Strengthening Counseling Corner in NCD Corner for Reducing Risk due to Non-Communicable Diseases in Jashore District

FINAL REPORT

March 2022

Asia Arsenic Network

In Association with the Ministry of Foreign Affairs of Japan
under the scheme of Grand Assistant for Japanese NGO Project

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PREFACE

Non-communicable diseases (NCDs) are one of the major causes of global death being responsible for around 67% of the same. NCD include, among others, cardiovascular diseases, cancer, diabetes and chronic respiratory diseases. Behind NCDs, there remain a set of risky health patterns such as tobacco consumption, unhealthy diet, lack of physical activity, and alcohol. These behaviors largely come with a results like overweight and obesity, raised blood pressure, and raised cholesterol, and ultimately death. Controlling NCDs has been a key challenge for the countries round the globe especially in the low to middle income countries where eighty percent of total deaths occur due to NCDs.

Bangladesh, which is now on its way to be graduated to middle income country, has remained exposed to NCD challenges as well which is being increasing keeping pace with its growing population. Rapid industrialization, socio-economic changes, urbanization, and unhealthy lifestyle above all stimulated the risk of NCDs, in particular, among the disadvantaged part of the society having poor access to the health services.

For the management of the key risk factors of NCDs a detailed understanding of the current status is required along with the information on the progress status. To reduce the burden and impact of NCDs feasible interventions are also required. Health care services towards prevention of NCDs has been providing through Community Clinics, Health & Family Welfare Centers, Primary Health Care Centers, Upazila Health Complexes, District Hospitals and from the Specialized Hospitals at tertiary level being managed by The Directorate General of Health Services (DGHS), as the key catalyst of government health care services.

DGHS included non-communicable diseases in the strategic plan for Health, Population & Nutrition Sector Development Program and arsenicosis is also managed by the NCD Section of the DGHS. Since there are many common denominators between arsenicosis and non-communicable diseases in approach of prevention and management, DGHS welcomed Asia Arsenic Network (AAN) to implement NCD control activities utilizing its arsenic mitigation and arsenicosis patient management expertise.

DGHS is proud to be part of the project “Strengthening Counseling Corner in NCD Corner for Reducing Risk due to Non-Communicable Diseases in Jashore District” which has been implemented by Asia Arsenic Network (AAN) in association with the Ministry of Foreign Affairs of Japan. It is anticipated that the lessons learnt from this project will help replicate it to other areas of Bangladesh that will subsequently strengthen the capacity of NCD prevention work force. Through the collaborative approach, DGHS is highly optimistic to tackle NCDs through bringing behavioral changes among the communities towards achieving the SDGs by 2030.

Prof. Robed Amin
Line Director
Non-Communicable Disease Control Program
Directorate General of Health Services

PREFACE

This is my pleasure to present this preface for the Final Report of the project "Strengthening Counseling Corner in NCD Corner for Reducing Risk due to Non-Communicable Diseases in Jashore District" which has been implemented by Asia Arsenic Network (AAN) in association with the Ministry of Foreign Affairs of Japan in four Upazila Health Complexes of Chaugachha, Keshabpur, Monirampur and Jashore Sadar.

NCD patients are to undergone a prolonged treatment procedure posing a burden on the family and society as well. NCDs in Bangladesh are becoming a severe health problem for the society. Though people of all classes are exposed to the risks of NCDs, still the underprivileged and financially unwell population is to bear the worst consequences due to its impact on socio-economic condition, poverty and non-productivity of the patients. The major risk factors of NCD can be controlled through modification of risky behavioral pattern and prevention of metabolic disorders. People's awareness on early detection mechanism, proper treatment and referral system is highly effective in this regard. It is also required to observe that how the health care system is functioning for NCD prevention and management activities. The burden of NCDs is to be reduced for the achievement of SDGs by 2030.

The project targeted to support to make function of NCD Corners with UHC initiatives, to reduce the burden of NCDs among the protect target population through developing knowledge & skills, to develop the counseling system at NCD Corners, to establish a computer-based data management system of newly identified and follow-up patients, to develop capacity of community representative for early risk detection due to NCDs and promotion towards lifestyle modification and necessary environmental arrangement and also to replicate the good practice to other areas. A combined effort has been given to the project combining local government istitutions, DGHS, Civil Surgeon Office, the implementing organization and finally the community to ensure sustainability of the activities.

We are glad to be associated with the project since its inception in the preceding years. I strongly believe that the lessons learnt through this project and the capacities that developed among the stakeholders will have a significant impact towards progress in prevention of NCDs in a sustainable manner. We would like to congratulate all concerned personnel, stakeholders, counterparts along with Asia Arsenic Network on this successful completion of the project.

Dr. Biplob Kanti Biswas
Civil Surgeon
Jashore

PREFACE

In recent years NCD has become one of the major global public health menace. It leaves adverse health impacts on nations specially where the scope of public health services are very limited due to having poor human and technical resources.

According to the "Risk Factor Survey 2018" about 1.9% men and 4% women had none of the above risk factors. Overall, 26.2% people of 18-69 years age had three or more of the above risk factors. The proportion was higher among the 60-69 years aged people (40.1%) than the 18-29 years aged people (16.5%). As per the "WHO NCDs Progress Monitor 2020", in Bangladesh, NCDs also account for 67% of the total deaths, exceeding other causes such as childbirth-related and infectious diseases. The under-privileged communities in the country are bearing the heaviest toll of this burden. Rural inhabitants and urban slum dwellers particularly suffer the most. Unavailability of skilled human resources to address NCDs, poor NCD surveillance system, lack of proper information and coordination between public and private services also play roles in increasing NCD burden.

Previously, AAN carried out projects titled "Risk-Reduction of Non-Communicable Diseases in Jessore District" during April 2013 to March 2016 and "Strengthening Community Capacity for Non-Communicable Diseases Prevention in Khulna Division" during 2016 to 2019. Based on the experiences of the previous projects, AAN, in consultation with the DGHS, decided to conduct a new project titled "Strengthening Counseling Corner in NCD Corner for Reducing Risk due to Non-Communicable Diseases in Jashore District" in association with the Ministry of Foreign Affairs of Japan. The new project targeted four Upazila Health Complexes of Chaugachha, Keshabpur, Monirampur and Jashore Sadar, where early detection has been promoted through counseling and developing a sound database system. DGHS, being the responsible institution for government health care service, has become a key counterpart of the project and also welcomed AAN to implement NCD control activities utilizing its arsenic mitigation and arsenicosis patient management experience.

Remarkable achievement of the project includes, among others, Enhancing the services of NCD corner, Early detection following referral system, Early detection (Screening) of NCDs through NRI Campaign, Establishment of web-based data collection system, Establishment of database system at NCD Corner, Identified NCD Patients' data management, App-based Self-risk tools developed, Strengthening reporting system and so on. For sustainability of the project, initiatives were taken such as Service delivery, Capacity building of govt. service provider and stake holder, Health Management Information Systems (HMIS), Access to essential medicines, Logistics and equipment and finally Supervision and monitoring.

It is expected that the experiences of the project will be successfully replicated to other areas of the country towards prevention of the risks of NCDs among the communities. All those outcome, findings along with challenges and strategic actions have been complied in this Final Report to enable any future endeavor towards achievement of SDGs through ensuring prevention of NCDs in Bangladesh.

Prof. Dr. Sk. Akhtar Ahmad
Chairman
Asia Arsenic Network Bangladesh

EXECUTIVE SUMMARY

As per the "WHO NCDs Progress Monitor 2020", in Bangladesh, NCDs also account for 67% of the total deaths, exceeding other causes such as childbirth-related and infectious diseases. The under-privileged communities in the country are bearing the heaviest toll of this burden. According to the "Risk Factor Survey 2018" about 1.9% men and 4% women had none of the above risk factors. Overall, 26.2% people of 18-69 years age had three or more of the above risk factors. The proportion was higher among the 60-69 years aged people (40.1%) than the 18-29 years aged people (16.5%). Rural inhabitants and urban slum dwellers particularly suffer the most. Unavailability of skilled human resources to address NCDs, poor NCD surveillance system, lack of proper information and coordination between public and private services also play roles in increasing NCD burden.

AAN carried out projects titled "Risk-Reduction of Non-Communicable Diseases in Jessore District" (April 2013 to March 2016) and "Strengthening Community Capacity for Non-Communicable Diseases Prevention in Khulna Division" (11th March 2016 to 10th March 2019). Through the projects the organization advocated the know-how of avoiding unsafe behavior and promoted NCD risk identification campaigns among the residents in the project areas since early detection helps them prevent NCD burden. It was observed through a pilot study in Jashore that inappropriate dietary patterns, smoking habit and lack of physical exercise increase the burden for NCDs.

The three-year project starting from 15 March 2019 and phasing out on 14 March 2022 was implemented in Chaugachha, Keshabpur, Monirampur and Sadar Upazilas of Jashore district. Target population was 1,644,980 (male 829,719 and female 815,261) in 389,152 households. Direct beneficiaries were estimated to be 129,555 and indirectly 149,000 people were also expected to get benefit from the project. Key objectives of the project were-

- To support to make function of NCD Corner with UHC initiative
- To protect target population from the risk of NCDs by developing knowledge & skills
- To develop a counseling system at NCD Corner
- To establish a computer-based data management system of newly Identified and follow-up patients
- To develop capacity of community representative for early risk detection due to NCDs and promotion towards lifestyle modification and necessary environmental arrangement
- To replicate good practice to other area

NCD corner was formally opened in target Upazila Health Complexes (UHC) prior to the starting of the project, but it was not functioning as per its management protocol. Although doctors were identifying NCD patients, it did not seem to be in an organized way. There were no supporting hands to measure and note down the records of physical weight, height and waist circumference. Follow-up information was not available and there was lack of medicine, too. Upon finding this gap, from April 2019 initiatives were taken by the project to make the NCD Corner functional. In this regard, steps were taken such as Establishment of NCD Corner, Early detection, Early detection following referral system, Early detection (Screening) of NCDs through NRI Campaign, Referral system, Record keeping.

Capacity development of NCD volunteers through training and health education was one of the major activities of the project. It was very much imported in view of the necessity of sustainability of the programs which aimed at preventing the risks due to non-communicable diseases. Besides, skill development trainings were provided to the Health Workers, Community Groups under Community Clinic, Secondary-level school

teachers and member of Youth Club and women representatives who were expected to play role. Health Education plan was executed through the help of individual volunteer who were treated as 'NCD volunteer'. Community Development Officers and Union Supervisors appointed under the project were also expected to develop communities to fight against NCD by utilizing their knowledge and skills gained through project activities. Competencies of the government service provider were also developed through orientation, training, workshop and on the job training. They have become capable of inputting data entry in database reporting system and preparing the report from the database. Following tasks has been accomplished during the project such as Project Launching Workshop, Project Introductory Workshop, Training of service provider (Nurse & SACMO), Health Workers' Training (for Govt. service providers), Training for SACMOs, Workshop with CG (Community group), Orientation to school teacher.

As a part of data management system, it was planned from the project to develop an APP for proper data management. In June 2019, discussion held on the outline of data management from field, CC and NCD Corner and finally adding with DHIS2 national server. Since the NCDC wanted to supply it but delayed due to technical problem, a database system was developed under the project to record identified and follow-up patients' information. From January 2020, NCDs Risk Identification Campaign visitors' data were also recorded online.

Community Clinics have started referring patient to NCD Corner by using apps and referral slip. Database system has been established in NCDs corners. Patient information get entered in database system on daily basis. Training was provided to the counselors and government service providers to enable them to input the patient data in database system. This database can be seen on the Arsenic Network's website www.aan.bangladesh.org. Under the project, initiatives were taken for Establishment web – based data collection system, Establishment of database system at NCD Corner, Identified NCD Patients' data management, Follow-up NCD Patient, Self-risk tools developed, Strengthening reporting system.

Awareness raising program called “NCD Education program” was conducted at the project areas. Based on the nature and requirement of the community various behavioral change communication materials were developed through which awareness raising programs were executed by various work groups like Health Workers, School Teachers, Youth Club Members, Community Group Members, Community Support Group Members and Project Staff. Various tasks were executed under the project such as Development of NCD Educational Tools (IEC materials & video), Individual counseling for lifestyle modification, Face to face counseling at UHC Level, Face to face counseling at community level, Community level Health education, Health Education by School Teacher, Health Education by Health Worker, Health Education by Youth Club Members, Health Education by Mosque Imam, Health Education by CG Member, Health Education by Project Staff, CG-lead NRI, Teachers' role to students, Students role to their parents and neighbors, NCDs early detection, COVID-19 infection prevention, and Education on display TV monitor.

Under the project it was also considered for NCDs Environmental Management through changing traditional cooking stoves to improved cooking stove, examine water for arsenic, promoting physical exercise and encouraging to avoid bad working conditions. In case of adopting such issues at community level, separate sessions were conducted during CG workshop. CG and CSG members were inspired to encourage villagers on those issues beside the health and family planning workers. The CHCP of Community Clinics regularly addressed suspected and identified NCD patients to adopt such issue to keep family members risk free. Arsenic contaminated tube-wells were identified and marked red color along with hanging signboard beside the tube-well. Total 05 tube-wells were identified as an Arsenic contaminated and marked red as not to be used for drinking. Steps were also taken under the project for Cooking stove installation and Drinking water supply.

The COVID-19 outbreak and the healthcare burden, together with related disruption increased the negative impacts on employment, household income and receiving health service from in both rural and urban areas.

Different steps were taken towards overcoming COVID-19 Situation. Project intervention was closed during locked down period. At that time communication took place with the project stakeholders, patients and HWs through phone. The patients, stakeholders and HWs were advised through phone calls to maintain personal hygiene, use masks, maintain social distance and to avoid the crowded places. When the COVID-19 infection trend was lower, some events were arranged at the community level according to the discussion with government health authority. NRI campaign and FGD (Focus group discussion) were arranged along with tea stall meeting ensuring low gathering and maintaining the COVID-19 infection prevention protocol. Similarly, this infection prevention protocol was followed for NCDs corner service providers. They inspired the visiting patient to use masks and maintain the social distance.

Under the project orientation was given to the service providers regarding prevention of infection during COVID- 19 and inspired them of using masks & PPE, maintaining social distance and personal hygiene during service delivery. To ensure safety of the service provider during COVID-19 situation all types of PPE, hand sanitizer and guideline were provided from the project. Service providers started rendering health services wearing PPEs and maintaining personal hygiene as per the instructions of project management. E- Monitoring was a key challenge of the project during COVID-19 situation. Patients, Stakeholders, NCD oriented teachers, Student, Community group members and others were communicated through phone calls.

Sustainability was the main view of the project. Asia Arsenic Network tirelessly worked to implement the "Project on Strengthening Counseling Corner (in NCD Corner) for Reducing Risk due to Non-Communicable Diseases in Jessore District" as a development partner of the government. AAN conducted the activities at NCDs corners of 04 Upazila Health Complex and 01 District Hospital. The project entered its third year after passing the first and second years. Despite the COVID-19 pandemic, the project successfully passed the first and second years following the rules of health. The third year have also passed successfully although having huge challenges due to COVID-19 situation. The challenges were overcome through taking different strategic initiatives. Such initiatives included, Service delivery, Capacity building of govt. service provider and stake holder, Health workforce, Health Management Information Systems (HMIS), Access to essential medicines, Logistics and equipment and finally Supervision and monitoring.

Tarun Kanti Hore
Team Leader

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ABBREVIATION

AAN	Asia Arsenic Network
AHI	Assistant Health Inspector
BMI	Body Mass Index
BP	Blood Pressure
CC	Community Clinic
CG	Community Group
CHCP	Community Healthcare Provider
COPD	Chronic Obstructive Pulmonary Disease
CSG	Community Support Group
DGHS	Directorate General of Health Services
DHIS	Directorate Health Information System
DTW	Deep Tubewell
FBS	Fasting Blood Sugar
FGD	Focus Group Discussion
FPI	Family Planning Inspector
FWA	Family Welfare Assistant
FWC	Family Welfare Centre
FWV	Family Welfare Visitor
HA	Health Assistant
HI	Health Inspector
HW	Health Worker
LLP	Local Level Plan
MDG	Million Development Goals
MT	Medical Technologist
NCD	Non-Communicable Disease
NCDC	Non-communicable Disease Control
NRI	NCD's Risk Identification
RBS	Random Blood Sugar
RMO	Residencial Medical Officer

SACMO	Sub-Assistant Community Medical Officer
SDG	Sustainable Development Goals
SI	Sanitary Inspector
SSG	Social Support Group
TV	Television
TW	Tubewell
UFPO	Upazila Family Planning Officer
UH & FPO	Upazila Health & Family Planning Officer
UHC	Upazila Health Complex
UNO	Upazila Nirbahi Officer
UP	Union Parishad
WG	Woman Group
WHO	World Health Organization
YC	Youth Club

CHAPTER 1 Outline of the Project

1.1 Background

Non-Communicable Diseases (NCDs) have been being considered as major global public health since recent years. NCDs leave adverse effects in low- and middle-income countries specially where public health services have very limited scopes to cater proper human and technical resources. It has become a burning issue for the world as it causes 63% (36 million) of total deaths globally (57 million). About 80% of NCD deaths occur in low- and middle-income countries.

The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes. Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioral factors, as described by WHO.

As per the "WHO NCDs Progress Monitor 2020", in Bangladesh, NCDs also account for 67% of the total deaths, exceeding other causes such as childbirth-related and infectious diseases. The under-privileged communities in the country are bearing the heaviest toll of this burden. According to the "Risk Factor Survey 2018" about 1.9% men and 4% women had none of the above risk factors. Overall, 26.2% people of 18-69 years age had three or more of the above risk factors. The proportion was higher among the 60-69 years aged people (40.1%) than the 18-29 years aged people (16.5%). Rural inhabitants and urban slum dwellers particularly suffer the most. Unavailability of skilled human resources to address NCDs, poor NCD surveillance system, lack of proper information and coordination between public and private services also play roles in increasing NCD burden.

The Directorate General of Health Services (DGHS) included non-communicable diseases in the strategic plan for Health, Population & Nutrition Sector Development Program (HPNSDP, 2011 – 2016)" and arsenicosis is also managed by the NCD Section of the DGHS. Since there are many common denominators between arsenicosis and non-communicable diseases in approach of prevention and management, Asia Arsenic Network (AAN) has been suggested by the DGHS to implement NCD control activities utilizing its arsenic mitigation and arsenicosis patient management expertise.

AAN carried out projects titled "Risk-Reduction of Non-Communicable Diseases in Jessore District" (April 2013 to March 2016) and "Strengthening Community Capacity for Non-Communicable Diseases Prevention in Khulna Division" (11th March 2016 to 10th March 2019). Through the projects the organization advocated the know-how of avoiding unsafe behavior and promoted NCD risk identification campaigns among the residents in the project areas since early detection helps them prevent NCD burden. It was observed through a pilot study in Jashore that inappropriate dietary patterns, smoking habit and lack of physical exercise increase the burden for NCDs. The emission of carbon dioxide from factories and vehicles as well as traditional cooking stoves and high level of arsenic contamination in drinking water also increase the NCD burden. Through the brief survey it was learnt that both appropriate knowledge on nutrition and motivation to have health condition examined to identify NCD risks are largely absent in the south-western part of the country.

Based on the experiences of the previous projects, AAN, in consultation with the DGHS, decided to conduct a new project titled "Strengthening Counseling Corner in NCD Corner for Reducing Risk due to Non-Communicable Diseases in Jashore District" in association with the Ministry of Foreign Affairs of Japan. The new project targeted four Upazila Health Complexes of Chaugachha, Keshabpur, Monirampur and Jashore Sadar, where early detection has been promoted through counseling and developing a sound database system.

Overall goal of the project was to to improve NCD patients access to healthcare services through strengthening of counseling services in NCD corner.

In the 2nd year the project goal was to prompt the coordination system including early detection, treatment and follow-up through the coordination among NCD corner, Community Clinic, HW, Community leaders (Referral system will be developed and strengthening). In the 3rd year the project promoted access to health care services for NCD patients by combining NCD services and COVID-19 infection prevention measures.

1.2 Objectives

1. To support to make function of NCD Corner with UHC initiative
2. To protect target population from the risk of NCDs by developing knowledge & skills
3. To develop a counseling system at NCD Corner
4. To establish a computer-based data management system of newly Identified and follow-up patients
5. To develop capacity of community representative for early risk detection due to NCDs and p r o m o t i o n towards lifestyle modification and necessary environmental arrangement
6. To replicate good practice to other area

1.3 Project Area & Population

Chaugachha, Keshabpur, Monirampur and Sadar Upazilas were selected for the project. Field activities were targeted all areas excluding paurasavas because project planned to work in collaboration with Upazila Health Complexes.

Target population was 1,644,980 (male 829,719 and female 815,261) in 389,152 households. Direct beneficiaries were estimated to be 129,555 and indirectly 149,000 people were also expected to get benefit from the project.

Target Area of Jashore District

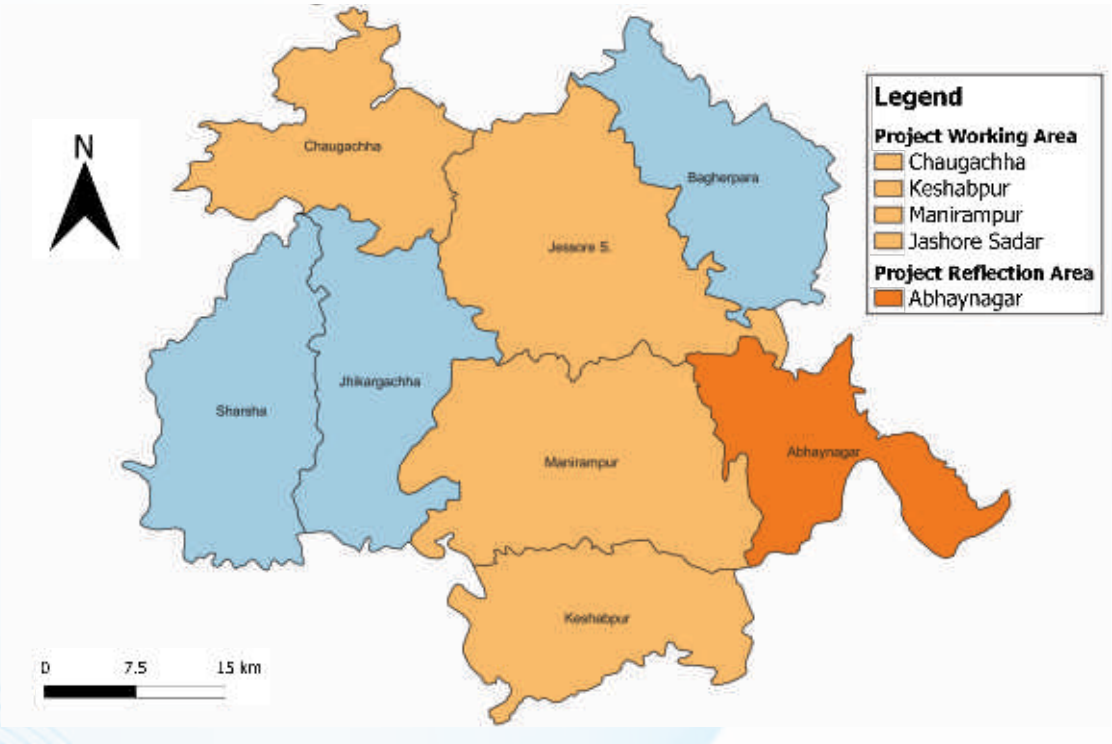


Table-1: Population of Target area

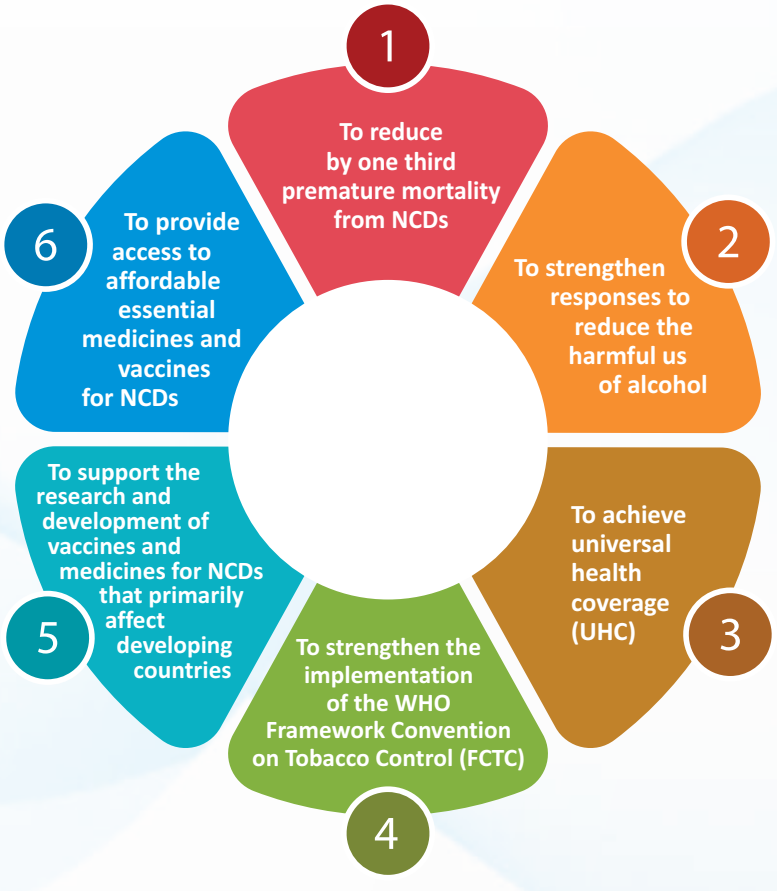
Upazila	Household	Male	Female	Total	Paurasava Excluded	Target Population ≥ 18 yrs (62.2%)
Chaugachha	56,440	115,907	115,463	231,370	209,948	130,588
Keshabpur	62,309	126,656	126,635	253,291	227,062	141,233
Monirampur	101,239	206,842	210,579	417,421	389,283	242,134
Sadar	169,164	380,314	362,584	742,898	541,102	336,565
Total	**389,152**	**829,719**	**815,261**	**1,644,980**	**1,367,395**	**850,520**

1.4 Project Duration

The project was designed for three years starting from 15 March 2019 and phasing out on 14 March 2022.

1.5 SDGs and Non-Communicable Diseases

The 2030 Agenda for Sustainable Development adopted at the United Nations Summit on Sustainable Development in September 2015, recognizes non-communicable diseases (NCDs) as one of major challenges for sustainable development. NCDs were not addressed in the Millennium Development Goals (MDGs). As part of the Agenda, heads of states and governments committed to develop national responses to the overall implementation of this Agenda, including the followings:




1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

CHAPTER 2 Enhancing the services of NCD corner

NCD corner was formally opened in target Upazila Health Complexes (UHC) prior to the starting of the project, but it was not functioning as per its management protocol. Although doctors were identifying NCD patients, it did not seem to be in an organized way. There were no supporting hands to measure and note down the records of physical weight, height and waist circumference. Follow-up information was not available and there was lack of medicine, too. Upon finding this gap, from April 2019 initiatives were taken by the project to make the NCD Corner functional.

As a result the targeted areas i.e., NCD corners have become well equipped with NCDs awareness related poster and medical equipment required for physical measurements. Service providers' sitting arrangement has also been reorganized as an essential part of meaningful counseling. Patient flow have been increasing day by day from date of reforming NCD Corners. During these years,record keeping and NCDs patients' database have been prepared strongly and tracked by project counselor and Govt. service providers. Recoding of follow-up patients' information has been started at NCD corner. NCD Implementation guideline has been being followed by the service providers. Huge barriers have been overcome during the project period. Activities have been run as per the target. On the other hand, Communities have started sensitizing about NCDs and the cause of disease through individual contact, E-Monitoring and focus group discussion at market places and tea stalls.

Establishment of NCD corner with Supply Materials in keshabpur

Establishment of NCD corner with Supply Materials in Chaugachha

2.1 Establishment of NCD Corner

NCD Corners were established at every Upazila Health Complexes by the Government of Bangladesh long ago. Though Community Clinics refer patients to UHCs but due to the lack of appropriate knowledge on NCD Management protocol it was not performing in an appropriate way. The challenge has been overcome during the project implementation. It was not running in a systematic way. Suspected referred patients were getting treatment from different outdoor corners.

Essential items such as desks and chairs for doctors and counselors, physical measurement tools, as required, were also provided under the project. A TV monitor was set on the wall at each UHC and the 250-Bed Hospital to play awareness videos for service receivers. Desktop computers were also supplied for record keeping. Different on the jobs orientation programs were organized on regarding record keeping, reporting system, data driven procedure etc.

Service providers and counselors have started providing service smoothly from the NCD

corner. Besides, counseling on lifestyle modification was also provided considering the prevention of coronavirus infection. Items and renovation works provided under the project are listed in the table below.

Table-2: List of supplied items to target Upazila Health Complexes and 250 Bedded Hospital

Sl	Particular	Quantity	Brand	Remarks
For patient treatment				Chaugachha, Monirampur, Keshabpur & Sadar UHCs
1	Desk (Doctor & Counselor)	4 pc	Otobi	
2	Chair (Doctor & Counselor)	4 pc	Otobi	
3	Patient observation chair	4 pc	Otobi	
4	X-ray view board	4 pc		
5	Patient observation bed	4 pc	Otobi	
6	Movable partition	4 pc	Otobi	
7	Plastic chairs (Receiving counseling)	12 pc	RFL	
8	Digital blood pressure measuring monitor	4 pc	OMRON	
9	Digital weight scale	4 pc	OMRON	
10	Height scale	4 pc	Order made	
11	Desktop Computer	4 pc	*hp*	
For relevant work				
12	Ceiling Fan	8 pc	Powerpac	
13	43" LED Smart TV (showing educational video)	4 pc	LG	Chaugachha, Monirampur, Keshabpur & 250-Bed Hospital
14	32" LED Smart TV	1 pc	LG	Sadar UHC
15	Almira (Steel)	1 pc	Otobi	Sadar UHC
16	Painting of room, door & window & setting curtain	4 sites		Chaugachha, Keshabpur, Monirampur & Sadar
17	Electric connection to computer, TV, light & fan	4 pc		
18	Commode	2 pc	RAK	Keshabpur
19	Basin	2 pc		Sadar

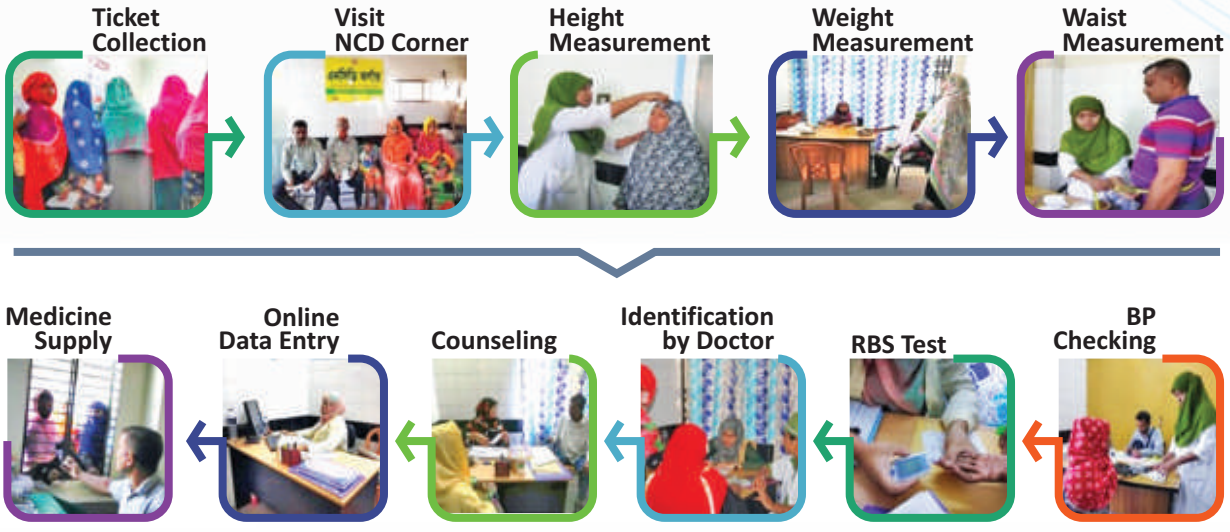
Accomplished identification and reduction of barriers to access health services

Established availability of health service providers

Promoted enabling environment to strengthen and functioning systems

Strengthened referral system from CC to UHC

Figure-1: Patient's Follow Chart



2.2 Early detection

Early detection is the best way to minimize the premature death of NCDs Patients. It reduces risk of NCDs and also the physical and financial suffering. After early detection patients can lead straggle free life by taking treatment and guidance on lifestyle modification. The early detection system was developed through the project following two separate initiative as detailed hereunder.

2.2.1 Early detection following referral system

The process for promoting suspected NCD patients towards early detection was discussed during the health workers' training. Project staff attended the CHCP's monthly meetings on regular basis to make them accustomed to continue referring suspected patient to NCD Corner. Previously a normal paper was used by CHCP as referral slip. A 'Screening Card' was developed and provided to CHCP from the project to maintain referral system. Now CHCP refer patient to UHC with referral slip provided by the government and project. Besides, the CG members have also started sending suspected patients to CHCP for proper detection, as a part of early detection. NCDs counselors have been maintaining referral documentation at NCD corners. Counselors have also started sharing the referral status with the UH&FPO at the end of the Month. On the other hand, 10 NRI campaigns was held each Month at every upazila. A total of 412 NRI camp has been held from July 2019 to January 2022 where 14,729 people (male-3,575 and female-11,154) are checked their risk. Early detection has been accomplished through NRI campaign. Early detection patients are being referred from the NRI camp with proper 'Screening Cards' which draw attention at NCD corner which ensuring the satisfaction of the service receiver and the CHCP we well. Among the participant 3,322 (23%) people's blood pressure found high (>140/90) and (35%) 1,174 / 3,322 were unknown about his symptom. BMI level found high (≥25) among 30% 4,467/14,729 people in which female were more 33% (3,695). Waist circumference found high 41% (5,979) participants.

Blood sugar test of suspected patient at Sadar UHC on 22-01-2020

2.2.2 Early detection (Screening) of NCDs through NRI Campaign

Early detection (Screening) of NCDs was one of the key activities of the project. CG workshop was held in 1st year after which the CG members expressed interest for holding early risk detection campaign at their areas. Then their role was explained for holding a NRI Campaign (NCDs Risk Identification Campaign). During lockdown period CG members were communicated through phone calls. 412 NRI Campaigns (NCDs Risk Identification Campaign) were conducted at the different remote areas where 4376 (Male - 968, Female-3,408) suspected cases were early detected. Through NRI campaigns Total 1261 persons among 4,376 were early detected having Diabetic and hypertension.

NRI Camp is conducted through CG Group at Goyalbare in Horehornagar union under Manirampur Upazila on 21-11-2021

In these campaigns CG invited participants and volunteers and on the job training was provided to the interested volunteers. Physical measurement tools (height measure scale, weighting machine, Blood Pressure measure machine and tape for waist measure) were also provided as lending basis. The people who crossed the permissible limit for BP (>140/90) and BMI were advised to visit nearest Community Clinic. Their lifestyle data was also noted and advised to modify risky behaviors. It is expected that these activities will be continued at the community for early detection, Refer and treatment of NCDs. NRI were hampered due to COVID-19 situation for some time which became smooth after improvement of the situation.

Table-3: Refer for early detection

Total Screening Participant				Suspected Patient Hypertensive (Those who were referred From NRI to CC)			Suspected Patient Diabetic (Those who were referred From NRI to CC)	Total
Name of Upazila	Male	Female	Total	Male	Female	Total	Newly Suspected	Suspected patients referred from NRI to CC
Chowhachha	243	1018	1261	51	147	198	3	201
Keshabpur	224	579	803	60	192	252	24	276
Manirampur	256	989	1245	106	272	378	55	433
Sadar	245	822	1067	71	265	336	15	351
Total	**968**	**3408**	**4376**	**288**	**876**	**1164**	**97**	**1261**

Data source: NRI camp and CC patient tracking report

2.3 Referral system

Patients were encouraged to come at the service delivery point of know the referral system that would help them to get ensured about the treatment. In the 1st year AAN (Asia Arsenic Network) provided orientation to service providers and other stakeholders on referral system. In this year, for better treatment, all government service providers and other stakeholders referred the patients from the community and CC level with referral slip. The referral system has become smooth and strengthened though having few challenges. Service providers received the referral slip and provided the treatment to patients. Gradually strong referral system has developed at UHCs for NCDs patients. Now, patients are being referred to UHC from CC and UH&FWC by the CHCP, FWV and others health workers. Treatment is being provided from NCD corner by the government service providers upon receiving referrals. Strong referral system is also built up among the union level service provider to upazila level service providers. NCDs counselor are keeping the referral document at NCD corner. After the project compilation strong referral system has been established from CC to UHC. HWs also started to refer patient with referral slip. NCDs counselors preserve the referral slip and share the information on referral slip with HWs and health authority during the monthly coordination meetings. Total 25,110 patients were referred from CC to UHC with referral card under NCD-III project. CC referral information is given below;

A CC reffered patient visiting NCD corner of Chaugahha UHC on 03-04-2021

Table-4: Referral information of referral patients

Name of Upazila	No. of CC	No. of Referral	Type of patient
Chaugachha	26	7,386	Diabetic, Hypertension, COPD/Heart/Kidney
Keshabpur	27	3,068	Diabetic, Hypertension, COPD/Heart/Kidney
Manirampur	43	4,660	Diabetic, Hypertension, COPD/Heart/Kidney
Sadar	60	9,996	Diabetic, Hypertension, COPD/Heart/Kidney
Total	**156**	**25,110**	

Data source: CC and UHC referral slip.

2.4 Record keeping

To reduce the data discrepancy found in record keeping process, a number of orientations, training and on the job training was provided to the government part under the project activities. Finally, a strengthened record keeping has been established at the 04 NCDs corner and 01 district hospital. Service providers became more capable of maintaining the record at NCDs corners. All patient data kept in database system of NCDs corners.

Service providers started maintaining NCDs register through properly writing registers and keeping the patients' document. Referral slip, coming from the CC and HWs at the field level, were kept in NCDs corner. Besides, progress information of different field activities were also inserted in google sheet and hardcopy of the same were preserved for data verification. Necessary photos were also preserved in program-wise picture profile and maintained the all procedures. All necessary document were kept for verifying and better understanding. Monthly progress report were produced and the data on NCDs corners and field activities were verified. All activity record was tracked for performance evaluation and next initiatives.

Online record keeping at NCD corner of 250 Bedded Hospital on 10-10-2021

CHAPTER 3 Development of Capacity

Capacity development of NCD volunteers through training and health education was one of the major activities of the project. It was very much imported in view of the necessity of sustainability of the programs which aimed at preventing the risks due to non-communicable diseases. Besides, skill development trainings were provided to the Health Workers, Community Groups under Community Clinic, Secondary-level school teachers and member of Youth Club and women representatives who were expected to play role. Health Education plan was executed through the help of individual volunteer who were treated as 'NCD volunteer'. Community Development Officers and Union Supervisors appointed under the project were also expected to develop communities to fight against NCD by utilizing their knowledge and skills gained through project activities. Competencies of the government service provider were also developed through orientation, training, workshop and on the job training. They have become capable of inputting data entry in database reporting system and preparing the report from the database. Following tasks has been accomplished during the project.

Table-5: Capacity Development Trainings

Sl	Type of Participant	No of Participants
1	Health Workers (CHCP (156), HA (125), AHI (18), HI (4), FWA (199), FPI (50), Statistician (3), Medical Technician (3), SI (3), others (13)	574
2	Nurses	15
3	Sub-Assistant Community Medical Officer (SACMO)	18
4	Community Group (CG)	2,131
5	Community Support Group (CSG)	525
6	Secondary School Teachers	4,042
	Total	**7,305**

3.1 Project Launching Workshop

The project launching workshop was designed at the 1st quarter with the concerned Upazila Health Complex representatives, Civil Surgeon office and Non-communicable Disease Control Programme, DGHS. However, due to unavoidable circumstances, it was held on 14th March 2019 i.e., at the last date of year one. Since the project information was given to UHC and CS through introductory meeting at the beginning of the project, the actual workshop held later.

In the presentation session outline and achievement of the project was presented at a glance. After that the concerned UH&FPOs gave presentation on each NCD corner's activities. In case of 250 Bedded hospital's activity, presentation was given by the the RMO. The limitation and difficulties of the project were also discussed briefly. Since, NCDC officials could not attend due to restriction on COVID situation, an Assistant Professor of Jashore Medical College made his presentation on “Implementation of NCD Management Protocol” with the support of Deputy Programme Manager. Some of the key challenges faced during implementation of the project as hereunder Hospitals did not allow supporting staff permanently.

Civil surgeon of Jashore during project launching workshop at RRF on 14-03-2020

- All NCD patients were not treated from NCD corners
- Many of the patients remained out of recording
- Medicine demand preparation was not perfectly done
- Received amount volume of medicine was not sufficient
- Referral system was not being followed.

Later, the Civil Surgeon guided for starting RBS test at all NCD Corner from 1st April, spreading technical cooperation to remaining 4 hospitals of Jashore district and requested for coordination from the project in order to make medicine available. The Superintendent of 250 Bedded Hospital also sought cooperation from the project for developing and maintaining register and online database.

3.2 Project Introductory Meeting

It was the formal meeting with the UHCs. The first meeting was held on 13th May 2019 at the UNO room of Jashore Sadar Upazila where Civil Surgeon, UNO, UHFPO, UFPO, Medical Officer, SACMO HI, AHI were present.

Project Introductory Meeting at 250 Bedded Hospital on 28-11-2019

Besides, NCD Corner and management relevant officials and staff were also attended. The outline of the project was given and it was discussed that how the project would like to assist UHCs for making the NCD corners functional. The purpose of this meeting was to let the participants think about setting a strategy for DGHS towards achieving SDGs. The Civil Surgeon expressed his gratitude and showed interest to know how effectively the data of each patient can be recorded. For smooth operation of NCD corners at Sadar UHC, the UNO extended support through making a shade for treatment recipients. The UH&FPO appreciated the idea of record keeping and announced to set a strategy with the support of project where Sadar UHC staff would play key role. In this way Project Introductory meetings were conducted at Keshabpur on 15th May, at Monirampur on 29th May, at Chaugachha on 11th June. Jashore 250 Bedded Hospital also expressed interest to establish an NCD Corner and asked for assistance from the project. Based on the consultation with the donor, the project started supporting formally from 16th October and hold the meeting on 28th October 2019.

Table-6: List of Introductory meetings

SI	Name of Upazila	Date of Meeting	Participants		
			Male	Female	Total
1	Chaugachha	11 June 2019	6	18	24
2	Keshabpur	15 May 2019	11	8	19
3	Monirampur	29 May 2019	7	9	16
4	Sadar	13 May 2019	23	7	30
5	250 Bed	28 October 2019	12	4	16
	Total		**59**	**46**	**105**

Data source: Database report.

3.3 Workshop for service providers of NCD Corner

Several workshops were held with the service providers. Workshop on NCD corner Management was held at 4 Upazila and 01 District hospital during project period. Last training held on from 28 October 2021 to 29 December 2021. Service providers of NCD corner, statisticians, store keepers, medical officers, Residential Medical Officer (RMO), Uapzila Health & Family Planning Officer (UH&FPO) and the Superintendent of district hospital were present at the workshops. Significant service provider 18 SACMO and 15 Nurses were present the training of the 3rd year.

Workshops on NCD corner Management were organized by Upazila Health complex and Asia Arsenic Network, supported by Non-Communicable disease Control Program and funded by the Ministry of Foreign Affairs, Japan. The workshops contained PowerPoint presentation, discussion and opinion sharing. Leaflets related to NCD and COVID-19 and BMI chart were distributed among the participants. The purpose of the workshop were as hereunder:

- To make the participants aware about non-communicable diseases and its causes
- To strengthen the management of NCD corner and service protocol
- To make the service providers skilled on data driven process and reporting system
- To reduce data discrepancy between register and data base report
- To strengthen supervision and monitoring from government side
- To establish enhanced counseling after workshop
- To promote enabling environment for health systems at NCD corners
- To identify and reduce the barriers to health services at NCD corners

Counselors Training at Arsenic Center on 06-01-2020

3.4 Health Workers' Training

Trainings were designed for developing knowledge and skills on non-communicable diseases among the health workers. To conduct the technical session the resource persons joined from the targeted Upazila Health Complexes. The speakers focused all the aspects of NCDs and its importance towards achieving the SDGS by

Health Worker training (Govt. service providers)

2030. The facilitators experienced remarkable findings on NCD. The presentation displayed introduction of AAN, participant's expectation, definition of NCD & non-NCD, type of NCDs, its controlling and management.

The training for Health Workers was designed for developing their knowledge and skills on non-communicable diseases in cooperation with Upazila Health Complex (UHC). The technical sessions were conducted by the Upazila Health & Family Planning Officer (U&FPO) and the Upazila Family Planning Officer (UFPO) as resource persons. Representative from AAN explained the definition of NCD & non-NCD, type of NCDs, control and management of NCDs in its presentation, along with the ways of cooperation between field level health workers and project staff and a reporting system of the project.

Table-7: Health Workers' Training

Upazila	Male	Female	Total
Chaugachha	39	57	96
Keshabpur	45	73	118
Monirampur	70	109	179
Sadar	84	115	199
Total	**238**	**354**	**592**

There were 592 participants altogether including CHCP (155), HA (125), AHI (18), HI (3), FWA (199), FPI (49), Statistician (2), Medical Technician (2), SI (4), others (35) in the training which was held in 21 batches between the 18th January to 27th February 2020. Statistician and MT-EPI received training in 3rd year again. The main part of the training was a self-risk identification session where each participant identified his/her NCD risk factors. They also learned online entry of the data and referral system. The training enabled to grasp the knowledge on how the health workers were going to make villagers aware of the risks of NCDs.

Although the project expected to start NCD screening using Apps, it was delayed for unavoidable reasons. However, the basic concept was shared with health workers and they agreed to start working for the screening through an introduction in their monthly meeting. It was a specialized training through which they realized where the purpose was to make a road map to take all people of ≥ 18 years old of the Upazila under primary screening.

A survey was carried out on the NCD situation at the target Upazilas by interviewing and taking basic physical measures of all people of ≥ 18 years old, which the DGHS terms "NCD screening". It was planned to develop an App for this purpose but finally it was agreed with the DGHS to utilize a common App for the NCD screening all over the country as well as in the area of this project. There was delay in the App development, but the basic concept of NCD screening was shared with health workers during the training.

আমি কি এনসিডি'র ঝুঁকিতে?

নাম: ..... পদবী .....

পেশা ..... তারিখ .....

	বিবরণ	পরিমাপ	আদর্শ	আপনার অবস্থা টিক চিহ্ন দিন	
১। সাধারণ পরিমাপ					
ক	উচ্চতা	মিটার			
খ	ওজন	কেজি			
গ	বিএমআই		<২৫.০		
ঘ	কোমরের পরিধি	সে.মি	পু: ৯৪ সে.মি ম: ৮০ সে.মি.		
ঙ	রক্তচাপ		১২০/৮০		
চ	রক্তের সুগার		খালি পেট: ৭.১ ভরা পেট: ১১.১		

২ অনান্য ঝুঁকি পরিমাপ

ক	ধুপমান/তামাক জাতীয় দ্রব্য খাওয়া	☐ না	☐ হ্যাঁ
খ	ধোঁয়াযুক্ত চুলা ব্যবহার/কর্মপরিবেশ অনুকূল নয় (ভালো না)	☐ না	☐ হ্যাঁ
গ	অতিরিক্ত তেল-চর্বি বা তেলেভাজা খাবার খাওয়া	☐ না	☐ হ্যাঁ
ঘ	পাতি অতিরিক্ত লবণ খাওয়া (৫ গ্রামের বেশি)	☐ না	☐ হ্যাঁ
ঙ	অতিরিক্ত মিষ্টি জাতীয় খাবার খাওয়া	☐ না	☐ হ্যাঁ
চ	রাতের খাবার দেরিতে খাওয়া	☐ না	☐ হ্যাঁ
ছ	খাওয়ার সাথে সাথে ঘুমাতে যাওয়া	☐ না	☐ হ্যাঁ
জ	শাক-সবজি ও ফলমূল প্রতিদিন ৪০০ গ্রামের কম খাওয়া	☐ না	☐ হ্যাঁ
ঝ	কায়িক পরিশ্রম সপ্তাহে ১৫০ মিনিটের কম করা	☐ না	☐ হ্যাঁ
ঞ	আর্সেনিক দূষিত পানি পান করা	☐ না	☐ হ্যাঁ

3.5 Training for SACMOs

After setting up the strategy, each concerned UHC engaged a nurse and a Sub-Assistant Community Medical Officer (SACMO) in the NCD Corner. Training was held for 18 SACMOs on 12th March 2020 to make them familiar with NCDs management protocol. In this protocol, responsibilities of CHCP, Nurse and Sub-Assistant Community Medical Officer (SACMO) for screening, referral and physical measurement and recording were briefly discussed. Provision of medicine for identified patient was also briefed. The Multi-sectoral Action Plan 2018-2025 showed road map how the NCD Control will be matched with SGD. Since, SACMO started supporting the function of NCD Corner and took part on its activities with project staff it was required to let them know the policy and destination. Every UHC assigned a SACMO in the NCD Corner and they played a vital role in risk assessment and medicine supply. Responsible SACMO received training again in the 3rd year of the project.

Health workers training in NCD screening and management at Manirampur UHC on 21-01-2020

3.6 Workshop with CG

Community Group (CG) is responsible to manage Community Clinic. It was decided to involve CG members for NCD control at the grassroots level since they remain in the community and it is easy for them to identify health problems of the people.

For the training a PowerPoint presentation was made focusing the risk factors that are likely to cause NCDs and the ways to overcome the same. During the training CG members listed such communities that were vulnerable to NCDs and came to a conclusion that they would include NCD relevant activities to their "Local Level Plan (LLP)". To promote the ways how to avoid risky health practices among villagers the CG members chose the idea of NCDs Risk Identification Campaign (NRI Campaign), where blood pressure and blood sugar were to be checked along with the measurement of height, weight and waist circumference. During the NRI campaign many relevant awareness messages were conveyed at every step of various physical measurements with the emphasis on checking blood pressure and blood sugar in a routine way. Community Groups have become active in facilitating the NRI campaign and making aware of the people on Non-Communicable diseases and changing life styles considering NCDs. Community Group took lead to implement the NRI campaigns.

Kholadanga CC in Arabpur Union under Sadar Upazila on 07-08-2019

There were 156 Community Clinics in the targeted four UHCs. Table 8 records the CG workshop.

Table-8: Presence of CG members at CG workshops

Name of Upazila	Target CG workshop	Period	Expected No. of participants	Attended	
				No.	%
Chaugachha	26	16 July-14 Dec 2019	442	375	84.8
Keshabpur	27	17 July-26 Nov 2019	459	393	85.6
Monirampur	43	17 July-17 Dec 2019	731	619	84.7
Sadar	60	17 July-28 Dec 2019	1,020	744	72.9
Grand Total	**156**		**2,652**	**2,131**	**80.4**

Data source: Database report.

3.7 Orientation to school teacher

The purpose of School Teachers' orientation was to educate students on their risky behaviors which start at the adolescent period and later lead to non-communicable diseases. The role of teachers was not only to educate students and also educate the society within home and at social gatherings. Orientation for teachers of secondary level institutions of Jashore Sadar Upazila was organized during the last project period 2016-2019. Therefore, this time a total 301 institutions including secondary-level schools (206) and madrassa (95) in three Upazilas considered for the program. The activity started at the 1st implementation year of the project targeting teachers. The programme oriented 4,547 participants in which, 4,020 teachers, 85 School Management Committee member and 442 school office staff are attended.

Table-9: Orientation to Secondary School Teachers

Upazila	Start date	End date	Madrasah	School	Total	Target Teacher	Attended			
							Teacher	Commety member	Clark	Total
Chaugachha	15 Jul 19	22 Feb 20	19	44	63	863	826	42	109	977
Keshabpur	29 Jul 19	10 Mar 20	39	62	101	1,445	1,360	13	155	1,528
Monirampur	6 Jun 19	14 Mar 20	37	100	137	1,888	1,834	30	178	2,042
Sadar Project given orientation to all 125 secondary-level schools in its early project (2026-2019). So. It is not included.										
Total			**95**	**206**	**301**	**4,196**	**4,020**	**85**	**442**	**4,547**

Data source: Database report.

Objectives of the orientation:

- To educate teachers about NCD risk factor
- To inspire teachers to change daily lifestyle and to take healthy foods
- To aware teachers on physical and biochemical check-up
- To enable teachers and students to check BMI and BP & blood glucose risks through self-risk identification apps

Orientation at Satbaria High School in Keshabpur Upazila on 16-10-2019

- To aware students about daily life style and to take healthy food
- To encourage teachers and students to aware the community people on life-style, diet pattern, harms of smoking and table salt taking and importance of physical activities
- To enable teachers and students to inspire the community on using the self-risk detection apps to known own BMI and risk on BP and blood glucose.

The PowerPoint presentation included the topic on risk factors, behavior and the prevention method. Along with session questions it was also designed with various photos for smooth understanding of the students. At the end of the orientation each school made their on education schedule (which teacher will teach student in which date) and project staff participated sometimes where teachers educate students using PowerPoint through multimedia projector. Project collected reports of education visiting those schools after completion. Oriented students conveyed the risk factors of NCDs message among family members and community people. Participants appreciated the easy method of identification of BMI, Blood pressure range and blood glucose through using the apps. A copy of the PowerPoint Presentation on was provided on how to educate students on NCDs in schools covering the following areas. Most of the institutions also appreciated the idea of providing presentation files in DVD. Following files are copied in DVD;

1. Introduction and contact of AAN
2. NCD Education through power point presentation
3. Promotion of Physical Exercise- a video clip for indoor exercise practice
4. A documentary on NCD severity and what to do
5. IEC Materials (NCDs leaflet, Guidance flyer, Corona hand bill, BMI chart and NCD guide book)

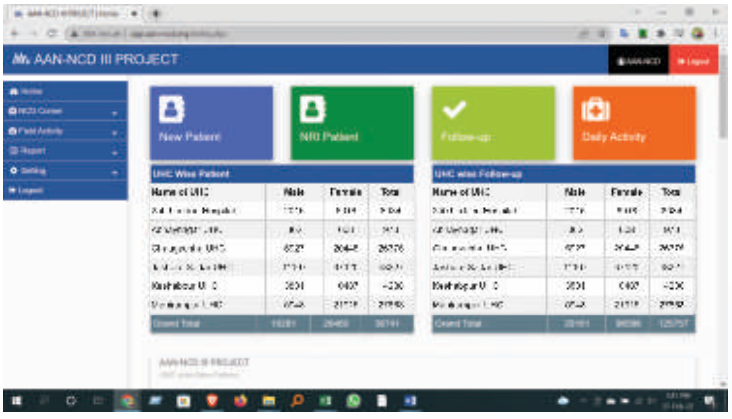
Orientation at Boalia Ghat High School in Manirampur Upazila on 09-11-21

Coronavirus greatly increases the risk of death in NCD patients. During COVID-19 epidemic many NCD patient was unable to visit hospitals or doctors. Project realized the situation and orientated 120 secondary schools from targeted 4 upazilas dividing 30 schools per Upazila. Introducing self-risk detection app and sharing the information what to do NCD patient during COVID epidemic project oriented 1,371 teachers and 686 students who have android phone. Students are advised to teachers their parents how to utilize the app and information for receiving facility. These schools are selected based on the criteria where many NCD patients are detected and teachers and students are willing to do something for their society. Project monitored these participants activities creating a WhatsApp group. Such a situation these program is appreciated from local community and hospital authorities.

CHAPTER 4 Development of database system

As a part of data management system, it was planned from the project to develop an APP for proper data management. In June 2019, discussion held on the outline of data management from field, CC and NCD Corner and finally adding with DHIS2 national server. Since the NCDC wanted to supply it but delayed due to technical problem, a database system was developed under the project to record identified and follow-up patients' information. From January 2020, NCDs Risk Identification Campaign visitors' data were also recorded online.

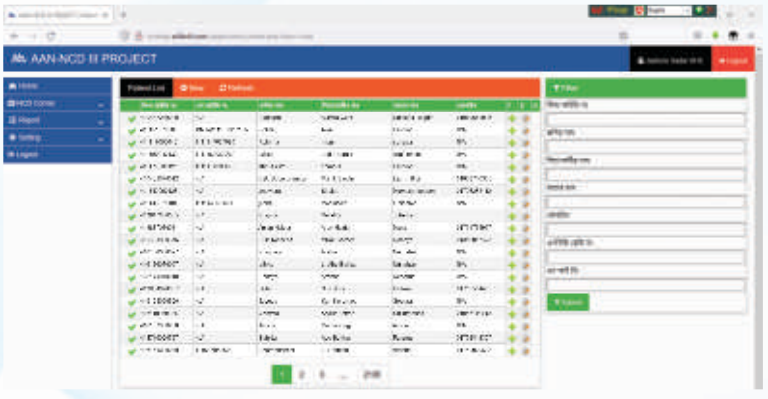
Community Clinics have started referring patient to NCD Corner by using apps and referral slip. Database system has been established in NCDs corners. Patient information get entered in database system on daily basis. Training was provided to the counselors and government service providers to enable them to input the patient data in database system. This database can be seen on the following website. Arsenic Network's website www.aan.bangladesh.org



4.1 Establishment of web – based data collection system

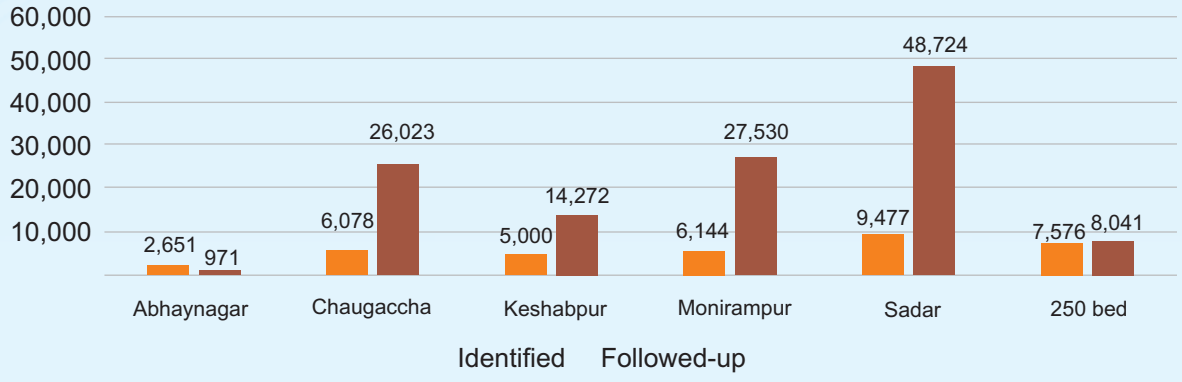
As a part of data management system, it was planned from the project to develop an APP for proper data management. In June 2019, discussion held on the outline of data management from field, CC and NCD Corner and finally adding with DHIS2 national server. Though the NCDC wanted to supply it but delayed due to technical problems, a database system was developed under the project to record identified and follow-up patients' information. From January 2020, NCDs Risk Identification Campaign visitors' data were also recorded online.

Community Clinics have started referring patient to NCD Corner by using apps and referral slip. Database system has been established in NCDs corners. Patient information get entered in database system on daily basis. Training was provided to the counselors and government service providers to enable them to input the patient data in database system. This database can be seen on the following website. Arsenic Network's website www.aan.bangladesh.org



hospital regularly by service providers. 100 % percent data has been incorporated in database system till end of the project. Now Govt. service provider given 100% percent data entry in database system.

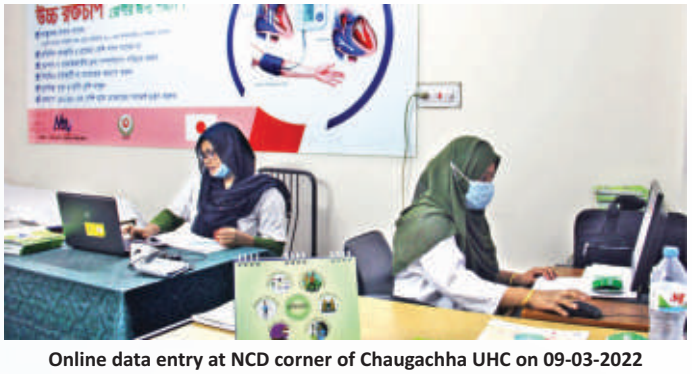
Figure-2: Identified & Followed-up Patients



4.2 NCD Patients' data management

4-2-1 Identified Patient

Supporting of NCD Corner was started under the project from May 2019. A smooth system has been established to record the newly identified and follow-up patients' information in computer. An NCD Counselor was deployed in each targeted Upazila Health Complex under the project.



Online data entry at NCD corner of Chaugachha UHC on 09-03-2022

At the beginning of the project NCD Corners were decorated with various awareness posters and signs. The quality of service in the Upazila Health Complex got better day by day and the number of service recipients was increased. In Upazila Health Complex, Jessore Sadar, the number of new service recipients became much higher. Total 36,926 patient are identified from April-2019 to February-2022 under 5 UHCs and 250 bedded district hospital.

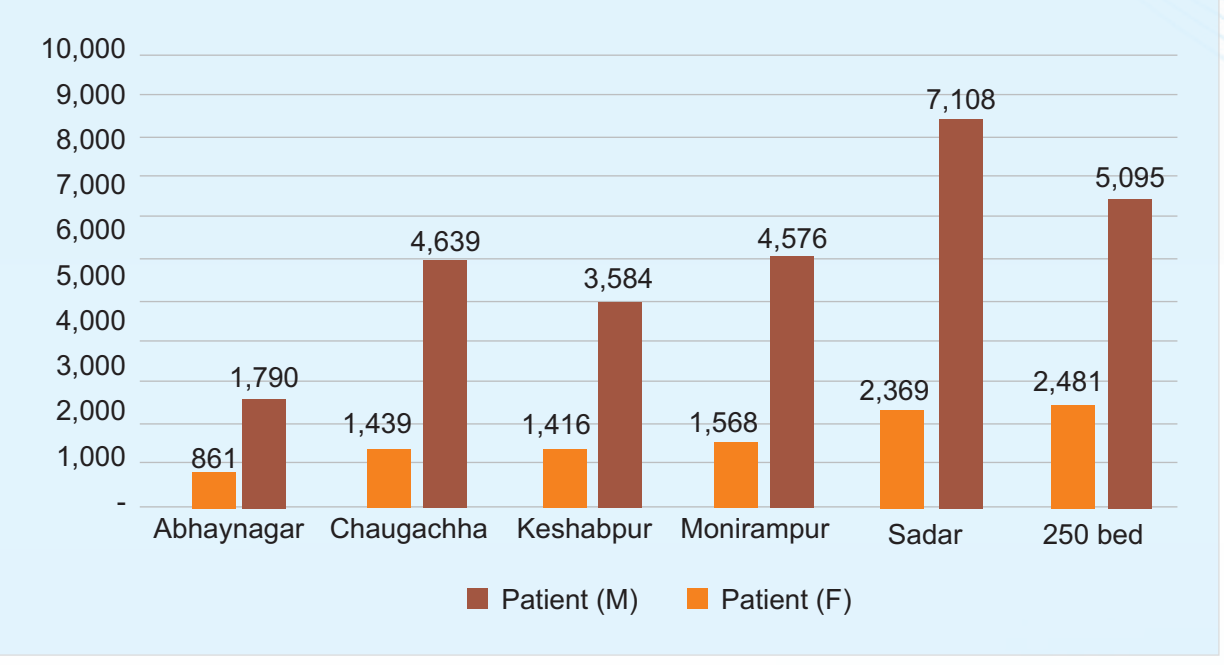
After the orientation of capacity building and on the job training the government service providers became capable to entry the data in data base system. From May,2021- Aug,2021 government service providers were input the data in database system 7,875 out of 22,684 which percentage was 34.77 of 04 UHCs and 01 District hospital. Now, government service providers given 100% data entry in database system.

Table-10: Identified new patients

Name of Hospitals	Patient (M)	Patient (F)	Total Patient
Abhaynagar*	861	1,790	2,651
Chaugachha	1,439	4,639	6,078
Keshabpur	1,416	3,584	5,000
Monirampur	1,568	4,576	6,144
Sadar	2,369	7,108	9,477
250 bed	2,481	5,095	7,576
Total	**10,134**	**26,792**	**36,926**

Note: *Project supported Abhaynagar UHC's NCD corner establishment under the reflection programme from April 2021*

Figure-3: Gender-wise Identified patients



Age group of Identified patients

Among the identified 36,926 patient the age group is detected where it was found that most of the patient found among the age 35-64 years old.

Table-11: Age-wise identified patients

Age	Female	Male	Total	Percentage
18 - 24	142	58	200	1%
25 - 34	1,848	278	2,126	6%
35 - 44	7,379	1,173	8,552	23%
45 - 54	11,523	4,062	15,585	42%
55 - 64	3,864	2,668	6,532	18%
≥ 65+	2,036	1,895	3,931	11%
Total	**26,792**	**10,134**	**36,926**	**100%**

Data source: Data base report.

Major Non-Communicable Diseases

At the beginning of the project, Non-Communicable disease corners were decorated with various posters, stickers and other awareness materials. One of the project's counselors provides advanced counseling at the NCD Corner. Conducts activities in collaboration with government service providers to provide improved services in the NCD Corner. The counselor is regularly entering the information of the service recipient in the database. The quality of service in the Upazila Health Complex is getting better day by day and the number of service recipients is increasing. The below table shows that the number of patients with Major Non-Communicable Diseases.

Table-12: Major Non-Communicable Diseases

Hospital	Hypertension	Diabetes	Diabetes & Hypertension	Asthma	Heart disease	Stroke	Arseni cosis	COPD	Dyslipi demia	Other	Total
Abhaynagar	1,169	328	776	196	89	11	-	29	-	53	2,651
Chaugachha	1,818	3,287	819	31	38	11	7	11	1	55	6,078
Keshabpur	2,264	1,926	677	33	42	23	-	6	-	29	5,000
Monirampur	2,372	2,380	1,196	100	48	14	-	-	-	34	6,144
Sadar	985	4,335	3,856	107	72	1	19	27	64	11	9,477
250 bed	3,359	1,922	2,080	12	79	29	-	9	1	85	7,576
Total	**11,967**	**14,178**	**9,404**	**479**	**368**	**89**	**26**	**82**	**66**	**267**	**36,926**

4.3 Followed-up NCD Patients

When the identified patient visits 2nd time then their record is moved to the follow-up list. A total of 125,561 patients received followed-up service where they received counseling, treatment and medicine form NCD Corners. Mentioned that project provided staff made phone call to patients for receiving the treatment from the UHC and DH. The data is shown from May-2019 to February-2022.

Doctor of Chaugachha UHC are providing services to follow-up of NCD patient on 26-12-2019

Table-13: Followed-up patients

Name of Hospital	Follow-up Patient (M)	Follow-up Patient (F)	Total Follow-Up Patient
Abhaynagar	362	609	971
Chaugachha	5,549	20,474	26,023
Keshabpur	3,679	10,593	14,272
Monirampur	5,746	21,784	27,530
Sadar	11,273	37,451	48,724
250 Bed	2,053	5,988	8,041
Total	**28,662**	**96,899**	**125,561**

Figure-4: Gender-wise followed-up patients

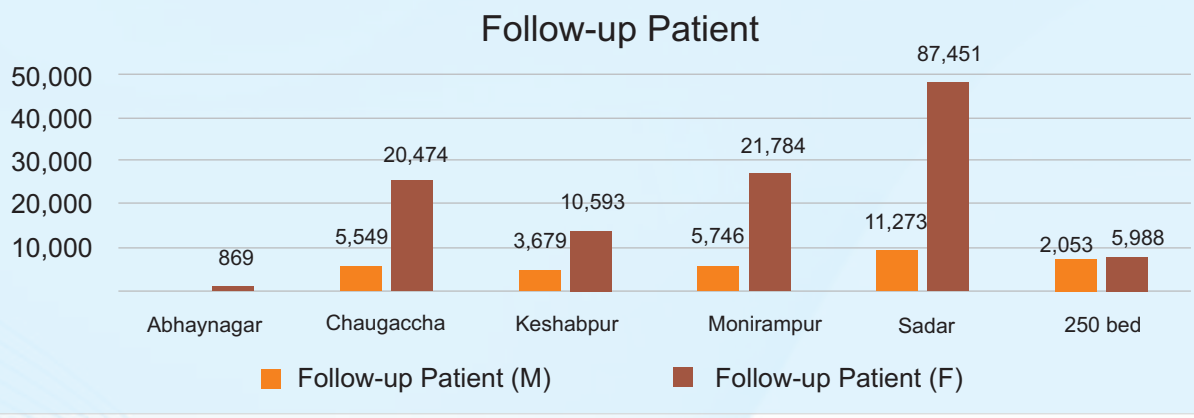


Table-14: Number of visits to NCD Corner of Identified patient as a part of health check up

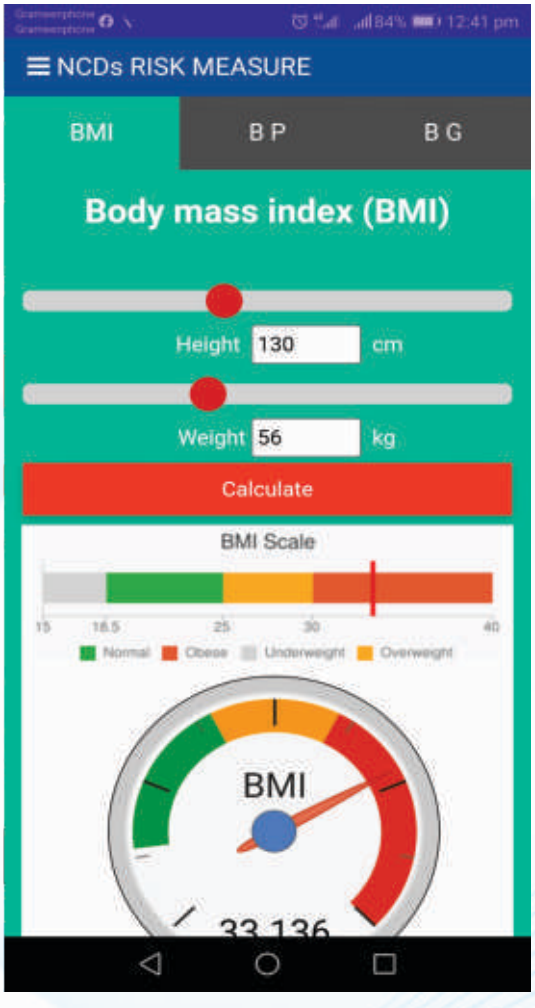
Upazila	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th+	Total
Abhaynagar	272	81	22	15	3	2	1	3			1	1				401
Chaugachha	1160	612	399	271	178	145	78	53	31	15	9	4	3	3	235	3,196
Keshabpur	774	410	221	122	119	91	72	62	39	26	16	20	13	15	144	2,144
Manirampur	1246	582	320	168	137	96	69	49	56	44	35	29	36	22	395	3,284
Sadar	1211	779	687	542	524	399	335	193	126	49	17	11	3		863	5,739
250 Bed	865	270	111	64	22	17	7	7	3	2	3	1	3	1	0	1,376
Total	**5,528**	**2,734**	**1,760**	**1,182**	**983**	**750**	**562**	**367**	**255**	**136**	**81**	**66**	**58**	**41**	**1,637**	**16,140**
	34%	**17%**	**11%**	**7%**	**6%**	**5%**	**3%**	**2%**	**2%**	**1%**	**1%**	**0.4%**	**0.4%**	**0.3%**	**10%**	

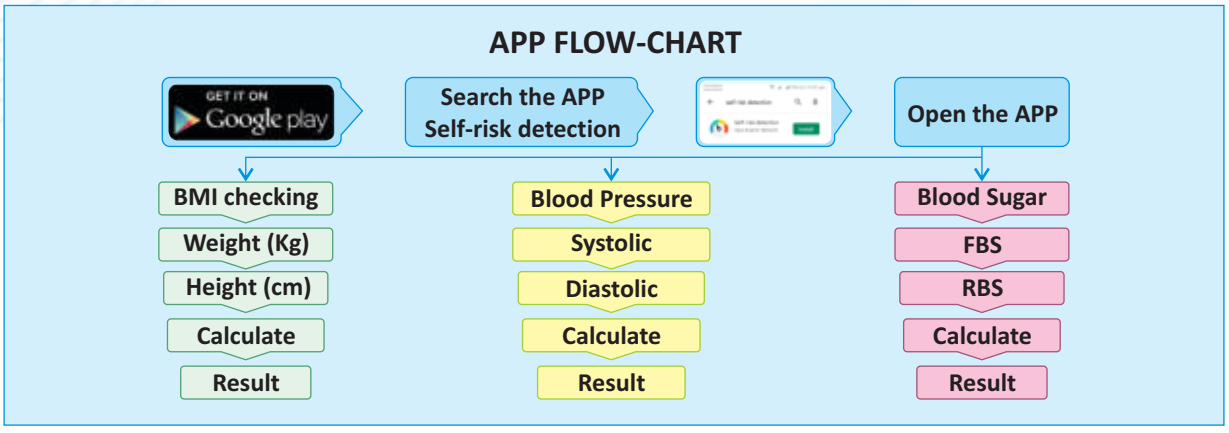
Followed-up service dropped cases

It is to be noted that during 1st two years (May 2019-14th March 2021) were idintified 23,319 NCD patients at targeted 5 hospitals (Chaugachha, Keshabpur, Manirampur, Sadar and 250 Bed). 69% (16,140) patients have come to take the service from NCD Corner in 3rd year. Therefore, the drop-out number is 7,179 (31%).

4.4 Developing Self-risk tools

In 3rd year, from 10 October 2021 to 23 January 2022 total 120 school orientation programs were organized under 4 upazilas on NCD prevention, behavioral change and role of teachers and students during COVID-19 situation. Teachers and students were expected to play vital role at community level for identification of NCD risk through use the self-risk detection Apps. They sensitized the community to use the Apps and also created awareness on BMI (Body Mass Index), BP (Blood pressure) and BG (Blood glucose). 600 teachers and 600 students used self-risk detection Apps. After getting the orientation each teacher was expected to aware 100 villagers about this Apps. Therefore, total 6000 villagers were to be sensitized on NCD risks. Besides, each student was expected to aware 100 people. Totally 100 students x 600 teachers =6000 students' families x 5 person per family (30,000) were conveyed through students. Risky health behavior has been changed at the community level after using the apps having an ultimate result on reduced risk of NCD. Up to till February 2021 total 2,730 person use self- risk detection Apps for their NCDs Risk measurement. The number of downloaded number was 3,149 and active volunteer who is using this app is 1,840. The app users are measuring risk of their mainly members and neighbors and relatives. Project makes the app available in google play store so that it can be found easily by which premature death can be prevented. This apps usually targeted young generation who can taking care of their parents.





Apps operating video

For the smooth use of the app project developed NCDs Risk Measure operating video with the technical assistance of an Information Technology (IT) expert. It is developed in January 2022. This operating video is almost 3 minutes and available in the google play store as well.

4.5 Strengthening reporting system

Asia Arsenic network made a database report at the NCDs corner and strengthened the capacity of government staff on system generated reporting.

As a part of data management system, it was planned from the project to develop an Apps for proper data management. In June 2019, discussion held on the outline of data management from field, CC and NCD Corner and finally adding with DHIS2 in national server. Declared by Additional General director, DGHS (Administration) and Line Director NCDC Programme, DGHS through final seminar that database will incorporate into DHIS2 which have established by Aisia Arsenic Network at NCD corner. Though the NCDC wanted to supply it but delayed due to technical problems, a database system was developed under the project to record identified and follow-up patients' information. From January 2020, NCDs Risk Identification Campaign visitors' data were also recorded online.

Community Clinics have started referring patient to NCD Corner by using apps and referral slip. Database system has been established in NCDs corners. Patient information get entered in database system on daily basis. Training was provided to the counselors and government service providers to enable them to input the patient data in database system. This database can be seen on the following website. Asia Arsenic Network's website www.aan.bangladesh.org

Different time Project were arranged orientation, training, on the job training, of service providers for strengthening report prepared through database system. Now, Service provider is well capable to prepare the strengthening report from the database.

Considering the COVID-19 situation, it was ensured to provide treatment having proper preventive measures, using masks and maintaining social distance. Service providers became more attentive to the counseling, register writing and inputting patient information in database system at NCD corner. Database system has been established at NCDs corners. Government health authorities have also started maintaining supervision and monitoring of all system and procedure at NCDs corners. Reports are prepared and shared with the HWs and authorities. Database are being updated from the NCDs corner of 4 upazilas and a district hospital regularly by service providers. From the 2nd year project supported developing NCD Corner in Abhaynagar and supported technically to make familiar of hospital staff on database management. 100% percent data has been incorporated in database system . Now Govt. service provider given 100% percent data entry in database system.

CHAPTER 5 Health Education

Awareness raising program called “NCD Education program” was conducted at the project areas. Group or communities remained little behind from the healthcare service were provided with extra focus to ensure 'equity rather than 'equality. Based on the nature of the community various behavioral change communication materials were developed through which awareness raising programs were executed by various actors like Health Worker, School Teacher, Youth Club Member, Community Group Member, Community Support Group Member and Project Staff. Following tasks were planned and targeted under:

5.1 NCD education

In preventing NCD, it is the most important to know what NCDs are and how to avoid the risks that may cause NCDs. Once any risks are identified, it is important to modify lifestyle to build a standard of healthy living to prevent the disease. The project, therefore, emphasised on raising awareness. In order to increase public awareness through this project, Community Group members and teachers motivated the people of the respective areas by using the educational tools developed under the project.

Door to door NCD Education at Manirampur Upazila on 15-June-2021

In addition, an educational video was also developed under the project that was played on a TV displayed in the waiting area of each target UHC enabling the people to gain knowledge on NCDs. The video has also been distributed in the form of DVD to various healthcare service centers private clinics, CC, FWC, Sub-Center and, satellite TV channels and schools.

The NCD education activities were as follows

- Promoting villagers and service receivers at NCD Corner on hygiene maintain and during COVID-19 situation.
- Ensuring NCD Educational tools to educate villagers by CG member at the community level. Support teacher's role for changing behavior for NCDs Prevention.
- Promoting NCDs early detection (Screening) through holding NRI campaigns.
- Performing NCD Educational tools by CG member to educate the villagers
- Supporting teachers' role for Changing behavior for NCDs Prevention
- Tea stall meeting
- Group meeting at the community level
- School teachers' orientation on self- risk detection apps.

5.2 Development of NCD Educational Tools

The following Guidance Flyer, Exercise Guidance, PVC Poster, BMI Chart, NRI Guidebook, Poster, NRI register and NRI token were developed under the project.

The following Guidance Flyer, Exercise Guidance, PVC Poster, BMI Chart, NRI Guidebook, Poster, NRI register and NRI token, and video (Rosul purer Jamal) were developed under the project at the end of the period. Corona hand bill were printed in this year for awareness the community about COVID-19. All IEC materials were distributed among the concern area. List of tools are:

Table-15: Development of NCD Educational Tools

Sl	Awareness Tool	Quantity
1	Guidance Flyer	34,000
2	Exercise Guidance	48,000
3	PVC Poster	1,000
4	NCD Prevention Guidebook	5,000
5	BMI Chart	1,900
6	NCD Leaflet	34,000
7	NRI Token	75,000
8	Handbill	35,000
9	COVID and NCD handbill	25,000
10	Screening card	10,000
11	Poster	20,000

a) Educational Video

An educational video was developed under the project between the period of December 2019 to January 2020 named "Rosulpurer Jamal" having a duration of less than 17 minutes. The video depicts tragic consequences of living an uncontrolled life while beautifully highlighting the role of controlled life for healthy living. An experienced film maker produced the video with popular actors and actress. The video was played at the hospital on the LED TV display in front of the NCD Corners. It was also played at UHCs and private clinics so that service receivers can watch while waiting for the doctor. It has been uploaded at the project's e-education site http://aan-bangladesh.org/ncd/galleryvideo.php for people to learn NCDs and prevent themselves from avoidable sufferings.

b) Guidance Flayer

A "Guidance Flyer" was made focusing common non-communicable diseases and remedies as discussed at the CG workshops and UHC meetings 34,000 copies of Guidance Flyer was printed on A4-size paper incorporating the meaning of non-communicable disease, symptoms of hypertension, diabetes, asthma, stroke, arsenicosis and heart attack with remedies as well as some general messages. The back page contained the information on four NCD risk factors and how to get rid of them. The flyers were distributed as guidance to confirmed and suspected NCD patients through the Community Clinics and Family Welfare Centers of the target area 120 school and also distributed at village-level during NRI.

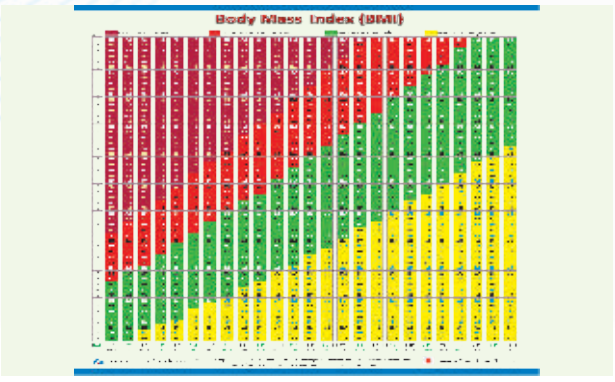
c) Exercise Guidance

Since physical inactiveness is one of the major factors for NCDs sufferings many teachers and health workers proposed for supplying Exercise Guidance. 48,000 copies are printed end of the NCD Project-III. Exercise Guidance distribution among the community people specially targeting overweight and obese people. Exercise group member are exercising to follow this exercise book. Exercise Guidance help the community people for done the exercise to follow the exercise guidance.

d) PVC Poster

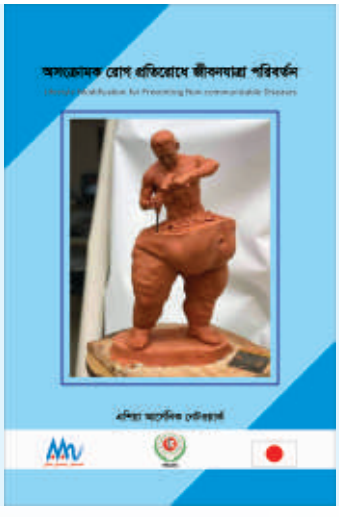
Considering the requirement various posters were developed based on the requirement upon discussion with UHC, Union and School Teachers. The purpose of Poster was to focus Unhealthy diet and how to avoid NCDs risk; NCD and its risk factors; Encouragement for regular health check-up; Encouraging regular exercise; Encouraging improved cooing stove and what to do for avoiding risk. Total 1,000 PVC poster was printed during this NCD- III project. PVC poster is distributing among the different health institution for community awareness.

Since PVC posters are suitable for hanging on wall at UHC, CC, Schools and its longevity is more than other papers those were distributed at CC, FWC, Union, Secondary level School & Madrassa and Upazila level offices.



e) BMI Chart

Body Mass Index (BMI) calculation is essential for any adult to measure NCD risk. To ease the job of HWs a BMI calculation chart was developed where weight is mentioned as kilogram and height was mentioned in inch and centimeter. This chart covered height 4.5" to 6.5" and 35-90 kg. 1900 copies of such chart were distributed among CC, FWC, YC, WG, HWs and school teacher and students.



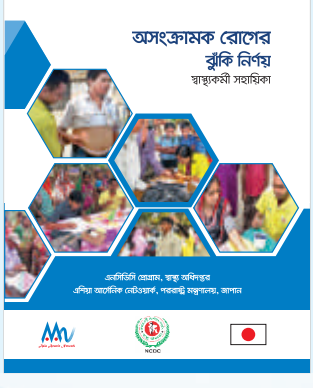
f) NCD Prevention Guidebook

NCDs Risk Identification guidebook named "Life-style Modification for Preventing Non-Communicable Disease" was developed and distributed among the service providers, school teachers, students and HWs for 5000 copies to help them develop knowledge on NCDs.

It contained information on NCDs risk factor, prevention, importance of life style modification and details on NCDs. This handbook was expected to be helpful to prevent Non-Communicable Diseases. It was distributed among the doctor, HWs, School teacher, NRI campaign and students. The manual that was.

g) Poster

To cover all type of participant from each corner of the society, posters were prepared during awareness raising campaign and performance programs. Therefore, a general poster was planned to paste crowded places to knock them to think about NCDs and its risky behavior. However, considering prohibition on poster pasting at different sites, to avoid affixing 20,000 piece of wall hanging posters were developed and distributed at CC, FWC and school level.



h) Patient screening book

Considering the importance of keeping record of the early detected NCDs patients, screening card was developed. 10000 copies of this card were printed in second year of the project and distributed among the CCs. After filling-up of the basic information in this card, the early detected NCD patients were referred to UHC for better treatment.

i) NRI Token

NRI Token was prepared for to keep record of various measured data of the campaign visitors containing the standard level of Blood Pressure, BMI, Blood, and Glucose along with general information name, address, sex and date. At the field campaign time participants received token and visited CC or UHC. 75,000 token was printed under the project.

j) Corona handbill

Coronavirus handbill was developed containing information on hygiene that should be followed to prevent the spread of corona virus. It was distributed at various levels including NRI camps, community meetings and tea stall meetings at the community level including NCD Corners. It was also distributed among the school teachers and students during teachers' training. As a result, a large portion of the population may learn about corona. A total 10,000 handbills were printed and distributed.

5.3 Face to face lifestyle modification

Considering its importance for changing lifestyle to reduce the risk of NCDs, individual counseling was planned and arranged for the community and service recipients. NCDs can be reduced through introducing food diversity, maintaining physical activity, following healthy lifestyles and avoiding tobacco intake. Under the project, advanced counseling was introduced on lifestyle changes to reduce NCD risk through in-person contacts at NCDs corners, NRI camps, group meetings and tea stall gatherings. Project staff provided counseling to the community people at individual level and the service providers also counseled while rendering health services.

5.3.1 Face to face counseling

From the NCDs corners of 04 Upazilas and 01 district hospital, face to face counseling was provided to every service recipients by the government service providers along with the project appointed counselors. 236,574 service receiver received counseling from the NCDs corner while getting the treatment. Service receivers became well aware about risk factor of NCDs and remained able to follow the advice after getting health facility.

Face to face counseling at UHC Level (Upazila Health Complex)

Table-16: Face-to-Face counseling

Upazila	Year-1	Year-2	Year-3	Cumulative Total
Abhaynagar	-	925	9,434	10,359
Chaugachha	9,525	14,359	17,635	41,519
Keshabpur	7,025	17,969	16,149	41,143
Monirampur	8,870	15,994	22,036	46,900
Sadar	13,531	30,074	23,642	67,247
250 bed	4,694	7,927	16,785	29,406
Total	**43,645**	**87,248**	**105,681**	**236,574**

5.3.2 Face to face counseling at the Community level

Face to face counseling was provided at the grass root level through inter personal communication (IPC), tea stall gathering, group meeting, NRI campaign and other different platforms. Total 80,792 people participated in the community level face to face counselling on NCDs risk factor, food diversity, harms of tobacco consumption, avoiding table salt intake, important of physical activity, daily life style and others relevant issues. The community, realizing the importance of these advices, gladly accepted those and changed their attitude and life style.

Door to door NCD Education at Chaugachha Upazila in 22-08-2021

5.4 Community level Health education

Most of the villagers were found familiar with the names of non-communicable diseases like diabetic, hypertension, stroke, asthma, heart attack etc. But to let them know about the sufferings and causes of NCDs, community level health education was provided under the project. Various stakeholders like field level Health & Family Planning Workers, Secondary level school teachers, Mosque Imam (Religious Leaders), Youth Club Members, Women Group Members and Project Staff conducted these educational sessions at community level, healthcare centers, schools and other suitable places. During the three years of the project period 80,792 people took part in different health education sessions as detailed hereunder:

Courtyard Meeting at Lauri in Shyamkur Union under Manirampur on 02-07-2020

Table-17: Health education at Community level

Upazila	Year-1	Year-2	Year-3	Cumulative Total
Chaugachha	1,415	3,450	4,500	9,365
Keshabpur	1,618	8,940	4,589	15,147
Monirampur	1,792	6,951	2,499	11,242
Sadar	10,239	20,607	14,192	45,038
Total	**15,064**	**39,948**	**25,780**	**80,792**

Data source: Data base report.

5.4.1 Health Education by School Teacher

Discussion on NCD risk mitigation of students through teacher at Chadpara High School in Chaugachha Upazila on 09-06-2021

Through school program, teachers and students got orientation on self-risk detection apps. They came to know about the benefits of using self – risk detection apps. BMI, BP and BG status can be checked by using the apps. Teachers and students then started to encourage the community for using the apps to know about BMI, High and low blood pressure and blood sugar/glucose.

After school orientation, a WhatsAPP group was created consisting all school students. The students were responsible to make the community aware about NCDs and post any of such activity into the WhatsApp group. Students were found enthusiastic to take part in these activities to aware people of their locality on NCDs related issues. The community people also welcomed these activities and got aware of the risk factors of NCDs. After the orientation program, teachers also conducted NCD education in the class rooms. During project period NCD educational message was conveyed to 31,361 students who subsequently conveyed the message among their family members, community people, neighbors and friends. Most of the students (65,316) received messaged from their teacher in the 1st year. In case of 2nd and 3rd year, orientation was provided to the teachers and students. Therefore, in last two years new students were also added under the program. As a result 65,316 students from 301 schools received NCD education.

It is expected that these students will be able to understand NCD risk factors and make aware their families to recognized risk at early stage and finally be able to change their life styles. NCD education was expected to spread to the parents by their children. Though project staff joined the sessions but in most of the cases teachers provided lesson. Printed copies were used for lessons where it was not possible to use PVC poster and multimedia presentations. The students were found interested and questioning on causes and risk factors of NCDs.

5.4.2 Health Education by Health Worker

First training for four unions HWs was conducted during 2013-2016. After that under 2nd NCD project period health workers received training from all 15 unions (NCD Project-I in four unions, NCD Project-II in 11 unions) or Sadar Upazila. Based on the trainings, health workers started providing NCD education through their regular activities in order to make NCDs risk free community. Based on the trainings, health workers started providing NCD education through their regular activities in order to make NCDs risk free community.

The Community Healthcare Provider (CHCP) provided health education through CC, Family Welfare Visitor (FWV) provided education through Family Welfare Centre (FWC) and Health Assistant (HA) and Family Welfare

Health Education by Health Worker

Assistant (FWA) through their regular activities. 281 HWs provided NCD education at the community level. The workers gathered intensive and current knowledge about NCD during the project and became able to spread it to their respective working areas. When the attendants visited health centers, the concerned health workers provided them with awareness individually and in group as well. Special care also taken by the health workers to the NCD patients or being NCD patients. The health workers also accomplished awareness at the time of field visits and performed enormous awareness with PVC poster in presence of project staff. Health workers being well acquainted with community found it very fruitful. In three years HWs given messages continuously where participant found 70,144 (Male-168,979, Female-462,776).

Health Education By Mosque Imam

5.4.3 By Mosque Imam

Awareness program was also conducted in mosques with the help of CG member and UP member in second year as well. CG members discussed with the mosque management committee and explained to the Imam (Religious Leader) about NCD educational papers. Union supervisors distributed leaflets to Imams and made them understand about NCD education. On every Friday, a large number of adults and children gathered at mosque where Imams provided awareness campaign. UP members also played a role in delivering messages at major places. In 2nd year project staff visited 405 mosques in targeted 4 upazilas and from where Imam reported 62,655 people got messages. In case of opposite religion, for Hindu community project staff met with 41 priest and in charge of temple and they have reported 2,977 participated received the messages. Both of them have informed about the service of CC and NCD Corner for NCD confirmed and suspected patients.

NCD Education by CG member at
Upashore union under Sadar upazila on 28-01-2021

5.4.4 By CG Member

In beginning CG member were trained on NCDs by project staffs. After the training, CG members became highly motivated on causes of NCDs. They were committed to aware community people on the cause of NCDs. 2131 CG member are trained on NCDs from 156 CCs. After got trained, CG member started awareness among the community and it continued. In 4 upaizla 219 CG members performed NCD Education to community where 4,393 people participated.

5.4.5 By Project Staff

A total 08 project staff were engaged in providing health education on NCDs risk factor to the villagers. Mainly upazila supervisors conducted different field activities for health education among the community people. NCD counselors also conducted different sessions at comfortable occasionally. The following field activities were accomplished by the project staff mainly along with the government health workers:

1. Focus group discussion (FGD)
2. Tea stall meeting
3. Court yard meeting
4. Home visit
5. Interpersonal communication (IPC)
6. Market place meeting
7. NRI campaign

Courtyard Meeting at Niyamotpur Union in Chaugachha Upazila on 03-02-2021

Table-18: NCD Education by project staff at Vulnerable Community

Upazila	Year-1	Year-2	Year-3	Cumulative Total
Chaugachha	1,415	3,450	4,500	9,365
Keshabpur	1,618	8,940	4,589	15,147
Monirampur	1,792	6,951	2,499	11,242
Sadar	10,239	20,607	14,192	45,038
Total	**15,064**	**39,948**	**25,780**	**80,792**

5.5 CG lead NRI

In the 1st year of the project orientation on NRI campaign was provided to the CG (Community group) members through workshops. After which they initiated early risk detection activities in their respective areas through NRI Campaigns (NCDs Risk Identification Campaign). CG members were communicated during lock-down period through phone calls.

NRI camp are being conducted by CG member at Khanpur union under Manirampur upazila on 07-06-2020

Most of the CG members arranged NRI campaign at community level. They had a proactive role in managing difficulties, such as sitting arrangements and in accomplishment of the campaigns. CG members motivated people to visit the NRI campaign to get physical measurement and counseling on lifestyle modification.

412 NRI Campaigns (NCDs Risk Identification Campaign) were conducted at the different remote area while 1,261 suspected case were early detection. Total 11,154 person were early detected (Diabetic and hypertension) through NRI campaign where the participants were 7,376 . CG member are very positive to help NRI camp conducting.

In this campaigns CG members invited participants and volunteers as well. From the project on the job training was provided to the interested volunteers along with providing (lending) physical measurement tools (height measure scale, weighting machine, blood pressure measuring machine and tape for waist measure. The participants who crossed the permissible limit for BP (>140/90) and BMI were advised to visit nearest Community Clinic. The risky lifestyles of those people was recorded and advised to modify.

Table-19: CG-lead NRI campaigns

SI	Upazila	# of NRI	Who takes initiative	Male	Female	Total
1	Chaugachha	112	CG Members	898	3,645	4,543
2	Keshabpur	99	CG Members	1,029	3,235	4,264
3	Monirampur	79	CG Members	658	1,641	2,299
4	Sadar	122	CG Members	990	2,633	3,623
Total		**412**		**3,403**	**3,575**	**11,154**

5.6 Teachers' role to sutdents for community people

Under the project, orientation programs on NCD were organized for the teachers in 4 upazilas during 7 October 2021 to 23 January 2022. A total 301 teachers and students got orientation on NCDs whereas 1327 teachers and 685 students were trained on NCDs and using self-risk detection apps in the third year. The trained teachers guided the students to create awareness among the community on NCD risk factors. Every teacher made at least 10 students aware on NCD campaigns and using self-risk apps. The also conveyed messages on how to present NCDs in every class. Orientation for school teachers was carried out with the following objectives:

Teachers' role to students at Narayanpur BU High School in Chaugachha Upazila on 06-05-2021

- To inform the teachers about NCDs risk factors
- To modify the daily life style of the teachers
- To inspire the teachers to take healthy food
- To make teachers conscious of physical and biochemical check-up
- To make them able to check BMI and BP and blood glucose through self-risk identification apps
- To enable teachers to aware students about life style and in taking healthy food
- To develop motivational skill of the teachers and students to motivate community on these issues

Based one teacher orientation at 301 secondary schools and madrasahs, 4020 teachers are educated 65316 students on NCDs risks factors and there roles in 3 upazilas excluding Sadar. Acduting to teachers teaching information following table is made.

Table-20: NCD Education for students at class room

Upazila	Boy	Girl	Total Student
Chaugachha	9,200	9,650	18,850
Keshabpur	8,485	10,607	19,092
Monirampur	12,425	14,949	27,374
Sadar	It was done earlier project		
Total	**30,110**	**35,206**	**65,316**

Data source: Database report

5.7 Students' role to their parents and neighbors

Students got trained on NCDs under the project and were also guided by the teachers. After the training students started informing their parents and neighbors about the NCDs risk factor. They also motivated parents and neighbors about life style modification, avoiding unhealthy diet, avoiding table salt, importance of physical activities, avoiding tobacco consumption and others relevant issues.

Students were found more familiar with the self-risk detection apps. They comfortably identified BMI, risk of blood sugar and blood pressure of their parents and neighbors through self-risk apps. Apart from this, the students also conveyed messages on NCDs to their friend and community people through publicity campaign at their locality. They continued these activities for NCDs risk reduction and prevention as well. A total 2,547 people were covered through WhatsApp's group also self-risk detection apps.

Students role to their parents at Keshampur union in Jashore Sadar Upazila on13-05-2021

Table-21: NCD awareness in their families through students

Name of Upazila	# of Yes	Number of community label awareness members
Chaugachha	9	79
Keshabpur	97	1,095
Manirampur	73	774
Sadar	44	599
Total	**223**	**2,547**

Source: Database and WhatsApp tracking status

5.8 COVID-19 infection prevention

Bangladesh reported its first confirmed COVID-19 case on 08 March 2020, it reached 100 cases on 9 April, and exceeded 200 cases within the next two (2) days (case doubling time). The multiplication of new cases continued for 14 days, and then on the 15th day after reaching 100 cases, the case doubling time changed to three (3) day time. Moreover, the COVID-19 outbreak and the healthcare burden, together with related disruption, increased the negative impacts on employment, household income and receiving health service from the health facility in both rural and urban areas.

Infection prevention and control (IPC) is a practical, evidence-based approach which prevents patients and health workers from being harmed by avoidable infection. Project intervention was closed during locked down

period. At that time communication took place with the project stakeholders, patients and HWs through phone. The patients, stakeholders and HWs were advised through phone calls to maintain personal hygiene, use masks, maintain social distance and to avoid the crowded places. When the COVID-19 infection trend was lower, some events were arranged at the community level according to the discussion with government health authority. NRI campaign and FGD (Focus group discussion) were arranged along with tea stall meeting ensuring low gathering and maintaining the COVID-19 infection prevention protocol. Similarly, this infection prevention protocol was followed for NCDs corner service providers. They inspired the visiting patient to use masks and maintain the social distance.

COVID-19 infection prevention at Sadar UHC on 04-April-2021

Under the project orientation was given to the service providers regarding prevention of infection during COVID- 19 and inspired them of using masks & PPE, maintaining social distance and personal hygiene during service delivery.

To ensure safety of the service provider during COVID-19 situation all types of PPE, hand sanitizer and guideline were provided from the project. Service providers started rendering health services wearing PPEs and maintaining personal hygiene as per the following instructions of project management.

- Using gown
- Using face shield
- Using face mask
- Using goggles/spectacles
- Wearing surgical bonnet
- Wearing gloves
- Repeatedly hand sanitizing

5.9 Educational video displaying TV monitor

Under the project an educational video was produced which had been being played on a TV display in the waiting area of each targeted UHC enabling the people to gain knowledge on NCDs. The video was also distributed in the form of DVD to various healthcare service centers, upazila wise private clinics, CC, FWC, Sub-Center and, satellite TV channels and schools. The number of video observer is 239,870.

Patients and relatives of are watching NCD educational video on TV at Kehabpur UHC on 01-06-2020

Table-22: Educational video displaying

Name of Hospitals	Year-1	Year-2	Year-3	Cumulative Total
Chaugachha	0	39,995	28,190	68,185
Keshabpur	0	28,751	32,731	61,482
Monirampur	0	24,025	14,284	38,309
Sadar	0	12,206	8,538	20,744
250 bed	0	23,988	27,162	51,150
Total	**0**	**128,965**	**110,905**	**239,870**

CHAPTER 6 Environmental development management

Under the project it was also considered for NCDs Environmental Management through changing traditional cooking stoves to improved cooking stove, examine water for arsenic, promoting physical exercise and encouraging to avoid bad working conditions. In case of adopting such issues at community level, separate sessions were conducted during CG workshop. CG and CSG members were inspired to encourage villagers on those issues beside the health and family planning workers. The CHCP of Community Clinics regularly addressed suspected and identified NCD patients to adopt such issue to keep family members risk free. Arsenic contaminated tube-wells were identified and marked red color along with hanging signboard beside the tube-well.

6.1 Cooking stove installation

Installing improve Stove at Arkandi

Traditional cooking stoves are largely responsible for causing respiratory diseases. In the beginning of the project no village women found using modern cooking stove rather they had been using traditional cooking stove. In a traditional cooking stove only 20 percent of the heat is used for cooking and it produces a lot of fumes which gradually cause rural women to suffer from respiratory diseases. Through NRI campaign, group meeting, tea stall meeting and interpersonal communications it was promoted under the project for installation of modern cooking stove. The rural community got inspired and installed the cooking stove for prevention of respiratory diseases. Extensive modern cooking strove has been installed at rural community from the own initiatives and others source. Total 652 cooking stove has been installed in 4 Upazilas at the end of the project reported by CG member.

Table-23: Information of newly constructed improved cooking stove after NCD education at community

Upazila	Year-1	Year-2	Year-3	Cumulative Total
Chaugachha	18	54	147	219
Keshabpur	42	37	77	156
Monirampur	30	35	92	157
Sadar	12	24	84	120
Total	**102**	**150**	**400**	**652**

6.2 Drinking water supply

Based on the experience of implemented projects, it was evident to Asia Arsenic Network that many of the healthcare centers did not have any drinking water facilities. The main reason of non-functioning of the water sources was lack of technical knowledge and some cases due to selecting wrong aquifer. To make available

drinking water at healthcare centers a fact-finding survey was designed under the project. From June to July-2020 project staff visited Community Clinics and collected information on the status of 156 nos. CCs' drinking water facilities. Then it was planned to ensure arsenic safe drinking water at healthcare service centers under the project in its targeted area.

Most of such inactive water devices were unusable in few days. Concerned Community Health Care Providers (CHCP) mentioned that the water devices were nonfunctional for more than 6 years in many cases. The common reasons were:

1) Leakage between GI and PVC connection
2) Bad water quality
3) Bore hole damaged
4) Strainer damaged
5) Water doesn't come out
6) Check-valve and washer damaged

Use safe water at Sarapol CC in Chanchra Union under Sadar Upazila on 07-08-2021

Under the project, some of the non-functional tube wells at Community Clinics were repaired and new Deep tubewells were installed where there was no scope to reactive the existing wells based on the survey result. Totally 28 deep tubewells were newly installed and 40 existing tube wells were repaired at healthcare centers. Among the new installation only one Deep Tubewell is installed at the Upazila Hospital Premises of Manirampur. Others installation and repair are done at Community Clinics and Family Welfare Centers. for safe water supply at the facility level at the end of the NCD-III project. Now, Service receiver get safe drinking water from the tubewells and adjacent community people collect the water for drinking. It is to be noted that after installation and repair wells project conducted water quality test for Arsenic, Iron, Manganese, Chloride and Coliform bacteria. A total of 14 sites arsenic contamination found high (>0.05mg/l). Therefore, project supplied locally available treatment filter and checked performance after two months. Arsenic level found high in 8 places where alert signboard is attached for using this water for washing hands and other hygiene purpose. According to the calculation around 92, 959 people will be benefited from the activity.

Repaired and Newly installed tube wells at Health Care Service Centers

Table-24: List of Newly Installed Deep Tubewells at Healthcare centers

Sl #	Name of CC	Upazila	Depth (ft)	Year of installation	Arsenic (mg/L)	Remarks
1	Rezakati CC	Keshabpur	740	2020	0.001	
2	Shikarpur CC	Keshabpur	740	2020	<0.001	
3	Sreephala CC	Keshabpur	1250	2020	0.001	
4	Ramnathpur CC	Monirampur	640	2020	0.001	
5	Durbadanga CC	Monirampur	600	2020	<0.001	
6	Bahadurpur CC	Monirampur	700	2020	0.001	
7	Goyalbari CC	Monirampur	820	2020	<0.001	
8	Ghughrail CC	Monirampur	670	2020	<0.001	
9	Soddullapur CC	Sadar	650	2020	0.002	
10	Sarapol CC	Sadar	500	2020	0.012	
11	Munsefpur CC	Sadar	615	2020	0.009	
12	Bahadurpur CC	Sadar	566	2020	**0.102**	Filter given but removal efficiency was not enough
13	Sirajshingha CC	Sadar	560	2020	**0.075**	
14	Boro Megla CC	Sadar	515	2020	0.035	
15	Baliyadanga CC	Sadar	470	2021	0.05	
16	Sajiyali CC	Sadar	460	2021	**0.072**	Filter given but removal efficiency was not enough
17	Daulatdihi CC	Sadar	450	2021	**0.113**	
19	Laurhi CC	Monirampur	700	2021	0.014	
20	Noyali CC	Monirampur	855	2021	0.044	
21	Manirampur UHC	Monirampur	600	2021	0.019	
22	Candipur CC	Monirampur	650	2021	0.014	
23	Chakla CC	Monirampur	710	2021	0.017	
24	Puradanga FWC	Monirampur	620	2021	0.014	
25	Caluyahati CC	Monirampur	1110	2021	0.044	
25	Meherpur CC	Keshabpur	735	2021	0.015	
26	Vallukghar CC	Keshabpur	605	2021	0.011	
27	Hashanpur CC	Keshabpur	505	2021	0.017	
28	Verchi CC	Keshabpur	555	2021	0.012	

Note: *Sl # 12, 13, 16, 17 is arsenic contaminated therefore advised not to drink water but use for other purposes*

Table-25: List of repaired existing tubewells at healthcare centers

Sl #	Name of CC	Upazila	Year of installation	Arsenic (mg/L)	Remarks
1	Chandra CC	Keshabpur	2020	0.038	Due to exceed guideline 0.05mg/L, project provided filter to Sl# 3, 6, 7, 8, 9, 13, 16, 26, 34, 38, 40 but could not find satisfactory result among Sl# 6, 8, 9, 13, 16, 26, 34, 38, 40. Only Sl# 3 and 7 produced safe water after filtration. Finally project advised not to drink water from the marked tubewell and placed signboards.
2	Dormutia CC	Keshabpur	2020	0.044	
3	Kasta CC	Keshabpur	2020	**0.090**	
4	Sree Rampur CC	Keshabpur	2020	0.010	
5	Altapol CC	Keshabpur	2020	0.000	
6	Belkathi CC	Keshabpur	2020	**0.096**	
7	Garvanga CC	Keshabpur	2020	**0.066**	
8	Kariyakhali CC	Keshabpur	2020	**0.109**	
9	Panjia CC	Keshabpur	2020	**0.109**	
10	Keshabpur UHC	Keshabpur	2020	0.000	
11	Pariyali CC	Monirampur	2020	0.010	
12	Syamnagar CC	Monirampur	2020	0.010	
13	Shyamkur CC	Monirampur	2020	**0.250**	
14	Chalkidanga CC	Monirampur	2020	0.020	
15	Barpara CC	Monirampur	2020	0.010	
16	Salamatpur CC	Monirampur	2020	**0.098**	
17	Jaipur CC	Monirampur	2020	0.010	
18	Pratafkati CC	Monirampur	2020	0.010	
19	Dowgacciwa CC	Sadar	2020	0.010	
20	Faridpur CC	Sadar	2020	0.010	
21	Kazipur CC	Sadar	2020	0.000	
22	Jhumjhumpur CC	Sadar	2020	0.010	
23	Ramnagar CC	Sadar	2020	0.010	
24	Karichia CC	Sadar	2020	0.010	
25	Khankaye Oyachiya CC	Sadar	2020	0.010	
26	Jattrapur CC	Chaugachha	2020	**0.091**	
27	Borni CC	Chaugachha	2020	0.010	
28	Swarupur CC	Chaugachha	2020	0.000	
29	Rampur CC	Monirampur	2021	0.027	
30	Kharinci CC	Monirampur	2021	0.014	
31	Kasipur CC	Monirampur	2021	0.015	
32	Dighirpar CC	Monirampur	2021	0.010	
33	Monoharpur CC	Monirampur	2021	0.010	
34	Gopsena CC	Keshabpur	2021	**0.436**	
35	Narendrapur CC	Sadar	2021	0.021	
36	Bajedurgapur CC	Sadar	2021	0.010	
37	Kholadanga CC	Sadar	2021	0.019	
38	Dakatiya CC	Sadar	2021	**0.142**	
39	Khojarhat CC	Sadar	2021	0.016	
40	Nimtala CC	Chaugachha	2021	**0.201**	

CHAPTER 7 Monitoring & Evaluation

Monitoring & evaluation is the great part of the project. Monitoring helps to make a decision of any policy level. Monitoring helps to identified the activities barriers and find out the way of reducing. Project has been conducting different survey as part of monitoring. Survey have helped to know what is status of progress. On the other hand, performance evaluation is done on the basis of monitoring. Conducted various surveys at different times to evaluate the project activities. Some survey status are given below.

Table-26: Patients before entering NCD Corner and after receiving treatment

Name of UHC	Period of survey		No. of respo-ndent	Among respondent		They are referred from			Reason of refer
	From	To		Visited hospital 1st time	More than 1 time	CC	HW	Others	
Chaugachha	13-09-20	27-02-21	150	116	34	112			Cause of NCD
Keshabpur	08-09-20	26-02-21	150	43	107	23			Cause of NCD
Manirampur	18-09-20	26-02-21	150	35	115	35			Cause of NCD
Sadar	10-09-20	23-02-21	150	25	125	19			Cause of NCD
250 Bed	09-07-20	24-02-21	150	37	113	20			Cause of NCD
Total			**750**	**256**	**494**	**209**	**44**	**439**	

7.1 Baseline & Endline survey

Project conducted baseline survey during 28 May to 18 Jun 2019 and endline survey 23 Nov to 12 Dec 2021 providing 2 daylong training to data collectors. The day 1 designed as a classroom training day and day 2 is designed for field training.

Endline Survey at Jhanpa Union in Manirampur Upazila on 09-12-2021

Table-27: Distribution of respondents of baseline and end line survey

SI	Upazila	No. of CC in Upazila	CC-near (neighborhood)		CC-far (long distance village)		No. of data collection	
			Baseline	Endline	Baseline	Endline	Baseline	Endline
1	Chaugachha	26	60	60	60	59	120	119
2	Keshabpur	27	60	60	60	60	120	120
3	Manirampur	43	60	60	60	57	120	117
4	Sadar	60	60	60	60	60	120	120
	Total	**156**	**240**	**240**	**240**	**476**	**480**	**476**

The baseline survey was conducted during 28 May – 18 June 2019 and the end line survey was conducted during 23 Nov – 12 Dec 2021. A two-day training was provided to the data collectors including 1 day for classroom training and 1 dat for fied. The baseline survey was conducted among 480 respondents in 04 Upazilas i.e., Sadar, Chaugachha, Manirampur and Keshabpur. The end line survey was also conducted in the same upazilas among 476 respondents. Between the two surveys, 366 respondents remained same. The Male to Female gender ratio for baseline survey was 1:1 which was 2:3 in end line survey. Data was collected from 5 Community Clinics (CC) from each 4 targeted Upazila where the 5 CC(s) were selected randomly from each Upazila. Under each CC project collected 3 data from each 4 direction (South-North-East-West). A total 480 data are collected under 20 CCs of 4 targeted upazilas during baseline survey but 476 are found during endline survey. The difference 4 respondents were migrated therefore it they were not found during endline data collection. A detailed findings of the baseline and end line survey are presented as hereunder:

Q 1) Do you know about NCDs?(Comparison with the same respondents)

Baseline Survey

	Chaugacha			Keshabpur			Maniranpur			Sadar			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	G.total
Yes	2 (4.4)	6 (11.1)	8 (8.1)	2 (6.6)	0 (0)	2 (2.4)	0 (0)	0 (0)	0 (0)	27 (73.0)	33 (62.3)	60 (66.7)	31 (19.5)	39 (18.8)	70 (19.1)
No	43 (46.6)	48 (88.9)	91 (91.9)	34 (94.4)	49 (100)	83 (97.6)	40 (100)	62 (100)	92 (100)	10 (27.0)	20 (37.7)	30 (33.3)	127 (80.4)	169 (81.3)	295 (80.9)
Total	**45**	**54**	**99**	**35**	**49**	**85**	**40**	**52**	**92**	**37**	**63**	**90**	**158**	**208**	**355**

End Line Survey

	Chaugacha			Keshabpur			Maniranpur			Sadar			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	G.total
Yes	42 (03.3)	61 (04.4)	93 (03.9)	36 (100)	49 (100)	86 (100)	39 (07.5)	52 (100)	91 (08.9)	36 (07.3)	61 (06.2)	87 (06.7)	153 (07.6)	203 (07.5)	356 (07.3)
No	3 (6.7)	3 (6.6)	6 (6.1)	0 (0)	0 (0)	0 (0)	1 (2.5)	0 (0)	1 (1.1)	1 (2.7)	2 (3.8)	3 (3.3)	5 (3.2)	5 (2.4)	10 (2.7)
Total	**45**	**54**	**99**	**35**	**49**	**85**	**40**	**52**	**92**	**37**	**53**	**90**	**158**	**208**	**355**

In Sadar, more than 60% of the respondents already knew about NCDs in Baseline Survey, but in other areas, most people didn't know about it. In Endline Survey, more than 90% of the respondents knew about NCDs.

Q 2) How do you get the name of NCD? (Comparison with the same respondents)

Source of knowledge	Baseline Survey Total no. of respondent (%)	End line Survey Total no. of respondent (%)
CHCP	46 (65.70)	296 (83.10)
SACMO/FW	4 (5.70)	32 (9.00)
Hospital (Dr./SACMO/Ns)	34 (48.60)	54 (15.20)
TV	15 (21.40)	45 (12.60)
AAN	12 (17.10)	340 (95.50)
Other NGO	-	28 (7.90)
Facebook	-	10 (2.80)
School student	19 (27.10)	66 (18.50)
Mosque Imam	1 (1.40)	6 (1.70)
HW (HA/FWA/AHI/HI)	17 (24.30)	144 (40.40)
CG Member	-	82 (23.00)
Teacher	-	45 (12.60)
Advertisement (Display TV/Billboard/Poster)	3 (4.30)	7 (2.00)
Others	2 (2.90)	2 (0.60)

The above table shows that, in baseline survey, there were only a limited number of information sources on NCDs. In End line survey, many respondents chose "CHCP" "AAN" "HW" as information sources on NCDs. "School" and "CG" become important sources of information

Q 3) Can you tell some names of NCDs? (Comparison with the same respondents)

Particular	Baseline Survey		End line Survey	
	Number	Percent	Number	Percent
Diabetes	84	17.5%	432	90.8%
Hypertension	61	12.7%	425	89.3%
Stroke	58	12.1%	313	65.8%
Asthma	27	5.6%	289	60.7%
Cancer	32	6.7%	204	42.9%
Heart disease	11	2.3%	180	37.8%
Tumor	11	2.3%	62	13.0%
Others	4	0.8%	0	0.0%

It is found from the above table that, Baseline Respondents knew major NCDs as Diabetes (17.5%), Hypertension (12.7%) and Stroke (12.1%). However, during end line survey, it is found that not only major NCDs, awareness of other NCDs has increased having Diabetes (90.8%), Hypertension (89.3%), Stroke (65.8%), Asthma (60.7%), Cancer (42.9%) and Heart disease (37.8%).

Particular	Baseline Survey		End line Survey	
	Number	Percent	Number	Percent
Unhealthy diet	75	15.6%	454	95.4%
Lack of physical labor	67	14.0%	414	87.0%
Use of tobacco	46	9.6%	393	82.6%
Drinking arsenic contaminated water	15	3.1%	247	51.9%
Air pollution	24	5.0%	80	16.8%
Others	10	2.1%	0	0.0%

The above mentioned table shows that during baseline survey 15.6% percent respondents told about Unhealthy diet which has increased to 95.4% during end line survey. Accordingly, Lack of physical labor from 14.0% to 87.0%, Use of tobacco from 9.6% to 82.6% and Drinking arsenic contaminated water from 3.1% to 51.9%.

Q 4) What type of cooking oil does your family use?

Baseline Survey					
Bottled	%	Open container	%	Others	%
31	6%	448	93%	1	0.2%
End line Survey					
81	17%	381	80%	14	2.9%

During the baseline survey only 6% respondents found using bottled cooking oil, which reached 17% during end line survey. Use of Open Container Oil decreased from 93% to 80%.

Endline Survey Activity at Jhanpa Union in Manirampur Upazila on 09-12-2021

Q 5) Do your family member go for taking service from CC/UHC?

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Yes	72	(80.0)	66	(66.7)	81	(95.3)	84	(91.3)	303	(82.8))
No	18	(20.0)	33	(33.3)	4	(4.7)	8	(8.7)	63	(17.2)
Total	**90**		**99**		**85**		**92**		**366**	

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Bring Medicine	56	(90.3)	63	(100)	46	(92.0)	42	(89.4)	207	(93.2)
Pressure Measure	28	(45.2)	18	(28.6)	2	(4.0)	0	(0)	48	(21.6)
Measure Weight	18	(29.0)	8	(12.7)	0	(0)	0	(0)	26	(11.7)
Diabetes Check	10	(16.1)	0	(0)	0	(0)	0	(0)	10	(4.5)
Take Advice	22	(35.5)	15	(23.8)	31	(62.0)	20	(42.6)	88	(39.6)

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Yes	72	(80.0)	66	(66.7)	81	(95.3)	84	(91.3)	303	(82.8))
No	18	(20.0)	33	(33.3)	4	(4.7)	8	(8.7)	63	(17.2)
Total	**90**		**99**		**85**		**92**		**366**	

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Medicine	70	(97.2)	61	(92.4)	79	(97.5)	84	(100)	294	(97.0))
BP Check	68	(94.4)	48	(72.7)	67	(82.7)	64	(76.2)	247	(81.5)
Weight Check	55	(76.4)	22	(33.3)	69	(85.2)	39	(46.4)	185	(61.1)
Diabetes Test	69	(95.8)	39	(59.1)	52	(64.2)	50	(59.5)	210	(69.3)
Health Education	71	(98.6)	33	(50.0)	67	(82.7)	60	(71.4)	231	(76.2)

During end line survey, many people (82.8%) were found using CC for various purposes than before. The key reasons of visit were to bring medicine (97%), measure pressure (81.5%) & weight (61.1%), check diabetes (69.3%) and to take advice (76.2%).

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Yes	3	(3.3)	31	(31.3)	22	(25.9)	31	(33.7)	87	(23.8)
No	87	(96.7)	68	(68.7)	63	(74.1)	61	(66.3)	279	(76.2)
Total	**90**		**99**		**85**		**92**		**366**	

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Bring Medicine	2	(66.7)	10	(32.3)	9	(40.9)	8	(25.8)	39	33.3
Pressure Measure	2	(66.7)	12	(38.7)	0	(0)	9	(29.0)	23	(26.4)
Measure Weight	0	(0)	4	(12.9)	4	(18.2)	6	(19.4)	14	(16.1)
Diabetes Check	0	(0)	4	(12.9)	4	(18.2)	2	(6.5)	10	(11.5)
Take Advice	1	(33.3)	15	(48.4)	15	(68.2)	13	(41.9)	44	(50.6)

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Yes	34	(37.8)	72	(72.7)	62	(72.9)	87	(94.6)	255	(69.7)
No	56	(62.2)	27	(27.3)	23	(27.1)	5	(5.4)	111	(30.3)
Total	**90**		**99**		**85**		**92**		**366**	

	Sadar		Chaugachha		Manirampur		Keshabpur		Total	
Medicine	26	(76.5)	56	(77.8)	49	(79.0)	66	(75.9)	197	(77.3)
BP Check	16	(47.1)	19	(26.4)	15	(24.2)	10	(11.5)	60	(23.5)
Weight Check	8	(23.5)	24	(33.3)	12	(19.4)	17	(19.5)	61	(23.9)
Diabetes Test	7	(20.6)	24	(33.3)	16	(25.8)	27	(31.0)	74	(29.0)
Health Education	14	(41.2)	32	(44.4)	30	(48.4)	51	(58.6)	127	(49.8)

Q 6) Did you check BP within last 2 months by own effort?

Baseline Survey					
Yes	**%**	**No**	**%**	**Don't say**	**%**
98	20%	382	80%	0	0.0%
End line Survey					
409	86%	65	14%	2	0.0%

The above table shows that only 20% respondents got their BP checked in last 2 months of baseline survey which reached at 86% during end line survey.

Q 7) Did you check Sugar last 6 months by own effort?

Baseline Survey					
Yes	%	No	%	Don't say	%
40	8%	440	92%	0	0.0%
End line Survey					
253	53%	213	45%	10	2.0%

The above table shows that only 8% respondents got their sugar checked in last 6 months of baseline survey which reached at 53% during end line survey.

Q 8) What type of stove do you have?

Baseline Survey					
Improved	%	Traditional	%	Others	%
110	23%	367	76%	3	0.6%
End line Survey					
203	43%	239	50%	34	7.0%

During the baseline survey 23% respondents were found using improved cooking stoves, whereas 76% of them where using traditional stoves. During end line survey the numbers have been shifted to 43% and 50% respectively, as evident from the above table.

Q 9) Maintaining dinner within 8 pm

Baseline Survey							
Self				Family			
Yes	%	No	%	Yes	%	No	%
95	20%	385	80%	88	18%	392	82%
End line Survey							
376	79%	100	21%	372	78%	104	12%

As found in the above mentioned table, during baseline survey 20% of the respondents were maintaining dinner within 8 PM and it was 18% in case of their family. The percentages were found shifted during end line survey to 79% and 78% respectively.

Q 10) Taking more vegetable (400gm)

Baseline Survey							
Self				Family			
Yes	%	No	%	Yes	%	No	%
60	13%	420	88%	56	12%	424	88%
Endline Survey							
392	82%	84	18%	389	82%	87	18%

As found in the above mentioned table, during baseline survey 13% of the respondents were maintaining taking more vegetables (400 gm) and it was 12% in case of their family. The percentages were found shifted during end line survey to 82% in both cases.

7.2 Exit Survey

The purpose of the survey was to know the effectiveness of basic guidance provided by the Counselors. In the Exit Survey the NCD Corner service recipients, specifically, identified NCD patient were requested to answers four types of questions. For the survey, the Information Analyst or two Healthcare Data Supervisors usually visited the target NCD Corners to interview randomly selected NCD patients while they came out from the counseling room.

Exit Survey Questions:

Q-1 How do you understand about your Blood Pressure compared with normal BP?

Q-2 How do you feel about your weight compared with ideal weight?

Q-3 How do you understand about your waist circumference compared with ideal measurement?

Q-4 Do you understand BMI?

Exit Survey at Chaugachha UHC on 13-01-2021

A total of 1650 data was collected from equal number of respondents during 3 years which was started on 24th August and ended on 31st December 2021. During the lockdown and COVID-19 pandemic period exit survey remain stopped. According to the data almost 90% (1478/ 1650) of the respondents answered 3 questions but in case of understanding on BMI (Body Mass Index) 39% (648/1650) was able to answer rightly.

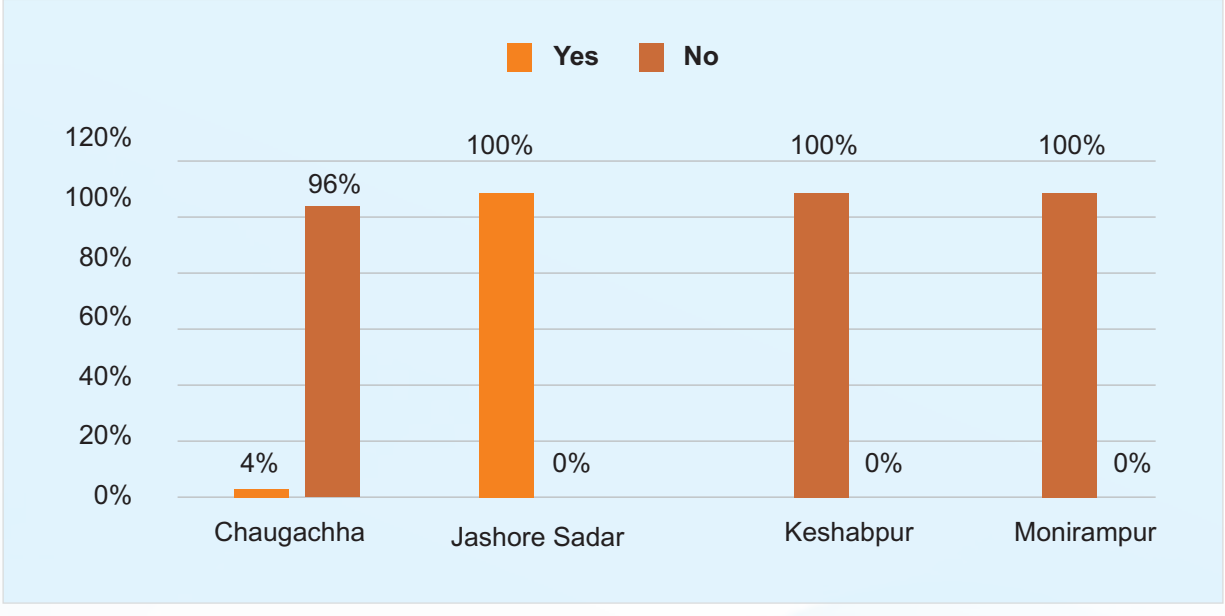
Table-28: Exit Survey results

Sl#	Name of UHC	No. of respondents	Q-1		Q-2		Q-3		Q-4	
			Yes	No	Yes	No	Yes	No	Yes	No
1	Chaugachha	330	96%	4%	95%	5%	86%	8%	98%	2%
2	Keshabpur	330	95%	5%	93%	7%	92%	13%	18%	82%
3	Monirampur	330	98%	2%	97%	3%	92%	9%	47%	53%
4	Sadar	330	96%	4%	98%	2%	86%	11%	19%	81%
	Total	**1320**	**97%**	**3%**	**96%**	**4%**	**92%**	**10%**	**15%**	**85%**

7.3 CG Members' Knowledge survey

The Community Group (CG) is the group of people responsible to manage Community Clinics. In the project plan, CG Members were expected to encourage villagers to go to NRI campaign for early risk identification and also to modify lifestyles, if required. Therefore, it was needed to know how much the CG members understood NCDs to make their related services meaningful. It was then planned to collect information during a workshop to know the status of CG members' knowledge on NCDs. The number of CCs in the target area was 156. At the end of the workshop the project staff conducted the Focus Group Discussion (FGD survey) in a prescribed format developed under the project. The method of survey was placing questionaries to participant and collect answer through raising hands. The number of participated members was 2,130 (80%) out of targeted 2,652 during 16 July to 28 December 2019.

Figure-5: Knowledge level on NCD riskfactors among CG members



Since it was the first occasion for most of CG members to learn about the NCD and its risk factors, almost all of them could not answer at all except the CG members of Sadar Uapzila's all 60 CCs who remembered what they had learned during the previous project.

Table-29: Knowledge level on NCD risk factors

Upazila	Number of CCs	Knew		Didn't know	
		No.	%	No.	%
Chaugachha	26	1	4%	25	96%
Keshabpur	27	-	0%	27	100%
Monirampur	43	-	0%	43	100%
Sadar	60	60	100%	-	0%
Total	**156**	**61**	**39%**	**95**	**61%**

7.4 Drinking Water at Healthcare Facilities Survey

During the previously implemented projects, AAN experienced that many healthcare centers did not have any drinking water facilities. Others remained non-functional due to lack of technical knowledge and in some cases due to selecting wrong aquifer. To make drinking water available at healthcare centers a fact-finding survey was designed. From 8th July to 28th December 2019 project staff visited Community Clinics and collected information on the status of drinking water facilities of 156 CCs. It was also planned to ensure arsenic safe drinking water at healthcare service centers in its targeted area. From the analysis of collected information it was found that the drinking water devices of 61 (39%) CCs were out of order. Most of such inactive water devices were out of order for a long time and concerned Community Health Care Providers (CHCP) mentioned that the water devices had been nonfunctional for more than 6 years in many cases. The common reasons were:

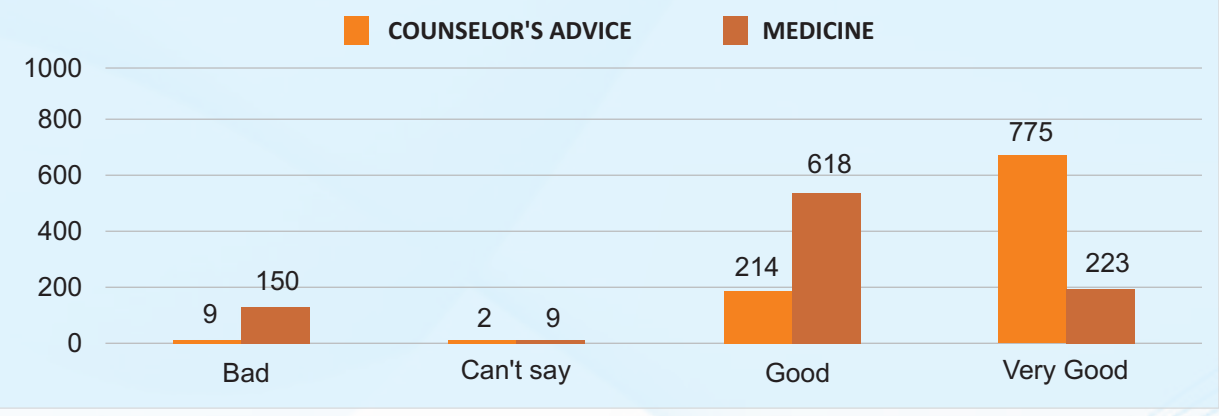
1. Leakage between GI and PVC connection
2. Bad water quality
3. Bore hole damaged
4. Strainer damaged
5. Water doesn't come out
6. Check-valve and washer damaged

Then initiatives were taken under the project to repair some non-functional tubewells at Community Clinics and install new Deep Tubewell where there is no scope to reactive the existing wells based on the survey result also considering approved project budget.

7.5 Patients' Attendant Survey

Most of the visitors to the NCD Corner come from rural area. Many of them were afraid of their symptoms and were not familiar with hospital. As a result, many service receivers came with attendants, either their neighbors or relatives who already had visited the NCD Corner. The purpose of survey was to let those attendants know about the NCD risk factors and the ways they can guide the patients. During the January-February 2020 period, information was collected from 380 patients' attendants (Chowgach-90, Keshabpur-90, Monirampur-90, Sadar-90 and 250 Bed Hospital-20) at NCD Corners. The ratio of respondents was male 45% and female 55%. Among the attendants 37% came for first time with their suspected patients. Regarding the performance or service of Counselor 304 (85%)/380 were very much satisfied with service. In 2021, between 15th March 2021 to 15th December 2021 a survey was conducted by selecting 200 respondents from each 5 hospitals (Chaugachha, Keshabpur, Manirampur, Sadar & 20 Bed). The summary as below;

Figure-6: Impression of service recipients



NCD Patients Attendant Survey at Manirampur UHC on 21-9-2021

Table-30: Impression of service recipients

Status	Counselor's advice	Medicine
Bad	9 (1%)	150 (15%)
Can't Say	2 (0%)	9 (1%)
Good	214 (21%)	618 (22%)
Very Good	775 (78%)	223 (22%)

Student Survey Bariali High School at Chaugachha Upazila on 19-02-2020

7.6 Students survey

School teachers' orientation was conducted in 301 schools in Chaugachha, Keshabpur and Manirampur Upazila during 15 July 2019 to 14th March 2020. The participated 4020 nos. teachers were requested to educate students in class. In the 3rd year project staff visited and collected information from 426 students who were from Class-VI (25), Class-VII (107), Class-VIII (178), Class-IX(195) and Class-X (137). Another survey was conducted to know how the educated students conveyed lifestyle modification messages to their families and neighborhoods:

Table-31: Distribution of respondents of Students Survey

Upazila	No of Oriented Schools	Selected Schools for survey	Interviewed students	Could remembered education	Progress
Chaugachha	63	53	200	30	15%
Keshabpur	101	63	200	124	62%
Maniramour	137	49	200	137	69%
Sadar	125	57	200	46	23%
Total	**426**	**222**	**800**	**337**	**42%**

- 302 (89%) out of 337 students answered at least 5 questions out of 10 questions regarding risk factor and unhealthy diet.
- 279 (92%) out of 302 discussed risk factor with their families
- 223 (79%) out of 279 conveyed messages to their neighbors and relatives
- 158 (52%) out of 302 faced various problems to give up taking salt (>5g/per), finish dinner early, go to sleep after 2 hours of dinner

7.7 Counselors' skill development survey

It was an innovative idea of the project to add Counselors to the NCD Corners. During the three-year project, formal trainings were provided to the hospital selected 15 NCD Counselor who were responsible for providing counselling on lifestyle modification of the identified patients. Based on the content of the trainings, project a skill test survey was conducted using a prescribe format. The summary of the skill test as hereunder:

Counselors' skill development survey at Sadar UHC on

Figure-7: Year-wise skill test result of UHC Counselors

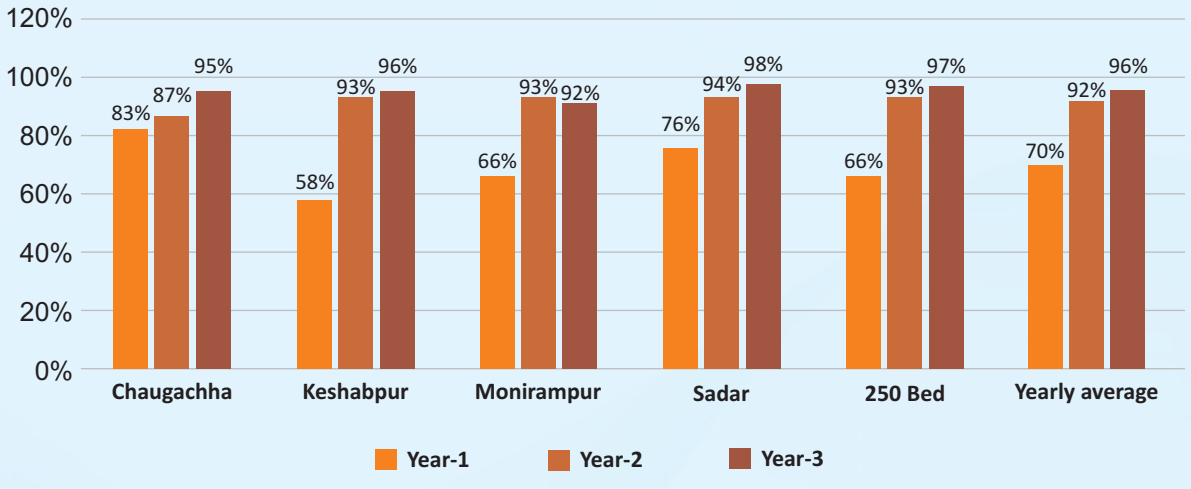


Table-32: Year-wise states of hospitals

Hospitals	Year-1	Year-2	Year-3	Hospital-wise ave. marking
Chaugachha	83%	87%	95%	88%
Keshabpur	58%	93%	96%	82%
Monirampur	66%	93%	92%	84%
Sadar	76%	94%	98%	89%
250 Bed	66%	93%	97%	85%
Yearly average	70%	92%	96%	86%

7-8 Monitoring Dropped FU patient

Drop-out Patient Survey was conducted during 23-07-21 to 05-08-2021. Total 9 surveyors (Counselor- 05, & Upazila Supervisor- 04) conducted the Telesurvey. A total 500 patients were surveyed at 250 Bed General Hospital, Chowgachha, Jashore Sadar, Keshabpur and Manirampur having 100 patients from each upazila. Among the surveyed patients, 214 (43%) were male and 286 (57%) were female. Details of the survey result furnished as hereunder:

Monitoring Dropped FU Patient at Keshabpur Upazila on 16-06-2021

Table-33: Distribution of dropped out by their diseases

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
DM	89	89%	97	97%	96	96%	93	93%	87	87%	**462**	**92%**
HTN	97	97%	99	99%	92	92%	92	92%	95	95%	**475**	**95%**
Asthma	0	0%	3	3%	1	1%	0	0%	1	1%	**5**	**1%**
HD	2	2%	5	5%	0	0%	0	0%	13	13%	**20**	**4%**
Heart Problem	3	3%	0	0%	4	4%	3	3%	0	0%	**10**	**2%**
HID	0	0%	0	0%	4	4%	0	0%	10	10%	**14**	**3%**
Kidney Problem	0	0%	0	0%	1	1%	1	1%	1	1%	**3**	**1%**
Stroke	2	2%	0	0%	0	0%	3	3%	0	0%	**5**	**1%**
COPD	0	0%	0	0%	0	0%	0	0%	2	2%	**2**	**0%**
Other	5	5%	0	0%	0	0%	0	0%	0	0%	**5**	**1%**

Note: DM- Diabetes Mellitus HTN- Hypertension IHD- Ishemic Heart Disease
HD- Hear Disease COPD- Chronic Obstructive Pulmonary Disease

It is found from the above table that among the surveyed patients, 92% were suffering from DM and 95% from HTN followed by IHD (3%), Asthma (1%), HD (4%), hearth Problem (2%) and others.

Table-34: Result of contact with respondent

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= Died	0	0%	0	0%	2	2%	1	1%	1	1%	**4**	**1%**
2= Migrated	0	0%	9	9%	0	0%	0	0%	0	0%	**9**	**2%**
3= Call not revised	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
4= Not Connected	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
5=Phone kept with another person	21	21%	7	7%	17	17%	4	4%	1	1%	**50**	**10%**
6= Received call	79	79%	84	84%	81	81%	95	95%	98	98%	**437**	**87%**
7= Others	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**

Table-35: Reason of not visiting NCD Corner

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
COVID-19	71	78%	90	92%	77	78%	76	77%	96	96%	**410**	**84%**
1= Long Distance (Kilometer)	17	19%	17	17%	9	9%	40	40%	27	27%	**110**	**23%**
2= Need to spend long time for this purpose (minutes)	18	20%	19	19%	5	5%	30	30%	25	25%	**97**	**20%**
3= I have to depend with your family member/ neighbor/ relatives to go to NCD corner?	17	19%	23	23%	22	22%	2	2%	0	0%	**64**	**13%**
4= Others	43	47%	66	67%	43	43%	43	43%	55	56%	**250**	**51%**

The key reason of not coming to NCD Corner was COVID-19 (84%) followed by Long Distance (23%), Need to spend long time for this purpose (20%) and others.

Table-36: Respondents' opinion about hospital's Medicine

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= Shortage of medicine in UHC (e.g. 10 days medicine)	68	75%	27	28%	3	3%	84	85%	83	83%	**265**	**54%**
2= No medicine which the patients need in UHC (NCDC did not send yet)	60	66%	93	95%	79	80%	60	61%	62	63%	**354**	**73%**
3= UHC's System is poor therefore need to wait Long time (What do you mean by poor?)	17	19%	41	42%	40	40%	23	23%	0	0%	**121**	**25%**
4= Others	8	9%	2	2%	24	24%	23	23%	2	2%	**59**	**12%**

Highest 73% of the respondents complained about No Medicine whereas there were other opinions such as Shortage of Medicine in UHC (54%), UHC's system is poor therefore need to wait long time (25%) and others.

Table-37: Physical and biochemical check done during drop-out period

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
BP	90	99%	90	92%	93	94%	93	94%	74	74%	**440**	**90%**
Sugar	81	89%	90	92%	94	95%	68	69%	72	72%	**405**	**83%**
Waist	2	2%	1	1%	0	0%	0	0%	0	0%	**3**	**1%**
Height	0	0%	0	0%	0	0%	0	0%	0	0%	**0**	**0%**
Weight	4	4%	21	21%	8	8%	12	12%	11	11%	**56**	**11%**
Other	18	20%	2	2%	34	34%	10	10%	4	4%	**68**	**14%**
Total	**195**	**214%**	**204**	**208%**	**229**	**231%**	**183**	**185%**	**161**	**161%**	**972**	**200%**

It is found from the above table that 90% of the patients got BP checked during the drop-out period, followed by Sugar (83%), Weight (11%) and others (14%).

Table-38: Long waiting time due to UHC system

Upazila	Yes	%	No	%
Chowgachha	41	42%	57	58%
Keshabpur	8	8%	91	92%
Manirampur	27	27%	73	73%
Sadar	43	43%	56	57%
250 Bed	15	16%	76	84%
Total	**134**	**28%**	**353**	**72%**

Among the respondents 92% complained about long waiting time due to UHC system at Keshabpur followed by 250 Bed General Hospital (84%), Manirampur (73%), Chowgachha (58%) and Jasore Sadar (57%).

Table-39: UHC's service providers' area development

Upazila	Yes	%	No	%
Chowgachha	9	9%	89	91%
Keshabpur	9	9%	90	91%
Manirampur	9	9%	91	91%
Sadar	26	26%	73	74%
250 Bed	3	3%	88	97%
Total	**56**	**11%**	**431**	**89%**

Among the respondents 97% opined about the area of development among the UHC service providers at 250 Bed General Hospital followed by Chowgachha, Keshabpur and Manirampur (91%) and Jasore Sadar (74%).

Table-40: Non-cooperation by families

Upazila	Yes	%	No	%
Chowgachha	20	20%	78	80%
Keshabpur	11	11%	88	89%
Manirampur	12	12%	88	88%
Sadar	28	28%	71	72%
250 Bed	9	10%	82	90%
Total	**80**	**16%**	**407**	**84%**

90% of dropped out patients of 250 Bed General Hospital mentioned non-cooperation by their families for no visiting NCD Corners, followed by 89% of Keshabpur, 88% of Manirampur, 80% of Chowgachha and 72% of Jashore Sadar.

Table-41: Motivation by health workers to visit hospital

Upazila	Yes	%	No	%
Chowgachha	78	80%	20	20%
Keshabpur	96	97%	3	3%
Manirampur	94	94%	6	6%
Sadar	76	77%	23	23%
250 Bed	88	97%	3	3%
Total	**432**	**89%**	**55**	**11%**

97% of dropped out patients of 250 Bed General Hospital and Keshabpur responded positive regarding motivation by health workers to visit hospitals followed by 94% of Manirampur, 80% of Chowgachha, 80% of Chowgachha and 77% of Jashore Sadar.

Table-42: Managing NCDs without visiting NCD Corners

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= Doing Nothing?	1	1%	1	1%	2	2%	0	0%	0	0%	4	1%
2= Make efforts to modify my lifestyle for prevention?	88	97%	86	88%	87	88%	97	98%	90	90%	448	92%
3= Follow-up on my health by myself	68	75%	70	71%	61	62%	67	68%	21	21%	287	59%
4= Go to the village doctor	14	15%	35	36%	24	24%	52	53%	17	17%	142	29%
5= Buy medicine as per NCD corner doctor's advice (Prescription)	72	79%	63	64%	44	44%	57	58%	67	67%	303	62%
6= Take alternative medicine (Herbal medicine, Homeopathy and others)	2	2%	7	7%	13	13%	24	24%	4	4%	50	10%
7= Go to clinic or to meet with MBBS doctor (out of the NCD corner)	17	19%	16	16%	47	47%	15	15%	11	11%	106	22%
8= Others	3	3%		0%	10	10%	9	9%	1	1%	23	5%

For managing NCDs without visiting NCD Corners / Hospitals, 92% of the drop-out patients made efforts to modify lifestyle for prevention of NCDs, 62% of them bught medicine as per NCD corner doctor's advice (Prescription), 59% of them followed-up by themselves, 29% went to village doctor and 22% went to clinic or met MBBS doctors (out of the NCD Corner).

Table-43: How to manage non-communicable diseases in the future

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= Going to NCD corner only	28	31%	30	31%	3	3%	57	58%	31	31%	**149**	**31%**
2= Going to NCD corner & CC	11	12%	62	63%	9	9%	25	25%	54	55%	**161**	**33%**
3= Going to NCD corner &/ or other MBBS doctor	34	37%	66	67%	77	78%	59	60%	32	32%	**268**	**55%**
4= Going to NCD corner & Village doctor	18	20%	54	55%	60	61%	42	42%	13	13%	**187**	**38%**
5= Going to NCD corner or Going to Local pharmacy (buy medicine following prescription)	56	62%	39	40%	30	30%	42	42%	63	64%	**230**	**47%**
6= Going to NCD corner & taking Telemedicine (phone or online counselling)	1	1%	2	2%	4	4%	1	1%	0	0%	**8**	**2%**
7= Going to NCD corner & / or taking Alternative medicine	9	10%	4	4%	12	12%	6	6%	0	0%	**31**	**6%**
8= Taking alternative medicine (Herbal medicine, Homeopathy)	2	2%	5	5%	5	5%	3	3%	2	2%	**17**	**3%**
9= Follow up on health myself and go to hospital/ clinic when the symptoms get worse	18	20%	5	5%	29	29%	14	14%	3	3%	**69**	**14%**

To manage non-communicable diseases in the future, highest 55% of the drop-out patients opined to go to NCD Corner and/or other MBBS doctor, following by 47% of them to go to NCD Corner or local pharmacy (buying medicine following prescription), 38% of them opined to go to NCD Corner & Village doctor, 33% to go to NCD Corner & CC ad 31% to go to NCD Corners only.

Table-44: Favorable frequency to visit hospitals

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= 7 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	31%
2= 10 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	33%
3= 15 days	2	2%	3	3%	1	1%	0	0%	13	13%	19	55%
4= 1 month	70	77%	56	57%	45	45%	81	82%	86	86%	338	38%
5= 2 months	14	15%	35	36%	16	16%	17	17%	0	0%	82	47%
6= 3 months	5	5%	3	3%	21	21%	1	1%	1	1%	31	2%
7= 6 months	0	0%	1	1%	16	16%	0	0%	0	0%	17	6%
8= 1 year	0	0%	0	0%	0	0%	0	0%	0	0%	0	3%

Highest 55% of the respondents opined about visiting hospitals in 15 days, followed by 47% in 2 months, 38% in 1 month, 33% in 10 days and 31% in 7 days.

Table-45: Family expenditure per month on NCDs treatment

Upazila	Number of family	%	Average spend per month
Chowgachha	98	100%	867
Keshabpur	96	97%	821
Manirampur	95	95%	1041
250 Bed	88	97%	1130
Sadar	99	100%	781

Drop-out patients under 250 Bed General Hospital had average monthly expenditure on NCD treatment for Tk. 1130, followed by Tk. 1041 for Manirampur, Tk. 867 for Chowgachha and Tk. 821 for Keshabpur patients.

Table-46: Motivation for patients to visit NCD Corner

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= Ensure medicine (30 days)	72	79%	98	100%	51	52%	87	88%	94	94%	402	83%
2= FU visit at least monthly	70	77%	49	50%	26	26%	69	70%	37	37%	251	52%
3= Reduce pocket expenses (test expense, medicine, etc)	13	14%	12	12%	29	29%	14	14%	19	19%	87	18%
4= One-stop service (Medicine, treatment, check-up in one point)	22	24%	48	49%	57	58%	21	21%	73	73%	221	45%
5= Need more attention (Doctor give more time)	13	14%	26	27%	16	16%	14	14%	22	22%	91	19%
6=If Corona Pandemic improved	22	24%	2	2%	14	14%	3	3%	5	5%	46	9%
7= Others	3	3%		0%	12	12%	2	2%	0	0%	17	3%

Among the respondents of drop-out patients, highest 83% opined for ensuring medicine (30 days) to motivate patients to visit NCD Corners. 52% of them opined about FU visit at least once in a month followed by 45% for One-stop service (Medicine, treatment, check-up in one point), 19% for more attention (More time from the doctors) and 18% for reducing pocket expenses (test expense, medicine etc.)

Table-47: Preference to receive follow-up guidance/support in future

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1=Counselor	89	98%	91	93%	77	78%	89	90%	92	92%	438	90%
2=Doctor	83	91%	89	91%	60	61%	83	84%	96	97%	411	84%
3=Nurse	31	34%	18	18%	3	3%	61	62%	3	3%	116	24%
4=SACMO	9	10%	37	38%	55	56%	2	2%	12	12%	115	24%
5=CHCP	5	5%	44	45%	1	1%	14	14%	40	40%	104	21%
6=HA	3	3%	15	15%	0	0%	2	2%	9	9%	29	6%
7=FWA	0	0%	2	2%	0	0%	0	0%	7	7%	9	2%
8= Others	9	10%	3	3%	47	47%	2	2%	0	0%	61	13%

To receive follow-up guidance/support for the betterment of health in future 90% of the respondents preferred Counselor, followed by Doctor (84%), Nurse and SACMO (24%) and CHCP (21%).

Table-48: Present health condition

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= Improved	73	80%	46	47%	67	68%	62	63%	68	68%	316	65%
2= Not change	1	1%	3	3%	8	8%	7	7%	1	1%	20	4%
3= Deteriorated	2	2%	2	2%	3	3%	1	1%	4	4%	12	2%
4= Improve (when take medicine)	15	16%	47	48%	21	21%	27	27%	27	27%	137	28%
5= Others	0	0%	0	0%	0	0%	2	2%	0	0%	2	0%

65% of the respondents reported their health condition improved, while 28% had improvement only upon taking medicine. 4% of them had no changes while health condition of 2% deteriorated.

Table-49: Having serious sickness during this gap period [spent at least 1 day in bed]

Particular	250 Bedded General Hospital	%	Chowgachha	%	Jashore Sadar	%	Keshabpur	%	Manirampur	%	Total	%
1= Yes (NCDs)	5	5%	8	8%	5	5%	7	7%	6	6%	31	6%
2= Yes (COVID-19)	1	1%	0	0%	3	3%	0	0%	4	4%	8	2%
3=Yes (Other disease)	5	5%	12	12%	7	7%	0	0%	10	10%	34	7%
4=No	80	88%	78	80%	84	85%	92	93%	80	81%	414	85%

Highest 85% of the drop-out patients did not have any serious sickness during this gap period while 7% of them suffered from other diseases, 6% from NCDs and 2% from COVID-19.

CHAPTER 8 Replication of good practices

8.1 Replication program

Replication program was another important event of the project. Some of the project activities were conducted to another districts for the achievement of the project goal. Considering the important role of the teachers in dissemination of information and raising awareness, trainings were provided to the school teachers and students in other districts on non-communicable disease to enable them for raising awareness on NCDs among the among different levels of population in their areas. Orientation programs were conducted in the following 30 schooles under 11 district of replication area during July, 19 to March, 20:

Orientation was held at Jamira Bazar Asmotia School and College in Khulna on 24-11-2020

Table-50: Orientated institutions out of Project targeted area

District	Number of School	District	Number of School
Bagerhat	2	Magura	3
Chuadanga	1	Meherpur	1
Jashore	4	Narail	2
Jhenaidah	2	Satkhira	4
Khulna	8	Sylhet	2
Kustia	1	**Total**	**30**

Oriented programs was conducted among 644 teacher and 22,619 out of the 600 teacher and 16,000 students respectively. After training teachers and students shared messages on NCDs among their families and community people. Total 29,558 community people got information by the teachers and students as detailed hereunder:

Table-51: Type of habits promoted to change by teachers

Type of habits	Number of students
Exercise/Walking	5,987
Regarding not smoking.	4,145
Use advanced stove.	2,211
Use arsenic free water	1,801
Use medication	6,177
Other	615
Total	**29,558**

Lessons learnt from replication areas

- Teachers and students of the replication areas were less aware on NCDs
- They were glad to receive the training on NCDs
- Participants were found committed to modify lifestyles to reduce the risks of NCDs
- They were enthusiastic to convey the messages to locality to prevent NCDs
- Teachers would disseminate the messages through different platform and IPC (Interpersonal communication)

Good practices of teacher and students of the replication areas

- After orientation partial number of teachers continued to convey the messages on NCD risk factors at their localities
- Students continued convey the messages on NCD risk factors among their friend, family and neighbors.
- Teachers also conveyed the messages at market places and gatherings.
- They refereed people suffering from any NCDs to nearest CC and UHC
- Teachers disseminated information on NCDs to the students regularly in every classes

8.2 Final Seminar

Final seminar on NCD activities was held at 10 March 2022, hotel City Plaza international, Jashore. Total 40 participants were present where the Chairman was Civil surgeon, Jashore, Chief guest was Additional Director General (Administration), Special guest were line director NCDC DGHS, Divisional director health, Khulna, Program Manager NCDC, DGHS, and superintendent of 250 bedded general hospital, Jashore. Deputy Program Manager NCDC, DGHS, UH&FPO of eight upazila, Teacher, CG member, Health inspector, Imam, CHCP were also present in the seminar.

Objective of the Final seminar

- To identify the gap to maintain NCDs protocol
- To ensure specific instruction for NCD activities operation
- To keep organized documentation after the seminar
- To create policy inbuilt NCD performance at DHIS2
- To smoothen National supply chain management
- To lead the path to making the model NCD corners
- To strengthen the NCD corner management and service protocol
- To reduce data discrepancy between register and data base report
- To promote enabling environment for strengthening health systems at NCD corners
- To identify and reduce the barriers of providing health services from the NCD corners from national level to upazila level

At the beginning the Team leader of NCD-III project presented the project implementation status through power point presentation. He highlighted the progress of the working areas. Although there were many obstacles at the beginning to implement the project, in the end the project was completed successfully.

Additional Director General (Administration), line Director NCDC, DGHS, Divisional Director health with all honorable guests were highly pleased to be present at this seminar. They appreciated the project activities. Our progress have to more improve. Quality counseling will be ensuring from the NCD corner and measured the physical condition of the service receiver.

Output of the final seminar

Distinguished Speakers termed the implementation strategy of Asia Arsenic Network Project as realistic and effective. Honorable Additional Director General (Administration) and Line Director, NCDC, DGHS said that in order to create a model NCD Corner in hospitals, strengthening the NCD Corner and providing quality services, some recommendations of the project will be incorporated in the NCDC Protocol at national level such as:

Additional Director General (Administration) of DGHS is addressing in the final seminar on 10-03-2022

- Deployment of required manpower.
- Data base will be incorporated into DHIS2 which has been established by AAN
- A policy for enhancement counseling will be formulated from NCD Corner for Lifestyle modification.
- This model will be incorporated into the National Protocol to create a model NCD Corner.
- NCD Corners will be equipped to make those a model NCD Corner
- Necessary Logistic and medicine supplies will be ensured timely
- The empowerment of local management will be increased
- A strong referral system from CC to UHC will be maintained

8.3 Development Fair

Participating the development fair was one of the important activities of the project. On 27-28 April, 2021 the NCD project of Asia Arsenic Network participated the development fair that took place at 4 upazilas (Chougachha, Jashore Sadar, Keshabpur and Monirampur) along with the government's health department. The purpose of the development fair was as follows :

- To make the visitors aware about the causes of non-communicable diseases
- To Identify Non-Communicable patients through physical examination
- To distribute awareness materials among the visitors
- To establish liaison with the government health department

At the beginning of the fair, stalls were decorated with various health awareness posters on Non-Communicable diseases. Blood pressure, weight and blood sugar (diabetes) of the visitors was measured. They praised Asia Arsenic Network for conducting such activities. NCD Project Supervisors of AAN described in details about Non-Communicable diseases and its causes. Awareness Guidance Flyers (1220), Exercise Guide (2460), Pana Poster (1100), Covid-19 Hand Bill (1950) and NCD related Hand Bill (749) were distributed among the visitors. Government officials and visitors from different levels also visited the fair and thanked the

government and NGOs for organizing the development fair and implementing its activities. Among the visitors, a total of 3324 people underwent physical examination including height of 665, weight of 1090, waist size of 326, blood pressure of 842 and blood sugar of 401.

At the fair, blood pressure of 842 people was measured, out of which 142 people were found to have high blood pressure and 401 people were tested for blood sugar (diabetes) out of which 65 people were found to have high blood sugar. Visitors with high blood pressure and high blood sugar were advised to seek immediate treatment at a government service center. Many poor people also received services at the fair. Jamir Sheikh, a van driver, came get tested his blood sugar. Upon test results, Jamir said, "I have never had my diabetes tested before. After testing at the fair, came to know that I have diabetes. They have advised me to take treatment. I will go to the hospital quickly and receive treatment."

Table-52: Number of Visitor who received physical examination at the development fair

Upazila	Height		Weight		Waist		BP		RBS		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Chowgacha	95	10	95	10	70	5	95	10	95	10	450	45
Keshabpur	180	110	285	210	52	22	182	125	85	56	784	523
Manairampur	130	80	210	160	75	30	180	120	55	40	650	430
Sadar	30	30	40	80	40	32	50	80	20	40	180	262
Total	**435**	**230**	**630**	**460**	**237**	**89**	**507**	**335**	**255**	**146**	**2,064**	**1,260**

Table-53: Education materials distributed at the development fair

Upazila	Guidance Flyer	Exercise Guide	PVC Poster	Handbill (Covid-19	Handbill (NCD)	Total
Chowgacha	190	210	190	220	150	960
Keshabpur	280	1020	150	250	210	1,910
Manairampur	300	1100	520	800	180	2,900
Sadar	450	130	240	680	209	1,709
Total	**1,220**	**2,460**	**1,100**	**1,950**	**749**	**7,479**

CHAPTER 9 Steps towards overcoming COVID-19 Situation

Bangladesh reported its first confirmed COVID-19 case on 08 March 2020, it reached 100 cases on 9 April, and exceeded 200 cases within the next two (2) days (case doubling time). The case doubling of new cases continued for 14 days, and then on the 15th day after reaching 100 cases, the case doubling changed to three (3) day time. Jashore was the high risk zone for COVID-19 due to the adjacent border with India. Large volume of freight trucks get unloaded at the Benapal land port under Jashore district which increased the risk. Huge people got COVID-19 infected during Mar, 2021 to May, 2021.

Moreover, the COVID-19 outbreak and the healthcare burden, together with related disruption increased the negative impacts on employment, household income and receiving health service from in both rural and urban areas.

Infection prevention and control (IPC) is a practical, evidence-based approach which prevents patients and health workers from being harmed by avoidable infection. Project intervention was closed during locked down period. At that time communication took place with the project stakeholders, patients and HWs through phone. The patients, stakeholders and HWs were advised through phone calls to maintain personal hygiene, use masks, maintain social distance and to avoid the crowded places. When the COVID-19 infection trend was lower, some events were arranged at the community level according to the discussion with government health authority. NRI campaign and FGD (Focus group discussion) were arranged along with tea stall meeting ensuring low gathering and maintaining the COVID-19 infection prevention protocol. Similarly, this infection prevention protocol was followed for NCDs corner service providers. They inspired the visiting patient to use masks and maintain the social distance.

Under the project orientation was given to the service providers regarding prevention of infection during COVID- 19 and inspired them of using masks & PPE, maintaining social distance and personal hygiene during service delivery.

To ensure safety of the service provider during COVID-19 situation all types of PPE, hand sanitizer and guideline were provided from the project. Service providers started rendering health services wearing PPEs and maintaining personal hygiene as per the following instructions of project management.

- Using gown
- Using face mask
- Wearing surgical bonnet
- Repeatedly hand sanitizing
- Using face shield
- Using goggles/spectacles
- Wear gloves
- Repeatedly hand sanitize.

9.1 E-monitoring

E- Monitoring was a key challenge of the project during COVID-19 situation. Patients, Stakeholders, NCD oriented teachers, Student, Community group members and others were communicated through phone calls. For E-monitoring, project team communicated 323 people through phone calls with the following objectives:

- To inspire the stakeholders to play their respective roles
- To inspire the teacher to play their respective roles
- To identify their activities
- To ascertained whether the patients visited the hospitals for timely treatment
- To know the status of change in the quality of life of the service recipients
- To know the number of students made aware by teachers on NCDs

E-monitoring at home

Table-54: E-Monitoring status

Name of Hospital	Year-1	Year-2	Year-3	Total
Chaugachha	579	396	269	1244
Keshabpur	805	461	256	1522
Manirampur	634	373	267	1274
Sadar	854	353	208	1415
250 Bed	11	200	100	311
Grand Total	**2,883**	**1,783**	**1,100**	**5,766**

9.2 Drop-out case

At the beginning, huge number of patients came to the UHCs to receive treatment on NCDs but some did not come back on time. The issue was observed from the project and it was discussed with the UH&FPO. It was then felt that tracking the drop-out patient was very important. In this connection, dropout list was prepared from the source of database system and the criteria was fixed. Then making a tracking sheet project team make call to survey 100 drop-out patients per Upazila. The target was to track the drop-out patient and identify the causes of being dropped out. The survey team tried to know why she/he did not come back to the hospital. Communication made with the dropout patient through phone call and also physically from the project site. The drop-out patients were mobilized to come to the hospital again for better treatment. Different questions were set up for the drop-out patient survey. After the survey and awareness the patients started coming back to the hospital. Total 500 phone calls made to the drop-out patients as detailed hereunder:

Table-55: Number of Drop-out patients surveyed

Upazila	Male	%	Female	%
Chowgachha	37	37%	63	63%
Keshabpur	34	34%	66	66%
Manirampur	39	39%	61	61%
Sadar	60	60%	40	40%
250 Bed	44	44%	56	56%
Total	**214**	**43%**	**286**	**57%**

Upazila Wise Survey Status.

Table-56: Findings from drop-out survey

Reason of Drop-out	Chowgachha	Keshabpur	Manirampur	Jashore Sadar	250 Bed	Total
COVID-19	90	76	96	77	71	410
1= Long Distance (Kilometer)	17	40	27	9	17	110
2= Need to spend long time for this purpose (minutes)	19	30	25	5	18	97
3= I have to depend with your family member/neighbor/ relatives to go to NCD corner?	23	2	0	22	17	64
4= Others	66	43	55	43	43	250

CHAPTER 10 Sustainability

Sustainability was the main view of the project. Asia Arsenic Network tirelessly worked to implement the "Project on Strengthening Counseling Corner (in NCD Corner) for Reducing Risk due to Non-Communicable Diseases in Jashore District" as a development partner of the government. AAN conducted the activities at NCDs corners of 5 Upazila Health Complex and 1 District Hospital.

- Service providers kept writing the register of patient information and ensured 100% data entry in the database system and prepared reports. The service providers regularly entered the data of the service recipient in the database, as a result, a strong database has been created in NCD Corner from where patient tracking including service delivery was facilitated by verifying all the information of the patients. Government authority provided the internet connection in the NCD corners from the hospital internet connection.
- After the final seminar and the process of incorporating the database in DHIS2 is underway which has been established by Asia Arsenic Network. Based on the experience of the Asia Arsenic Network the process of developing NCD Corner into a model NCD Corner is in progress and this model will be incorporated into national protocols.
- With the guidance of the NCDC project established the database system. Now NCDC is preparing to link the database with DHIS2 after completing a technical test of their new build server
- IEC materials and medical commodities were supplied for the development of NCD knowledge of the patient. The storekeeper prepared the demand letter for materials and medicine and submitted it through the proper channel for getting the materials and medicine timely.
- The project-appointed counselor provided services by maintaining the NCD service protocol. Upazila and district hospital authorities deployed adequate service providers in the NCD corner. Asia Arsenic Network organized training and workshops for the development of service providers. The project counselors have improved their skills through on-the-job training.
- NCDs treatment protocol was maintained at the NCD corner like physical measurement ensuring (BP, Height. Weight, Blood Sugar, Waist circumference and necessary examination of patient). All patient information was noted in the patient book and database system, therefore, patient tracking and treatment from the NCDs corner have become easier for the doctors.
- CHCP (Community health care provider) referred patients to UHC with proper referral slips. Patient referral from the field level has been increased by 63%.
- Local government involvement has increased to improve the quality of service in community clinics and hospitals. The local government has provided health commodities in 52% CC from their funds. LGIs created a waiting area and wash facilities for patients at UHC.
- NCDC took liability to monitor activities to keep the NCD corner functional as a project supported. Internet connection is ensured by UHC management for smooth online function.
- Under the project hospitals got support to follow NCDC made NCD Patient management protocol where NCDC supplied patient treatment protocol (hypertension and blood sugar) and the project supplied a physical risk measure handout.
- In the case of referring patients from CC to NCD Corner use referral slip has been established. Patient referrals increased up to 63% with proper guidance of the project and UHC.

Upazila Health Workers, Upazila and District Health Authority of DGHS have become well aware of NCDs activities. A positive attitude has been established between the service providers, upazila and district hospital authorities. They have been playing an important role in the implementation of NCDs activities, regularly supervising the activities of NCD Corner and taking necessary steps to make the activities accelerate.

Recommendation

- For smooth operation of NCD Corner activity the number of train doctor, nurse, SACMO should be increased so that transfer and duty shifting may not create problem.
- A follow-chart on "NCD patient management process" can be considered to hang in the wall so that newcomer UHFPO can understand the activity.
- UHC staff who can stay long time at UHC should be included with management body so that after transfer of UHFPO activity can run smoothly.
- Proper counseling may change the patient mentality on getting free medicine. So counseling need to continue.
- Monitoring on supply chain required (demand letter, drug & materials like register, patient book, referral slip utilization)
- Without reducing paper work at NCD Corner, it is difficult to keep the current speed. So, daily online entry summary can be filing after printing.

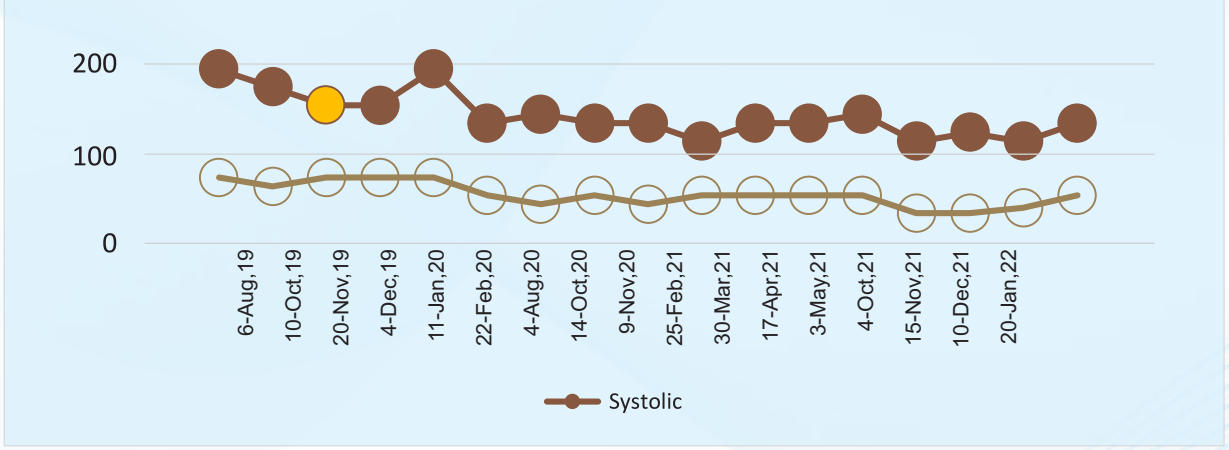
ANNEXURE 1 CASE STUDY It is not poverty but the desire to change one's life that can tackle NCD

Housewife, Mrs. Rabeya Bugum (60) is the wife of Asadul Islam who lives in Marua village, union Jogodishpur under Chaugachha Upazila of Jashore district. Among the five members of her family, there are 3 children consisted of 2 sons and a daughter. Her height is 160 cm. Rebeya's husband don't do any particular job but he sometimes works as day labor. To bear the expense of their families Rabeya started small scale poultry farming.

Rabeya Begum in her own house.

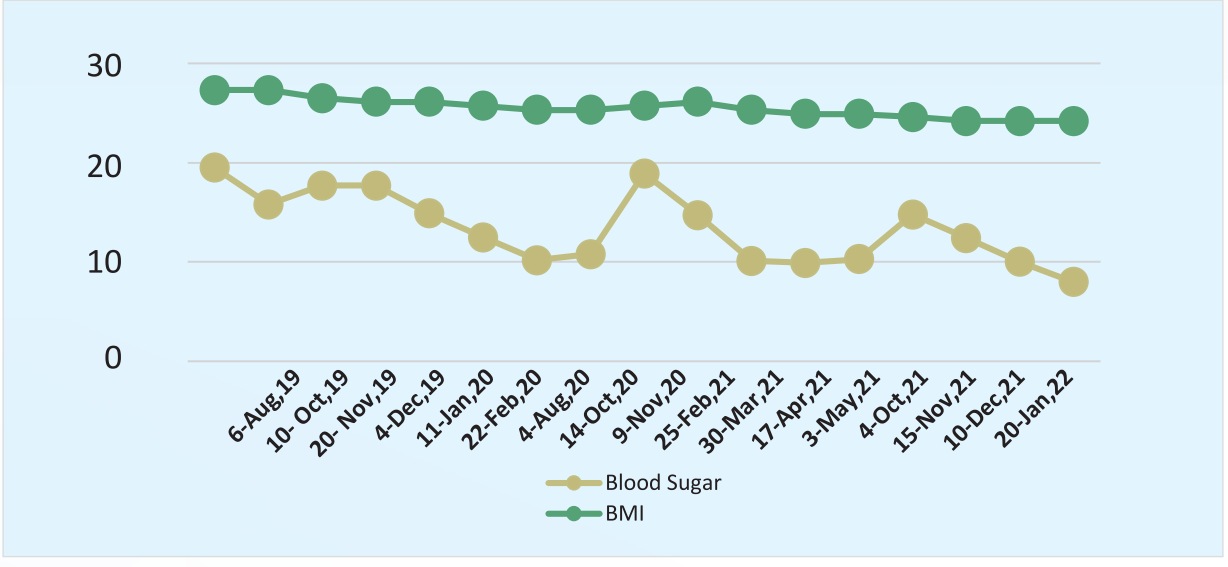
She bought 10 to 12 boiler chicks at a time and raised them and sold in the village. From this activity she earns around 2500 taka per month. Due to her poverty although she was not feeling comfortable, could not get attention from her husband and was unable with meet doctor. One day Rabeya begum went to Marua CC and receipt a referral slip from CHCP. CHCP was oriented on NCD management from Asia Arsenic Network. Rabeya begum entered at the NCD corner of Chaugachha UHC on 06/08/2019. Project's Counselor measured her high blood pressure, and physical parameter and UHC staff measured diabetes. Her blood pressure was 150/90, Blood Sugar was 19.5mm/l and BMI level were 27.3. NCD Corner doctor checked and provided treatment treating as a diabetes, hypertensive and obstructive patient. She was registered. Her field ID no. was 411186060067 as NCD patient in database. After analyzing her lifestyle doctor and counselor gave her lifestyle modification advices and medicine. Counselor and doctor's advice knocked her and she realized that there was a scope to get free medicine and if can modify lifestyle then she will be able to pay more effort to income generating through livestock business. She started following the rules as per the counselor's advice. At the

Systolic & Diastolic of Rabeya Begum



beginning she was not feeling comfortable walking, giving up taking additional salt but slowly it was adopted with her life. As a result, blood sugar comes under control. Testing her blood sugar, she needs to pay 60tk at a time at the Upazila Health Complex. But she was measuring it from nearest Community Clinic where she had to pay 30tk. She was getting free test facilities as well from CHCP support. Lastly, on 20th January 2022, when

Blood Sugar & BMI



Service provider measured blood pressure of Rabeya Begum

Rabeya Begum came to NCD Corner found her blood sugar 8.0mm/l, blood pressure 120/80 and BMI was 24.2.

Mentioning February 21's memory Rabeya Begum said that although she was concussing but lack of physical activity and mental stress effect to decorate the situation. She then tried to walk regularly and gave up using dry tobacco and tried to finish dinner by 7:00pm and went bed at 9:00pm and got good result within one and half month. Now, Rabeya Begum lives in a controlled life. She and her husband are walking

Every day and maintains all rules. Therefore, she could put more time to her poultry business and to her children. Following Rabeya Begum, her brother's wife walks every day to lead a healthy life. Rabeya begum was coming 17 times at UHC for receiving the advice.

"The brothers of Asia Arsenic are very good. Beside CHCP and AAN staff helped me to modify my lifestyle not to eat too much salt, not to use tobacco, to eat vegetables, to walk regularly. I am fine now living according to their advice"

Table-57: Health condition of Rabeya Begum

Behavior	Previous status	Present status
Physically Activity	She did not walk.	She is walking around 40 minutes in the morning.
Using of tobacco	She used dry tobacco	Now, she does not use dry tobacco.
Use of additional salt	She and her husband are habituated with 6 teaspoons of raw salt every day	Now, she and her husband do not eat of raw salt.
Vegetable	She was taking vegetables 200 g in daily.	She tried to take vegetable 400g in a day.
Use smoky stove for cooking	She was using traditional cooking stove.	She is using traditional cooking stove till now.
Dinner and sleeping time	She would finish dinner at 9:30 pm and goes to bed at 10 pm.	She finishes dinner at 7:00 pm and goes to bed at 9:00 pm.

Normal range of BP, BMI and Blood sugar mentioned are given below table

BP		BMI	Blood sugar	
Systolic BP (mmHg)	**Diastolic BP (mmHg)**		**Fasting (FBS) Blood Sugar**	**RBS (Random Blood Sugar)**
<120	<80	24.9	< 6.1 mm/l	< 7.8 mm/l

BP is being measured through NRI at Manoharpur Union under Manirampur Upazila on 08-Feb-2020

ANNEXURE 2 Summary of Output and Achievement

Output and Verifiable Indicator		Achievement
Output-1: UHCs oerates NCD corner supported by project		
1.1	Project hold workshop on Function of NCD Corner and Role of Counselor	Launching workshop is held at district level.
1.2	Project and UHC decide design outline of NCD corner.	NCD Corner is designed with concern hospitals
1.3	Materials procurement, do renovation work and set-up	Project supplied necessary materials and set-up designed NCD Corner after doing necessary renovation
1.4	NCD corner will show educational video to visitors and their attendance continuously.	Educational video is continued playing on the disply TV
Output-2: UHC and Project train concern people on NCD tracking		
2.1	Project hold Introductory workshop with UHC & 250 Bed	Introductory workshop was held in 5 places (4 UHCs and 250 Bedded Hospital) and flow-chart for NCD management developed
2.1.1	NCDC tasks and expected function of NCD corner will be discussed during Project Introductory workshop with UHC in presence of UHFPO, UFPO, Doctor, SACMO & Senor nurse and others	Strategey or flow-chart is made during Introductory Workshop and finalized discussing among management and expected role players.
2.2	NCD Management training organize for NCD Counselor & Nurse	Capacity building training is provided among the 47 (SACMO-18 and SSN-29) during 3 years where 15 nurses were in planned. Additonally, 28 concern hospital selected role players also received training.
2.2.2	Project supports NCD counselor to play the expected role and give appropriate counseling to patients.	From the establishement of NCD Corners trained Counselors provided lifestyle modificational education to 236,574 (Male: 65,486 and Female: 171,088) participants.
2.3	Training on Early detection and management of NCD's for HWs	A total 592 Health Workers (CHCP -155, HA -125, AHI -18, HI - 4, FWA - 199, FPI - 50, SACMO-25 & Others-16) are trained by project .
2.3.1	Project staff continue feedback about referral, identify & follow-up data management to counselor	Project monitored performance of HWs in case of refer suspected paatients to NCD corners where a total 25,110 patients were referred from CC
Output-3: Data management system is developed and used for UHC-CC cooperation system		
3-1	Strategy of data management system will be made discussing with DGHS through developing app.	Since, DHIS made app is not established during project start, project made a database system discussing with NCDC.
3-1-1	Project introduces apps for patient data management system and developed government staff.	Targeting 4 UHCs and 250 bedded district hospital, project introduced patient database system in 6 hospitals including Abhaynagar UHC and developed hospital staff through on the job training.

3-2	Capacity Development on App using will be made for HWs and NCD Councelours.	Training provided to a total 75 NCD counselors for their capacity development on Apps using. Due to COVID-19 epedemic field-level using plan was not possible with same app therefore a self -risk dectection app is introduced.
3-3	Field level HWs such as HA & CHCP input data of suspected patient using app. If someone don't have Smart phone, they will fill information at form and send NCD corner.	It was not possible to use govt. apps due to delay supply to UHC while project introduced its web-based apps and android-based apps for field. Due to vaccination and COVID-19 management it was not applied much but was systems were functional with project's help.
3-4	NCD counselour insert patients data using sama app.	Counselor input the new and follow patient data in data base system on 6 UHCs and 250 bedded hospital where a total of 36,926 new patient and 125,561 followed-up patient data has been incorporated in data base system.
3-5	"UHC will chek the progress from the server and discuss it at their monthly meeting (reporting the data of 3-3 and 3-4)"	"Statistician made familiar with database system and now able to make various report Report generated from the data base. They are capable for data checking and report prepared. They are sharing of the NCD corner progress with respective line manager."
3-6	UHC will make provision to link the data to DHIS-2 server	The project has discussed data transfer NCD Corner situation with NCDC of DGHS and is developing a joint plan for problem/obstacle mitigation that identifies challenges and problems and paves the way for solutions.
Output-4: NCD health educational materials including video will be developed		
4-1	The purpose and script are decided by discussion with DGHS.	Based on the necessity the script is made with project guidance. Project shared outline of video with NCDC and finalized.
4-2	Company for video development will be selected.	Company is selected for developing video considering their experience.
4-3	Materials (video) is to be developed	Video is developed after a shooting program in Gazipur and completing editing in time.
4-4	Materials (video) is to be used for Health education in and out of UHC.	Developed video is played regualry with the display monitor at govt. hospitals. Video CD is supplied to private clinics, CC and schools and playing.
Output-5: Behavioral changing (including Environmental) arrangements are promoted by community initiative		
5-1	CG understood the necessity of Environmental arrangements and adopt it in Local Level.	As a part of environmental issue project received information that a total 652 Improved Cooking Stoves has installed in 4 Upazilas. On the other hand 28 deep tube-wells were newly installed and 42 existing tube wells were repaired at healthcare centers. CG members have played an active role in this activity.
5-2	Project support CG for performing NCD Educational tools to educate villagers	
5-2-1	"Project support CG for performing NCD Educational tools to educate villagers Project shall support CG to hold NRI at CC and Community level and educate community people"	CG members have alerted the villagers using various educational materials. CG lead 412 NRI Campaigns (NCDs Risk Identification Campaign) were conducted at the different remote areas where 14,662 (Male-3,563, Female-11,099) suspected cases were early detected.
5-2-2	Project staff will follow-up the activities of CG member and provide technical guidance to promote villagers for lifestyle modification and early detection.	Total 83,635 person grass root level people has sensitized on NCDs risk factor, Food diversity, harmful to tobacco use, Avoid raw salt, important of physical activity, daily life style and others relevant issues

5-3	Workshop on Necessity of Changing Behavior for NCDs Prevention (Secondary School teacher 300*10=3000 teachers)	A total of 301 educational institutions (school-206 and madrasa-95) teachers and student received the training on necessity of changing behavior for NCDs prevention where the 4,547 (4,020) teachers and 65,316 students were attend the training.
5-3-1	Workshop on Necessity of Changing Behavior for NCDs Prevention (Secondary School 30times* 5teachers*4 Upz=600 Teachers)	Project conducted workshop in 30 secondary schools in each 4 upazilas in 3rd year where 1418 participants (463 students and 955 teachers) are attended.
5-4	NCDs early detection (Screening) will be promoted (strengthening) with holding NRI campaigns	412 NRI Campaigns (NCDs Risk Identification Campaign) has been conducted at the different remote areas where 14,662 (Male - 3,563, Female-11,099) suspected cases were early detected. Through NRI campaigns Total 1,261 persons among 4,376 were early detected having Diabetic and hypertension. 1,261 suspected patients referred from NRI to CC and all patient data is inbuilt in database.
5-5	Find problem of drinking water from CC, FWC, USC and UHC	Project surveyed drinking water condition at 156 CC and found 61(39%) out of order. Technial and geological reason were the main cause of inactive. To solve the problem project newly installed 28 Deep Tubewells and repaired 40 existing wells.
5-6	Project support health institutions to ensure arsenic safe water.	A total of 28 deep tube wells have been newly installed and 40 existing tube wells have been repaired in the healthcare centers under the NCD-III project based on their request application. From these devices 92,959 users and getting safe drinking water.
5-7	Project install SWD in Health institution and hand over after confirmation of water quality.	After installed 28 Deep Tubewell at healthcare centers project checked water quality and found 8 DTWs water is contaminated with arsenic. It is advised to use for washing purpose.
Output-6: Project make sure lesson and learnt through survey and evaluation, then disseminate it		
6-1	BLS and FUS are conducted.	Baseline survey was conducted for 480 respondant and with the simiarl taget, endline is conducted in Dec 2021
6-2	Evaluation workshop (Middle and final) are conducted.	Evaluation workshop (Middle and final) are conducted participation of project staffs. All project staffs are participation of evaluation workshop. 13 project staffs are attend the workshop actively.
6-3	Strategy of data management system will be made discussing with DGHS through developing app.	Project provided the 30-school orientation under 11 district of replication area. Total 644 teacher and 22619 has been oriented out on non-communicable disease. 107% teachers and 141% students were trained out of target areas.
6-4	Disseminate outcome through "Development Fair"	Development fair is organized under 4 upazila (Chougachha, Jashore Sadar, Keshabpur and Monirampur) along with the government's health department. At the fair, blood pressure of 842 people was measured, out of which 142 people were found to have high blood pressure and 401 people were tested for blood sugar (diabetes) out of which 65 people were found to have high blood sugar. Counseling provided to them for lifestyle modification and referred to nearest health facility for better treatment.
6-5	Final report is developed.	Final Report is published.
6-6	Dissemination of outcome through Final Seminar	"Necessary manpower has been deployed in NCD Corner after the final seminar and the process of incorporating the database in DHIS2 is underway which has established by Aisia Arsenic Network. Based on experience of the Asia Arsenic Network's the process of developing NCD Corner into a model NCD Corner is in progress and this model will be incorporated into national protocols."

ANNEXURE 3 Survey Questionnaires

Asia Arsenic Network

Question	No.
E:	N:

Strengthening Counseling Corner in NCD Corner for reducing Risk Due to Non-Communicable diseases in Jashore District

Endline Survey 2021 (NCD Project-III)

A. General Information of Respondent

Type of Respondent		Relation	Identification status	
Self	F. mbr		Identified	Not visited

Upazila	Union	CC-neghbour Village	CC-far Village	Para

Name of Respondent	Father/Mother/Son	Age	Sex	Education	Occupation	Religion	Mobile

Code: *Sex: 1=Male, 2= Female*

Education:*(1-10) use class, 11=SSC, 12=HSC, 13=Degree/ Hons, 14= Masters, 15= Others*

Occupation: *1= Day labor (Agriculture), 2= Day labor (Non-agriculture such as workshop machenic, painter, transport worker, etc), 3= Riskswa, van (non-engine), 4= Riskswa, van, Easybike, Nosimon, Korimon (engine), 5 = Business (small), 6=Business (big), 7=Farmer,), 8= Masonry, 9=Woodcutter, 10=Handicraft, 11= Students, 12=Aged people, 13= Workless, 14= Transport Worker, 15= Work Jute/Cotton/Agro such type of mills, 16= Service, 17= Teacher, 18= Housewife. 66. Others*

Religion: *1= Muslim, 2= Hindu, 3= Christian, 4= Buddhist, 5= Others (-----)*

B. Basic Information for family

	Total	Category	Male	Female
1. How many members does your family have?		<18 yrs		
		>18yrs		

2. Does your household have?			
2.1	Electricity	Yes	No
2.2	Color Television	Yes	No
2.3	Mobile phone	Yes	No
2.4	Cupboard (Almirah/wardrobe)	Yes	No
2.5	Battery bike/van	Yes	No
2.6	Refrigerator	Yes	No
2.7	Water motor (domestic use)	Yes	No
2.8	Motorcycle	Yes	No
2.9	Latrine with flash system	Yes	No
2.10	Laptop	Yes	No
2.11	Bicycle	Yes	No
2.12	Electric fan	Yes	No

3. Construction of home		Roof	Wall
3.1	Wood/Bamboo/Straw		
3.2	Tin		
3.3	Brick/Concrete		

4. Source of Expenditure		Monthly	Yearly
4.1	Food		
4.2	Cloths		
4.3	Accommodation		
4.4	Education		
4.5	Treatment		
4.6	Loan (NGO/Bank)		
4.7	Savings		

5. Which is the income source of your family? *[Code: Use it from occupation]*	Main Source
	Secondary source

6. Can you create surplus yearly?			
1=Yes	2=Minus	3=Balance	Amount*

C. Question to Respondent

7. Do you know about non-communicable disease? 1= Yes | 2= No

8. How you get the name of NCD?

Code: 1= CHCP, 2= SACMO/FWV, 3= USC (SACMO), 4= UHC (Doctor/SACMO/NURSE), 5= TV, 6 = AAN, 7= Other NGO, 8=Facebook, 9=School Students, 10= Mosque Imam, 11= HW (HA/FWA/AHI/HI), 12= CG Member, 13= Teacher, 14= Advertisement (Display TV/Billboard/Poster), 66= Others (----)

9. Can you tell some names of NCD diseases?

Code: 1=Diabetic, 2= Hypertension, 3= Stroke, 4= Asthma, 5= Cancer, 6= Heart Attack, 7=Tumor, 66=Others (---)

10. Can you tell about the risk factor of NCDs?

Code: 1=Unhealthy diet, 2= Lack of physical lobor, 3=Use of tobacco, 4= Drink arsenic contaminated water, 5= Air pollution, 66. Others

11. Any member of your family members have following disease?

Disease	No. of Member	Disease	No. of Member	Disease	No. of Member
1= Diabetes		5= Hypertension		9= Cancer	
2= Asthma		6= Stroke		10= Arsenicosis	
3= COPD		7= Heart disease		11= Road accident	
4= Obesity		8= Cataracts		66= Others (-------)	

12. Do you have any disease? 1=Yes [code of disease]: | 2= No

13. How much money does your family expense due to NCDs in a month? Tk:

14. Do your family member go for taking service from CC?(you can use code of reason if answer is 'no')

	[Write reason if answer comes 'yes' and 'no']
Yes	
No	

Code: 1=distance from home, 2=lack of medicine, 3=doctor don't like to hear more, 4=family member don't take CC/UHC, 5=don't like to measure pressure, 66. Others (----)

15. Do your family members go for taking service from UHC ? ***(you can use above code)***

	[Write reason if answer comes 'yes' and 'no']
Yes	
No	

16. What type of service do you get from?

From CC					From UHC			
Medicine	Health education	Diabetes test	BP check	Weight check	Treatment	Medicine	Counseling	Others

17. Where do you take treatment due to NCDs? 1st choice: | 2nd choice:

Code: 1= UHC doctors, 2= MBBS doctor (private practice), 3= Clinic, 4= Village Doctor, 5= Homeopathy doctor, 6=Ayurvedic doctor, 7=CHCP, 66. Others

18. What type of cooking oil does your family use?	☐ Bottled	☐ Open container	☐ Others (.....)	
19. What type of tobacco products do you use?	☐ Smoke	☐ Smokeless	☐ Don't smoke	
20. What do you do if someone smokes beside you?	☐ Say him to stop	☐ left the place	☐ Don't tell any	
21. How many days in a week you eat fruits? (last 7 days)	☐ ..... days	☐ Not known	☐ Have not eaten	
22. How many servings did you take on that day? (use chart)	☐ .....Servings	☐ .... gm	☐ Don't say	
23. How many days in a week you eat vegetables? (last 7 days)	☐ ..... days	☐ Not known	☐ Have not eaten	
24. How much vegetable do you take in a day (use chart)	☐ .....Servings	☐ .... gm	☐ Don't say	
25. Does your work involve vigorous-intensity activity cause increase heart rate (10 minutes continue)? (using chart)	☐ Yes.....d/w	☐ No	☐ Irregular	
26. Did you check BP within last 2 months by own effort?	☐ Yes	☐ No	☐ Don't say	
27. Did you check Sugar last 6 months by own effort?	☐ Yes	☐ No	☐ Don't say	
28. Do you check your waist for physical examine purpose?	☐ Yes	☐ No	☐ Don't say	
29. Does your drinking source As contaminated?	☐ Yes	☐ No	☐ Not tested	☐ Others
30. Do you have any arsenicosis symptom?	☐ Yes	☐ No	☐ Not checked	☐ Health card (if Yes)
31. What type of stove do you have?	☐ Traditional	☐ Improved	☐ Gas used stove	☐ Electricity

32. How about your lifestyle?

Name of habit	Self		Family Practice	
	Yes	No	Yes	No
32-1 Taking raw salt during meal				
32-2 Taking oily & fatty food				
32-3 Food you eat from outside				
32-4 Maintain dinner within 8pm				
32-5 Go to bed after 2 hrs of dinner				
32-6 Taking more vegetable (400gm)				
32-7 Use of tobacco				
32-8 Physical labor 150min/week				
32-9 Homestead gardening				

33. Would you like to detect your of NCDs in early stage? 1= Yes 2= No

34. If "yes" then where will you go to UHC? 1= Yes to CC 2= Yes to UHC 3= No need

35. Physical check-up of respondent Note: ***Please take BP measure with 3 minutes interval***

BP (Systolic)	BP (Diastolic)	Waist (cm)	Weight (Kg)	Height (m)	BMI

36. Did you take medicine for BP during last 24 hours? ☐ Yes ☐ No

37. Who identified you as a hypertensive patient? 1= Vill doctor | 2= Hospital doc | 3= Others (.....)

38. Do you know any NCD patients around you who got newly receiving NCD services in CC or UHC (after starting project)?

No. of person		Visited CC	Visited UHC
Family			
Neghbor			
Relatives			

39. If there is NCD patients who cannot access to the services, why?

40. COVID-19 effect

a) Do you (and your family) know the process of COVID 19 prevention? ☐ I know ☐ I don't know ☐ Family known ☐ Family not known ☐ Others...

b) Are there anyone who suffered byCOVID19? ☐ Self ☐ Family member (no.....) ☐ In your para (no.....) ☐ In village (no.....) ☐ Others...

c) Do you know about the COVID risk of NCD patient? ☐ Known ☐ Unknow ☐ Family known ☐ Fmly unknown ☐ Others...

d) COVID 19 affect's your family's for NCD?

Code: d) 1= Could not go to doctor, 2= Could not buy medicine in time, 3= Could not go for work, 4= Mental disruption, 5.= NCD Deterioration, 6= Income decreased, 7= Deteriorated Nutrition status, 8= Disrupt physical exercise

Data Collected by	Date	*d*	*d*	*m*	*m*	2	0	2	1

Data Checked by	Date	*d*	*d*	*m*	*m*	2	0	2	1

Asia Arsenic Network