



Final Technical Report on

Capacity Building on WHO Package of Essential Non-communicable Disease (PEN) Interventions for Primary Health Care Workers of Cox's Bazar District to Strengthen NCD Service Delivery

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1. INTRODUCTION

1.1 Background

Cox's Bazar district is home of nearly 3 million Bangladeshi population and the burden of NCD and risk factors is on the rise among the Bangladeshi population. In addition, approximately one million Rohingya, the forcibly displaced Myanmar nationals (FDMN), are living in the refugee camps of the Cox's Bazar district of Bangladesh. The Directorate General of Health Services (DGHS) of Bangladesh has declared Cox's Bazar a model district for the prevention and control of NCD.

Given the burden of NCDs, the WHO and other partners also established a non-communicable disease (NCD) core group to foster responses to NCDs and highlighted the need for providing additional training on NCDs to health care providers. The World Health Organization (WHO) has also identified the need for proactive, long-term, patient-centered, community-based and sustainable NCD care delivered through primary health care (PHC) teams to achieve impact against NCD at the population scale. To facilitate this, the WHO has developed a package of essential NCD interventions (WHO PEN) for PHC teams in low-resource settings. The package includes a prioritized set of cost-effective lifestyle and pharmacological interventions that can be delivered to prevent and control NCD. The package includes sessions on reduction of tobacco and alcohol consumption, weight regulation, improved diet, increased physical activity, and pharmacological measures for prevention and control of NCD. The WHO also recommended a brief counseling model known as 5A's and 5R's approach to be used in the health care settings and in the community.

In 2019, more than 407 primary health care workers (102 doctors, nurses, and paramedics and 305 community level health care workers and their supervisors) were trained in Cox's Bazar district on the WHO PEN by the BRAC James P Grant School of Public Health (JPGSPH) in collaboration with the non-communicable disease control (NCDC) and WHO Bangladesh. In 2020, BRAC JPGSPH also trained a total of 280 doctors, nurses, paramedics, community health care providers, assistant health inspector, health inspectors, and community health workers' supervisors working in the Rohingya camps and in the Ukhia and Teknaf Upazila (157 doctors, nurses and paramedics, 69 government community level health care workers and supervisors and 54 community level health care providers and their supervisors from the camps) on the PEN interventions. In 2021, 150 health care providers (Doctors, Nurses, paramedics) from eight upazila Health Complexes and Rohingya camps were trained by JPGSPH in collaboration with the non-communicable disease control (NCDC) and WHO Bangladesh. In 2022, 151 health care providers (doctors, nurses, paramedics, and midwives) from eight upazila health complexes were trained on the WHO Bangladesh Package of Essential Noncommunicable Diseases (PEN) Interventions. The training was also provided by in collaboration with the non-communicable disease control (NCDC) and WHO Bangladesh.

According to the current terms of Agreement for Performance, JPGSPH was contracted by the WHO to coordinate and facilitate the training on the package of essential non-communicable

diseases (PEN) interventions for 130 doctors, nurses, and medical assistants/paramedics working in different UN/INGO/NGO offices in Cox's Bazar district, as well as to facilitate Training of Trainers (TOT) for the 20 doctors from the government, NGO, and WHO. The training objective was to enhance the knowledge, skills, and practices of primary health care providers for the early detection and appropriate management of hypertension and Type 2 Diabetes using a comprehensive CVD risk-based approach. The four-day training manual was developed by WHO Bangladesh. The manual was adapted from the "Package of Essential Noncommunicable (PEN) disease and healthy lifestyle interventions – Training modules for primary health care workers" developed by WHO Regional Office for South-East Asia for the member states. The training incorporated sessions on Bangladesh's "National protocol for integrated management of hypertension and diabetes using a total cardiovascular risk approach in primary health care settings." The training also incorporated sessions to simulate the NCD service delivery and OSPE for hands-on evaluation of the skills learnt during the training. JPGSPH of BRAC University was selected as a contractual partner to provide the following services in collaboration with the Directorate General of Health Services (DGHS).

Service 1: Training on WHO PEN intervention for PHC providers

- Train 130 doctors, nurses, and medical assistants/paramedics in 5 batches using the 4-day training package developed by the WHO-Bangladesh
- Train the 20 trainers using the 4-day training package developed by the WHO-Bangladesh
- Arrange facilitators for the training from BRAC JPGSPH and other government and non-government agencies
- Arrange necessary logistics, supplies, and services required for the training including training venue, banner, multimedia (projector/screen), sound system/cordless, training equipment (flipchart/whiteboard), training materials including copies of relevant national protocols/agenda/participants' workbook, per-diem disbursement, accommodation, refreshment, travel allowances disbursement, relevant resource persons from the government and non-government agencies, essential precautions for COVID-19, implement a digital pre-test/post-test/OSPE.
- Final technical report of the training of the primary health care provider

Service 2: Supportive supervision on PEN implementation and establishment of referral linkages

- Continue the activities of an NCD coordination committee in Cox's Bazar with Civil Surgeon of Cox's Bazar as the Chairperson
- Develop tools for supportive supervision/implementation and undertake supportive supervision meeting at UHC level to provide supportive supervision to care, providers
- Make relevant travel arrangements for supportive supervision visits
- Assessment of knowledge and practice among previously trained participants on WHO PEN protocol.

1.2 Objectives

The objectives for the project were to

- i. Strengthen the capacity and skills of Primary Health Care (PHC) providers (doctors/nurses/paramedics) in Cox's Bazar district on implementation of the Package of Essential Noncommunicable Diseases (PEN) interventions using team-based approach;
- ii. Undertake supportive supervision for the trained PHC providers and community health volunteers for implementing the PEN interventions.

2. PROJECT DESCRIPTION

2.1 Training on WHO PEN intervention for FDMN camp health care providers

Between 17 October to 8 December 2022, 151 doctors, nurses, and medical assistants or paramedics were trained in 5 batches. Apart from the trainees, there were two observer participants from the WHO and 2 observer participants from JPGSPH. Most of the trainees were from health care facilities of the FDMN camps and host community. All trainees received 4-day residential training on WHO PEN. One of the events was organized as the training of the trainers (TOT) and 23 participants attended the TOT. Facilitators for the training were primarily from JPGSPH (Five facilitators). Two facilitators from the WHO also imparted training sessions. During the ToT, there were additional facilitators from the WHO, and ICDDR, B. One ex-government employee also facilitated TOT sessions as a technical expert. The WHO Cox's Bazar Sub-office provided copies of the National Guidelines for the Management of Hypertension and Diabetes. All other necessary materials (participants' workbook, flip charts, WHO risk charts, selected handouts, pre-test and pre-test questionnaires, and evaluation forms were printed using the fund from the WHO. WHO also provided folders and pens. Hotel Sea Palace supported us with other arrangements required for the training (venue, food, accommodation) etc. JPGSPH administration and finance department arranged transports and administrative and financial management of the project. Data for pre-test, post-test, training evaluation, and objectively structured practical exams have been entered for the all the batches and have been analyzed for the report.

As mentioned earlier, the main objective of the training was to enhance the capacity and skills of health care providers (doctors/nurses/paramedics) in Cox's Bazar district on the implementation of PEN intervention in low resource primary health care settings, using a team-based approach. After the completion of the training, participants were expected to acquire the following competencies.

- Detect, manage and appropriately refer patients with cardiovascular diseases and diabetes.
- Calculate and stratify cardiovascular risk using the WHO risk prediction chart.
- Employ the 5A and 5R techniques to motivate positive behavioral change among individuals using tobacco, consuming unhealthy diets, and whose physical activity levels are low.
- Demonstrate the use of basic diagnostics such as a handheld device to perform point

of care tests such as blood glucose, and to measure blood pressure.

During the training, all participants were required to develop a PEN implementation plan to deliver essential NCD services at their hospitals, apply the knowledge gained from the PEN training.

2.1.1 Arrangement of necessary logistics and supplies

WHO Bangladesh Office provided 165 copies of National Guidelines for the Management of Hypertension and Diabetes. All other necessary materials (participants' workbook, flip charts, WHO risk charts, selected handouts, pre-test and pre-test questionnaires, and evaluation forms) were printed. Questionnaires and other supplies for OSPE were also arranged. Anthropometric equipment's (stadiometer and weighing scale), blood pressure measuring devices and glucometers with strips were also arranged with other relevant logistics. Hotel Sea Palace was contracted for venue, food, accommodation required for the training. They also provided multimedia projector with screen, sound system/cordless, and other training equipment (flipchart/whiteboard). Essential supplies were arranged for COVID-19 prevention. JPGSPH administration and finance department arrange transports and administrative and financial management of the project.

2.1.2 Training venue and duration

Considering the COVID-19 pandemic, social distancing, mask-wearing, and hand hygiene were promoted during the training. Participants were provided with surgical masks and alcohol-based hand rub at the training venue in addition to the handwashing facilities.

The training events were conducted from 17th October to 8th December 2022. The duration of the training for each batch, including the ToT was four days. The training sessions were held at the Hotel Sea Palace, Cox's Bazar.

2.1.3 Trainers

WHO Bangladesh has provided five-day long Training of Trainers (TOT) on the WHO PEN intervention in February 2020 and helped to develop a pool of skilled PEN trainers. The TOT was conducted by technical experts from WHO and academia to enhance the knowledge and capacity of the PEN trainers. The pool comprised of experienced trainers from the JPGSPH, BRAC, BIRDEM, JICA, MOHFW Coordination Cell and the WHO Emergency Sub-Office, Cox's Bazar. A team of trainers from JPGSPH and WHO Sub-Office, Cox's Bazar was selected based on availability and expertise for delivering the training sessions for this training program. Some of the trainers also received online training on patient centered care organized by SEARO.

During the training, the facilitators adapted the contents based on the participants' response, and the trainers supported each other during the sessions to engage the participants appropriately. In addition to delivering the training, the trainers fulfilled the following responsibilities for this training:

- Contributed to the revision of the facilitators’ manual.
- Contributed to the development of other training materials.
- Shared feedback and recommendations on the session/training after the training.
- Contributed to improvement/finalization of the facilitators’ module and training materials.

2.1.4 Participants

Nomination and communication with the expected participants were coordinated by WHO Sub-Office, Cox’s Bazar. The goal was to nominate and train a team of physician, nurse, and paramedics from the targeted FDMN camp health facilities so that they can implement a team-based approach for implementing the PEN interventions at the Primary Health care settings. However, as similar trainings were imparted in 2019, 2020 and 2021 some facilities sent less number of trainees as they already had trainees graduated. A total of **130 participants** from the FDMN cam health facilities of the Cox’s Bazar district attended the training. Of them, **62 were doctors, 33 were nurses, and 35 were paramedics/SACMO**. Twenty-two participants received the Training of the trainers and total 13 participants were from different NGOs, 7 from WHO and rest 2 were from the civil surgeon office. The list of the organizations or facilities the participants came from are provided in Table 2.1. Distribution of the training participants from different health facilities are given in Table 2.2 and training of the trainer participants from different health facilities are given in Table 2.3

Table 2.1: List of participating organizations (except ToT)

S. No	Organization (s)*
1	Gonoshsthaya Kendra (GK)
2	Global One
3	Greenhill
4	Health and Education for All (HAEFA)
5	Health Management in Broader Dimension Foundation (HMBD foundation)
6	International Organization of Migration (IOM)
7	International Rescue Committee (IRC)
8	MedGlobal
9	Médecins Sans Frontières Operational Centre in Brussels (MSF, OCB)
10	Prantic Unnayan Society
11	Relief International
12	Refugee Health Unit Nayapara Registered Camp (RHU NYP RC)
13	Research, Training and Management (RTM) International
14	SALT FLI
15	Save the Children
16	United Nations High Commissioner for Refugees (UNHCR)
17	World Health Organization (WHO)
18	BRAC James P Grant School of Public Health (BRAC JPGSPH)
19	Civil surgeon office

Table 2.2: Summary of the training participants by type and organizations (except ToT)

S. No	Organization (s)*	Doctors	Nurses/ Midwife	Paramedics/ SACMO	Total
1	GK	3	1	0	4
2	Global One	1	0	1	2
3	Greenhill	2	1	1	4
4	HAEFA	2	0	2	4
5	HMBD Foundation	0	0	3	3
6	IOM	15	0	3	18
7	IRC	10	13	11	34
8	MedGlobal	2	5	1	8
9	MSF, OCB	5	4	9	18
10	Prantic Unnayan Society	1	0	0	1
11	Relief International	1	0	0	1
12	RHU NYP RC	1	0	0	1
13	RTMI	5	6	3	14
14	SALT FLI	1	1	0	2
15	Save the Children	8	2	1	11
16	UNHCR	1	0	0	1
17	WHO	2	0	0	2
18	BRAC JPGSPH	2	0	0	2
	Total	62	33	35	130

*Please, see the acronyms in Table 2.1

Table 2.3: Summary of the training of the trainers (TOT) participants by number and Organization

S. No	Organization	Doctors
1	Gonoshsthaya Kendra (GK)	1
2	Partners in Health and Development (PHD)	1
3	Food for the Hungry Association (FH Association)	1
4	Save the Children	1
5	International Rescue Committee (IRC)	1
6	Green Hill	1
7	International Organization for Migration (IOM)	1
8	Relief International (RI)	1
9	United Nations High Commissioner for Refugees (UNHCR)	1
10	International Rescue Committee (IRC)	1
11	Civil Surgeon Office, Cox's Bazar	2
12	World Health Organization (WHO)	7
13	BRAC James P Grant School of Public Health (BRAC JPGSPH)	2

S. No	Organization	Doctors
	Total	21

2.1.5 Training sessions

The training sessions were developed based on the WHO 5X5 approaches (5 diseases and 5 risk factors), WHO PEN training modules and considering the local context of Cox’s Bazar district. Alcohol consumption was covered briefly within the unhealthy diet session. Moreover, out of the five major NCDs and metabolic risk factors, only overweight and obesity, Hypertension and Diabetes were discussed. The four-day “WHO Bangladesh PEN interventions for primary health care providers” training package consists of PowerPoint presentations for twelve modules, facilitator guides, and participant workbooks. This four-day training package covered both technical and practical aspects of the PEN and incorporate interactive teaching methodology (power-point presentations, reflections of personal experience, individual and group discussions, case studies, role plays, videos, brainstorming, practical demonstrations). The titles of the sessions and respective modules are listed in table 2.4. Moreover, the schedule of the training sessions has been provided in the annex.

Table 2.4: List of training modules and sessions

Modules	Sessions
A	An overview of the NCD burden and PEN as a primary health care approach
B	Overview of NCDs: Cardiovascular diseases (CVD) and Diabetes Mellitus
C1	Risk factors for non-communicable diseases: Tobacco use
C2	Risk factors for non-communicable diseases: Unhealthy diet
C3	Risk factors for non-communicable diseases: Physical inactivity
C4	Risk factors for non-communicable diseases: Overweight and obesity
D1	Total cardiovascular risk-based approach
E	Assessment and Management of Hypertension
F	Assessment and Management of Type 2 Diabetes
G1	Healthy lifestyle: Basics of counseling
G2	Brief interventions for non-communicable disease risk factors: Tobacco cessation, healthy diet, physical activity, and treatment adherence
H1	Develop and present a team-based approach to implementing PEN intervention in the existing health facilities
	Additional Session
NA	Simulation of service delivery at PHC
NA	Objective Structured Practical Examination (OSPE)

PowerPoint presentations, and participant workbooks, were provided to the participants in hardcopies or as files in pen-drives for each health facility. Animated and pictorial PowerPoint presentation, group works, video demonstration, recap quiz, games, and open discussions were used to facilitate lively and spontaneous engagement of the participants in each session.

2.2 Supportive Supervision on PEN Implementation and Referral Linkage

- An NCD coordination committee, named NCD prevention and control committee (NCDPCC) was formed during last year's PEN training. The committee is chaired by the Civil Surgeon of Cox's Bazar District.
- Three supportive supervision tools were utilized. One of the tools was for the upazila health complexes (UHC), and primary health care facilities and health posts in the Rohingya camps for facility assessment. One observation tool was developed to observe and record the health care delivery process for patients receiving services from the NCD corner of the UHCs. Another tool was developed for the participants' survey to assess the knowledge and practice of previously trained participants.
- The transportations for supportive supervision were arranged. Two supportive supervision visits were carried out for each UHC. Accordingly, 16 supervision visits were carried out in the UHCs. Moreover, 2 supportive supervision visits were carried out in the NCD corners of the District Hospital.
- During the supportive supervision visits, the supportive supervision team conducted on-the-job training to support the facility staff in the NCD corner. The supportive supervision team also conducted 200 observations (100 during the first round of visits and 100 during the second round of visits) to assess the NCD service delivery at the upazila health complexes.

2.3 Meeting on PEN Implementation and Referral Linkage

The NCDPCC meeting was held on 26 December 2022 at the District EPI store conference room, Cox's Bazar. Representatives from all the UHCs were present. Two medical officers were present from the Civil surgeon's office, Cox's Bazar. Prof. Malay Kanti Mridha presented the progress of PEN training and findings from the supportive supervision visits.

3. PROJECT OUTCOME

3.1 Training on WHO PEN intervention for PHC providers

3.1.1 Result of pre/post-test

At the beginning and the end of the training of each batch, participants were offered a test to assess their knowledge on NCDs and PEN interventions. The same set of 30 questions was used for both the assessments. We also conducted an objective structured practical examination (OSPE) at the end of the training to assess the skills and techniques learned throughout the training. See the pre and post-test questionnaire in the annex. Figure 3.1 and 3.2a, 3.2b, 3.3c below illustrate a comparison of the average score and absolute score of different types of participants before and after the training. Improvement has been noticed in all groups of

participants at the post-test. Out of the highest possible score of 30, the mean (\pm SD) score of the doctors was 18.73 (\pm 3.653) in the pre-test and 27.44 (\pm 1.72) in the post-test. The nurses and midwife scored 15.87 (\pm 3.31) in the pre-test and 23.72 (\pm 2.75) in the post-test, and the paramedics scored 18 (\pm 3.91) in pre-test and 26.88 (\pm 5.06) in the post-test. Overall, the mean score for all participants 17.83 (\pm 3.799) in pre-test and 26.34 (\pm 3.51) at the post-test. The difference between the mean score in post-test and the pre-test was 8.50.

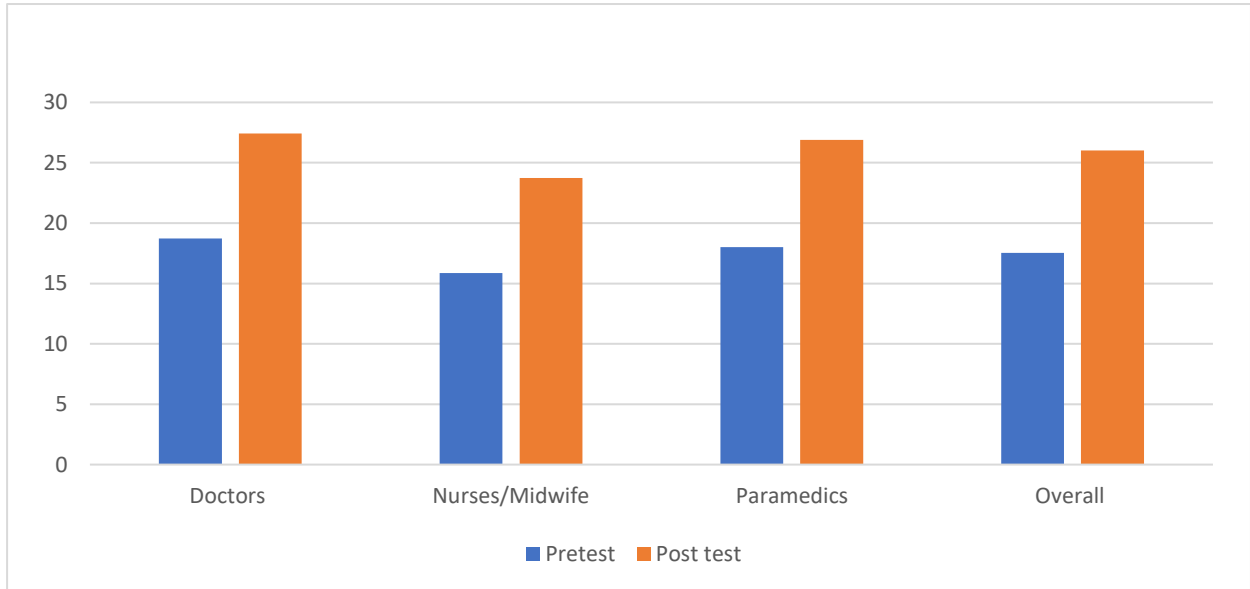


Figure 3.1: Mean score at pre and post-test by type of trainee

Figures 3.2a, 3.2b, and 3.2c below show that participants from all the groups of have improved their knowledge through the training as all of them did better in the post-test compared to the pre-test.

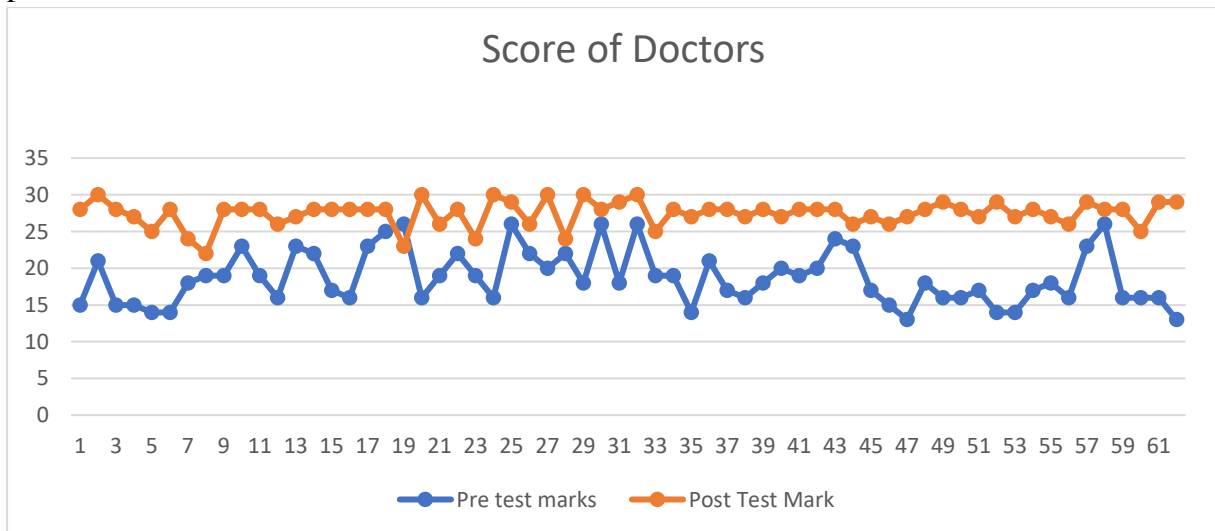


Figure 3.2a: Change of score of the doctors between pre and post-test

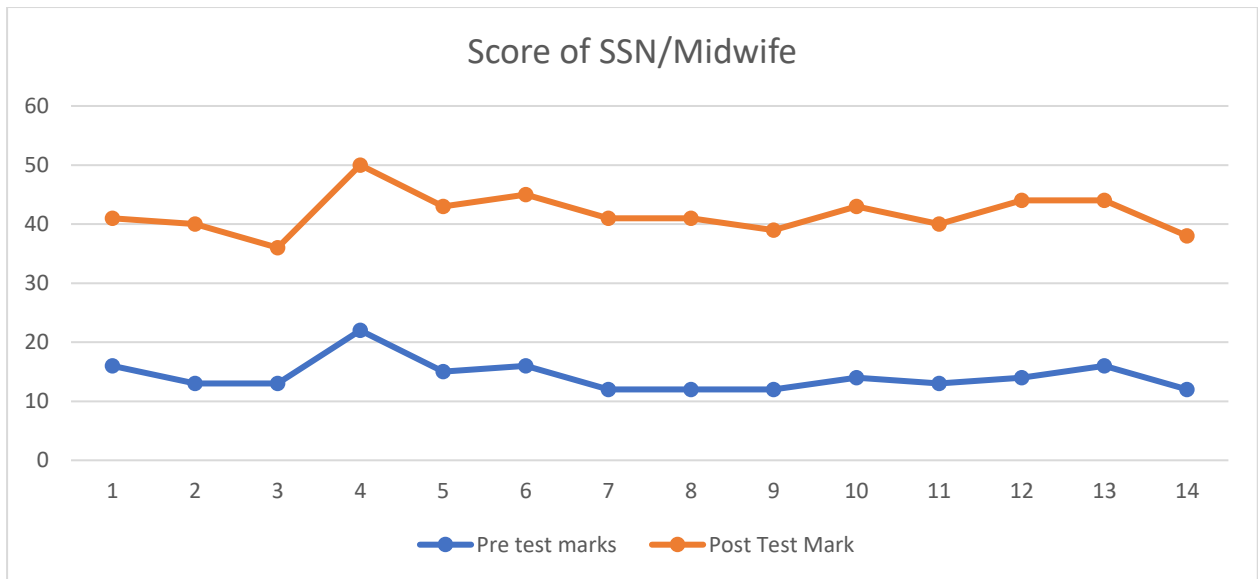


Figure 3.2b: Changes of score of the nurses between pre and post test

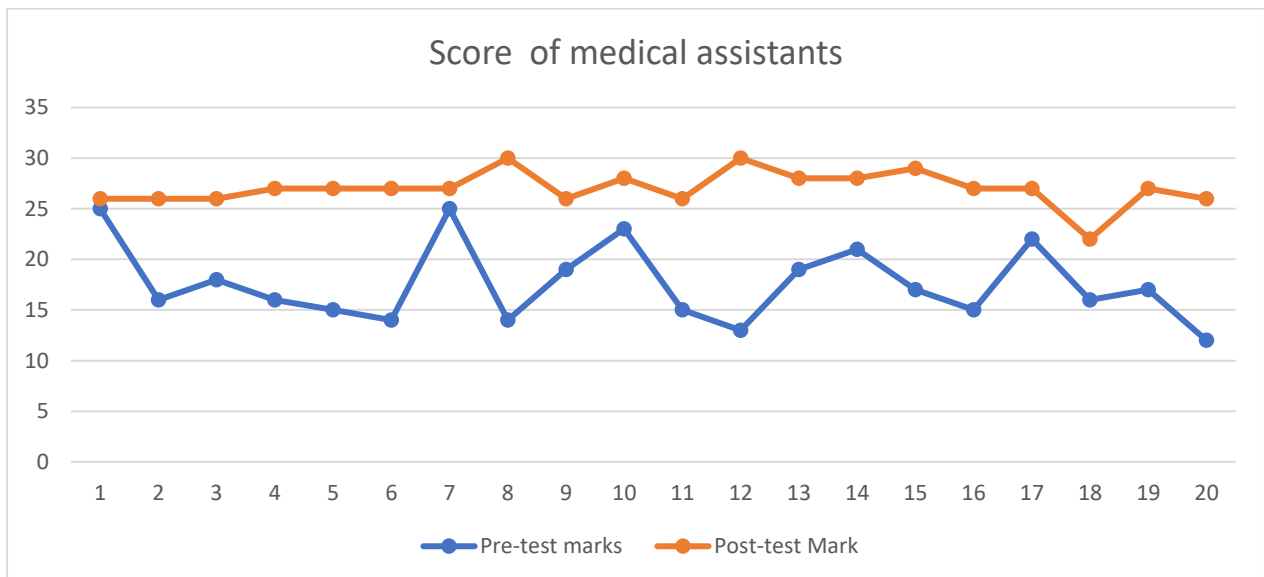


Figure 3.2c: Score changes of the paramedics (Medical Assistants/Paramedics) between pre and post test

On the last day of the training, we conducted an objective structured practical examination (OSPE) with five stations to evaluate the participants' acquired techniques and skills. We prepared four stations for each group of participants. The stations were – a) the measurement of height and weight, and calculation of BMI, b) Use of WHO CVD risk chart, and risk score estimation for patient management, c) measurement of BP, d) Treatment of hypertension and treatment of diabetes based on two case scenarios. Each participant was given 3 minutes to conduct the activities of a station. There was an examiner to rate their performance in each of the stations. Table 3.1 below compares the performance of each group of participants in the OSPE examination (mean score).

Table 3.1: Performance of the participants in the OSPE test

Occupation	Height Measurement (Total Score 10)	Weight Measurement (Total Score 10)	BMI Calculation (Total Score 5)	BP Measurement (Total Score 10)	CVD Risk Assessment A (Total Score 5)	CVD Risk Assessment B (Total Score 5)	Management Plan A (Total Score 10)	Management Plan B (Total Score 10)	Total Score (65)
Doctor	9.78	9.73	5	9.4	4.75	5	8.6	7.92	60.18
Nurse	9.3	9.45	4.24	8.14	4.24	4.39	5.24	3.67	48.68
Paramedics	9.49	9.66	4.71	8.74	3.97	4.85	7.15	6.71	55.26
Overall	9.58	9.64	4.72	8.89	4.41	4.8	7.34	6.49	55.88

3.1.2 Training evaluation by the participants

At the end of each session during and on the last day of each batch, participants were requested to complete the prescribed evaluation form. Training evaluation forms are attached to this report as annex below are some glimpses from the evaluation of the training by the participants (Table 3.2).

Table 3.2: Overall Evaluation of training by the Participants (% of the participants)

Question	Very confident (%)	Confident (%)	Somewhat confident (%)	A little confident (%)
Confidence to apply 5A and 5R method to counsel patients	43.53	59.66	0.83	0.00
Confidence to use WHO risk prediction chart	90.68	32.77	0.83	0.00
Confidence to manage hypertensive patients using national guidelines	65.81	33.05	4.20	0.00
Confidence to manage diabetic patients using national guidelines	65.25	34.45	3.33	0.00

In the overall training evaluation, which was taken at the end of the training, 47.46% of participants responded that the training was beyond their expectations, and 54.62% of them said that the training met their expectations. Only 0.83% said that the training had somewhat met their expectations. The participants (Table 3.3) were also requested to comment on the overall quality of the training's logistical aspects (Table 3.3). Among those who responded to these questions, 70.59% of said that the accommodation was either excellent or good, and

68.28% said that the provided foods were excellent or good. On the other hand, 93.49% and 96.19% said that communication and training materials were either excellent or good, respectively.

Table 3.3: Evaluation of Foods and Logistics (% of the responses)

Evaluation area	Excellent (%)	Good (%)	Average (%)	Bad (%)	Very bad (%)
Accommodation	34.55	36.04	27.68	2.65	1.75
Foods	20.00	48.28	30.77	2.54	0.84
Communication	51.75	41.74	7.76	0.00	1.69
Training Materials	58.26	37.93	5.13	0.85	0.84

3.1.3 QUALITATIVE FEEDBACK FROM THE TRAINEE (DOCTORS, NURSES AND PARAMEDICS)

As per the participants' comments at the end of the training sessions, most of the training sessions were excellent and helpful for the participants, but there was some problem with time management. Below are some specific issues expressed by the fellow participants:

Table 3.4: General comments

Time management
<ul style="list-style-type: none"> Several participants suggested that time management might have been executed more effectively Participants also suggested that the training duration should be longer (at least 6 days) and the number of training sessions should be less because it is hard to learn everything in four days. They also mentioned that it is quite tough for them to keep their concentration from 8:30 a.m. to 5:00 p.m. The time for some sessions should be shortened or can be divided into two more sessions. Some also suggested to shorten the training to 3 days. Some participants wanted more time for Prayer.
Venue, Food and Accommodation
<ul style="list-style-type: none"> Most of the participants were fine with the venue. There was some feedback on the accommodation; some suggested to transfer the accommodation of the participant either to main crown plaza building of hotel sea palace or to the other hotel. Some participants were not happy with the food. Some participants suggested that coffee should be available all the time Participants suggested to add more protein as food items and provide dinner at night
Contents
<ul style="list-style-type: none"> Most participants said all training sessions were good, interactive, and two-way. Most participants found the content relatable, highly effective, useful, and of high standard but some suggested to improve the logistic supply. Many of the participants suggested to cover hyperlipidemia and Type -1 DM, gestational diabetes, management of diabetes complications, respiratory diseases and more exercise sessions.

<ul style="list-style-type: none"> • Most of the participants said that engagement, clarity, and coverage of the topics were superior and unique.
<ul style="list-style-type: none"> • Some participant suggested more time should be allocated for counselling sessions
<ul style="list-style-type: none"> • Training was very interactive and practical. Some participants expressed that more time should be allocated for counselling sessions
<ul style="list-style-type: none"> • Need refresher training and regular follow-up.
<ul style="list-style-type: none"> • Some of the participants felt as a clinician a few modules were less interesting and expected a little more clinical information.

4. SUPPORTIVE SUPERVISION ON PEN IMPLEMENTATION AND REFERRAL LINKAGE

4.1 Supportive supervision visits, human resources, and training status

Table 4.1 shows the supportive supervision visit dates and table 4.2 shows the human resources and training status of the human resources at the upazila health complexes and the district hospital. For each upazila health complex and the district hospital, two supportive supervision visits were carried out. In these seven upazila health complexes and one district hospital, there were currently a total of 167 doctors, 221 nurses or midwives, and 28 SACMOs. Among them, 39% of the doctors, 55% of the nurses or midwives, and 64% of the SACMOs have already received pen training. The Teknaf UHC had the highest percentage of trained doctors (67%). On the other hand, Chakaria UHC had the highest percentage of trained nurses (74%). Cox's Bazar District hospital had only 19% trained doctors and 5% trained nurses or midwives.

Table 4.1: Dates of supportive supervision visit at the health facilities

Facility	Meeting Date (First)	Meeting Date (Second)
Ramu UHC	30-10-22	21-12-2022
Maheshkhali UHC	01-11-22	27-11-2022
Teknaf UHC	05-11-22	24-11-2022
Chakaria UHC	06-11-22	13-12-2022
Pekua UHC	08-11-22	22-11-2022
Kutubdia UHC	14-11-22	23-11-2022
Ukhiya UHC	16-11-22	14-12-2022
Cox's Bazar District Hospital	21-11-22	11-12-2022

Table 4.2: Key human resources and training status of health facilities

Name of the facility	Physicians		SACMO		SSN/Nurses/Midwife	
	Available	PEN training received (%)	Available	PEN training received (%)	Available	PEN training received (%)
Chakaria UHC	16	7(44)	3	3(100)	34	25(74)
Kutubdia UHC	26	4(15)	1	0(0)	17	7(41)
Moheshkhali UHC	17	5(29)	4	4(100)	38	24(63)
Pekua UHC	22	7(32)	2	1(50)	38	10(26)
Ramu UHC	14	8(57)	4	4(100)	21	14(67)
Teknaf UHC	30	20(67)	5	4(80)	37	20(54)
Ukhia UHC	21	10(48)	9	2(22)	36	21(58)
Cox Bazar District Hospital	21	4 (19)	0	0(0)	238	11(5)
Total	167	65(39)	28	18 (64)	221	121 (55)

4.2 Availability of services

Table 4.3 shows the current status of NCD services in terms of NCD corner availability, blood pressure, hypertension, and weight measurement, BMI calculation, CVD risk assessment, and treatment of hypertension and diabetes according to national protocol. In 2021, there was no NCD corner in the Kutubdia UHC, but in 2022, each of the seven upazila health complexes and the district hospital had an NCD corner. Measurement of blood pressure and checking pulse rate and rhythm, as well as weight measurement, were widely available in all upazila health complexes, also in the district hospital. Both in 2021 and 2022, Chakaria, Ramu, and Ukhiya UHC performed height measurement services in the NCD corner. Also, Moheshkhali and Pekua UHC had improved height measurement services in 2022 compared with 2021. However, in 2022, there were no height measurement services available at Kutubdia and Teknaf UHC. In 2021 and 2022, BMI calculation and CVD risk assessment of NCD patients were available at the Ramu and Ukhiya UHCs but not at the Moheshkhali UHC and the Kutubdia UHC. In 2021 and 2022, BMI calculation was available at the Chakaria UHC, but CVD risk assessment was only available in 2021 but not in 2022. Similarly, in 2021, at the

Teknaf UHC, both BMI calculation and CVD risk estimation services were available, but in 2022, these services were not available. Also, in 2022, the NCD corner of the Cox Bazar District hospital did not have BMI calculation or CVD risk estimation available for patients. In 2022, health care providers at all seven UHCs were treating the diabetic and hypertensive patients as per the national protocol, except at the Cox Bazar District hospital. Furthermore, no supportive supervision visit was conducted in 2021 at the Cox Bazar District Hospital.

Table 4.3: Current status of NCD services (Clinical)

Services	CDH		CKR		KBD		MHK		PKA		RMU		TNF		UKA	
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
NCD corner	N/A	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
BP measured	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Height measured	N/A	N	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	N	Y	Y
Weight measured	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
BMI calculated	N/A	N	Y	Y	N	N	N	N	N	Y	Y	Y	Y	N	Y	Y
CVD-risk assessed	N/A	N	Y	N	N	N	N	N	N	Y	Y	Y	Y	N	Y	Y
Hypertension on treatment as per national protocol	N/A	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Diabetes treatment as per national protocol	N/A	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

*CDH=Cox's Bazar District Hospital, CKR=Chakaria, KBD=Kutubdia, MHK=Maheshkhali, PKA=Pekua, RMU=Ramu, TNF=Teknaf, UKA=Ukhiya

4.3 Laboratory services

Table 3.8 shows the availability of the laboratory services. All the laboratory services (e.g., random blood glucose, fasting blood glucose, HbA1C, urine protein test strips, Urine ketones test strips, Serum creatinine, Serum Electrolyte, Total cholesterol) were available at the Cox's Bazar District Hospital whereas only random blood glucose and fasting blood glucose tests were available in all UHCs of the Cox's Bazar District. HbA1C was only available in 2021 at Ukhiya UHC but in 2022 this test was not available in any of the UHCs. In 2022, urine protein

test was available in all UHCs except in Kutubdia UHC. Urine ketones test was not available in any of the UHCs except Ramu UHC. Both in 2021 and 2022, serum creatinine test was only available at Chakaria, Teknaf and Ukhiya UHCs and total cholesterol test was only available at Teknaf and Ukhiya UHC.

Table 4.4: Current status of NCD services (Laboratory)

Services	CDH		CKR		KBD		MH		PKA		RM		TNF		UKA	
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
Random blood glucose	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fasting blood glucose	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
HbA1C	N/A	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N
Urine protein test	N/A	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
Urine ketones test	N/A	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N
Serum creatinine	N/A	Y	Y	Y	N	N	N	N	N	N	N	N	Y	Y	Y	Y
Serum electrolyte	N/A	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y
Total cholesterol	N/A	Y	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y

*CDH=Cox's Bazar District Hospital, CKR=Chakaria, KBD=Kutubdia, MHK=Maheshkhali, PKA=Pekua, RMU=Ramu, TNF=Teknaf, UKA=Ukhiya

4.4 Drugs

Table 3.9 shows the availability of the drugs. In 2022, except for hydrochlorothiazide, all the listed antihypertensive drugs were available in the health facilities of the Cox's Bazar. Statins and listed anti-diabetic drugs were also available in all the health facilities. Except for inhalers, drugs for respiratory diseases, such as tablet salbutamol, are also available in all health facilities. Inhalers were only available in the Cox Bazar district hospital and the Ramu UHC.

Table 4.5: Current status of NCD drugs

Services	CDH		CKR		KBD		MHK		PKA		RMU		TNF		UKA	
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
Amlodipine	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Losartan	N/A	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hydrochlorothiazide	N/A	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y
Rosuvastatin	N/A	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Metformin	N/A	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Gliclazide	N/A	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Aspirin	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Tablet Salbutamol	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Inhaler, e.g: Salbutamol	N/A	Y	Y	Y	Y	N	Y	N	Y	N	N	Y	Y	N	Y	N

*CDH=Cox’s Bazar District Hospital, CKR=Chakaria, KBD=Kutubdia, MHK=Maheshkhali, PKA=Pekua, RMU=Ramu, TNF=Teknaf, UKA=Ukhiya

4.5 Challenges and solutions

To provide NCD services health care providers were facing some challenges, and they suggested some solutions for that, which are listed below in the table 4.6 and table 4.7

Table 4.6: Challenges and solutions: Facility level

Domain	Challenges	Challenges
Human resources	<ul style="list-style-type: none"> •Shortage in some UHCs •Many doctors get training but only one or two sit in the NCD corner regularly •Support staff needed •Counselor needed •Turn over, frequent change, trained person unavailable in NCD corner 	<ul style="list-style-type: none"> •At least one physician, one nurse/SACMO and one dedicated person for counseling in the NCD corner, fixed staff for NCD corner, Training and refresher training
Drugs and supplies	<ul style="list-style-type: none"> •Irregular supply/oversupply/lack of supply/with close expiry dates •Shortage of green book 	<ul style="list-style-type: none"> •Regular supply based on the need of the facilities •Local level coordination/digital BP

Domain	Challenges	Challenges
	<ul style="list-style-type: none"> •Medicine shopping is a challenge •Electricity dependent BP machine is not usable during load shedding 	<p>machines, weighing scales needed/Regular calibration</p>
Service delivery	<ul style="list-style-type: none"> •Overload •Lack of time for counseling •Need more room for NCD care 	<ul style="list-style-type: none"> •Decentralization of services (screening, medicine refilling) •Involve union facilities/One stop services from the NCD corners
MIS and record keeping	<ul style="list-style-type: none"> •Paper-based record •Patients do not keep the record book •No use of data for local decisions •Data not reported to DHIS2 regularly •Need TV to build awareness 	<ul style="list-style-type: none"> •Digital record keeping and use of data for decision making •Reporting of NCD services regularly and inclusion of more NCD indicators in DHIS2/NCD display board/Registers and SS log
Financing	<ul style="list-style-type: none"> •Inadequate and NCD services are not prioritized •Need a dedicated budget for NCD corner to buy some equipment 	<ul style="list-style-type: none"> •Adequate evidence-based financing and prioritization of NCD services/local level financing for drugs and supplies
Governance	<ul style="list-style-type: none"> •Need dedicated Supportive supervision officer •Irregular supervision of NCD services 	<ul style="list-style-type: none"> •Implementation of supportive supervision •Regular supervision for NCD services •District level NCD prevention and control coordination committee

Table 4.7: Challenges and solutions: Community level

Domain	Challenges	Ways to overcome
Adherence	<ul style="list-style-type: none"> • Lack of adherence to medication 	<ul style="list-style-type: none"> • Regular supply of medicines • Counseling on drug adherence
Self-care	<ul style="list-style-type: none"> • No awareness of self-care 	<ul style="list-style-type: none"> • Training of health care providers on self-care and counseling of the patients
Medicine Shopping	<ul style="list-style-type: none"> • Patients come to health centers just to collect medicines 	<ul style="list-style-type: none"> • Digital recording and use of NID
Service Delivery	<ul style="list-style-type: none"> • Long wait, laboratory facilities are far away 	<ul style="list-style-type: none"> • Point of care tests at the NCD corner

Domain	Challenges	Ways to overcome
Involvement of RMP	<ul style="list-style-type: none"> • Patients go to RMPs • RMPs advise against regular medications • Overmedication 	<ul style="list-style-type: none"> • Involve CHCP and union facilities • Awareness raising and counseling
Counseling need	<ul style="list-style-type: none"> • Individual counseling is time consuming 	<ul style="list-style-type: none"> • Brief intervention (5A-5R approach) • Health education using audio-visual aids • Use of posters/flip charts

5. HEALTH CARE SERVICES OBSERVATION

5.1 Percentages and mean differences between the visits

Table shows the proportion of patients received NCD services by type along with hypothesis testing results regarding the changes between the visits. Weight was measured for 46.07% of cases during the first visit and for 36.11% of cases during the second visit ($p=0.158$). Height was measured in 25% and 22.34% of cases during the first and second visits, respectively ($p=.067$). Blood pressure was also measured for 91.76% of cases during the 1st visit and 86.67% of cases during the 2nd visit ($p=0.267$). The accuracy of the BMI calculation was only 8.33% in the first visit, compared to 33.03% during the second visit ($p<0.001$). Furthermore, the health care providers carried out the 10-year CVD risk estimation for 32.11% of cases during the second visit, compared to 19.79% during the first visit ($p=0.046$).

Table 5.1: Percentages and mean differences between the visits

Service	First visit (n=96)	Second visit (n=109)	p-value
Weight measurement	46.07	36.11	0.1583
Height measurement	25.00	22.43	0.6723
Blood pressure measurement	91.76	86.67	0.2675
BMI calculation	22.11	33.03	0.0836
Accuracy of BMI calculation	8.33	33.03	<0.001
10 years CVD risk estimation	19.79	32.11	0.046

5.2 Clinical management related to NCD

Table 5.2 shows the findings of the management of hypertension, and diabetes and scheduled follow-up according to the protocol compared between the first and second visits. The management of hypertension according to the national protocol was only observed for 8.42%

during the 1st visit and only for 0.92% on the 2nd visit. Though screening for diabetes was available almost in all health facilities only 16.84% of the patients received the management of diabetes according to the protocol on the 1st visit and only 4.59% of patients received it during the 2nd visit. Only 1% scheduled follow-up according to the protocol was observed during the 1st visit and no scheduled follow-up according to the national protocol was observed on the 2nd visit.

Table 5.2: Assessment of the management of hypertension, and diabetes and scheduled follow-up according to the protocol

Service	First visit (n=96)	Second visit (n=109)
Management of hypertension according to protocol		
Yes	8.42	0.92
No	42.11	44.95
Not applicable	49.47	54.13
Management of diabetes according to protocol		
Yes	16.84	4.59
No	64.21	76.15
Not applicable	18.95	19.27
Scheduled follow-up according to protocol		
Yes	1.05	0.000
No	96.84	99.08
Not applicable	2.11	0.92

5.3 Counseling

Table 5.3 shows the availability of counseling services in the health facilities of the Cox Bazar districts. During the 1st visit, it was found that nearly half of the observed patients received any type of lifestyle modification counseling, but during the 2nd visit, it was observed that only 36.70% of the patients received any of that. However, we found no facility that was using the 5A-5R approach for lifestyle modification counseling. During the first visit, it was observed that a higher proportion of patients received advice on physical activity, and the percentage was 88.89%, followed by advice on sugar, salt, fruit and vegetable consumption, medical adherence, fat consumption, smokeless tobacco cessation, and smoking, and the percentages were 60.00%, 55.56%, 53.33%, 51.11%, 48.89%, 40%, and 33.33%, respectively. Similarly, during the second supportive supervision visit, most of the patients received advice on physical activity (65%) and medicine adherence (55%), followed by sugar consumption (40%), fruit and vegetable consumption (35%), fat consumption (32.5%), salt consumption (30%), smokeless tobacco cessation (20%), and smoking cessation (10%).

Table 5.3: Availability of the counselling services

Service	First visit (n=96)	Second visit (n=109)
Any lifestyle modification counseling	46.88	36.70
Any lifestyle modification counseling on smoking cessation		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00
Only advice	33.33	10
No counselling	2.22	0.00
No advice	53.33	90
Not applicable	11.11	0.00
Any lifestyle modification counseling on smokeless tobacco cessation		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00
Only advice	40	20
No counselling	2.22	0.00
No advice	57.78	80
Not applicable	0.00	0.00
Any lifestyle modification counseling on salt consumption		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00
Only advice	55.56	30.00
No counselling	2.22	0.00
No advice	42.22	70.00
Not applicable	0.00	0.00
Any lifestyle modification counseling on sugar consumption		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00
Only advice	60.00	40.00
No counselling	0.00	0.00
No advice	40.00	60.00
Not applicable	0.00	0.00
Any lifestyle modification counseling on fat consumption		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00

Service	First visit (n=96)	Second visit (n=109)
Only advice	48.89	32.50
No counselling	2.22	0.00
No advice	48.89	67.5
Not applicable	0.00	0.00
Any lifestyle modification counseling on fruit and vegetable consumption		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00
Only advice	53.33	35.00
No counselling	2.22	0.00
No advice	44.44	65.00
Not applicable	0.00	0.00
Any lifestyle modification counseling on physical activity		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00
Only advice	88.89	65.00
No counselling	0.00	0.00
No advice	11.11	35.00
Not applicable	0.00	0.00
Any lifestyle modification counseling on medicine adherence		
Yes, counselled fully using 5As/5R	0.00	0.00
Yes, counselled partially using 5As/5Rs	0.00	0.00
Yes, counselling without using 5A/5R	0.00	0.00
Only advice	51.11	55.00
No counselling	0.00	0.00
No advice	48.89	45.00
Not applicable	0.00	0.00

6. CHALLENGES AND LEARNINGS

6.1 Training on WHO PEN intervention for FDMN health care providers

The following is the summary of trainers' feedback and recommendations for improvement of the training program.

6.2 Training module

- The trainers became more efficient in time management over time and could finish the training sessions on time. There were some challenges in starting the session in the morning since some participants could not arrive on time.
- Some sessions could be more customized for different categories of trainees (e.g., more

practical exercises on clinical protocol/risk management for medical officers and more counseling practice for nurses).

- Although the trainers explained the issues carefully, the midwives and SACMOs who are not engaged with NCD management had difficulty completing the case management in the OSPE. Most trainees showed an eagerness to learn new protocols and drug therapy.
- Participants enthusiastically participated in the development of a team-based approach of implementing PEN interventions. The teams were bold to share their challenges and suggest solutions. The gallery walk was extremely helpful in terms of cross learning and addressing the challenges.
- The simulation session gave an opportunity to clarify the team approach and reiterate the key steps/issues.

6.3 Training implementation

- Conducting 5 batches of training in consecutive five weeks was extremely challenging. With support from the Civil Surgeon, UH&FPOs, senior leadership of implementing partner NGOs, WHO, this could be completed as scheduled. Participant's interest and enthusiasm was also clearly helpful.
- All relevant materials/handouts/supporting documents were timely available, and there was no problem.
- All trainers paid adequate attention to engage all participants to attend the training actively.
- More exercises/practical exercises in the session could help to make interactive and stimulate motivation to learn.
- Regular supportive supervision with on-the-job support at the facility level after the training both at the UHCs and at the PHCs is required to facilitate quality service delivery. The participants were appreciative of the supportive supervision support that they were receiving at the UHCs.
- An evaluation of training participants and their facilities is also required after a few months.

7. CONCLUSION

The team-based training package of essential NCD interventions of the WHO provides a high-quality training to build capacity of primary healthcare providers to implement PEN as part of the essential health service package in Bangladesh. Imparting the training within a short duration and during these difficult hours proves the commitment of all the stakeholders, the WHO, implementing partner organizations, Civil Surgeon, UH&FPOs, NCDC of directorate general of health services. This also demonstrated the strength of a productive partnership and commitment.

The PEN training created an understanding among the health care providers that they need to work together and help each other for delivery of essential NCD services from PHC facilities. During the service delivery flow discussion, they could identify the gaps and opportunities in their current system, and each primary health care facility team proposed a feasible NCD

service delivery model for the prevention and management of NCDs. The team divided the tasks and responsibilities of each category of staff, considering the existing resource limitations. Sharing of these groups works during the gallery walk also facilitated cross learnings within the teams. The participants were requested to facilitate discussion within their organization and health facilities and devise a feasible service delivery model at their hospitals following the CVD risk-based approach. Limitations of this training program were expressed already as feedback from trainees and trainers. Despite those limitations, the outcomes of the training looked satisfactory.

The participants were also informed on the supportive supervision and were requested to seek support from the supportive supervision team. However, the findings during the supportive supervision team revealed that the learning from the training is not practiced. There has been an improvement of drugs and supplies, a concomitant improvement is necessary for the delivery of services. The DGHS, the WHO need to consider further improvement of the reporting system linking the NCD registers of the DHIS 2, so that NCDs related activities are better reported, and progress is monitored.

The unique implementation challenges in their respective health facilities and communities will demand timely support from the government, WHO, and their supervisors. The NCDC and WHO Bangladesh should be committed to providing such supports with regular communication and encouragement. The BRAC James P Grant School of Public Health of BRAC University will also be committed to working with the government and WHO Bangladesh in the future.

8. WAY FORWARD

In future, similar training program will require further adaptation depending on the context and needs. The WHO is promoting a 5X5 approach (5 diseases; CVD, COPD, T2D, Cancer and Mental Health disorders, and 5 risk factors: unhealthy diet, tobacco consumption, alcohol consumption, physical inactivity and air pollution) and the future training program should integrate the missing components such as chronic respiratory diseases and cancers. Separate training programs for CHCPs and the HAs might be helpful with customized package based on the national NCD implementation plan.

BRAC JPGSPH considers the in-house training as a steppingstone towards the quality NCD service delivery. The quality implementation of PEN will need the regular supportive supervision mechanism to continue at different level, and periodic evaluation of knowledge, skills, and service quality. The PHCs and UHCs will need committed management of different organizations to for regular availability of supplies and medicines. BRAC JPSPH is eager to work with WHO to support capacity building of implementing partners on supportive supervision and PEN implementation.

Proper documentation and record keeping can increase commitment and accountability among

the health care providers, improve the interaction between the providers and the patients, and thereby improve adherence to the treatment and follow-up plan. The participants showed their interest in a standardized recording system for the health facilities and a patient record book. The WHO can facilitate discussions among different partners to develop a record-keeping system for NCDs in a consultative process. Digital care coordination system can address the challenges in consistent and quality of NCD service delivery at the primary health care settings. BRAC JPG School of Public Health has developed a digital care coordination system to provide decision support to primary care providers for appropriate delivery of NCD care and improve record keeping. The system is developed following the national protocol and is currently going through proof-of-concept study. If WHO is interested, there is a scope to work together to implement the digital system for NCD care.

Expansion of services beyond CVD risk-based approach for hypertension and diabetes should be considered. There is a need for a continued education program to support health care providers with updated knowledge and skills. An online learning and certification program can be established so that a large number of PHC providers can be trained. Moreover, in case of online training, the training materials can be shared with the participants at least one week in advance informing them about the training dates so that they can be prepared for the training.

There is a need for proper monitoring and evaluation of the NCD training programs so that the implementation of the skills learnt from the training can be evaluated. Without a proper monitoring and evaluation system in place, there is a chance that the trainees will soon forget their skills. As NCD programs are relatively new, it will take consistent support and resources to make a meaningful change and this training can be regarded only as a start point aimed towards this goal.

9. ANNEXES

Annex 1.1: Agenda for the 4-days PEN training for Doctors, Nurses and Paramedics



TRAINING AGENDA

Training on package of essential non-communicable diseases (PEN) interventions for primary health service providers

Cox's Bazar

May-June 2022

Day 1

Time	Activity		Facilitators
08:15-08:30	Registration		Dr. Ali Ahsan Hemel
08:30 -9:15	Inauguration, introduction and ice breaking, training objectives and ground rules		Government/WHO/JPGSPH representative
9:15-9:45	Pre-test		Dr. Ali Ahsan Hemel
9:45 -10:00	Healthy Break		
10.00- 11.45	Module A	A. An overview of NCD burden and PEN as a primary healthcare approach to delivering essential NCD services and organizing NCD services through a team-based approach at primary healthcare setting	Dr. Raisul Islam Dr. Rina Rani Paul
11:45 -13:00	Module B	B. Overview of NCDs: Cardiovascular diseases (CVD)	Dr. Ali Ahsan Hemel Dr. Priscilla Khyang
13:00 -14:00	Lunch & prayer break		
14:00- 14:10	Energizer Dance		
14:10 -15.30	Module C	C1. Risk factors for non-communicable diseases: Tobacco use	Dr. Raisul Islam Dr. Ali Ahsan Hemel
15.30- 15.45	Healthy Break		
15:45- 17.00	Module C	C2. Risk factors for non-communicable diseases: Unhealthy diet	Dr. Rina Rani Paul Dr. Priscilla Khyang

Day 2

Time	Activity		Facilitators
08:30 -09:00	Recap		
09.00- 10.15	Module C	C3. Risk factors for non-communicable diseases: Physical inactivity	Dr. Priscilla Khyang Dr. Ali Ahsan Hemel
10.15- 10.30	Healthy Break		
10.30- 12.00	Module C	C4. Risk factors for non-communicable diseases: Overweight and obesity	Dr. Raisul Islam Dr. Ali Ahsan Hemel
12.00- 13.00	Module D	D1. Total cardiovascular risk-based approach	Dr. Rina Rani Paul Dr. Raisul Islam
13:00 -14:00	Lunch & prayer break		
14:00- 14:10	Energizer Dance		

14:10 -15:10	Module D	D1. Total cardiovascular risk-based approach (continued)	Dr. Rina Rani Paul Dr. Raisul Islam
15:10 -15:25		Healthy Break	
15.25- 16.00	Module D	D1. Total cardiovascular risk-based approach (continued)	Dr. Rina Rani Paul Dr. Raisul Islam
16.00-17.00	Module C	C5. Total cholesterol and test of urine using urine strips	Dr. Rina Rani Paul

Day 3

Time	Activity		Facilitators
08:30 -09:00		Recap	
09:00 -10:45	Module E	E. Assessment and Management of Hypertension	Dr. Raisul Islam Dr. Ali Ahsan Hemel
10.45- 11.00		Healthy Break	
11.00- 13.00	Module F	F. Assessment and Management of Type 2 Diabetes	Dr. Ali Ahsan Hemel Dr. Rina Rani Paul
13:00 - 14:00		Lunch & prayer break	
14:00- 14:10		Energizer Dance	
14:10 -15:15	Module G	G1. Healthy life-style: Basics of counseling	Dr. Priscilla Khyang Dr. Ali Ahsan Hemel
15:15 -15:30		Healthy Break	
15:30 -17:00	Module G	G2. Brief interventions for non-communicable disease risk factors: Tobacco cessation, healthy diet and physical activity	Dr. Rina Rani Paul Dr. Raisul Islam

Day 4

Time	Activity		Facilitator
08:30 -9:00		Recap No table of figures entries found.	
9:00 -10:45	Module H	H1. Develop and present team-based approach of implementing PEN intervention in existing health facility	Dr. Raisul Islam
10:45 -11:00		Healthy Break	
11:00 -12:30	Module H	H2. Simulation of service delivery in the PHC	All
12:30 - 13:30		Lunch & Prayer break	
13:30 -15:30	Evaluation	Evaluation: Objective Structured Practical Examination (OSPE) Post-test and evaluation	All
15:30 -15:45		Healthy Break	
15:45 -16:15	Closing	Closing and certificate distribution	All
16:15 -16:30	Post-closing	Administrative works	

Annex 1.2: Pre and post-test of 4-day PEN training



Training on Bangladesh Package of Essential Noncommunicable Disease Interventions (PEN) for Primary Health Care

Pre-Training Assessment/Post-training Assessment

Time: 20 minutes

Trainee Name: _____	Designation: _____	Date: ___/___/2022
Name of the healthcare facility: _____		Batch: _____

Read the following Case Scenario and answer the following questions

[নিচের গল্পটি পড়ে প্রশ্নগুলোর উত্তর দিন।]

Mst. Lutfa Begum, 64-year-old women presents again to the Upazila Health Complex. Two weeks ago, she came for a runny nose and her blood pressure was 154/86 mmHg. Today, her blood pressure is measured again, and it is 152/88 mmHg.

Lutfa weights 74kg and she is 5 feet 5 inches tall (1.68 meters). Her waist circumference is 94 cm.

Lutfa was diagnosed with diabetes two years ago but she stopped taking the prescribed medication after 1 year. Her random plasma glucose today is 14 mmol/L. Her cholesterol level is 5.2 mmol/L.

Lutfa tells the health care worker that she chews betel nut, but never smokes, although her husband smokes cigarettes every day in the house around her 2 grandchildren – her grandson ages 16 yrs and her granddaughter ages 10 yrs. Every afternoon, she goes for a brisk walk for 10 minutes around the neighborhood with her grandson.

She is a little concerned about her weight, and her brother died at the age of 43 from a heart attack. She eats one orange a day, and really likes soft drinks, cake and rice with *sutki vorta*.

[মোছাঃ লুতফা বেগম, ৬৪ বছর বয়স উপজেলা স্বাস্থ্য কমপ্লেক্সে এসেছেন। ২ সপ্তাহ আগেও তিনি সর্দি নিয়ে এসেছিলেন তখন তার রক্তচাপ ছিল ১৫৪/৮৬ মিলি মিটার মার্কারি। আজ তার রক্তচাপ পাওয়া গেছে ১৫২/৮৮ মিলি মিটার মার্কারি।

লুতফার ওজন ৭৪ কেজি এবং তার উচ্চতা ৫ ফিট ৫ ইঞ্চি (১.৬৮ মিটার)। তার কোমরের পরিধি (waist circumference) ৯৪ সে.মি.। লুতফার ২ বছর আগে ডায়াবেটিস রোগ নির্ণয় হয়েছিল, কিন্তু ১ বছর পর তিনি ডায়াবেটিসের ঔষধ খাওয়া ছেড়ে দিয়েছেন। আজ তার রক্তের র্যানডম গ্লুকোজের (random plasma glucose) পরিমাণ ১৪ মিলিমোল/লিটার। তার কোলেস্টেরল ৫.২ মিলিমোল/লিটার।

লুতফা স্বাস্থ্যকর্মীকে জানিয়েছেন যে, তিনি সুপারি খান কিন্তু কখনও ধূমপান করেননি। বাড়িতে তার স্বামী প্রতিদিন তাদের দুই নাতিনাতির সামনে ধূমপান করেন। তাদের নাতির বয়স ১৬ বছর এবং নাতির বয়স ১০ বছর। প্রতিদিন বিকালে লুতফা তার নাতির সাথে বাড়ির আশেপাশে ১০ মিনিট হেঁটে বেড়ান। তিনি তার ওজন নিয়ে কিছুটা চিন্তিত এবং তার ভাই ৪৩ বছর বয়সে হার্ট অ্যাটাকে মারা গেছেন। তিনি প্রতিদিন একটা কমলা খান এবং কোমল পানীয়, কেক, ভাত ও শুটকি ভর্তা তার অনেক পছন্দ।]

Answer the following questions: [নিচের প্রশ্নগুলোর উত্তর দিন]

1. Lutfa's risk of having a fatal heart attack or stroke in the next 10 years is: [আগামী ১০ বছরে লুতফার হার্ট অ্যাটাক অথবা স্ট্রোকের ঝুঁকি কত?] (circle)
 - a) <10% [$<10\%$]
 - b) 10-<20% [$10\% - <20\%$]

- c) 20-<30% [২০% - <৩০%]
d) 30-<40% [৩০% - <৪০%]
e) >40% [>৪০%]
2. Considering Lufta's weight and height, she is: [লুতফার উচ্চতা এবং ওজন অনুযায়ী তার পুষ্টির অবস্থা] (circle)
a) Underweight [কম ওজন]
b) Normal weight [স্বাভাবিক ওজন]
c) Overweight [অতিরিক্ত ওজন]
d) Obese [স্থূলতা]
3. If Lufta's diabetes remains uncontrolled, she is at risk of foot ulcers and amputation. [যদি লুতফার ডায়াবেটিস অনিয়ন্ত্রিত থাকে, তবে, তার পায়ে ঘা এবং অঙ্গহানির ঝুঁকি আছে] (circle)
a) True [সত্য]
b) False [মিথ্যা]
4. Lufta should be diagnosed with hypertension [লুতফার উচ্চ রক্তচাপ রোগ mbv³ হওয়া উচিত] (circle)
a) True [সত্য]
b) False [মিথ্যা]
5. Lufta's target for blood pressure control will be $\leq 140/90$ mmHg: [লুতফার রক্ত চাপ নিয়ন্ত্রনের লক্ষ্যমাত্রা $\leq 140/90$ মিলি মিটার মার্কারি] (circle)
a) True [সত্য]
b) False [মিথ্যা]
6. Lufta and her grandchildren are being exposed to secondhand smoke [লুতফা এবং তার নাতি নাতনি পরোক্ষ ধূমপানের শিকার] (circle)
a) True [সত্য]
b) False [মিথ্যা]
7. Lufta's family history of a heart attack is also a risk factor for her having a heart attack of stroke. [লুতফার হার্ট অ্যাটাকের পারিবারিক ইতিহাস তার জন্যও হার্ট অ্যাটাকের ঝুঁকি হিসাবে কাজ করেছে] (circle)
a) True [সত্য]
b) False [মিথ্যা]
8. Currently Lufta is meeting the recommended physical activity guidelines for adults [লুতফার বর্তমানে হাঁটার অভ্যাস প্রাপ্তবয়স্কদের শারীরিক পরিশ্রমের গাইডলাইন অনুযায়ী পর্যাপ্ত] (circle)
a) True [সত্য]
b) False [মিথ্যা]
9. Which of following foods that Lufta likes are high in salt? [লুতফার পছন্দের নিচের কোন খাবারটি অতিরিক্ত লবনযুক্ত?] (circle)
a) Orange [কমলা]
b) Sodas [কোমল পানীয়]

- c) Cake [কেক]
d) *Sutki vorta* [শুটকি ভর্তা]
10. The maximum recommended intake of salt is 2 teaspoons per day. [প্রতিদিন সর্বোচ্চ ২ চা চামচ লবন খাওয়ার সুপারিশ করা হয়েছে] (circle)
a) True [সত্য]
b) False [মিথ্যা]
11. Women of childbearing age having possibility of becoming pregnant should not be prescribed Losartan to control hypertension [সন্তান জন্মানের বয়স সীমার মধ্যে যেসব মহিলার গর্ভবতী হবার সম্ভাবনা আছে তাদের উচ্চ রক্তচাপের ঔষধ হিসেবে লোসারটান দেয়া উচিত নয়] (circle)
a) True [সত্য]
b) False [মিথ্যা]
12. Hydrochlorothiazide is the first line choice of drug to treat hypertension in primary health care in Bangladesh [বাংলাদেশের প্রাথমিক স্বাস্থ্যসেবা কেন্দ্রগুলোতে উচ্চ রক্তচাপের চিকিৎসায় হাইড্রোক্লোরোথায়াজাইড প্রথম পছন্দের ঔষধ হিসেবে নির্ধারিত] (circle)
a) True [সত্য]
b) False [মিথ্যা]
13. Metformin is the first line drug of choice for managing Type II diabetes in primary health care setting [বাংলাদেশের প্রাথমিক স্বাস্থ্যসেবা কেন্দ্রগুলোতে টাইপ ২ ডায়াবেটিসের চিকিৎসায় মেটফরমিন, ডায়াবেটিসের প্রথম পছন্দের ঔষধ হিসেবে নির্ধারিত] (circle)
a) True [সত্য]
b) False [মিথ্যা]
14. Patients with diabetes should have an eye exam every 3 years [ডায়াবেটিসের রোগীদের প্রতি তিন বছর পর পর চোখ পরীক্ষা করা উচিত] (circle)
a) True [সত্য]
b) False [মিথ্যা]
15. Patients presenting with blood pressure >200/120 mmHg should be urgently referred to a higher facility [কোন রোগীর রক্তচাপ > ২০০/১২০ মিমি মার্কারি পাওয়া গেলে তৎক্ষণাৎ তাকে উচ্চতর স্বাস্থ্য সেবা কেন্দ্রে রেফার করা উচিত] (circle)
a) True [সত্য]
b) False [মিথ্যা]
16. Tobacco kills approximately one third of its users: [তামাক ব্যবহারকারীদের এক তৃতীয়াংশই এটি সেবনের কারণে মারা যায়] (circle)
a) True [সত্য]
b) False [মিথ্যা]
17. How much fruits and vegetables should be eaten every day? [প্রতিদিন কি পরিমাণে ফল ও শাকসবজি খাওয়া উচিত?]
a) 100gm [১০০ গ্রাম]

- b) 200gm [২০০ গ্রাম]
- c) 400gm [৪০০ গ্রাম]
- d) 800gm [৮০০ গ্রাম]

18. Jorda, Sada pata are not as harmful as *bidi*, cigarettes. [জর্দা, সাদা পাতা বিড়ি সিগারেটের মতো অতটা ক্ষতিকর নয়।]

- a) True [সত্য]
- b) False [মিথ্যা]

19. Diabetes can be preventable in 80% cases. [৮০ ভাগ ডায়াবেটিস প্রতিরোধ করা সম্ভব।]

- a) True [সত্য]
- b) False [মিথ্যা]

20. Brief interventions are expensive and not effective ways to support persons to change behaviors, like stopping smoking [সংক্ষিপ্ত কাউন্সেলিং ev ব্রিফ ইন্টারভেনশন ব্যক্তির আচরণ পরিবর্তন করতে সহায়তা করার জন্য, যেমন ধূমপান ছেড়ে দেয়ার জন্য কার্যকরী নয়] (circle)

- a) True [সত্য]
- b) False [মিথ্যা]

21. Which of the following is the 1st step of brief intervention "5A" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ এ' মডেলের প্রথম ধাপ?]

- a. Approach [ঘনিষ্ঠ হওয়া]
- b. Ask [জিজ্ঞাসা করা]
- c. Assist [সাহায্য করা]
- d. Assess [নির্ণয় করা]
- e. Address [সম্বোধন করা]

22. Which of the following is the 2nd step of brief intervention "5A" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ এ' মডেলের দ্বিতীয় ধাপ?]

- a. Assist [সাহায্য করা]
- b. Allow [অনুমতি জ্ঞাপন]
- c. Address [সম্বোধন করা]
- d. Ask [জিজ্ঞাসা করা]
- e. Advice [উপদেশ]

23. Which of the following is the 3rd step of brief intervention "5A" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ এ' মডেলের তৃতীয় ধাপ?]

- a. Assess [নির্ণয় করা]
- b. Avail [গ্রহণ করা]
- c. Advice [উপদেশ]

- d. Ask [জিজ্ঞাসা করা]
- e. Assist [সাহায্য করা]

24. Which of the following is the 4th step of brief intervention "5A" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ এ' মডেলের চতুর্থ ধাপ?]

- a. Appreciate [প্রশংসা করা]
- b. Assist [সাহায্য করা]
- c. Assess [নির্ণয় করা]
- d. Arrange [ব্যবস্থা করা]
- e. Advice [উপদেশ]

25. Which of the following is the 5th step of brief intervention "5A" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ এ' মডেলের পঞ্চম ধাপ?]

- a. Ask [জিজ্ঞাসা করা]
- b. Arrange [ব্যবস্থা করা]
- c. Aid [সাহায্য করা]
- d. Advice [উপদেশ]
- e. Assist [সাহায্য করা]

26. Which of the following is the 1st step of brief intervention "5R" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ এ' মডেলের প্রথম ধাপ?]

- a. Refusal [প্রত্যাখ্যান]
- b. Relevance [প্রাসঙ্গিকতা]
- c. Resistance [প্রতিরোধ]
- d. Reward [পুরস্কার]
- e. Recall [মনে করা]

27. Which of the following is the 2nd step of brief intervention "5R" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ এ' মডেলের দ্বিতীয় ধাপ?]

- a. Refusal [প্রত্যাখ্যান]
- b. Resistance [প্রতিরোধ]
- c. Reward [পুরস্কার]
- d. Risk [ঝুঁকি]
- e. Renovation [পুনঃনির্মাণ]

28. Which of the following is the 3rd step of brief intervention "5R" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ আর' মডেলের তৃতীয় ধাপ]

- a. Reward [পুরস্কার]
- b. Risk [ঝুঁকি]
- c. Resistance [প্রতিরোধ]
- d. Roadblock [বঁধা]
- e. Repetition[পুনরাবৃত্তি]

29. Which of the following is the 4th step of brief intervention "5Rs" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ আর' মডেলের ৪র্থ ধাপ?]

- a. Resistance [প্রতিরোধ]
- b. Relation [সম্পর্ক]
- c. Risk [ঝুঁকি]
- d. Repetition[পুনরাবৃত্তি]
- e. Roadblock [বঁধা]

30. Which of the following is the 5th step of brief intervention "5R" model? [নিচের কোনটি সংক্ষিপ্ত কাউন্সেলিং 'ফাইভ আর " মডেলের ৫ম ধাপ?]

- a. Relation [সম্পর্ক]
- b. Repetition[পুনরাবৃত্তি]
- c. Risk [ঝুঁকি]
- d. Resistance [প্রতিরোধ]
- e. Roadblock [বঁধা]

Annex 1.3: Name of the facilitators for PEN trainings

Name of the session	Name of the facilitators, Organization
A. Overview of NCD burden and PEN as a primary health care approach to organizing and deliver essential NCD services through a team-based approach at a primary health care setting	Batch 1: Dr. Raisul Islam, WHO
	Batch 2: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 6: Dr. Farzana Akter Dorin
B. Overview of NCDs: Cardiovascular diseases (CVD) and Diabetes Mellitus	Batch 1: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 2: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 3: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 4: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 5: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 6: Dr. Raisul Islam, WHO
C1. Risk factors for non-communicable diseases: Tobacco use	Batch 1: Dr. Ali Ahsan Hemel , BRAC JPGSPH
	Batch 2: Dr. Raisul Islam, WHO
	Batch 3: Dr. Ali Ahsan Hemel , BRAC JPGSPH
	Batch 4: Dr. Ali Ahsan Hemel , BRAC JPGSPH
	Batch 5: Dr. Ali Ahsan Hemel , BRAC JPGSPH
	Batch 6: Dr. Farzana Akter Dorin
C2. Risk factors for non-communicable diseases: Unhealthy diet	Batch 1: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 2: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 6: Dr. Farzana Akter Dorin
C3. Risk factors for non-communicable diseases: Physical inactivity	Batch 1: Dr. Priscilla Khyang , BRAC JPGSPH
	Batch 2: Dr. Raisul Islam, WHO
	Batch 3: Dr. Priscilla Khyang , BRAC JPGSPH
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Priscilla Khyang , BRAC JPGSPH
	Batch 6: Dr. Rina Rani Paul, BRAC JPGSPH
C4. Risk factors for non-communicable diseases: Overweight and obesity	Batch 1: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 2: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 3: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 4: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 5: Dr. Ali Ahsan Hemel , BRAC JPGSPH

Name of the session	Name of the facilitators, Organization
	Batch 6: Dr. Rina Rani Paul, BRAC JPGSPH
D1. Total cardiovascular risk-based approach	Batch 1: Dr. Raisul Islam, WHO
	Batch 2: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 6: Dr. Syed Mahfuzul Huq
D2. Measurement of total cholesterol and test of urine using urine strips	Batch 1: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 2: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 6: Dr. Rina Rani Paul, BRAC JPGSPH
E. Assessment and Management of Hypertension	Batch 1: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 2: Dr. Raisul Islam, WHO
	Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 6: Dr. Khaleda Islam
F. Assessment and Management of Type 2 Diabetes	Batch 1: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 2: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 3: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 4: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 5: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 6: Dr. Rina Rani Paul, BRAC JPGSPH
G1. Healthy lifestyle: Basics of counseling	Batch 1: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 2: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 3: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Priscilla Khyang, BRAC JPGSPH
	Batch 6: Dr. Nahin Ahmed
G2. Brief interventions for non-communicable disease risk factors: Tobacco cessation, healthy diet and physical activity	Batch 1: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 2: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 4: Dr. Ali Ahsan Hemel, BRAC JPGSPH
	Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 6: Dr. Farzana Akter Dorin
H1. Develop and present team-based approach of implementing PEN intervention in existing health facility	Batch 1: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 2: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH

Name of the session	Name of the facilitators, Organization
	Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH
	Batch 6: Dr. Khaleda Islam
Simulation of service delivery at PHC	Batch 1: Dr. Rina Rani Paul, BRAC JPGSPH Batch 2: Dr. Rina Rani Paul, BRAC JPGSPH Batch 3: Dr. Rina Rani Paul, BRAC JPGSPH Batch 4: Dr. Rina Rani Paul, BRAC JPGSPH Batch 5: Dr. Rina Rani Paul, BRAC JPGSPH Batch 6: Dr. Rina Rani Paul, BRAC JPGSPH
OSPE	Facilitators from BRAC JPGSPH, and WHO

Annex 1.4: Participants' list for PEN training

Annex 1.4.1: Participants' list for PEN training-Batch 1

	Participant Name	Participant Designation	Participant Organization
1	Mishel Rosemary Does	Nurse	Greenhill
2	Shiju Shikder	Medical Officer	SALT FLI
3	Kalins Halder	Nurse	SALT FLI
4	Most. Sharmin Akter	Medical Assistant	RTMI
5	Soni Akter	Midwife	RTMI
6	Mst. Shapla Akther	Midwife	RTMI
7	Ishaat Nabila	Medical Officer	Save the Children
8	Dr. Md. Shahidul Islam	Medical Officer	Save the Children
9	Dr. Kaniz Fatema Shimu	Medical Officer	Global One
10	Dr. Md. Imran Hossain	Medical Officer	IRC
11	Foujia Akter	Midwife	IRC
12	Mst. Surovi Akter	Nurse	IRC
13	Md. Harun-Ar Rashed	Medical Assistant	IRC
14	Faisal Noor	Medical Officer	IRC
15	Mahmudul Hasan Mridul	Medical Assistant	IRC
16	Tania Akter	Midwife	IRC
17	Azad Hossain	Medical Assistant	MSF, OCB
18	Md. Sakhayet Hosen	Medical Assistant	MSF, OCB
19	Md. Sharif	Medical Assistant	HMBD Foundation
20	Dr. Rahana Parvin	Medical Officer	MedGlobal
21	Shipan Aktar	Midwife	MedGlobal
22	Md. Jahidul Islam	Medical Assistant	Health and Education for All (HAEFA)
23	Sanjay Tanchangya	Medical Officer	IOM
24	Sabekun Nahar	Nurse	GK

Annex 1.4.2: Participants' list for PEN training-Batch 2

SN	Participant Name	Participant Designation	Participant Organization
1	Dr. Mitaly Sarker	Medical Officer	Greenhill
2	Dr. Muntaha Rahman	Medical Officer	RTMI
3	Mst. Shahida Begum	Midwife	RTMI
4	Dr Roshidul Islam	Medical Officer	RHU NYP RC
5	Dr. M. Ishmam Kalam	Medical Officer	Save the Children
6	Bipi Rani Roy	Nurse	Save the Children
7	Jannatun Naim Santa	Nurse	MSF, OCB
8	Dr. Md. Easin Arafat	Medical Officer	IRC
9	Pallabi Kundu	Midwife	IRC
10	Habiba Akter	Nurse	IRC
11	Md Nymul Islam	Medical Assistant	IRC
12	Dr. Jannatul Ferdous Lopa	Medical Officer	IRC
13	Tuli Biswas	Medical Assistant	IRC
14	Mst. Nasima Akther	Midwife	IRC
15	Md. Jewel Rana	Medical Assistant	MSF, OCB
16	Md. Mehedi Hasan	Medical Assistant	MSF, OCB
17	Dr. Farhana Sarkar Rasmi	Medical Officer	MedGlobal
18	Momta Halder	Nurse	MedGlobal
19	Mst. Rokeya	Medical Assistant	Health and Education for All (HAEFA)
20	Asif Hannan	Medical Officer	IOM
21	Torpo Rozario	Medical Officer	IOM
22	S.M. Tareq Rahman	Medical Officer	IOM

SN	Participant Name	Participant Designation	Participant Organization
23	Nabila Nowshin Rafiq	Medical Officer	IOM
24	Dr. Md Asaduzzaman	Medical Officer	Health and Education for All (HAEFA)
25	Dr. Nishat Yasmin	Medical Officer	BRAC JPGSPH
26	Dr. Asaaduzzaman Noor	Medical Officer	BRAC JPGSPH

Annex 1.4.3: Participants' list for PEN training-Batch 3

SN	Participant Name	Participant Designation	Participant Organization
1	Dr. Toushidul Islam	Medical Officer	Greenhill
2	Dr. Raihana Aktar Lima	Medical Officer	RTMI
3	Monowara Akter	Medical Assistant	RTMI
4	Dr. Rozi Nahar	Medical Officer	Save the Children
5	Liza Akter	Nurse	Save the Children
6	Ritu Barua	Medical Officer	IRC
7	Dr. Rahima Khatun Dolon	Medical Officer	IRC
8	Kanika Ray	Midwife	IRC
9	Md. Sohag Mia	Medical Assistant	IRC
10	Kobir Hossain	Medical Assistant	IRC
11	Md. Hasan Hasibur Rahman	Medical Assistant	IRC
12	Akram Ullah	Medical Assistant	IRC
13	Asim Deb	Nurse	MSF, OCB
14	Md. Sohel Rana	Nurse	MSF, OCB

SN	Participant Name	Participant Designation	Participant Organization
15	Mourry Tania	Medical Assistant	MSF, OCB
16	Mojibur Rahman	Medical Assistant	MSF, OCB
17	Md. Shohag Miah	Medical Assistant	HMBD Foundation
18	Suhena Khatun	Midwife	MedGlobal
19	Md. Ayub Hossain	Medical Officer	Gonoshasthaya Kendra- Ukhiya Specialized Hospital(USH)
20	Dr. Atyia Fatema	Medical Officer	IOM
21	Dr. Imtiaz Tanvir	Medical Officer	IOM
22	Dr. Md. Golam Muttakin	Medical Officer	IOM
23	Mithun Sikari	Medical Assistant	IOM
24	Dr. Nazifa Tasnim Dea	Medical Officer	IOM

Annex 1.4.4: Participants' list for PEN training-Batch 4

SI	Participant Name	Participant Designation	Participant Organization
1	Dr. Md. Kaushik Ahamed Shuvo	Medical Officer	RTMI
2	Dr. Rehana Sultana Keya	Medical Officer	RTMI
3	Mst. Sayera Akter	Medical Assistant	RTMI
4	Most. Sabana Khatun	Midwife	RTMI
5	Md. Suman PK	Medical Assistant	HMBD Foundation
6	Dr. Asalin Musaffa Esha	Medical Officer	Prantic Unnayan Society
7	Suma Rani Das	Medical Assistant	Global One
8	Rezaul Karim	Medical Assistant	MedGlobal

SI	Participant Name	Participant Designation	Participant Organization
9	Rabeya Basori	Midwife	MedGlobal
10	Dr. Khadija Ahamed	Medical Officer	Save the Children
11	Dr. Mahmud Siddiqueei	Medical Officer	Save the Children
12	Dr. Md. Amdadul Haque	Medical Officer	Save the Children
13	Nitto Kumar Das	Medical Assistant	MSF, OCB
14	Dr. Md. Jahirul Islam	Medical Doctor	MSF, OCB
15	Dr. Saleha Islam	Medical Officer	MSF, OCB
16	Dr. Md. Fazlay Mahmud Bin Amin Molla	Medical Officer	MSF, OCB
17	Sabuj Halder	Nurse	MSF, OCB
18	Dr. Md. Saddam Hossan	Medical Officer	IRC
19	Ety	Midwife	IRC
20	Parvin Akter	Nurse	IRC
21	Mt. Mollika Khatun	Medical Assistant	IRC
22	MD. Zahidul Islam	Medical Officer	IRC
23	Sabia Akter	Midwife	IRC
24	Mst. Afia Wasima Asha	Nurse	IRC
25	Dr. Hamim Tassdik	Clinical Supervisor	IOM
26	Dr Dipankar Das	National Consultant	WHO
27	Dr Ishakul Kabir	National Consultant	WHO

Annex 1.4.5: Participants' list for PEN training-Batch 5

SN	Participant Name	Participant Designation	Participant Organization
1	Lutful Haider Rob Chowdury	Medical officer	IOM
2	Dr. Md. Ashikur Rahman	Medical officer	IOM
3	Dr Momtaz Hossain	Medical officer	Ukhiya specialised hospital
4	Toshita barua tithi	Medical officer	GK
5	Shanjida Akter sharmin	Midwife	MedGlobal Inc
6	Dr.Nasrin Sultana Homaira	Medical officer	Save the Children
7	Md Abeed Hasan	Physician	IOM
8	Dr. Mohammad Saiful Islam Khan	Medical officer	IOM
9	Md.Motakabbir Kafy	Medical Assistance	IRC
10	Jihan Akter	Nurse	RTMI
11	Champa begum	Midwife	RTMI
12	Nishat Anjum Anisha	Medical officer	IRC
13	Jubaida Jannat	Nurse	IRC
14	Dr Mst Sharmin Akther	Medical officer	MSF
15	Dr.Saifuddin Ahmed	Medical officer	Relief International
16	Fairuz Homayra Fariha	Medical officer	HAEFA
17	Md Mahatab Hossain	Medical Assistance	IOM
18	Sayem Uddin	Medical Assistance	IRC
19	Sarmin Akter	Medical Assistance	Green Hill
20	RUKSHANA AKTER	Midwife	IRC
21	Rashida khanom	Medical officer	MSF
22	SALMA AKTER	Medical Assistance	Save the children
23	Kazi Nazmus Sakib	Assistant Surgeon	UNHCR

24	Dr Mou das	Medical officer	IOM
25	MST.NASRIN AKTAR SIMU	Medical Assistance	IOM
26	Somit Mohan Ray	Medical Assistance	MSF- Belgium
27	MD. SORIFUL ISLAM	Medical Assistance	MSF-Belgium
28	Dr. Mostarina Sharmin	Medical officer	IRC
29	Faria Jannatul Ferdous	Medical officer	RTMI

Annex 1.4.6: Participants' list for PEN training- TOT Batch

S N	Participant Name	Participant Designation	Participant Organization
1	Dr.Fahad Bin Akhter	Assistant Health Coordinator	GK
2	Dr. Md.Shariful Islam Showrove	Clinical coordinator	PHD
3	Dr. Saiful Alam Prodhan	Medical Officer	FH Association
4	Dr. Md. Ariful Islam Akash	Technical Specialist- QA & CB	Save the Children
5	Md Abdullah Al Mamun	Senior Health Manager	International Rescue Committee
6	Dr. Syeed Ahmed Mahbub	Medical Team Lead	Green Hill
7	Dr. Hamim Tassdik	Clinical Supervisor	International Organization for Migration (IOM)
8	Dr. Md. Abeed Hasan	National Programme Officer (EPR)	International Organization for Migration (IOM)
9	Dr. Saifuddin Ahmed	Medical Officer	Relief International/IOM
10	Dr. Kazi Nazmus Sakib	Assitant Public Health Officer	UNHCR

S N	Participant Name	Participant Designation	Participant Organization
11	Dr. Imrul Kayes	Medical Officer Civil Surgeon	Civil Surgeon Office, Cox's Bazar
12	Dr. Kaninika Dastidar	Medical Officer Disease Control	Civil Surgeon Office, Cox's Bazar
13	Dr. Shah Fahim Ahmed Faisal	Medical Officer Disease Control	Civil Surgeon Office, Cox's Bazar
14	Dr. Watin Alam	National Consultant	World Health Organization
15	Dr. Ishakul Kabir	National Consultant	World Health Organization
16	Dr. Dipankar Das	National Consultant	World Health Organization
17	Asif Ahmed	National Consultant	World Health Organization
18	Dr. Tanjina Rahman	National Consultant	World Health Organization
19	Dr. Abu Noman Bin Azad	National Consultant	World Health Organization
20	Dr. Md. Abdul Kader	National Consultant	World Health Organization
21	Dr. Fahad Bin Hossain	Clinical Supervisor	International Rescue Committee
22	Dr. Ataur Rahman	Director	BRAC JPGSPH

Annex 1.5: Training evaluation form for PEN training



Training on package of essential non-communicable diseases (PEN) interventions for primary health care providers Training Evaluation Form Overall

Name: _____ Batch: _____ Date: ____/____/2022
(you might skip the name here if you want to give anonymous feedback)

1. রোগীদের অস্বাস্থ্যকর আচরণ পরিবর্তনে সহায়তা করতে ফাইভ এ এবং ফাইভ আর পদ্ধতি ব্যবহারে আপনি কতটা আত্মবিশ্বাসী? সঠিক উত্তর গোল করুন [How confident you are to apply the 5A's and 5R's technique to support patients to change their unhealthy behavior? Circle]

Not Much	A little	Somewhat confident	Confident	Very Confident
1	2	3	4	5

2. WHO risk prediction chart ব্যবহার করতে আপনি কতটা আত্মবিশ্বাসী? সঠিক উত্তর গোল করুন [How confident you are to use the WHO risk prediction chart?] [Circle]

Not Much	A little	Somewhat confident	Confident	Very Confident
1	2	3	4	5

3. জাতীয় নির্দেশিকা ব্যবহার করে উচ্চরক্তচাপের ব্যবস্থাপনা করতে আপনি কতটা আত্মবিশ্বাসী? সঠিক উত্তর গোল করুন [How confident you are to manage hypertensive patient based on the national guideline? Circle]

Not Much	A little	Somewhat confident	Confident	Very Confident
1	2	3	4	5

4. জাতীয় নির্দেশিকা ব্যবহার করে ডায়াবেটিসের ব্যবস্থাপনা করতে আপনি কতটা আত্মবিশ্বাসী? সঠিক উত্তর গোল করুন [How confident you are to manage Diabetic patients based on the national guideline? Circle]

Not Much	A little	Somewhat confident	Confident	Very Confident
1	2	3	4	5

5. এই প্রশিক্ষণ আপনার প্রত্যাশা কতটা পূরণ করেছে? সঠিক উত্তর গোল করুন [How much the training met your expectations? Circle]

Not Much	A little	Somewhat	Met expectations	Exceeded expectations
1	2	3	4	5

6. কোন সেশনগুলো আপনার সবচেয়ে ভাল লেগেছে? ভালোর ক্রম অনুসারে লিখুন [Please mention below the session(s) you enjoyed most]

- a) _____
- b) _____
- c) _____
- d) _____

7. কোন সেশনগুলো আপনার তেমন ভাল লাগেনি? খারাপ লাগার ক্রম অনুসারে লিখুন [Please mention below the session(s) you did not enjoy that much]

- a) _____
- b) _____
- c) _____
- d) _____

8. কোন বিষয়গুলো আরো ভালো হতে পারতো? [List of things that could have been better]

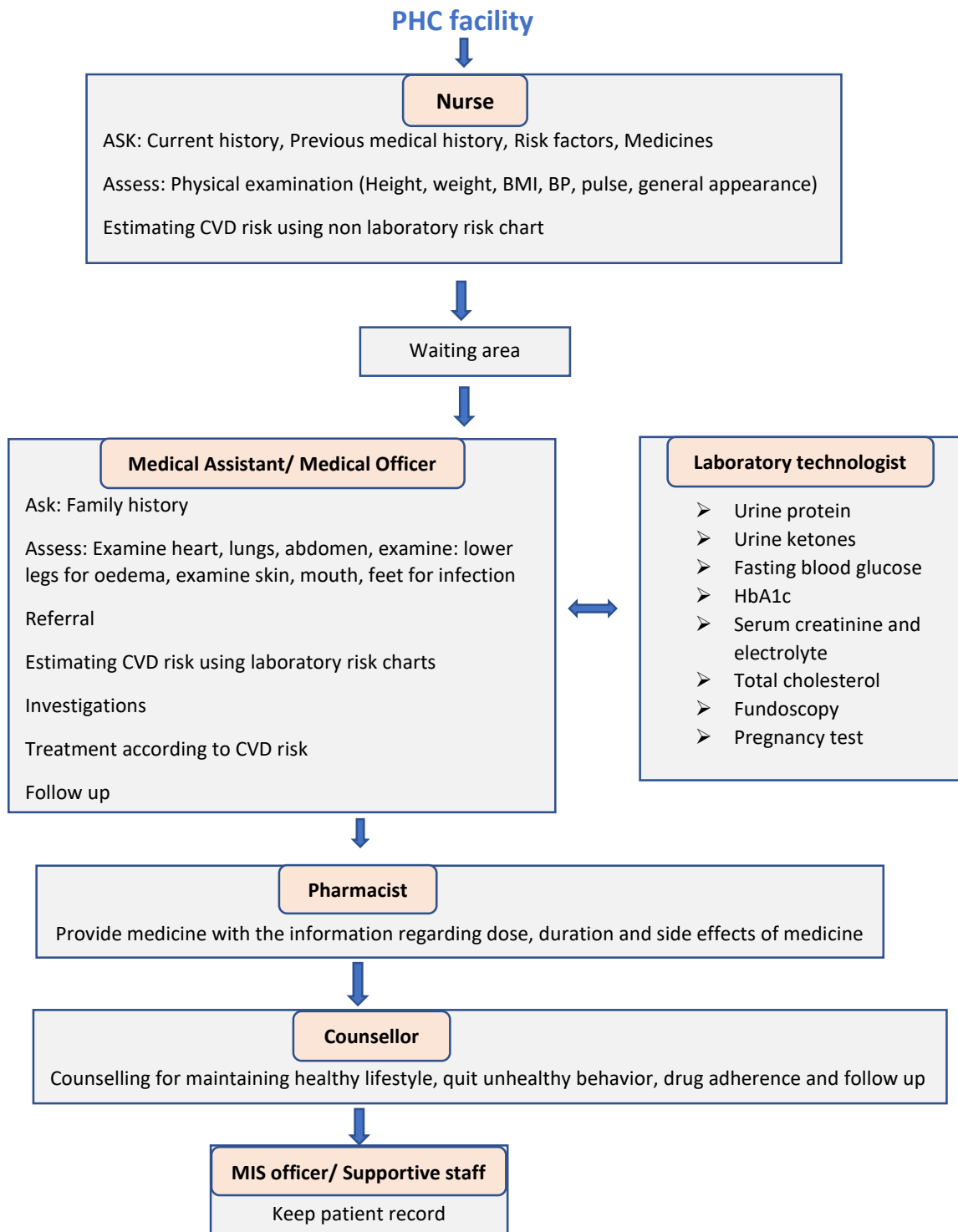
9. ট্রেনিং এর মান ও বিষয় নিয়ে সাধারণভাবে আপনার মন্তব্য লিখুন [Any general comment or suggestion on training quality and content]

10. Foods and logistics [Please comment on the overall quality of training logistics (tick in the appropriate column for each area)]

Area	Excellent	Good	Average	Bad	Very bad
Accommodation					
Foods					
Communication					
Training materials					

11. Please give your suggestions for improvement in the area of training accommodation, foods, materials, and other logistics arrangements for future training.

Annex 1.6: NCD patient flow-chart in the PHCs



Annex 1.7: Sample treatment card that can be used in the PHC

<p><u>A. PATIENT IDENTIFICATION:</u> ID No. _ _ _ _ _ _ _ _ _ _ Full name: _____ Gender: Male _ Female _ Others _ Age: _ _ Patient Type: NEW/FOLLOW-UP Address: Household no. _ _ _ _ _ _ _ _ _ _ Block no.: _ _ Camp no.: _ _ Upazilla: Ukhiya/Teknaf</p>	<p><u>Laboratory Examination</u> FBS: _ _ _ _ _ _ _ _ mmol/L HbA1C: _ _ _ % RBS: _ _ _ _ _ _ _ _ mmol/L Total cholesterol: _ _ _ _ _ _ _ _ mmol/L Urine Ketone: Negative / ± / + / ++ / +++ Urine Protein: Negative/ Trace / + / ++ / +++ <u>D. REFERRAL:</u> _ _ Referred to: _____ Reason: _____ <u>E. CVD RISK CATEGORY AND DIAGNOSIS</u> CVD Risk: _ _ _ % Category: Low/Moderate/High/Very High Clinical Diagnosis: _____ _____ _____ Target BP: _____/_____ mmHg Target FBS: _____ mmol/L</p>
<p><u>B. ASK</u> Current history: Any acute symptoms of: Heart attack _ Stroke _ Chief complaints: _____ Previous history: Heart attack _ Stroke _ HTN _ Diabetes _ Family history: Heart attack _ Stroke _ HTN _ Diabetes _ Medicines: _____ Risk factors: Smoking (12 months): _ Other Tobacco: _ Alcohol (30 days): _ F/V (≤ 5 servings): _ Sugar: _ Extra salt: _ Sugary drinks: _ Fats: _ P/A (≤ 150 mins/wk): _ </p>	<p><u>F. TREATMENT</u> <u>G. FOLLOW-UP DATE:</u> _____ / _____ / 202____</p>
<p><u>C. ASSESS (Physical Examination)</u> Ht: _ _ _ _ _ m Wt: _ _ _ _ _ Kg BMI: _ _ _ _ _ kg/m² SpO2 _ _ _ % BP: _____/_____ mmHg Pulse: _ _ _ _ /minute Temp: _____ °C R/R: _ _ /minute Anemia: _ Jaundice: _ Edema: _ Heart: _____ Lungs: _____ Abdomen _____ Legs and feet _____ Skin/Mouth _____</p>	<p><u>H. COUNSELING</u> Smoking (12 months): _ Other Tobacco: _ Alcohol (30 days): _ F/V (≤ 5 servings): _ Sugar: _ Extra salt: _ Sugary drinks: _ Fats: _ PA (≤ 150 mins/wk): _ M/A: _ Advice: _____</p>
<p><u>Staff Name:</u> _____</p>	<p><u>Signature:</u> _____</p>

Annex 1.8: Sample format for NCD register in the PHC

SN	Date	FDMN ID or NID/ Patient ID	Name	Smoker? Y/N	Sex/ Age(Y) M/F/O	New/ FU N/FU	Weight (kg)/ Height (Cm)	BMI	BP Sys/Dias	FBS/RBS /F/R	CVD Risk	Diagnosi s (circle)	Counseli ng on (circle)	Comme nts
1	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
2	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
3	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
4	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
5	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
6	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
7	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
8	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
9	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	
10	___/___/202_				M/F/O					F/R		HTN / DM/ Others	S / ST Salt / Fat PA / MA	

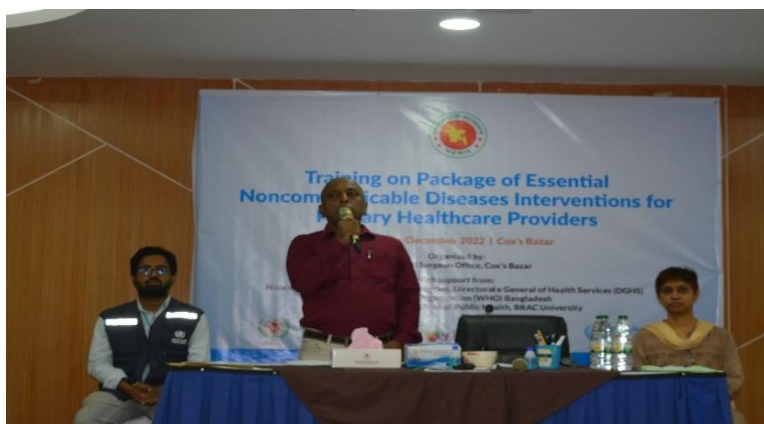
Annex 1.8: Important moments of the PEN training captured in photographs



Honorable Additional secretary Md. Saidur Rahman,
Health and Family Welfare Ministry:
Expressing his thoughts on the PEN training



Dr. Jorge Martinez, MD, Head of Sub-office, WHO,
Cox's Bazar: speaking in the opening session



Dr Fazla Elahi, Program Manager, NCDC, DGHS: speaking
in front of the participants during his supervisory visit



Prof. Malay Kanti Mridha, JPGSPH, BRACU: speaking
during the session



Dr. Rina Rani Paul, Consultant, BRAC JPGSPH



Dr Ali Ahsan Hemel, Research Medical officer, BRAC JPGSPH



Dr Priscilla Khyang, Senior Research Assistant, BRAC JPGSPH



Dr. Raisul Islam, NCD Officer, WHO Cox's Bazar sub-office



Dr. Nahin Ahmed, Study physician, ICDDR, B



Physical Activity during session



All participants are taking part in physical activity



Practical session on anthropometric measurement



Participants practicing height measurement technique



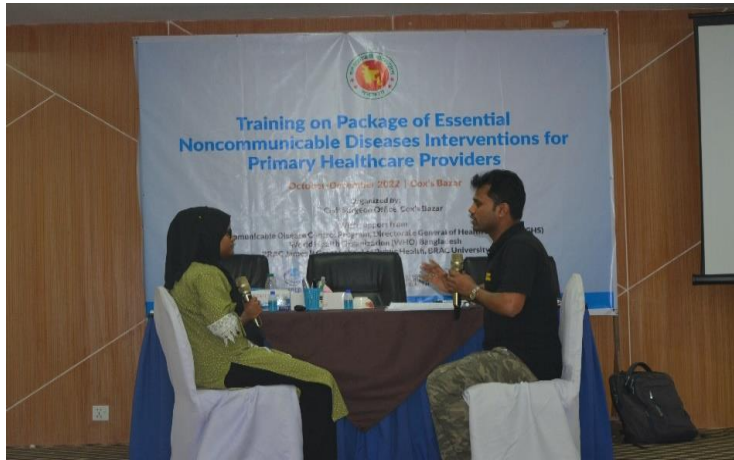
Participants practicing waist circumference measurement



Group work: CVD Risk based management



Presenting poster on CVD Risk based management exercise



Role play: Brief intervention (5A and 5R Counseling)



Exercise on NCD care delivery at PHC level



Group work during the ToT



Physical activity exercise with the participants after the training session



Participants sharing his experience during the closing session



Ending ceremony and participants receiving certificates from Jakia Parvin (Joint Secretary)



Supportive supervision visit by Dr. Priscilla Khyang and Dr. Nishat Yasmin



NCD presentation and control district coordination committee meeting at Cox's Bazar