

PRACTICUM REPORT

For the Partial Fulfillment of Course Requirements of the

Master of Public Health Program

Offered By

Johns Hopkins Bloomberg School of Public Health

In Cooperation with IIHMR University

By

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Cohort-4

2016-18

Under the Guidance of

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West Bengal, India

TO WHOMSOEVER MAY CONCERN

This is to certify that Kaushik Chakraborty, student of Master of Public Health Program offered by IIHMR University, Jaipur in cooperation with Johns Hopkins Bloomberg School of Public Health, Baltimore has undergone Practicum Training at Barrackpore Population Health Research Foundation, West Bengal, India from 25.10.2017 to 23.03.2018.

The Candidate has successfully carried out the study designated to his during practicum training and her approach to the study has been sincere, scientific and analytical.

The Practicum Training is in fulfillment of the course requirements.

I wish him success in all his future endeavors.

-Sd

Dr. Arindam Das
(Practicum Advisor)

CERTIFICATE BY SCHOLAR

This is to certify that the Practicum Project titled **“Designing Tools for Longitudinal household based NCDs survey and analyze, interpret secondary data of various cross-sectional study”** submitted by Kaushik Chakraborty with Enrollment No. IIHMR-U/07/2016-2018/0018, JH ID: 8B5C0A under the supervision of Dr. Arindam Das (Practicum Advisor) and Dr. Saumen Kumar Mitra (External Advisor) for award of **Master of Public Health** carried out during the period 30.10.2017 to 23.03.2018 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.



Kaushik Chakraborty
MPH Candidate 2016-18

Certificate from the organization

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I express my heartiest gratitude to Prof. Marie Diner West, MPH Program Chair and Professor of Biostatistics of Johns Hopkins Bloomberg School of Public Health, USA for giving me the opportunity to do this Practicum.

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Kaushik Chakraborty
MPH, Cohort 4

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Background of the organization:

Barrackpore Population Health Research Foundation (BPHRF) is a registered Non-Government Organization recognized by West Bengal Society Registration Act, 1961, Govt. of West Bengal, India. The foundation established "Barrackpore Longitudinal Health Study (BLHS)" in 1999 to work in the field of public health, epidemiological and clinical research in India. The foundation is internationally associated with West Australia Institute of Medical Research, School of Population Health (University of West Australia) and nationally with Barrackpore Ramakrishna Vivekananda Mission, India.

BPHRF has been working in India for over 18 years, focusing on selective Non-Communicable Diseases (NCDs) and few Communicable diseases (CDs). Over the years, careful monitoring of the study population has led of the organization to identify the major communicable and non-communicable diseases, associated risk factors and also the compilation of data store on the associations. The Barrackpore Health Study has been extending its important scientific contributions by enhancing its research capabilities through

- Gather and record the parameters of normal health of community individuals
- Estimate the prevalence of communicable and non-communicable diseases
- Provide useful information from longitudinal surveys including fixed interval cross sectional work to improve community health and reduce disease burden also measure the changes over time and to compare study population with other populations.

BPHRF manages a valuable database as a resource for medical researchers. The organization often works collaboratively with leading local, national and international researchers on medical and population health studies and projects.

Background of longitudinal household survey:

The predominant determining factors of health and sickness are environment and genetics. To know the normal physical health of a community, it needs to compile and record the parameters of healthy individuals of the community, similarly for knowledge of sickness need information of: prevalence, burden, risks and causatives. Genetics cannot be altered, environment can be modified to have positive outcome from the knowledge of normal parameters of health and essential aspects of sickness (disease burden). Gathering these information of health and sickness require longitudinal (in time) study and to establish a cohort. Limited reliable useful information so far been recorded of any Eastern Indian cohort. The organization is an attempt to enhance the information base by collating data of health and sickness over time.

The data from representative sample of longitudinal household survey is also used to estimate and project the burden of NCDs in State and National level. This also helps in different cross-sectional study prioritization, resource allocation and evaluation of existing community-based programs. The BLHS in India is one of the largest population based longitudinal health survey.

Practicum learning objectives:**1. Primary objective:**

1.a) To get trained in methodology and gain experience in NCDs survey conducted at longitudinal cohort in urban settings

Deliverables:

- Get trained in longitudinal population health survey.
- Designing tools to collect information for longitudinal cohort.
- Perform supervisory visit to field to supervise collection of data
- Quality review of sample frame development data.

2. Secondary objective:

2.a) To gain experience in analytical skills development activities to identify risk factors and interpret of data to define risks to the community.

Deliverables:

- Performed descriptive analyses, inferential analyses (bivariate and multivariate) and Multinomial regression analyses

Primary objective: *To get trained in methodology and gain experience in NCDs survey conducted at longitudinal cohort in urban settings –*

Non-communicable diseases (NCDs) are the diseases that are not able to be transmitted from one sufferer to another. They are not caused by any infection, non-infectious. NCDs are slowly progressive, of prolonged suffering, chronic in nature. Determinants are overall environment including life style, behavioural predilections and genomic predisposition.

In BLHS 2017-18, A set of administered structured questionnaire was used for data collection for NCDs survey. In this survey, three sets of structured questionnaires were designed:

Questionnaire-1: To assess different socio-demographic information about the study families
(Appendix A)

Questionnaire-2: To determine different health related problems of individuals 18 years of age or older ***(Appendix B)***

Questionnaire-3: To determine prevalence of Hepatitis and its risk factors for population less than 18 years of age. ***(Appendix C)***

NCDs are considered as Diabetes Mellitus, Hypertension, Cardiovascular Diseases (Angina, Heart Failure, Heart Attack, Rheumatic Heart Diseases), Stroke, Epilepsy, Musculoskeletal Disorder (Osteo Arthritis. Gout, Ankylosing Spondylitis). All the questionnaires were pretested and validated and translated in local language. Based on this questionnaire information collated by the enumerators by visiting every selected individual and face to face interview on socio-demographics: age, hours usually spent on manual activities per day, hours spent on other physical activities, hours spent for sleep per day, gender, marital status, education, occupation, dietary habits. Lifestyle and behaviours: current and passive smoking, alcohol, history of snoring,

perceptions of own health, any past or present illness (NCDs) confirmed by medical practitioner and their past and present symptoms.

Competencies gained from primary objective:

a) *Data Collection and Data Management:*

A paper-based tool was developed with the purpose of capturing NCDs related covariates and quality assessment indicators for the representative sample population.

There is a team of six Data Collection Officers (DCO) - one DCO is responsible for data collection through paper-based questioners in a single ward (500 households approx.). One DCO was responsible for 10/12 households from one ward in a day.

The data collection operation is managed by Field MLE Officer (FMO). Also, they are responsible for data quality assurance through spot checks and 100% editing.

b) *Data Quality Assurance:*

Data Quality Assurance will be done by FMOs using three major standard quality assurance mechanisms i.e. - Spot Check, Back Check and Editing.

Under “Spot Check” mechanism is observed on the spot to check that the live interview is actually happening on the scheduled date and to provide supportive supervision so as to ensure that the interviewer (DCO) is filling up the questionnaire in the right manner and interpreting the answers correctly.

Under the “Back Check” mechanism, to recheck the quality of collected data, some randomly filled up questionnaire were picked up by the FMOs and a randomly selected sample population and re-interviewed later, with a brief to ensure that the answers as collected by the DCO is correct. Finally, all the filled-up checklist (100% of sample) will be meticulously checked to ensure no data or information for any questions are missing.

c) Sampling strategy:

The BLHS area divided into 24 administrative divisions which are termed as “wards”. Total 144391 persons residing in 31715 households as per the 2011 census in the mentioned area. Six wards (No. 3, 6, 11, 15, 18 and 22) among the 24 wards were chosen randomly for established the cohort. Before the NCDs survey in November 2018, a comprehensive household list was prepared for the selected wards through household mapping. Hence from the ward mapping list, 3030 households from six selected wards with 12734 residents were recruited for the longitudinal cohort.

d) Organizational skills:

To track the ongoing progress and discuss the issues that are faced by field team, a weekly status and monthly review meeting is conducted. Attending the meetings helped to understand the organizational ongoing research activities and how the progress was tracked, and decisions were taken in the said activities.

Secondary objective: *To gain experience in analytical skills development activities to identify risk factors and interpret of data to define risks to the community.*

During practicum training period, statistical analysis was performed by me based on the secondary data to gain experience for the following studies.

- Burden & Correlates of Diagnosed & Undiagnosed Hypertension: Observation from an urban area of West Bengal, India
- Burden and Correlates of Viral Hepatitis among residents of an urban community in West Bengal, India

Descriptive analyses were conducted to determine the frequency distribution of various socio-demographic characteristics, behavior dietary pattern, physical activities, snoring and any past

medical conditions/illnesses of the participants and were expressed in mean (for continuous variables) and in proportions (for categorical variable) along with 95% confidence interval. For the inferential analyses, bivariate (unadjusted model) and multiple logistic regression analyses (adjusted model) were performed to find the associations between the above-mentioned variables. Multinomial regression analyses were done for outcome variables having more than two categories.

Competencies Gained from Secondary Objective:

a) Data review:

During tenure of Practicum, data was reviewed from the secondary database. The review was done to check

- Consistency of data
- Correctness of data
- Completeness

b) Advance data analysis:

To identify risk factors, estimate the burden of different covariates, determined strength of association between potential correlates and outcome variables, multiple, cumulative (additive model) and multinomial logistic regressions were used. Also learnt statistical analyses by using SAS (Statistical Analysis Software) version 9.3.2.

Other tasks:

1. Preparation of concept note:

Contribute to scientific writing and literature review to designing a study titled “Menstrual health & hygiene among rural women in West Bengal, India (MH)” under the supervision of Prof.S K Mitra, external supervisor.

2. Observation of Pulmonary Function Test and Obstructive Sleep Apnea detection study:

Observation at BPHRF six outposts where pulmonary function test (PFT) was performed to measure the prevalence of respiratory symptoms, and related clinical entities with the degree of severity of Asthma, Chronic Obstructive Pulmonary Diseases, Intermediate phenotypes. Also, record levels of lung function as measured by Forced Expiratory Volume in 1 second (FEV1) and Forced Vital Capacity (FVC) before and 15 minutes after bronchodilator.

Obstructive Sleep Apnea (OSA) is a common chronic disorder that characterized by recurrent episodes of upper airway collapse during sleep. It is also being recognized as an independent risk factor for several clinical consequences, including hypertension, cardiovascular disease, stroke, and abnormal glucose metabolism. The aim of the study is to measure association between snoring and non-communicable diseases (NCDs).

Competencies Gained from other tasks:

During observation, services provided by BPHRF clinician and counselors at outposts were observed, which gave insight into the dynamics of day to day care of OSA patients and as well as Asthma and COPD patients.

Competency gained Reflections on Practicum:

Overall the practicum at BPHRF served the purpose of practicum which is to engage MPH student in activities aligned with their career goals, as well as activities that demonstrate application of public health concepts and critical thinking relevant to the student's area of specialization.

Being involved in longitudinal population health survey and various epidemiological study as a team member was a great opportunity to develop skills for career ahead in public health. For NCDs survey, skills were applied in defining indicators with appropriate denominators and numerators

to monitor and track the field data collection activities and variations in productivity and output measurement with respect to longitudinal survey settings.

BLHS on the other hand furnished with opportunity to experience field work, monitoring the field work and to perform rapid assessment of methodology in the field. It helped in applying the skills of data review to check inconsistencies in data and sometimes validating data by spot and back check.

It helped in getting conversant with the advance data analysis through SAS. It was a significant learning experience of visiting the health outpost and interacting with field teams and study population on whom the survey is carried out. Also, it was the great conceptualization to accumulated experience and skill on scientific proposal writing and extended literature review.

A crucial learning experience was the culture competency of organization. BPHRF internally hosts an expert committee called Scientific Advisory Committee (SAC) where study proposal, papers are presented and critiqued which is very essential in organization for zero tolerance scientific deliverables, knowledge sharing and as well as mentoring students about scientific research on public health domain.

Challenges:

The learning experience at BPHRF has been rich and extensive due to the nature and significance of survey settings in longitudinal population health and immense support from all the team members. I appreciate the challenges where various stakeholders are involved in the program such as Virus Unit of Indian Council of Medical Research (ICMR), Kolkata, Western Australia Institute of Medical Research (University of Western Australia), Mission Arogya field research agency, NGOs are involved with the organization.

It is challenging to meet deadlines specially for drop outs rate in the community participations during the survey which leads to shrinking the cohort. Also keep track of inter-migration, household replacement against migration, refusals and non-duplicate enrollment are being huge challenges.

Initially challenges were faced during interaction with high risk groups such as SERO POSITIVE (for the hepatitis serology study) due to no prior experience of interacting with the community.

Take home message:

During my practicum, I acquired practical experience to pursue a professional journey in public health. Over that period of training, I have gained valuable insights into the preparation of the tools for survey, learned key concepts of writing of a scientific proposal, expand my skills on advance statistical data analysis, spend many hours with selected population to conducting surveys and quality of time for scientific communication.

Appendix:

Appendix A: Household Tool

BARRACKPORE POPULATION HEALTH STUDY 2017-18
Barrackpore Population Health Research Foundation

HOUSEHOLD QUESTIONNAIRE

Questionnaire No. :

Ward No. :

Serial No.
Household No.

Name of the Head of Household :

Present/ Permanent Address :

Household Landmark/ Location:

Contact No.

1. Ownership of house : Own house 1 / Rented house 2

2. Duration of stay in the locality : in yrs.

3. Particulars of usual members of the household :

Sl. No.	Name	Sex M/F	Relationship with Head	Age (in completed yrs.)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

4. Respondent serial No. (Refer from Q.3 Sl no.):

5. Total monthly family Income : Stated 1 // Don't Know 77 // Refused to state 88
If stated, amount (Rs.)

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6. Members aged 18 years and above :	Number	
7. Total members in the household :	Number	

8. Water sources :

A) <u>Drinking water</u>		B) <u>Bathing/ Washing water</u>	
Piped Water	1	Piped Water	1
Surface & Ground Water (Tube-Well/ Hand Pump)	2	Surface & Ground Water (Tube-Well/ Hand Pump)	2
Well Water	3	Well Water	3

9. Excreta disposal :

Sanitary	1
Two pit pour flush latrine	2
Others (Specify) _____	3

10. Drainage :

Underground Drain	1
Surface Drain	2
No Drainage	3

11. a) Health care delivery facilities utilized in the last 12 months : Yes 1 // No 2 → Q12

b) Type of the facilities : Public 1 Times Private 2 Times

c) Type of utilization :

Obstetric & Gynaecological care	1
Paediatric care	2
Other (Specify) _____	3

12. a) Any death in the household in last 12 months : Yes 1 // No 2

b) If yes, No. of deaths in the household in last 12 months

c) Details of deaths :

Cause of death to verify from Death Certificate if available				
Sl No.	At the time of death		Cause of death (Code to be given from code list)	Verified from death certificate (Yes=1, No=2)
	Age	Sex (M/F)		

Code for cause of death

Heart disease	1	Nephritis	8
Cerebral Stroke	2	Renal failure	9
Pneumonia	3	Trauma	10
Cancer	4	Violence	11
Hepatitis	5	Suicide	12
Cirrhosis of liver	6	Septicemia (Infection)	13
Maternal cause	7	Don't Know	77
Others (specify)	14		

RSS Code :

Signature of Enumerator : Code Date of Interview

Final checked by: Date:

Result (Completed - 1 / Not at home - 2 / Refused - 3 / Partly completed - 4 / MO - 5 / Other - 6 _____)

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Appendix B: Individual Adult (Age ≥ 18 yrs.) Tool

BARRACKPORE POPULATION HEALTH STUDY 2017-18 Barrackpore Population Health Research Foundation			
INDIVIDUAL'S QUESTIONNAIRE (FOR PERSONS AGED 18 YEARS AND ABOVE)		Questionnaire No. 2	
Ward No. 	Household No. 	Sl. No. 	
Name : 			
1. Serial number of individual in household schedule : 			
2.a) Age : In completed years b) Date of birth 			
3. Sex : Male 1 // Female 2 			
4. Education : Can't read or write 1 / Non-formal education 2 / Primary incomplete 3 / Primary complete 4 / Middle school complete 5 / High school complete 6 / Higher secondary or above 7 			
5. Marital status : Single 1 // Married 2 // Widow/ Widower 3 // Separated / Divorced 4 			
6. Occupational History :			
a) What is your current occupation (Specify). Code: 			
b) If Unemployed, what is your reason for not working? Medical 1/ Others 2 (Specify) 			
c) Are you currently paid for your occupation stated above? Yes 1 / No 2 			
d) If 'No', are you currently paid for any other associated occupation? Yes 1 / No 2 If 'Yes', state your associated occupation? 			
e) Nature of work : Sedentary 1 / Manual 2 / Both 3 			
f) How long have you been in the present job: month			
7. Do you now work or have you ever worked in any job that has exposed you in dust or fumes : Yes 1 / No 2 			
8. Diet : a) Are you vegetarian or non-vegetarian ? Vegetarian 1 / Non-vegetarian 2 b) How many main meals you take in a day ? Number 			
c) Main food items in the main meal ? Rice 1 Roti 2 Dal 3 Vegetables 4 Egg 5 Fish 6 Meat 7 			
9. How much milk you consume in a week : No. of glasses 			
10. How often do you add salt to your food after it is cooked? Rarely or never 1 / Sometimes 2 / Almost always or always 3 			
11.a) How many eggs you eat in a week? Number 			
b) How many times in a week you eat fish? Times 			
c) How many times in a week you eat meat? Times 			
d) How many times in a week you eat cooked vegetables? Times 			
12. How much cereals (Rice/ Wheat) you eat in a day? gms. 			
13. Which of the following is/are regularly used in your cooking : Mustard Oil 1 Vegetable Oil 2 Vanaspati 3 Ghee 4 Other (Specify) 5 			
14. Alcohol :			
a) Have you ever drunk alcohol : Yes 1 / No 2 If 'No', skip to Q 15			
b) If "Yes", at what age you started drinking alcohol in completed years			
c) Do you presently drink alcohol? Yes 1 / No 2 If 'No', skip to Q 14 (e)			
d) If "Yes", how often : Every day 1 / A few times in a week 2 / Once in a week 3 / 2-3 times in a month 4 / Once in a month or less 5 / Rarely (not more than twice/year) 6 			
e) Have you significantly reduced the amount of intake Yes 1 / No 2 If 'No', skip to Q 15 or stopped drinking alcohol?			
f) At what age you stopped drinking alcohol or significantly reduced the quantity (in completed Years)			

g) What was the reason for stopping or reducing quantity of alcohol?

Own decision for health reasons 1 / Own decision for other reasons 2 / Doctor's advice 3 / Media 4 ☐

15. Smoking :

a. Have you ever smoked? Yes 1 / No 2 ☐ [If "No" skip to Q 16]

b. If yes, at what age did you start smoking? Completed age

c. Do you smoke at present? Yes 1 / No 2 ☐ [If '1', skip to Q.16]

d. Did you smoke tobacco in the past? Yes 1 / No 2 ☐ [If '2', recheck Q.15a]

e. At what age did you stop smoking? Completed age

f. Smoking History [Only for present & past smoker]

Smoking Type	No.	Quantity (In grams)	Frequency of consumption Daily 1 / Weekly 2 / Monthly 3 / Yearly 4
Cigarettes 1			
Bidis 2			
Hand rolled cigarettes 3			
Cigars 4			
Others 5 (Specify _____)			

16. Do you use tobacco in some other form (Chewing, snuff etc) ? Yes 1 / No 2

17. PASSIVE SMOKING (ANSWER ONLY IF PRESENTLY NON-SMOKER)

	Home	Indoor workplace	Other indoor places
a. How often do you smell smoke? [Daily 1 / Weekly 2 / Monthly 3 / Yearly 4 / Never 5 / Not applicable 99]			
b. How many hours are you exposed to the smoke?			
c. How many person usually smoke in the same area when you smell the smoke?			

(Skip 'b and c', if answer to a is '5 or 99')

18. Exercise :

a) How many hours in a day, you usually spend at your work place, by doing :

Manual activity 1 in hours Sedentary work 2 in hours

b) How many days in a week you do physical exercise? days [If '0', skip to Q.19]

c) How long have you been engaged in physical exercise? months

d) How many hours in a day, you spend in physical exercise :

Less than half an hour 1 / Half an hour but less than one hour 2 / One hour and more 3 ☐

19. Sleep :

a) How long do you sleep in 24 hours? in hour

b) Do you snore : Never 1 / Sometimes 2 / Always 3 / Don't Know 7 ☐

20. a) Did you consult a doctor during last 12 months : Yes 1 / No 2 ☐ Q (21)

b) What was the reason :

Illness 1 ☐ Routine Check-up 2 ☐ Other 3 ☐ (Specify) _____

c) Reasons:

Blood pressure 1	☐	Epilepsy 5	☐
Heart diseases 2	☐	Cancer 6	☐
Cerebral Stroke 3	☐	Diabetes 7	☐
Respiratory diseases 4	☐	Diarrhoeal disorders 8	☐
Others 9	☐	(Specify) _____	

d) Were you admitted to hospital in last 12 months because of same illness? Yes 1 / No 2 ☐ Q (21)

e) If yes, how many times?

f) What was the reason for hospitalization?

Blood pressure 1	☐	Epilepsy 5	☐
Heart diseases 2	☐	Cancer 6	☐
Cerebral Stroke 3	☐	Diabetes 7	☐
Respiratory diseases 4	☐	Diarrhoeal disorders 8	☐
Others 9 (Specify)	☐		

21. a) What is your perception of your present health? Poor 1 / Fair 2 / Good 3 / Don't know 77

b) Have you gained or lost weight compared with that 3 months back :

(Individual perception & circumstantial evidence) Loss 1 / Gained 2 / No change 3 / Don't know 77

I am going to ask you some questions, mainly about the condition of your chest

22. **Breathlessness :**

a) Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill? Yes 1 / No 2 ☐ Q (23)

b) Do you get short of breath walking with other people of your own age on level ground? Yes 1 / No 2 ☐ Q (23)

c) Do you have to stop for breath when walking at your own pace on level ground? Yes 1 / No 2 / Don't know 77

23. **Cough :**

a) Do you suffer from cough? Yes 1 / No 2 ☐ Q (24)

b) Do you usually cough first thing in the morning? Yes 1 / No 2 ☐

c) Do you usually cough during any time of the day? Yes 1 / No 2 ☐

d) Do you cough like this on most days for as much as three months a year? Yes 1 / No 2 / Don't know 77

24. **Phlegm (Sputum, not Saliva) :**

a) Do you usually bring up Phlegm from your chest first thing in the morning : Yes 1 / No 2 ☐

b) Do you usually bring up Phlegm from your chest during the day or at night : Yes 1 / No 2 ☐

If "No" to (a) & (b) both go to Q.25

c) Do you cough/ bring up Phlegm like this on most days for as much as three months in a year? Yes 1 / No 2 / Don't know 77

25. **Wheezing :**

a) Does your chest ever sound wheezing or whistling? Yes 1 / No 2 ☐ Q (26)

b) Do you get this on most days or night? Yes 1 / No 2 ☐

26. **Chest Tightness :**

a) Have you ever felt tight in the chest? Yes 1 / No 2 ☐ Q (27)

b) in the last 12 months? Yes 1 / No 2 ☐ Q (27)

c) in the last month? Yes 1 / No 2 ☐

27. **Chest X-ray :**

a) Have you ever had a chest x-ray? Yes 1 / No 2 / Don't Know 77 If '2/77', skip to Q (28)

b) Have you got the chest x-ray film? Yes 1 / No 2 ☐

c) When was it done? Month Year

28. Past Respiratory Illness :

Has your doctor ever told you that you had..... ?

- A. Pulmonary tuberculosis and/ or pleurisy Yes 1 / No 2 / Don't know 77 ☐ Q (B)
- a) Are you presently on medications ? (for TB) Yes 1 / No 2 ☐ Q (B)
- b) Date of commencement : Date Month Year
- c) Date of (expected) completion : Date Month Year
- B. Bronchitis Yes 1 / No 2 / Don't know 77 ☐
- C. Pneumonia Yes 1 / No 2 / Don't know 77 ☐
- D. Asthma or bronchial asthma Yes 1 / No 2 / Don't know 77 ☐
- E. Other chest trouble (Specify) Yes 1 / No 2 / Don't know 77 ☐
- F. An injury OR operation affecting your chest Yes 1 / No 2 / Don't know 77 ☐

Now I am going to ask you about the condition of your heart and blood pressure

29. Chest Pain :

- a) Have you ever had a pain or discomfort in your chest ? Yes 1 / No 2 ☐
- b) Have you ever had any pressure or heaviness in your chest ? Yes 1 / No 2 ☐
- If "No" to both (a) & (b), go to Q 30
- c) Do you get it when you walk up a hill on hurry ? Yes 1 / No 2 ☐
- d) Do you get it while walking at ordinary pace on the level ? Yes 1 / No 2 ☐
- If "No" to both (c) & (d), go to Q 30
- e) What do you do if you get it while you are walking ? Stop or slow down 1 ☐ Keep going 2 ☐
- f) If you stand still what happens to it ? Relieved 1 ☐ Not relieved 2 ☐ Uncertain 3 ☐
- g) How soon is it relieved ? 10 minutes or less 1 ☐ More than 10 minutes 2 ☐
- h) Where do you get this discomfort, pressure, heaviness or pain ?
(Mark all the places on the diagram with "X")
- Central - 1 ☐
Left - 2 ☐
Right - 3 ☐
- i) Did you see a doctor because of this pain ? Yes 1 / No 2 ☐
- j) What did the doctor say it was ? Angina or heart pain 1 / Other 2 (Specify)

30. Have you ever had a severe pain across the front of your chest, lasting 20 minutes or more ? Yes 1 / No 2 ☐ Q(31)

- a) When did this happen ? Month Year
- b) Did you see a doctor because of that pain ? Yes 1 / No 2 ☐ Q(31)
- c) What did the doctor say it was ? Heart Attack 1 / Angina or heart pain 2
Other 3 (Specify)

31. Have you ever been told by a doctor that you have any of the following :

- 31.1. High Blood Pressure Yes 1 / No 2 ☐ Q(31.2)
- a) Are you on medication ? Yes 1 / No 2 ☐ Q(c)
- b) Do you take them regularly and daily ? Yes 1 / No 2 ☐
- c) How often is your blood pressure taken ? Daily 1 / Weekly 2 / Bi-weekly 3 / Monthly 4 / Bi-Monthly 5 / Rarely 6 ☐
- d) When was the last blood pressure taken ? days before

31.2. Angina :

- a) Have you ever been told by a doctor that you had angina? Yes 1 / No 2 ☐ Q(31.3)
- b) What test did you have?
- | | | |
|------------|---|--------------------------|
| ECG | 1 | ☐ |
| Stress ECG | 2 | ☐ |
| Angiogram | 3 | ☐ |
| None | 4 | ☐ |

31.3. Heart Failure :

- a) Have you ever been told by a doctor that you have had heart failure? Yes 1 / No 2 ☐ Q(31.4)
- b) What test did you have? Chest X-ray 1 ☐ ECG 2 ☐ Echo Cardiography 3 ☐
Catheter Study (Angio) 4 ☐ Blood Test 5 ☐ None 6 ☐
- c) Have you ever been hospitalized for heart failure, diagnosis or treatment or both? Yes 1 / No 2 ☐ Q(31.4)
- d) Name of the hospital
- e) Are you presently or have you been in the past on any medication for heart failure? Yes 1 / No 2 ☐ Q(31.4)
- f) Please name the medicine : Stated 1 ☐ Don't know 77 ☐
If stated, Specify

31.4. Heart Attack :

- a) Have you ever been told by a doctor that you have had a heart attack? Yes 1 / No 2 ☐ Q(31.5)
(That is coronary thrombosis or occlusion or myocardial infarction)
- b) Were you hospitalized? Yes 1 / No 2 ☐ Q(31.5)
- c) Name of the hospital

31.5. Rheumatic Heart Disease :

- a) Have you ever been told by a doctor that you have rheumatic heart disease? Yes 1 / No 2 ☐ Q(31.6)
- b) Have you got damaged valve? Yes 1 / No 2 / Don't Know 77 ☐ If '2/77', skip to Q(31.6)
- c) Which valve? Mitral 1 ☐ Aortic 2 ☐ Both 3 ☐ Don't Know 77 ☐

31.6. Other Heart Disease :

- a) Have you ever been told by a doctor to have any other form of heart disease? Yes 1 / No 2 ☐ Q(32)
- b) Do you know the name of the condition? Yes 1 / No 2 ☐ Q(32)
- c) Please name the condition

Now I am going to ask you about stroke and epilepsy**32. Neurological Symptoms :**

- a) In the last 12 months have you had any sudden feeling of numbness, tingling or loss of feeling in either arm, hand, leg, foot or face? Yes 1 / No 2 ☐ Q(33)
- b) How long did the attack(s) usually last?
- | | | |
|---------------------------|---|--------------------------|
| Usually less than an hour | 1 | ☐ |
| from 1 to 24 hours | 2 | ☐ |
| More than a day | 3 | ☐ |
33. a) During the past 12 months, have you had any sudden attacks of paralysis or loss of use of either arm, hand, leg or foot? Yes 1 / No 2 ☐ Q(34)
- b) How long did the attack (s) usually last?
- | | | |
|---------------------------|---|--------------------------|
| Usually less than an hour | 1 | ☐ |
| from 1 to 24 hours | 2 | ☐ |
| More than a day | 3 | ☐ |

34. a) In the past 12 months have you had any sudden loss of eyesight or blurring of vision? Yes 1 / No 2 ☐ Q (35)
 b) Was the loss of sight in one eye or both eyes? One eye affected 1 ☐
 Both eyes affected 2 ☐
 Not sure whether one or both eyes affected 3 ☐
 c) How long did the attack (s) usually last? Usually less than an hour 1/ From 1 to 24 hours 2/ More than a day 3 ☐
35. a) In the last 12 months, have you had any attacks of changes in speech, Yes 1 / No 2 ☐ Q (36)
 loss of speech or inability to say words for more than two minutes?
 b) How long did the attack (s) usually last? Usually less than an hour 1/ From 1 to 24 hours 2/ More than a day 3 ☐
36. a) In the last 12 months, have you had any spells of severe dizziness or light headedness, vertigo, difficulty in walking or loss of balance? Yes 1 / No 2 ☐ Q (37)
 b) How long did the attack (s) usually last? Usually less than an hour 1/ From 1 to 24 hours 2/ More than a day 3 ☐
37. a) Did you see a doctor for any of the above attacks (Q: 32 - 36) Yes 1 / No 2 ☐ Q (38)
 b) What did the doctor say it was
38. Have you ever been doctor diagnosed as having any of the following :
 a) A Transient Ischaemic Attack (TIA) Yes 1 / No 2 ☐
 b) A Stroke Yes 1 / No 2 ☐
 c) A Cerebral Thrombosis Yes 1 / No 2 ☐
 d) A Cerebral Haemorrhage Yes 1 / No 2 ☐
39. a) Has a doctor ever told you that you suffer from epilepsy or epileptic attacks? Yes 1 / No 2 ☐ Q (42)
 b) By whom? General Physician 1 ☐ Neurologist 2 ☐ Other 3 ☐ (Specify) _____
40. a) If you are an epileptic or diagnosed to have epilepsy, are you on anti-epileptic medication? Yes 1 / No 2 ☐
 b) How many attacks have you had till date? No. of attacks Don't know 77
41. a) Did you have any test Yes 1 / No 2 ☐
 b) Which tests? EEG 1 ☐ CT of brain 2 ☐ Blood tests 3 ☐
 Other 4 ☐ (Specify) _____
42. **Arthritis :** [Pain, Tenderness (Pain on Pressure), Swelling or Stiffness]
 a) Have you in the last 7 days had any problem, that is pain, tenderness Yes 1 / No 2 ☐ Q (43)
 (pain on pressure), swelling or stiffness, in your bones, joints or muscles.
 b) How long have you had this problem?
 Unit : in days 1 ☐ in weeks 2 ☐ in months 3 ☐ in years 4 ☐
 Duration:
Please mark on this diagram with an "X" where you feel the pain, tenderness (pain on pressure), swelling or stiffness in the last 7 days
- c) Was there a traumatic event Yes 1 / No 2 / Don't know 77 If '2/77', skip to Q (e)
 (i.e. strain or injury) that has caused the pain, tenderness, swelling or stiffness?

d) What type of traumatic event was responsible ?

Fracture, Broken bone 1 ☐

Car accident 2 ☐

Fall 3 ☐

Strain 4 ☐

Other 5 ☐

(Specify) _____

e) How would you describe the pain, tenderness, swelling or stiffness in the last 7 days ?

Mild 1 / Moderate 2 / Severe 3 / Very Severe 4 ☐

[If Q.42 is YES, Skip Q.43]

43. a) If you have no problem, that is pain, tenderness (pain on pressure), Yes 1 / No 2 ☐ Q (44)

swelling or stiffness on your bones, joints or muscles in the last 7 days,

have you EVER had any problem, that is pain, tenderness (pain on pressure), swelling or stiffness.

b) Please mark on this diagram with an "X" where you have EVER felt the pain, tenderness (pain on pressure) swelling or stiffness.

c) Was there a traumatic event Yes 1 / No 2 / Don't know ?? ☐ ☐ If '2/??', skip to Q (e)

(i.e., strain or injury) that caused the pain, tenderness, swelling or stiffness ?

d) What traumatic event was responsible ?

Fracture, Broken bone 1 ☐

Car accident 2 ☐

Fall 3 ☐

Strain 4 ☐

Other (Specify) 5 ☐

e) How would you describe your recollection of the severity of the pain ?

Mild 1 / Moderate 2 / Severe 3 / Very Severe 4 ☐

44. Functional Disability :

a) Are you currently limited to the kind or amount of activities you can do because of a problem that is pain, tenderness (pain on pressure), swelling or stiffness in your bones, joints or muscles ? Yes 1 / No 2 ☐ Q (b)

If "Yes", how long (Unit) : in days 1 ☐ in weeks 2 ☐ in months 3 ☐ in years 4 ☐

Duration : ☐ ☐ Q (45)

b) Have you ever been limited in the past ? Yes 1 / No 2 ☐ Q (46)

If "Yes", how long (Unit) : in days 1 ☐ in weeks 2 ☐ in months 3 ☐ in years 4 ☐

Duration : ☐ ☐ Q (46)

45. Difficulty Performing Specific Tasks :

(Note : This section is to be completed only for respondents who are currently limited)

Has any of these problems {Pain, tenderness (pain on pressure), swelling or stiffness} affected your ability for more than two weeks ? [Not for fracture & neurological problems] Yes 1 / No 2 ☐ Q (46)

(Tick mark One best answer for your usual abilities for more than two weeks)

ITEMS	RESPONSE			
	Without ANY difficulty	With SOME difficulty	With MUCH difficulty	UNABLE to do at any time
a) Dress yourself, including tying shoelaces and doing buttons	1 ☐	2 ☐	3 ☐	4 ☐
b) Get in and out of bed	1 ☐	2 ☐	3 ☐	4 ☐
c) Lift a full cup or glass to your mouth	1 ☐	2 ☐	3 ☐	4 ☐
d) Walk outside on flat ground	1 ☐	2 ☐	3 ☐	4 ☐
e) Wash and dry your entire body	1 ☐	2 ☐	3 ☐	4 ☐
f) Bend down to pick up clothing from the floor	1 ☐	2 ☐	3 ☐	4 ☐
g) Turn regular taps on and off	1 ☐	2 ☐	3 ☐	4 ☐
h) Get in and out of a car	1 ☐	2 ☐	3 ☐	4 ☐
i) Get in and out of a bus	1 ☐	2 ☐	3 ☐	4 ☐
j) Squat	1 ☐	2 ☐	3 ☐	4 ☐
k) Kneel	1 ☐	2 ☐	3 ☐	4 ☐

46. **Treatment :**

a) Have you had treatment for the pain, tenderness (pain on pressure) swelling or stiffness in your bones, joints or muscles ? Yes 1 / No 2 ☐ Q (e)

b) From whom ?

(Mark as many as possible)

- | | |
|-----------------------------|----------------------------|
| General Practitioner | 1 ☐ |
| Pharmacist / Chemist | 2 ☐ |
| Hospital | 3 ☐ |
| Specialist (Rheumatologist) | 4 ☐ |
| Physiotherapist | 5 ☐ |
| Self Remedies | 6 ☐ |
| Other (Specify) | 7 ☐ |

c) Which of the following treatments were given for the pain, tenderness (pain on pressure), swelling or stiffness ?

(Tick mark as many as apply)

- | | |
|---------------------------|----------------------------|
| Non-prescription tablets | 1 ☐ |
| Prescription tablets | 2 ☐ |
| Injections | 3 ☐ |
| Physiotherapy | 4 ☐ |
| Surgery | 5 ☐ |
| Special diet | 6 ☐ |
| Other treatment (Specify) | 7 ☐ |

d) Did a doctor give you a name or diagnosis for the pain, tenderness (pain on pressure), swelling or stiffness in your bones, joints or muscles ? Yes 1 / No 2 / Don't Know 77 ☐ ☐ If '2/77', skip to Q (f)

e) Name the diagnosis :	Osteo Arthritis	1	☐
	Rheumatoid Arthritis	2	☐
	Gout	3	☐
	Ankylosing Spondylitis	4	☐
	Others	5	☐ (Specify) _____

f) If you have had pain, tenderness (pain on pressure), swelling or stiffness, how well have you been able to adapt to this problem ? Very well 1/ Rather well 2/ Not so well 3/ Not at all 4 ☐

47. **Diabetes :**

a) Has a doctor ever told you that you have diabetes or high blood sugar levels ? Yes 1 / No 2 ☐ Q (49)

b) Please state the year you were first told ? Month Year

48. a) Have you ever been given advice or treatment for diabetes or high blood sugar levels ? Yes 1 / No 2 ☐ Q (49)

b) Please state the year you were first given advice or treatment Month Year

c) Was this

No treatment	1	☐
Diet advice	2	☐
Tablets	3	☐
Insulin injections	4	☐

49. **Peptic Ulcer :**

a) Do you have attacks of indigestion or epigastric pain ? Yes 1 / No 2 ☐

b) Have you had attacks of indigestion or epigastric pain in the past ? Yes 1 / No 2 ☐

c) How many days the attacks usually last? Days

If both 'a & b' are no skip to Q (50)

50. **Acidity :**

a) Do you suffer from heartburn ? Yes 1 / No 2 ☐

b) Have you suffered from heartburn in the past? Yes 1 / No 2 ☐

c) How many days heartburn usually last? Days

If both 'a & b' are no skip to Q (51)

51. a) Have you ever been told by a doctor that you had :

a) Duodenal ulcer	Yes 1 / No 2	☐
b) Gastric ulcer	Yes 1 / No 2	☐
c) Peptic ulcer	Yes 1 / No 2	☐

If the answers of all the three questions are "No" go to Q 52

b) Did your doctor ask for investigation ?

No	1	☐
Barium meal	2	☐
Endoscope	3	☐

52. Were you taking any anti-inflammatory and/ or analgesic drugs (Aspirin, Brufen etc.) during the episode of indigestion, epigastric pain or heart burn ? Yes 1 / No 2 ☐

53. Has any of your blood relative suffered from peptic ulcer?

a) Brothers or Sisters	Yes 1 / No 2 / Don't know	77	
b) Mother or Father	Yes 1 / No 2 / Don't know	77	
c) Grand Parents	Yes 1 / No 2 / Don't know	77	

54. **Viral Hepatitis :**a) Have you ever suffered from jaundice (Yellow colouration of skin, eye, & urine)? Yes 1 / No 2 ☐ Q (57)b) How many times? Don't Know 77

c) Detail history of jaundice:

Episode	Year	Whether Viral Hepatitis (Stated by doctors) Y/N/ DN	Duration of illness (in weeks)	Whether admitted in hospital Y/N	Any complication [Swelling in feet 1/ Fluid in abdomen 2/ Others 3 (Specify)]

55. Were you pregnant at the time of jaundice ? Yes 1 / No 2 / Not Applicable 99 ☐ ☐56. a) Did you receive blood or blood product transfusion during last six months before the attack ? Yes 1 / No 2 / Don't know 77 ☐ ☐b) Did you receive any injection during last six months before the attacks ? Yes 1 / No 2 / Don't know 77 ☐ ☐c) Were you habituated/ addicted in taking drugs by injection ? Yes 1 / No 2 / Don't know 77 ☐ ☐d) Did you have acupuncture, tattooing, nose and /or ear piercing during last six months before the attack ? Yes 1 / No 2 / Don't know 77 ☐ ☐57. i) Has any other member of the family suffered from jaundice in the last ten years? Yes 1 / No 2 / Don't know 77 ☐ ☐ii) If "Yes", how many members?

iii) Specify relation to the individual:

- a) Spouse 1 ☐
- b) Brother / Sister 2 ☐
- c) Children 3 ☐
- d) Parents 4 ☐
- e) Grand parents 5 ☐
- f) Others 6 ☐

58. Has any member of the family had liver disease (Cirrhosis, Liver cancer) ? Yes 1 / No 2 / Don't know 77 ☐ ☐59. Have you ever got Hepatitis B vaccine ? Yes 1 / No 2 ☐a) If yes, No. of doses with date

Dose 1 ____//____//____ Dose 2 ____//____//____ Dose 3 ____//____//____

60. **Cancer :**a) Have you ever been diagnosed by a doctor and / or hospital to have any form of Cancer? Yes 1 / No 2 ☐

b) Please state the site : Lung 1 ☐ Stomach 2 ☐ Colon 3 ☐

(Tick the box) Throat 4 ☐ Mouth including tongue 5 ☐ Lymph glands 6 ☐

Prostate 7 ☐ Breast (male / female) 8 ☐ Uterus 9 ☐

Ovary 10 ☐ Skin 11 ☐ Blood 12 ☐

Others 13 ☐ (Specify) _____

61. How it was diagnosed ?

Surgery 1 ☐Biopsy 2 ☐Cytology 3 ☐X-ray 4 ☐Others 5 ☐ (Specify) _____

62. If diagnosed in hospital, name of the hospital is :

RSS Code : ☐☐Signature of Enumerator : _____ Code ☐☐ Date of Interview _____Final checked by _____ Code ☐☐ Date _____Result ☐ (Completed - 1 / Not at home - 2 / Refused - 3 / Partly completed - 4 / MO - 5 / Other - 6 _____)

Appendix C: Hepatitis Tool (Age<18 yrs.)

BARRACKPORE POPULATION HEALTH STUDY 2017-18
Barrackpore Population Health Research Foundation

QUESTIONNAIRE FOR INDIVIDUALS Below 18 yrs. AGE

Questionnaire No. :

Serial No.

Ward No. :

Household No.

Name :

Respondent : Parents 1 / Guardian 2 ☐ Respondent member serial No.

1. Serial No. in household schedule (Member Serial No.)

2. a) Age: in completed years b) Date of birth:
Day Month Year

3. Sex: Male 1 // Female 2 ☐

4. Education:
[Can't read or write 1 // Non-formal education 2 // Primary incomplete 3 // Primary complete 4 // Middle school complete 5 // High school complete 6 // Higher secondary or above 7 // Not applicable 99 (for age<6 yrs.)]

5. Marital Status: Single 1 // Married 2 // Widow/ Widower 3 // Separated/ Divorced 4 ☐

6. Occupation: Code → [Not Applicable-99 for age below 7years]

7. a) Has any health care delivery facilities been utilized in last 12 months? Yes 1 // No 2 ☐
b) If 'Yes', specify reasons for utilization _____

8. a) Has the child ever suffered from Jaundice? Yes / No 2/ Don't know 77 If '2/77', goto → Q.10
b) How many times? No. of times // Don't Know 77
c) Detail history of jaundice:

Episode	Year	Whether Viral Hepatitis (Stated by doctors) Y/N/ DN	Duration of illness (in weeks)	Whether admitted in hospital Y/N	Any complication [Swelling in feet 1/ Fluid in abdomen 2/ Others 3 (Specify)]

9. a) Did the child receive blood or blood product transfusion during last six months before the attack? Yes 1 // No 2 // Don't Know 77 ☐
b) Did the child receive any injection during last six months before the attack? Yes 1 // No 2 // Don't Know 77 ☐
c) Did the child have acupuncture, tattooing, nose and/ or ear piercing during last six months before the attack? Yes 1 // No 2 // Don't Know 77 ☐

Page 1

- 10.a) Has any other member of the family suffered from Jaundice in the last 10 years? Yes 1 / No 2 / Don't Know 77 ☐ If ans '2 or 77' → Q.11
- b) If yes, how many member/ members?
- c) Specify, relation to child: Parents 1 ☐ Siblings 2 ☐ Grand Parents 3 ☐ Others 4 ☐ Specify) _____
11. Has any member of the family had liver disease (*Cirrhosis, Liver Cancer*)? Yes 1 // No 2 // Don't Know 77 ☐
12. **Feeding History (for children <1 year):**
- a) How long was your child breast fed ?
- i) Total no. of days [If '0', reasons _____]
- ii) No. of months exclusively breast fed
- b) Did your child ever take any milk other than breast milk? Yes 1 // No 2 ☐ → Q.(d)
- c) What kind of milk other than breast milk, had your child ever had?
- Cow's/ Buffalo's/ Goat's milk 1 ☐ Tinned milk 2 ☐
- d) Have you started giving weaning food to the child? Yes 1 / No 2 ☐ → Q.(13)
- e) At what age did your child start taking other food? Months Not applicable 99 ☐
- f) If the child had taken other food, what kind of food the child started with? _____
- 13.a) Has a doctor ever physically examined your child? Yes 1 // No 2 // Don't Know 77 ☐
- b) If "Yes", any congenital anomalies detected? Yes 1 // No 2 // Don't Know 77 ☐
- c) If "Yes", specify _____
14. **Immunization details: (Fill up all questions for age < 5 Years & Hepatitis B for age <18 yrs.)**

Vaccine name with dose	Status (Yes1 / No2 / Don't know77)	If Yes, date	Verified from Immunization Card (Yes 1 / No 2)	Source of receipt of vaccine (Govt.1/ Pvt.2/ Others 3/ DK 77)	Remarks
BCG					
OPV0					
OPV1					
DPT1					
OPV 2					
DPT 2					
OPV 3					
DPT 3					
Measles/MMR					
Hep B - 1st dose					
Hep B - 2nd dose					
Hep B - 3rd. Dose					
Hib - 1st. Dose					
Hib - 2 nd. Dose					
Hib - 3rd. Dose					
1st. Booster - DPT					
1st. Booster - OPV					
2nd.Booster - DT					
2nd.Booster - OPV					
Vitamin A (Five doses)					

RSS Code: Signature of enumerator Code Date of interview

Final checked by Date

Result ☐ (Completed - 1 / Not at home - 2 / Refused - 3 / Partly completed - 4 / MO - 5 / Other - 6 _____)

Appendix D: Few snaps of field activities



Pic 1: Household visit for survey data collection in Ward No. 11



Pic 2: Physical Examination in Ward No. 22 Health Outpost



Pic 3: Pulmonary Function Test in Ward No. 22 Health Outpost



Pic 4: Viral Hepatitis Study (Serology test) in Ward No. 3 Health Outpost



Pic 5: Demonstrating OSA instrument to the participant before performing the test



Pic 6: Taking consent during survey

all photos were taken with verbal consent