?	A. Tooth Brush B. Miswaq (go to J72a) C. Tooth Powder with the help of finger (go to J73) D. Tooth paste with the help of finger (go to J73) E. Too young to brush (go to J73) X. Other (specify) (go to J73) Y. Don't know (go to J73) Z. No Response (go to J73)
J72	Has anyone in house been sharing your [Name's] brush?	1. Never 2. Some times 3. Most of the times 4. Always 9. No Response
J72a	Has anyone in house been sharing your [Name's] miswak?	1. Never 2. Some times 3. Most of the times 4. Always 9. No Response

J73	Do you perform any religious ritual, traditional practice or custom or HAJAMA in which you get body piercing, cut or bleeding?	1. Yes 2. No (go to J8) 8. Don't know (go to J8) 9. No Response (go to J8)
J74	Is there any sharing of instruments in this practice?	1. Yes 2. No 8. Don't know 9. No Response
J75	How often you have performed this practice?	1. Once in life time 2. Every year 3. Every month 6. Other (specify)_____ 9. No Response
J8 - Ear and Nose piercing, Tattooing		
J81	Have you ever got your [Name's] body part pricked	1. Yes 2. No (go to J85) 8. Don't know (go to J85) 9. No Response (go to J85)
J82	If yes which body part have you got pricked? <i>Multiple answers possible</i>	A. Nose B. Ear C. Eyebrow X. Other (specify)_____ Y. Don't know Z. No Response
J83	How long ago were you pricked for the first time? <i>Write in completed years (if less than one year write 00)</i>	Number of years : _ _
J84	Who pricked?	A. Doctor B. Jeweler/Johri C. Barber/ Saloon D. Beauty Parlor E. A family member X. Other (specify)_____ Y. Don't know Z. No Response
J85	Did you get your [Name's] skin tattooed?	1. Yes 2. No (go to J9) 8. Don't know (go to J9) 9. No Response (go to J9)
J86	How long ago you got your skin tattooed for the first time? <i>Write in completed months (if less than one month write 00)</i>	Number of months : _ _ <i>If don't know write 98</i> <i>If no response write 99</i>
J87	Who performed the procedure?	A. Doctor B. Jeweler/Johri C. Barber/ Saloon D. Beauty Parlor E. A family member X. Other (specify)_____ Y. Don't know Z. No Response
J88	Had that needle been used previously?	1. Yes

		2. No (go to J9) 8. Don't know (go to J9) 9. No Response (go to J9)
J89	How was it cleaned before use?	1. Not cleaned 2. Boiled 3. Cleaned with spirit 6. Other (specify) _____ 8. Don't know 9. No Response
J9 - Forever married women only		
J91	How many times have you been pregnant? <i>If 00 go to Section J10</i> <i>If no response write 99 and go to Section J10</i>	Number of pregnancies : _ _

Pregnancy history (start with most recent and includes all pregnancies regardless of outcome)

	J93	J94	J95
	Place of delivery	Type of delivery	Were you screened for Hep B & C during your pregnancies?
	1. Home, 2. Hospital, 3. Neighbor, 4. Clinic, 6. Other ____	1. Normal Delivery (NVD) 2. Normal Delivery (NVD) & use of instrument 3. C-Sec 5. Miscarriage/ abortion	1. Yes 2. No
1			
2			
3			
4			
5			
6			

J10 – Exposure to Blade/Razor and related instruments		
J101	Do you go to a barber	1. Yes 2. No (go to J108)
J102	If Yes, then reason	A. For hair Cut (go to J103) B. For Shave (go to J104) C. For Arm Pit Shave (go to J105) X. Other (specify) _____ (go to J106) Z. No Response (go to J106)
J103	How often you go to barber for Hair cut?	1. once in a week 2. once in a month 3. once every two month 6. Other (specify) _____ 9. No Response
J104	How often you go to barber for Shave?	1. once in a week 2. once in a month 3. once every two month 6. Other (specify) _____ 9. No Response
J105	How often you go to barber for arm pit shave?	1. once in a week 2. once in a month 3. once every two month

		6. Other(specify)_____ 9. No Response
J106	Does your barber use a new blade every time	1. Every time/always new blade 2. Sometimes new blade 6. Other(specify)_____ 8. Don't know 9. No Response
J107	Have you ever received a cut at the barber's?	1. Yes 2. No 8. Don't know 9. No Response
J108	Do you shave at home? (for male and age 13 and above)	1. Yes 2. No (Go to Section L) 8. Don't know (Go to Section L) 9. No Response (Go to Section L)
J109	Do you share your razor with anyone? (for male age 13 and above)	1. Yes 2. No 8. Don't know 9. No Response

L .Illicit Drug Use (Only for age 13 years and above)

L1	Do you currently use illicit drugs for recreational purposes?	1. Yes 2. No (go to Section M) 3. Was using previously 8. DK (go to Section M) 9. No Response (go to Section M)
L2	How do you use illicit drugs?	A. Injecting (go to L3) B. Sniffing (go to L4) C. Smoking (go to L5) D. Inhale through mouth breath (go to L5) X. Other, specify_____ Y. DK (go to L5) Z. No Response
L3	Do you share syringe with other people?	1. Yes 2. No 8. DK 9. No Response
L4	Do you share drug paraphernalia لوازمات such as cookers, swabs with other people?	1. Yes 2. No 8. DK 9. No Response
L5	For how many months/ years have you used drugs?	Months : ____ ____ Years : ____ ____ 8. Don't know 9. No response

Section M. Other Health Questions

Now I would like to ask some questions about some other health conditions

M01	Have you ever been diagnosed with Diabetes?	1. Yes 2. No (go to M04) 8. Don't know (go to M04) 9. No Response (go to M04)
M02	For those with sugar (diabetes), how long ago were you diagnosed with diabetes? <i>(Write 98 if don't remember, if less than 1 year record 00)</i> <i>If no response then write 99</i>	Number of Years __ __
M03	Which medications are you using for sugar (diabetes)?	1. No medication, diet only 2. Injection (Insulin) only 3. Oral tablets only 4. Injection (Insulin) + oral tablets 6. Others (specify)_____ 9. No Response
M04	Have you ever been diagnosed with high blood pressure?	1. Yes 2. No (go to M08) 8. DK (go to M08) 9. No Response (go to M08)
M05	For those with high blood pressure, how long ago were you diagnosed with high blood pressure? <i>(Write 98 if don't remember, if less than 1 year record 00)</i> <i>If no response then write 99</i>	Number of Years __ __
M06	Are you taking medication for or high blood pressure?	1. Yes 2. No 8. DK 9. No Response
M07	How frequently do you get your blood pressure checked?	1. Once every day 2. At least once a week 3. At least once in a month 4. At least once in a year 5. Less than year 9. No Response

M08	Have you been diagnosed with heart disease?	1. Yes 2. No 8. DK 9. No Response
M09	Have you been ever diagnosed with kidney stones?	1. Yes 2. No (go to M15) 8. DK (go to M15) 9. No Response (go to M15)
M10	Do you currently have kidney stones?	1. Yes 2. No 8. DK 9. No Response
M11	Have you been diagnosed with kidney disease?	1. Yes 2. No (go to M15) 8. DK (go to M15) 9. No Response (go to M15)
M12	Has kidney disease progressed to stage of needing dialysis?	1. Yes

		2. No (go to M15) 8. Don't know (go to M15) 9. No Response (go to M15)
M13	If Yes, how long have you been on dialysis? <i>(if less than 1 year then record "00")</i> <i>If no response then write 99</i>	No. of Years: __ __
M14	How often do you get dialysis?	1. Once a week 2. Two times a week 3. Three times a week 6. Others, specify 9. No Response
M15	Have you been diagnosed with bladder stone?	1. Yes 2. No 8. Don't know 9. No Response
M16	Have you been ever diagnosed with any cancer?	1. Yes 2. No (Questionnaire End) 8. DK (Questionnaire End) 9. No Response
M17	Which one?	1. BRAIN CANCER 2. BLOOD CANCER 3. LUNGS CANCER 4. KIDNEYCANCER 5. LIVER CANCER 6. OTHER SPECIFY _____ 9. No Response
M18	Did you receive treatment for cancer?	1. Yes 2. No 9. No Response
M19	What is current status of cancer?	1. Cured 2. Treatment in progress 6. Other, Specify _____ 9. No Response

B09: Record Interview end time : ____|____|

Thank you very much

Hepatitis is the most common cause of liver failure and results in liver cancer and a very painful and long drawn out death. Fortunately new treatments for hepatitis are now available which can result in complete cure. However to get such treatments, hepatitis first has to be diagnosed with blood tests. The treatment for hepatitis is very expensive costing several lac of rupees. The Government of the Punjab for the sake of its citizens has procured these extremely expensive medications. The Government of the Punjab has also decided that anyone suffering from Hepatitis in the Punjab will be diagnosed and treated absolutely free of cost. To avail this life saving opportunity for you and your family including small children, free of cost, I would like to draw blood samples with your due permission. Once the blood test results are available you will be contacted and if found to be suffering from hepatitis you will be scheduled for treatment right away.

Annex V:

- Blood Complete identification of household members especially member's full name, unique ID, data and time of sampling & initials of collector etc. to be noted;
- Consent related documentation to be read to the individuals and their affirmation taken;
- Properly fitting disposable gloves to be always worn;
- The survey participant's ID number to be labeled using permanent marker on two yellow top and one purple top 3cc vacutainers (for adults) and one yellow top and one purple top 3cc vacutainers (for children up to 15 years);
- Open fresh syringe/vacutainer needle in the presence of the survey participant;
- After applying the tourniquet, the needle to be inserted at 20-40 degree angle (30-35 is perfect angle) into the vein and fill 2 clotted yellow top tubes and 1 EDTA purple top tube;
- The vacutainer tube to be removed from the needle before removing the needle from the vein;
- After the needle is removed, direct pressure to be applied with disposable alcohol swab on the insertion site and punctured site to be bandaged;
- Tubes to be placed in upright position in the thermoform box which should have at least 4-6 gel ice packs;
- Proper disposing off of the syringe needle by cutting the needle with the help of needle cutter and all sharp objects to be placed in sharps container;
- Disposing off of gloves in bio-hazard bag;
- In case of miss-prick, to make sure the vein is fixed with thumb, the needle to be partially pulled back without removing it from the skin and attempt to puncture the vein again;
- Sample to be centrifuged at 2000-4000 rpm for 5-10 minutes to separate serum within 30 minutes of sample collection at site (subject to availability of electricity), If not done on site, samples to be centrifuged at the nearest designated center.

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