Reducing Dietary Related Risks associated with Non-Communicable Diseases in Bangladesh (RDRNCD)

Technical Report
Noncommunicable Disease in Bangladesh: Policies, Program Implementation, Challenges and Way Forward

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List of Abbreviations

AHI - Assistant Health Inspector
BP - Blood pressure
CC - Community Clinic
CG - Community Group
CSG - Community Support Group
CVD - Cardiovascular disease
DM - diabetes mellitus
DP - Development partners
FWA - Family Welfare Assistant
HA-Health Assistant
HPNSP - Health, Population and Nutrition Sector Program
HTN - Hypertension
IEC - Information, Education and Communication
MHV - Multipurpose Health Volunteer
MO-Medical Officer
MSAP - Multisectoral Action Plan
MNCC - Multisectoral NCD Coordination Committee
NCD - Non-Communicable Disease
NGO - Nongovernment Organization
OP - Operation Plan
PHC - Primary Health Care
RPG - Random Plasma Glucose
SACMO - Sub Assistant Community Medical Officer
SBCC - Social Behaviour Change Communication
UHC - Upazila Health Complex
UH&FPO - Upazila Health and Family Planning Officer
USC - Union Sub-center
UH&FWC - Union Health and Family Welfare Centre
WHO - World Health Organization
WHO-PEN - Package of Essential NCD interventions

Title

Noncommunicable Disease in Bangladesh: Policies, Program Implementation, Challenges and Way Forward

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Abstract

Background

It is estimated that NCD is contributing about 67% of mortality with 22% risk of premature deaths in Bangladesh though deaths from infectious diseases and other causes declined with public health intervention. Moreover, National Health System review in 2017 found that only 5 out of 10 medicines which are essential and categorized as 'generally available' to treat major NCDs were supplied. With this backdrop the write-up shares an overview of NCD related policies, programs, challenges and way forward of the country.

Policies

Recently developed policy documents prioritized NCD prevention and control e.g. 4th Health, Nutrition and Population Strategic Investment Plan, 4th Health, Population and Nutrition Sector Program with NCD operation plan, National protocol for management of NCD at PHC, Multisectoral action plan with a three-year operational plan, Essential Health Services Package etc. These policy documents highlighted low-cost high impact interventions focusing primary health care.

Programs

The NCD control program contextualized WHO package of essential NCD interventions to develop NCD Management Protocol for PHC which is focusing screening and management of NCDs based on total risk assessment, using simple guideline for diagnosis, treatment and referral. Currently this protocol implementation is going on in 30 subdistricts along with capacity development, supply of drugs and diagnostics etc. For prevention of NCDs program is using multisectoral action plan with "Health in all policy and whole of the society approach" involving stakeholders and community health workers for lifestyle modification of people. Creating awareness and engaging community to take

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responsibility of own health is the objective so that they may avail health care for screening, treatment and follow-up.

Conclusion and recommendations

While implementing NCD management protocol, the program is facing challenges e.g. services providers doesn't have the mindset for team approach or adherence to protocol, the community has misconception regarding NCD and not yet ready to accept lifestyle approach for prevention. In spite of odds, different innovative initiatives are taken off where program, development partners and stakeholders are working together and waiting to scale up the lessons learned within shortest possible time.

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Introduction

Noncommunicable diseases (NCDs) are collectively responsible for almost 70% of all deaths worldwide and takes prematurely before the age of 70 about 16 million lives annually. Almost three quarters of all NCD deaths, and 82% of premature deaths occur in low- and middle-income countries. However according to World Health Organization (WHO) investing just US$ 1 to 3 per person per year, countries can dramatically reduce illness and death from NCDs (World Health Organization 2015).

The main types of NCDs are cardiovascular diseases (heart attacks and stroke), cancers, chronic respiratory diseases (chronic obstructive pulmonary disease and asthma) and diabetes which are also known as chronic diseases and are the result of combination of genetic, physiological, environmental and behavioral factors (World Health Organization 2018b). The risk factors for NCD include modifiable behavioural factors (tobacco use, unhealthy diet, harmful use of alcohol, physical inactivity, air pollution) which may give rise to metabolic risk factors, (raised blood pressure, raised blood cholesterol, raised blood glucose and overweight or obesity) and all are linked to underlying social determinants (World Health Organization 2019a) as well as commercial determinants of health (World Health Organization 2018e). Hypertension though remains widely undetected, undertreated and poorly controlled, is a major risk factor to cardiovascular disease (CVD) and increases three times more risk than that of normotensive person of same age (Kannel 1993). Particularly in low- and middle-income countries multiple barriers have been found in accessing to cardiovascular medicines in terms of availability, affordability, accessibility, acceptability and quality of medicine (Wirtz et al. 2016).

With gradual economic development, improved public health intervention at primary health care (PHC) level, deaths from infectious diseases, maternal and perinatal causes are declining in Bangladesh while deaths from NCDS are rapidly rising. It is estimated that about

580,000 deaths are caused by NCD annually (67%) and there is 22% risk of premature deaths from NCDs in the country (World Health Organization 2017) . In 2017 Bangladesh National Health System was reviewed and looked for medicines which were essential to treat major NCDs and categorized as 'generally available'. It was found that only 5 out of 10 medicines are available (World Health Organization 2018c).

WHO introduced a package of essential NCD interventions (WHO-PEN) for NCD management at PHC facilities which is cost effective and can be delivered in resource poor setting to an acceptable quality. The package provides technical guidance in integrating interventions in the health system and includes protocols for treatment and simple, affordable tools (e.g. clinical measurements, simple laboratory testing, CVD risk assessment charts, blood pressure measurement devices etc.) for early detection. These tools may be used for screening to identify peoples at risk for heart attacks or strokes and bringing them under Risk-based management in PHC settings (World Health Organization 2018d, 2018a).

Policy documents for NCD in Bangladesh

1. The 4th Health, Nutrition and Population Strategic Investment Plan - the document recognizes the importance of NCD control as an important agenda and highlighted the linkage to Sustainable Development Goals of the United Nations (Ministry of Health and Family Welfare 2016b).

2. The 4th Health, Population and Nutrition Sector Program (4th HPNSP) - the implementation period of 4th HPNSP is from January 2017 to June 2022. The NCD Control operation plan (OP) of HPNSP detailed out the activities to be conducted to address NCD and allocated budget to implement NCD management program. The objectives of the OP are as follows (Ministry of Health and Family Welfare 2017);

The general objective is to reduce mortality and morbidity of NCDs through control of risk factors and improving health service delivery

The specific objectives address to

- Policy implementation of NCDs, risk factors, and determinants
- Surveillance of NCDs, risk factors, and public health interventions
- Social, economic and commercial determinants of NCDs
- Lifestyle modification of community

3. National protocol for management of NCD at PHC level - The NCD control program contextualized the WHO PEN and developed the NCD Management Protocol for the PHC setting of Bangladesh. The protocol is customized for screening and management of hypertension, diabetes and CVD based on total risk assessment using simple guideline for diagnosis, treatment and referral (Ministry of Health and Family Welfare 2019b). While developing the national protocol, the program also captured the lessons learned from the first piloting of WHO PEN model in Debhata, one sub-district in Satkhira district in 2012. The implementation was supported by WHO country office (Zaman MM, Ullah AKMJ, Bhuiyan MR, Karim MN 2016).

4. The multisectoral action plan (MSAP) with a three-year operational plan - currently the government's health care system is giving more importance to the effective prevention and control of NCD nationwide. Therefore, the ministry of health and family welfare (MOH&FW) developed a MSAP with a three-year OP with the technical assistance of WHO. This is in alignment of 4th HPNSP and is a blueprint for key stakeholders. The first OP of MSAP implementation is going on from July 2018 to June 2021 and the next one will be developed for 2025 targets. The MSAP is addressing NCD risk factors through 'Health in all Policy with Whole Society Approach' engaging stakeholders and addressing public policies outside the health sectors. This approach is targeting 'Lifestyle Modification' of community to prevent risk factors and to achieve NCD targets for 2025. This requires coordinated, collaborative effort of 21 ministries, and different institutions, organizations, professional

associations, civil society, academia, research institutes, Nongovernment Organizations (NGOs), development partners etc. The low-cost high impact activities addressed are categorized into following areas (Ministry of Health and Family Welfare 2018);

- Advocacy, leadership and partnership - a national multisectoral NCD coordination committee is formed to act in this area to raise awareness to prevent NCD epidemic.
- Health promotion and risk reduction - social behaviour change communication (SBCC) is introduced nationwide to increase health literacy of population for NCD risk reduction
- Health system strengthening - this is important to improve efficiency and coverage of NCD services so that no one should left behind and universal health coverage is achieved.
- Surveillance, monitoring, evaluation and research - NCD OP implementation, progress monitoring, impact evaluation with identification of further research area is important. The NCD control program of DGHS will compile an annual consolidated progress report for prime minister's office.

5. The Bangladesh's Essential Health Services Package - includes prevention and management of NCD services focusing at PHC facilities (Ministry of Health and Family Welfare 2016a).

NCD management by NCD control program

The Goal of NCD management program is to reduce premature mortality (death between the ages of 30 and 69 years) from NCD by one third by 2030 which is currently 22% (United Nations General Assembly 2015; World Health Organization 2019c).

The Objectives of the NCD management initiative are;

- **The general objective -** is to achieve universal health coverage for NCD management.
- **The specific objectives are**

A. Prevention of risk factors of NCD

B. Control of NCD

The Strategies

The strategies decided by the program has two components which are (World Health Organization 2013);

- **Lifestyle modification** - is the strategy for prevention of risk factors with 'Health in all Policy and whole of the society' approach.
- **Screening, treatment and follow-up -** is the strategy to control NCD. At PHC setting implementation of 'National Protocol for Management of Diabetes and Hypertension' (Ministry of Health and Family Welfare 2019b) with a patient centred approach for overall management of NCD implementation has started. This needs to ensure strengthening of health System which is allowing health care providers to do early detection and treatment. The front-line health care providers are doing follow-up of patient at household level ensuring drug compliance, rehabilitation and palliative care ultimately encouraging the family and the patient taking responsibility of own health.

The initiatives

The NCD control program took rigorous initiative to implement the MSAP and NCD Management Protocol starting with few subdistricts and gradually scaling up. On October 2019 about 30 subdistricts are implementing the national NCD management protocol and different development partners (DPs) are supporting different innovative approach, lessons learned of which will be scaled up nationally.

A. Initiatives for prevention of risk factors are as follows;

- **Implementation of MSAP -** The Multisectoral NCD Coordination Committee (MNCC) has been formed with specific terms of references (TOR) for all level national, divisional, district and upzila and institutionalized through gadget

notification. The National MNCC is supporting integrating of NCD prevention and control in the policies and programs of relevant Ministries and agencies and meeting six monthly to review the progress. Meanwhile, the MOH&FW and NCD control program arranged series of meetings with different ministries and other stakeholders (World Health Organization 2019b). The divisional, district and Upazila level committees are getting operationalized gradually to support cross sectoral coordination to mainstream NCD prevention and control at district, Upazila and community levels (Ministry of Health and Family Welfare 2018).

- **Stakeholders' involvement -** initiatives have been taken to involve the local government bodies (City Corporation, Upazila or Union Parishad), Schools, Masjids, local institutions, influential, political personnel for lifestyle modification initiatives. Some of such activities are 'Healthy City', NCD prevention at schools, Masjids for sensitization and advocacy activities etc.
- **Law enforcement** - This is important to support Low-cost, high impact intervention like tobacco control (Ministry of Law and Parliamentary Affairs 2013), harmful use of alcohol, banning energy drinks and trans-fat consumption, salt reduction, clean footpath etc. Training of Magistrate, Sanitary Inspectors, law enforcing authorities and concerned department personnel is to be arranged to conduct activities like 'Mobile court', 'Prosecution in court and enforce certain clauses of tobacco control law' by Sanitary Inspectors etc.
- **Community awareness, engagement and empowerment** - community group (CG), community support group (CSG), Multipurpose Health Volunteer (MHV) etc. who are attached to community clinic (CC) are creating awareness, engaging and empowering the community for lifestyle modification, health promotion, drug compliance and follow up to control NCD. Training with customized material are

being arranged for them (Ministry of Health and Family Welfare 2019a). Information, Education and Communication (IEC) materials are being developed to be used by this group in the community. A national strategy and action plan for IEC material development is going on.

- **Mass media campaign and journalist's capacity development -** mass media campaign has been started for community awareness, engagement and empowerment so that the community may take the responsibility of own health, rehabilitation at family and individual level. Journalists need to be oriented and trained on specific NCD issues so that they may convey the proper message and correct information using print and electronic media and contribute creating awareness in the community.

B. Initiatives for control of NCD

Proper implementation of NCD management protocol is required to control and treat NCDs (Ministry of Health and Family Welfare 2019b). To achieve that addressing health system strengthening to build NCD integrated PHC is required. The initiatives are as follows;

- **Prioritize patient-centred community - based care** which starts at community with lifestyle modification, screening of high-risk groups, management at Upazila Health Complex (UHC) and establishing mechanism for necessary referral, back referral and follow up of patients at community and household level. Managers and service providers need to be oriented about the protocol and referral pathway. Establishing effective referral pathway is important to ensure implementation of management protocol
- **Identification of high-risk groups -** Screening to identify high-risk groups is being done at facilities of three different levels which are community, Union and Upazila (sub-district). To reach the doorstep of community and to have a wide range of coverage the facilities involved in screening are included from both directorate

general of health services (DGHS) and directorate general of family planning (DGFP). The enlisted facilities are CC, Union Subcentre (USC), Union Health and Family Welfare Centre (UH&FWC), UHC.

- **Capacity building of health care providers -** tailormade and team approach-based training is designed for different cadres of health personnel on NCD Management Protocol e.g. Competency-based training for health care providers for management of NCDs,
- **Orientation of other health personnel -** Preparation and delivery of 'Orientation package' for different groups of health personnel is going on e.g. senior managers like Civil Surgeon, Upazila Health and Family Planning Officer (UH&FPO), Upazila Family Planning Officer, other staff of UHC (Pharmacists, Storekeeper, Medical Technologists etc.), private practitioners and NGO health care providers, which is crucial for effective implementation of NCD management protocol.
- **Essential medicines and biochemical tests -** Ensuring uninterrupted supply of essential medicines, core set of laboratory investigations, equipment, logistics at facilities is prerequisite for effective implementation of NCD management protocol. NCD control program from its OP is purchasing and supplying the drugs, reagents and strips for minimum biochemical tests and trying to ensure supply chain management. Standard list of equipment and logistics has developed.
- **Improving service delivery by task shifting** - reassignment of clinical and nonclinical task from one type of health personnel to another is going on to ensure that the health services is provided efficiently.
- **Task sharing and team-based care -** is a strategic redistribution of work among members where all the members share some responsibilities. With this approach

patient is benefited from shorter waiting time and better follow-up, whereas the physician's time is better utilized for patient care.

- **Physical facility of NCD screening room and waiting area -** rearranging physical facility in spite of limited resource is required for proper delivery of NCD management protocol. The screening room should accommodate Nurse or Sub Assistant Community Medical Officer (SACMO) who will be doing the initial measurements, recording, supply of medicine and follow-up. The required equipment, registers, patient health card, referral slip, drugs etc. is also arranged in the screening room. In the patient waiting area counselling and behaviour change communication for lifestyle modification is being done by health education officer, nurse, SACMO or counsellor using electronic monitor and IEC materials available.
- **Ensuring quality of care** through supportive supervision **-** A framework along with checklist with a pool of resource persons need to be developed to conduct monitoring and supportive supervision to ensure quality of care provided.
- **Rehabilitation at family and in community -** the frontline health workers are doing training of patient and family members on drug compliance, lifestyle modification and rehabilitation which is crucial for proper control and management of NCDs.
- **Individual and cohort monitoring through information system -** DGHS is developing software to tract individual patient which will ultimately led to cohort-based monitoring. This requires ensuring registration, reporting and Data management of NCD patients and is crucial for the sustainability of program.
- **Indicators of NCD -** for monitoring and evaluation of program effectiveness using important. DGHS started developing monitoring indicators to measure program effectiveness using DHIS2.

- **District monitoring and supervision officer** - in the initial phase of the program assigning specific personnel as district monitoring and supervision officer is strongly recommended. This position may be supported by the development partners.

NCD management protocol implementation (Figure 1)

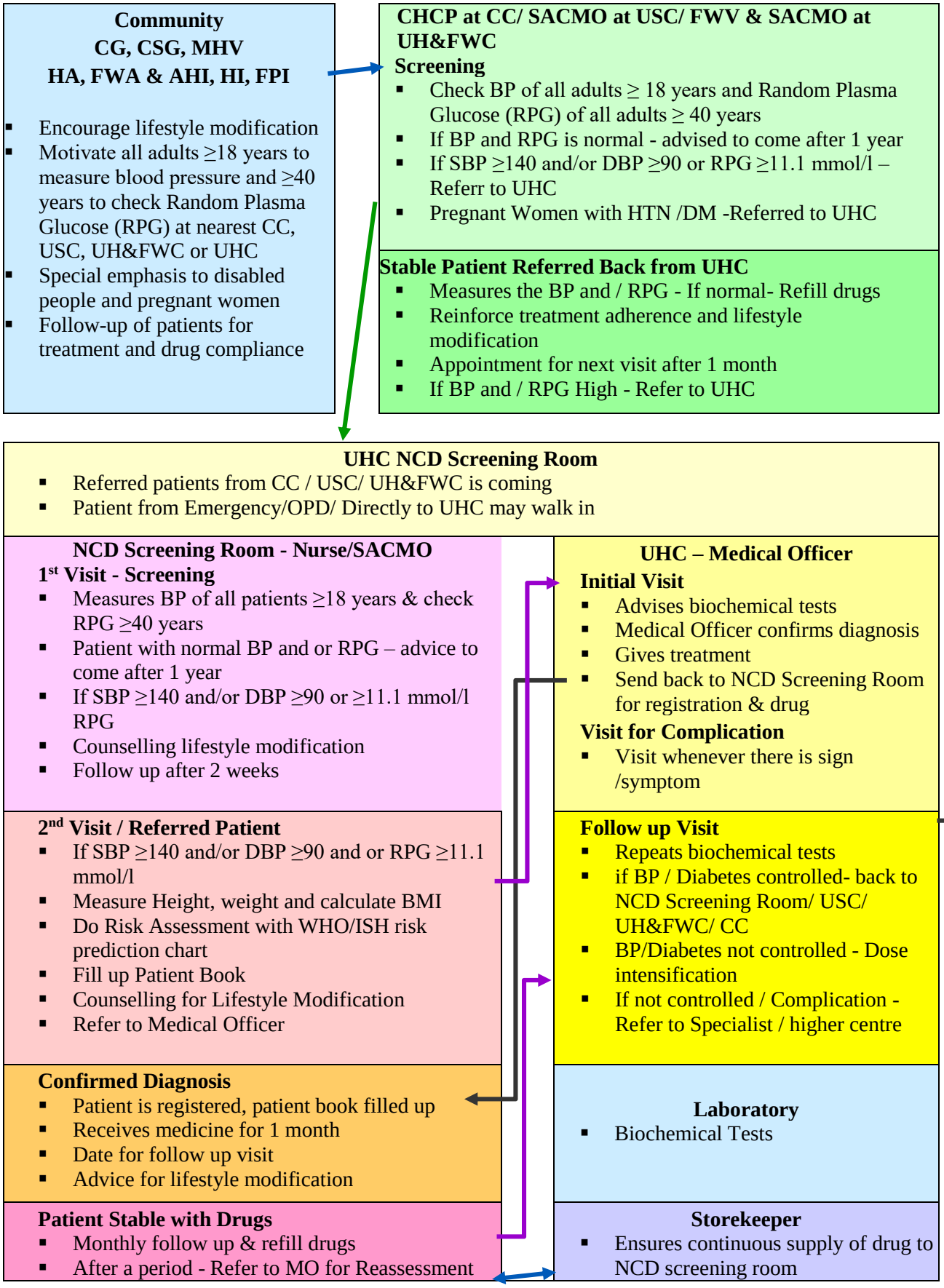

Figure 1: NCD Management Protocol from community to PHC with Upward and Backward Referral

At community

The health care providers at the community are Health Assistant (HA), from DGHS side and Family Welfare Assistant (FWA) from DGFP side. The supervisors of the HA are Assistant Health Inspector (AHI), Health Inspector and that of the FWA is Family Planning Inspector who are also involved with the community. In addition to them the members of CG, CSG, MHV are also working in the community (Ministry of Health and Family Welfare 2019a). At community the health care providers are doing preventive, promotive, follow-up and rehabilitative activities through interpersonal communication (IPC) and SBCC (Johns Hopkins Centre for Communication Program. 2019).

The activities they are performing at the community are as follows;

- Creating awareness about NCD and empowering with knowledge and information
- Motivating community and engaging them for life style modification for NCD prevention and control
- Counselling to change care seeking practice of all adults aged ≥18 years to measure blood pressure (BP) and all aged ≥40 years to check Random Plasma Glucose (RPG) and the high-risk groups to check both BP and RPG at nearest Community Clinic, Union Subcentre, UH&FWC or NCD screening room of UHC.
- Emphasizing all pregnant women to check BP and RPG during ANC
- Emphasizing all people with disability to check BP and RPG
- Engaging community leaders for program ownership so that they may take initiative for resource mobilization within the community

At Community Clinic, Union Sub-centre and Union Health and Family Welfare Centre

The health personnel working at CC is the Community Health Care Provider, at USC is the SACMO and at the UH&FWC the Family Welfare Visitor and the SACMO. The following activities are performed at these centres;

Screening, Referral and Follow-up

- Measuring the blood pressure (BP) of all adults ≥ 18 years, random plasma glucose (RPG) of all adults ≥ 40 years and recording the findings in a health book for each person
- If the results are normal following the protocol, the person is advised for lifestyle modification and come for follow-up (after 1 year if age is <40 years and after 6 months if age is ≥ 40 years).
- Screening positive patients (BP and or RPG is higher than normal) are referred to the NCD screening room of UHC.
- The patients whose Hypertension (HTN) and or Diabetes Mellitus (DM) is confirmed by a Medical Officer (MO) at the UHC, received treatment and is under control s/he may receive follow-up and drug refilling (awaits approval) from the CC, USC and UH&FWC
- The stable patient is be referred back to the NCD screening room for biochemical tests and reassessment by a doctor following the protocol.
- All the patients of HTN and / DM is registered when diagnosed for the first time and during each follow-up visit which gives the number of new and follow-up patients every month.

At Upazila health complex

NCD screening room

A patient may be referred from CC, USC, UH&FWC or from the emergency or outpatient department of the UHC to the NCD screening room, or may directly walk in there. The Nurse / SACMO at NCD screening room is doing the following activities;

- **New patient** - same standard screening procedures is followed.
- **Screening positive or referred patients -** the nurse/ SACMO is doing the followings
  - Measuring weight, height and calculating BMI
  - Doing risk assessment using WHO/ISH risk prediction chart of patients ≥ 40 years
  - Recording the findings in patient health card
  - Refereeing the patient to the Medical Officer (MO)

The MO - is doing the following activities

- Advising the baseline biochemical tests
- Confirming the diagnosis of NCDs (HTN, DM, comorbidities)
- Prescribing drugs following national protocol and sending the patient back in the NCD screening room.
- Referring the patient to next level if not controlled after dose intensification, having complication or very serious.

Patient with confirmed diagnosis and prescription

Once the diagnosis is confirmed and treatment is given by the MO, the patient comes back to the NCD screening room where nurse/SACMO will

- Register the patient
- Gives the medicine for minimum 1 month
- Advises on lifestyle modification and drug compliances
- Records the date for follow-up visit before one month in the patient book so that the patient should have continuous supply of drug.

Follow-up visit

- Routine check-up is done at NCD screening room in a follow-up visit, if the patient is stable, he receives drug for 1 month and the process repeats.
- The patient revisits the MO for biochemical check-up and reassessment following protocol and if stable is referred back to the CC, USC or UH&FWC which one is nearby to patient's house.

Monthly Reporting

The NCD screening room in-charge Nurse /SACMO is doing monthly reporting and the data will be uploaded to DHIS2 by the statistician as soon as the software is updated.

Upazila health and family planning officer

At UHC, UH&FPO is holding the main responsibility for implementing NCD management protocol and multisectoral coordination for 'Healthy Upazila' initiative to help lifestyle modification of community. S/He will be doing the following activities;

- Setting up NCD screening room,
- Assigning nurse and / SACMO to run the NCD screening room
- Assigning and Medical Officer for NCD Management.
- Arranges counselling**,** health education and social behaviour change communication at patient waiting area.
- Arranging training and orientation of concerned staff
- Ensuring uninterrupted supply of drug, logistics, equipment, protocols, and IEC materials.
- Coordinating with health facilities for proper referral from community, up to specialized hospitals and backward referral and rehabilitation at community.
- Actively monitoring the program, and doing supportive supervision.
- Ensuring monthly reporting.

Challenges and way forward

Many challenges are faced in preventing and controlling NCDs which are as follows;

- **Team Approach -** a new concept to physicians who are not accustomed to it yet. Their attitude and reactions to other team members (Nurse, SACMO, nonclinical staff) needs to be addressed through increased communication. Moreover, patient's preference for senior physicians needs to be changed.
- **Staff orientation -** All staff need to be aware about the NCD management program so that they can help implementing the program. Conducting tailor made orientation workshop for all staff and the managers is important.
- **Training -** rapid turnover of trained staff and retention of training is a serious issue which needs to be addressed by frequent and repeated technical training of all staff involved in NCD patient management.
- **Supply chain management -** Ensuring efficient and timely management of supply of drugs, logistics, equipment is a challenge as the record keeping is manual. Developing Electronic Logistic Management Information System (ELMIS) is important to address the issues. Also, there is apprehension of gap period in supply where development partners may need to support.
- **Referral -** functional referral mechanism is absent. Transport support for referred patient is required which may be addressed by external resource mobilization.
- **Registration and Record Keeping** - currently this is manual, which is a huge challenge for the nurse/ SACMO with increased chance of human error. Developing database for registration and recordkeeping will not only decrease workload but will ensure timely reporting.
- **Patient Follow-up -** Monitoring and follow up of individual patient is absent now, which may be established incorporating Mobile phone in the system.

- **Monthly Reporting** - Proper NCD data capturing is absent therefore, there is need to update the database in DHIS2 for the monthly reporting.
- **Monitoring and supportive supervision -** this is practically non-existing. To ensure quality program delivery developing a monitoring and supportive supervision framework with observation checklist and deploying a designated person in system is important.
- **Multisectoral Coordination** for lifestyle modification though crucial for prevention of NCD risk factors, yet all stakeholders don't have clear understanding how they will be contributing from their perspective. More and regular coordination among stakeholders is important
- **Health Education & Social Behaviour Change Communication -** conducting regular health education and counselling session in the patient waiting area is currently not done regularly. Also, conducting rigorous SBCC session at the community to address lifestyle modification is crucial. Trained counsellor and health education officer to perform the activities along with enough audio-visual material, electronic display monitor and IEC material is essential at patient waiting area.
- **Mass communication and display material -** there is huge need of mass communication and display material to create awareness among the community.

Conclusion

Though with 4th HPNSP Bangladesh started addressing NCD, yet it is taking sometime to create visible change. With highest level of commitment and policy documents in hand, while implementing NCD management protocol, the program is facing challenges e.g. services providers doesn't have the mindset for team approach or adherence to protocol, the community has misconception regarding NCD and not yet ready to accept lifestyle approach for prevention of risk factors. In spite of odds, different innovative initiatives are

taken off where program, development partners and stakeholders are working together and waiting to scale up the lessons learned and good practices within shortest possible time. PHC system strengthening for NCD care through implementation of NCD management protocol and MSAP implementation for prevention of NCD risk factors is the only way to ensure universal health coverage for NCD and to reduce out of pocket expenditure.

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