The People's Republic of
Bangladesh

Ministry of Health and
Family Welfare

# Data Collection Survey for Universal Health Coverage Promotion Project in the People's Republic of Bangladesh

# Final Report

**February 2018**

**Japan International Cooperation Agency (JICA)**

**TA Networking Corp.**

| |
|---|
| **4R** |
| **JR (先)** |
| **18-005** |

**Currency**

| |
|---|
| 1Taka＝1.38Yen<br>（as of November 2017） |

# Abbreviations

| | |
|---|---|
| A/C | Air Conditioner |
| ADB | Asian Development Bank |
| ADP | Annual Development Program |
| BCC | Behavior Change Communication |
| ANC | Antenatal Care |
| BEmONC | Basic Emergency Obstetric and Newborn Care |
| BSc | Bachelor of Science |
| CBHC | Community Based Health Care |
| CC | Community Clinic |
| CDs | Communicable Diseases |
| CEmOC | Comprehensive Emergency Obstetric Care |
| CEmONC | Comprehensive Emergency Obstetric and Newborn Care |
| CG | Community Group |
| CHCP | Community Health Care Provider |
| CSBA | Community Based Skilled Birth Attendant |
| CMSD | Central Medical Supply Depot |
| COPD | Chronic Obstructive Pulmonary Disease |
| CQI | Continuous Quality Improvement |
| CSG | Community Support Group |
| CVD | Cardio Vascular Disease |
| DAC | Development Assistance Committee |
| DALYs | Disability-Adjusted Life Years |
| DEMEW | District Electro-Medical Engineering Workshop |
| DGDA | Directorate General of Drug Administration |
| DGHS | Directorate General of Health Services |
| DH | District Hospital |
| DM | Diabetes Mellitus |
| DPs | Development Partners |
| DPM | Deputy Program Manager |
| ECG | Electrocardiograph |
| EmOC | Emergency Obstetric Care |

| | |
|---|---|
| ENC | Essential Newborn Care |
| EPI | Expanded Program on Immunization |
| ESD | Essential Service Delivery |
| ESP | Essential Service Package |
| FP | Family Panning |
| FWA | Family Welfare Assistant |
| FWC | Family Welfare Center |
| FWV | Family Welfare Visitor |
| GEAP | Gender Equity Action Plan |
| GES | Gender Equity Strategy |
| GNI | Gross National Income |
| GOB | Government of Bangladesh |
| GOD | Government Outdoor Dispensary |
| HA | Health Assistant |
| HED | Health Engineering Department |
| HNP | Health, Nutrition and Population |
| HPNSDP | Health, Population and Nutrition Sector Development Program |
| 4th HPNSP | 4th Health, Population and Nutrition Sector Program |
| HRH | Human Resources for Health |
| HSM | Health Services Management |
| HSSS | Health System Strengthening Score |
| IBRD | International Bank for Reconstruction and Development |
| IDA | International Development Association |
| IMCI | Integrated Management of Childhood Illness |
| JICA | Japan International Cooperation Agency |
| LD | Line Director |
| LDC | Least Developed Country |
| MA | Medical Assistant |
| MCH | Medical College Hospital |
| MLSS | Member of Lower Subordinate Staff |
| MNCAH | Maternal Neonatal Child and Adolescent Health |
| MNCH | Maternal, Neonatal and Child Health |
| MO | Medical Officer |
| MOHFW | Ministry of Health and Family Welfare |

| | |
|---|---|
| MOLGRD&C | Ministry of Local Government, Rural Development and Cooperatives |
| NCDs | Non-Communicable Diseases |
| NCDC | Non Communicable Disease Control |
| NEMEMW & TC | National Electro-Medical Equipment Maintenance Workshop & Training Center |
| NGO | Non-governmental Organization |
| ODA Loan Project Phase 1 | Maternal, Neonatal and Child Health Improvement Project (Phase 1) (Health, Population and Nutrition Sector Development Program) |
| ODA Loan Project Phase 2 | Maternal, Neonatal and Child Health（MNCH）and Health System Improvement Project |
| OOP | Out-Of-Pocket |
| OP | Operational Plan |
| OPD | Outpatient Department |
| OT | Operation Theater |
| PFD | Physical Facilities Development |
| PHC | Primary Health Care |
| PHCC | Primary Health Care Center |
| PIP | Programme Implementation Plan |
| PM | Program Manager |
| PNC | Postnatal Care |
| PO | Program Organizer |
| PWD | Public Works Department, Ministry of Housing and Public Works |
| RPA | Reimbursable Project Aid |
| SACMO | Sub-Assistant Community Medical Officers |
| SBCC | Social and Behavior Change Communication |
| SDGs | Sustainable Development Goals |
| SHASTO | Project for Strengthening Health Systems through Organizing Communities |
| SMPP | Safe Motherhood Promotion Project |
| SWAp | Sector Wide Approaches |
| TB | Tuberculosis |

| | |
|---|---|
| THE | Total Health Expenditure |
| TQM | Total Quality Management |
| UHC | Upazila Health Complex |
| UHFWC | Union Health and Family Welfare Center |
| UHS | Urban Health Survey |
| USAID | United States Agency for International Development |
| WHO | World Health Organization |

# Contents

Abbreviations ..... i
Contents ..... v
Annexes ..... vii
Tables and Figures ..... viii
Executive Summary ..... x
Chapter 1 Outline of the Data Collection Survey ..... 1
1-1 Background of the Survey ..... 1
1-2 The Purpose of the Survey ..... 2
1-3 Scope of the Survey ..... 2
1-4 Survey Methods ..... 3
1-5 Survey schedule ..... 4
Chapter 2 Situation in Bangladesh ..... 7
2-1 Country Information ..... 8
2-2 Health situation and Development issue ..... 8
2-3 Health System ..... 12
Chapter 3 Strategy in Health Sector ..... 20
3-1 Health Sector Strategies related to the Project ideas ..... 20
Chapter 4 Past JICA's Cooperation and Selected Development Partners Activities in Health Sector 26
4-1 ODA Loan Projects ..... 26
4-2 Technical Cooperation ..... 28
4-3 Other DPs activities and coordination with them ..... 30
Chapter 5. Results of the Field Study and Analysis ..... 35
5-1 Non-communicable Diseases (NCDs) ..... 35
5-2 Urban Health ..... 48
Chapter 6 Project ideas ..... 62
6-1 Project Outline ..... 62
6-2 NCD Control ..... 63
6-3 Urban Health ..... 81
6-4 Estimation of the Cost of the Project ..... 87
6-5 Project Implementation Schedule ..... 94
Chapter 7 Implementation and Maintenance Mechanisms ..... 94
7-1 Implementation Mechanisms for the 4th HPNSP ..... 96
7-2 Implementation System for Facility Construction ..... 98
7-3 Implementation System for Provision of Equipment ..... 99

7-4 Implementation System of Training .....100
7-5 Maintenance System.....101
Chapter 8 Project Evaluation .....108
8-1 Relevance .....108
8-2 Effectiveness.....108
8-3 Efficiency.....111
Chapter 9 Environmental and Social Considerations.....112
9-1 Target Medical Facilities .....112
9-2 Environmental Policy and Guideline.....113

# Annexes

Annex 1: Final Report for health system survey (Data Collection Survey for Health Service Strengthening Project)
Annex 2: Project Implementation Schedule
Annex 3: Pictures

# Tables and Figures

Table: Monitoring Indicators for the Project ..... xv
Table 2-1 Top 5 causes of death ..... 9
Table 2-2 Top 5 causes of DALYs ..... 9
Table 2-3 The Top 5 Causes of NCD death in Bangladesh in 2014 ..... 10
Table 2-4 Critical Issues Uncovered by the NCD Risk Factor Survey Bangladesh 2010 ..... 10
Table 2-5 Staff categories involved in the provision of the ESP ..... 15
Table 2-6 Minimum standard for human resources and service by the primary and the secondary level facilities ..... 16
Table 2-7 MOHFW budget ..... 18
Table 4-1 Activities Supported by the ODA Loan Project Phase 1 ..... 26
Table 4-2 Activities Supported by the ODA Loan Project Phase 2 within the HPNSDP ..... 27
Table 5-1 Room Components Required as UHC ..... 43
Table 5-2 Room Components Required for CC ..... 45
Table 5-3 ESP for NCD control at CC, UHC and DH ..... 46
Table 5-4 GOD in Dhaka City ..... 50
Table 5-5 Room Components required for GODs ..... 53
Table 6-1 Target areas of the Project for NCD control ..... 64
Table 6-2 UHC Development Plan ..... 71
Table 6-3 Development plan for CCs ..... 71
Table 6-4 Equipment for dealing with NCDs in CCs ..... 72
Table 6-5 Equipment for NCD controls in UHC ..... 73
Table 6-6 Imaging and Laboratory Equipment for DH ..... 74
Table 6-7 Community engagement training for CG ..... 76
Table 6-8 Community engagement training for local government ..... 77
Table 6-9 Training for CHCP on management of NCDs ..... 77
Table 6-10 Training for doctors, nurses on HTN & CVD ..... 78
Table 6-11 Training for doctors on stroke & other neurological diseases ..... 79
Table 6-12 Training of doctors & nurses on NCDs of pregnant mothers ..... 79
Table 6-13 Referral system training ..... 80
Table 6-14 Training on supervision & monitoring ..... 80
Table 6-15 Development Plan for GODs ..... 83
Table 6-16 Proposed Equipment for GODs ..... 83
Table 6-17 Training for para-health staff on management of NCDs ..... 84
Table 6-18 Training for doctors, nurses on HTN & CVD ..... 85

Table 6-19 Training for doctors on stroke & other neurological diseases....86
Table 6-20 Training of Doctors & Nurses on NCDs of Pregnant Mothers ....86
Table 6-21 Project Cost....87
Table 6-22 Reconstruction/Upgrading Cost of UHC....89
Table 6-23 Cost Breakdown of the UHC Facility. ....90
Table 6-24 Reconstruction of the CC....90
Table 6-25 Breakdown of the Cost for the CC Facility....91
Table 6-26 Reconstruction of GOD ....91
Table 6-27 Breakdown of Cost for the GOD Facility ....92
Table 6-28 Summary of Equipment Cost....92
Table 6-29 Cost of equipment for NCD control at DH....92
Table 6-30 Cost of equipment for NCD control at UHC and GOD....93
Table 6-31 Cost of equipment for NCD control at CCs....93
Table 6-32 Summary of the NCDC training cost....94
Table 6-33 Summary of the CBHC Training Cost....94
Table 7-1 Specialized institutions for each NCDC Training....100
Table 7-2 Management Demarcation by Facility....101
Table 7-3 Maintenance Budget of Health Facilities....102
Table 7-4 Maintenance Budget for Equipment....106
Table 8-1 Monitoring Indicators for the Project ....109

Figure 1-1 Basic Structure of the Survey. ....2
Figure 1-2 Workflow....4
Figure 2-1 Map of the People's Republic of Bangladesh ....7
Figure 2-2 MOHFW organogram....12
Figure 2-3 Healthcare facilities under the DGHS....13
Figure 4-1 Activities under the Safe Motherhood Promotion Project (SMPP)....29
Figure 5-1 Location of GODs in Dhaka....52
Figure 6-1 Location of the Target areas of the Project for NCD control ....66
Figure 7-1 Operational Plan Implementation Committee. ....96
Figure 7-2 OP Implementation Structure....98
Figure 7-3 Cascade model of CBHC Training....101
Figure 7-4 Maintenance system of HED....102
Figure 7-5 Maintenance system of PWD....104
Figure 7-6 NEMEMW & TA Organization Chart....107

# Executive Summary

## 1. Outline of the Data Collection Survey

### 1-1 Background of the Survey

The Ministry of Health and Family Welfare (hereinafter referred to as "MOHFW") of the People's Republic of Bangladesh (hereinafter referred to as "Bangladesh") developed the '4th Health, Population and Nutrition Sector Program' (hereinafter referred to as "4th HPSNP") as a comprehensive development plan in the sector. The main objective of the 4th HPSNP is to achieve Universal Health Coverage by 2030 through improving the access to and quality of health services.

The Japan International Cooperation Agency (hereinafter referred to as "JICA") has been supporting the efforts of the Government of Bangladesh (hereinafter referred to as "GOB") especially in the areas of maternal, neonatal and child health and health system strengthening through a technical cooperation project, 'Safe Motherhood Promotion Project' (hereinafter referred to as "SMPP") and 'Maternal, Neonatal and Child Health Improvement Project (Phase 1) (Health, Population and Nutrition Sector Development Program)' (hereinafter referred to as "ODA Loan Projects Phase 1") and 'Maternal, Neonatal and Child Health (MNCH) and Health System Improvement Project' (hereinafter referred to as "ODA Loan Projects Phase 2"). Currently, JICA is implementing a technical cooperation project, 'Project for Strengthening Health Systems through Organizing Communities' (hereinafter referred to as "SHASTO").

JICA carried out the data collection survey in Bangladesh from August 2017 through February 2018 to explore the possibility of supporting the GOB in the implementation of the 4th HPSNP and to consider a concrete support program focusing on non-communicable disease (hereinafter referred to as "NCDs") control and Urban Health using approaches developed through the SMPP.

### 1-2 Scope of the Survey

(1) Project ideas formulated will contribute to the 4th HPNSP.
(2) Project ideas formulated will contribute to the achievement of Universal Health Coverage under Sustainable Development Goals (hereinafter referred to as "SDGs").
(3) Program formulation based on Japan's know-how, cooperation policy and experiences from past cooperation programs/projects in Bangladesh.
(4) Synergy with other JICA's health sector projects.
(5) Project ideas are selected using the Development Assistance Committee (hereinafter referred to as "DAC") evaluation criteria.

## 2. Survey Results

### 2-1 Health Situation

The health situation in Bangladesh has improved greatly over the past two decades, and life expectancy at birth has increased by 10 years for both sexes to 71.8 years. Health concerns have shifted from infectious diseases to chronic health problems.

Bangladesh has been experiencing a rapid urbanization over the last decade. Since 60% of the urban population is slum dwellers, there are health issues caused by poor sanitation. In the urban area, the rate of communicable disease (hereinafter referred to as "CDs") deaths remains at an elevated level compared to that of rural areas, and the prevalence of NCDs continues to be high. Therefore, the disease issue is two-pronged, consisting of both CDs and NCDs.

### 2-2 Health Facility

The health facilities under MOHFW consist of tertiary level hospitals such as Medical College Hospitals (hereinafter referred to as "MCH") located in each Division and specialized hospitals, secondary level facilities such as District Hospitals (hereinafter referred to as "DH") at the District level, and the primary level facilities such as the Upazila Health Complexes (hereinafter referred to as "UHC") at Upazila level and Community Clinics (hereinafter referred to as "CC") at Ward level. The services which are expected at each level are identified by the Essential Service Packages (hereinafter referred to as "ESP"). The tertiary and secondary level hospitals provide advanced and specialized health care services. UHC provides the primary level of diagnosis and treatment. CC provides family planning, health education, and the basic level of disease screening and treatment. The Community Group and Community Support Groups are formulated under each CC to carry out health promotion.

In the urban area, the Government Outdoor Dispensary (hereinafter referred to as "GOD") is responsible for providing the primary level of health services. Especially, in Dhaka Cities, since there are no secondary level health facilities, the GOD should refer patients to the tertiary level hospitals in accordance with the ESP.

### 2-3 Human Resource for Health

The Community Health Care Provider (hereinafter referred to as "CHCP") is stationed at the CC to provide health services such as disease management and health promotion to the community. At the UHC and DH, medical doctors, medical assistants, nurses, pharmacists, midwives, dentists, lab technicians, x-ray technicians and others are stationed.

Medical doctors, pharmacists, medical assistants and other work assistants are stationed at GODs.

2-4 Major Issues

(1) Non Communicable Disease Control

a. Prevention

Activities for community awareness about the risks of NCDs are insufficient. The technical capacity of health promotion of the CHCP is relatively low. The activities on health promotion at the NCD Corner at the UHC is limited

b. Screening

The capacity of the CHCP for NCD screening is not enough as facilities are old and equipment is limited to carry out primary test for the patients. At the UHC, health facilities are not able to provide the required screening because of the lack of human resource capacity, expendable supplies shortage, old facilities and inadequate equipment. The NCD corner is not functioning properly.

c. Treatment

The capacity of NCD treatment at the UHC is not sufficient due to inadequate equipment and a shortage of expendable supplies. At the DH, an adequate number and technical capacity of staff and necessary equipment are needed to meet the ESP. The referral systems for NCD control has not been established properly.

(2)Urban Health

a. Prevention

The capacity of health promotion and prevention at the GODs is not sufficient.

b. Screening

The capacity of NCD screening at the GODs is not sufficient to meet the ESP due to limited human resources, equipment and supplies. Relatively fewer outpatients use the GOD because of their antiquated condition.

c. Treatment

The capacity for diagnosis and treatment of NCDs at the GOD is not sufficient because of limited equipment and insufficient capacity of medical staff for diagnosis and treatment.

2-5 The Strategies for NCD control and Urban Health (the 4th HPNSP)

(1) NCD control

- To conduct health promotion for increasing community awareness and expanding the healthy lifestyle of people suffering from NCDs for reduction and control of NCD risk factors.
- To strengthen capacity of screening and diagnosis of NCDs in order to prevent major NCDs and risk factor in advance.

(2)Urban Health

- To strengthen the capacity of the GOD for diagnosis and treatment in accordance with the ESP such as CDs, Maternal, Neonatal and Child Health (hereinafter referred to as "MNCH"), and NCDs as the primary level health facility in the urban area.
- To strengthen the referral system between the GOD and the upper level health facilities.

3. Project Ideas

3-1 Name of the Project

Health Services Strengthening Project (hereinafter referred to as "the Project")

3-2 Objectives and Scope

The objectives of the Project are to develop a health system for strengthening NCD control by improving referral system through the primary and secondary level health facilities in all divisions, and to improve access to health services by urban poor populations in Dhaka by improving health services at the primary level of health facility, thereby contributing to the health promotion of the people in Bangladesh.

3-3 NCD Control

The Pilot Referral Network will be formed as the framework of NCD control system to strengthen the mechanisms of the services for prevention, screening and diagnosis/treatment to control NCDs. The Project focuses on the control of four major NCDs; Cardio Vascular Disease (hereinafter referred to as "CVD"), Chronic Obstructive Pulmonary Disease (hereinafter referred to as "COPD"), Cancers and Diabetes mellitus (hereinafter referred to as "DM").

The approaches developed by SMPP are applied for the Project design. In addition, the Project pursues to maximize the synergy effect with SHASTO. The Project activities consist of training for various health personnel, provision of equipment and facility construction.

The Pilot Referral Network is defined as the network which consists of MCH strengthened by the previous Japan's ODA Loans Project as the top referral, DHs in the catchment area of MCH as the secondary level, UHCs in the catchment area of selected DH, and CCs in the catchment area of selected UHCs.

The target health facilities are 11 DHs in eight Divisions, 46 UHCs, and 1,227 CCs

3-4 Urban Health

The access to the health services by the urban low-income population will be improved through strengthening the capacity of the screening and diagnosis/treatment services provided at the GODs in Dhaka City. For this purpose, the Project activities are necessary training of health service providers, provision of equipment and facility improvement of 16 GODs in Dhaka City.

4. Project Implementation Mechanisms

Since the Project is formulated based on the list of Operational Plans (hereinafter referred to as "OPs"), it will be implemented in line with the process of the OP implementation of the 4th HPNSP.

The Project Steering Committee will be formulated and chaired by the secretary of MOHFW to coordinate the Project activities and to monitor the progress. The Operational Plan Implementation Committee chaired by the Joint Chief of Planning Wing will be responsible for the coordination of each activity under the Project. The responsible OPs are; Non Communicable Disease Control (hereinafter referred to as "NCDC"), Community Based Health Care (hereinafter referred to as "CBHC"), Hospital Services Management (hereinafter referred to as "HSM") and Physical Facilities Development (hereinafter referred to as "PFD"). The training activities will be managed by NCDC (health promotion, screening, diagnosis and treatment about NCDs) and CBHC (Community Engagement, Referral System and Supervision). The provision of equipment will be managed by the HSM. The facility construction will be managed by the PFD. The Planning Wing will manage the Development Partners (hereinafter referred to as "DP") coordination related to the Project.

5. Project Evaluation

5-1 Relevance

In Bangladesh, the health conditions have shifted from infectious diseases to chronic health problems. Focusing on NCDs in order to to achieve Universal Health Coverage as a part of the SDGs is necessary and effective. Targeting Urban Health as the main issue is also important in Bangladesh due to its rapid urbanization caused by economic growth. This project matches the health sector program of Bangladesh, supporting the 4th HPNSP in the MOHFW health development strategies. Moreover, the Project reflects the past experiences of JICA activities such as the SMPP and ODA Loan Projects, and the synergetic effect with the ongoing SHASTO.

5-2. Effectiveness

Table: Monitoring Indicators for the Project

| Indicator | Source | Base number (2017) | Target number(2024) (2years after the project) |
|---|---|---|---|
| 1) Index for Improvement of NCDs | | | |
| 1. Number of CC which established the pilot referral network, referring its patients to UHC (total number of facilities) (*1) | Project Report | - | 1,227 |
| 2. Number of UHC which established the pilot referral network, referring its patients to DC (total number of facilities) (*2) | Project Report | - | 46 |
| 3. Number of CHCP Participants to NCDs Improvement Training (total number) (*1) | Project Report | 0 | 1,227 (*4) |
| 4. Number of Participants (doctors and nurses) to NCDs Training (total number) (*2) | Project Report | 0 | 2,990 (*5) |
| 2) Indicators for Urban Health | | | |
| 1. Number of Participants (doctors and para-health professionals) to NCDs Training (total number) (*3) | DD | 0 | 120 (*6) |

*1: 1,227 CCs supported by the project.

*2: 46 UHCs supported by the project.

*3: 16 GODs supported by the project.

*4: Health professionals from each of 1,227 CCs supported by the project.

*5: For 46 UHCs supported by the project, 15 doctors x 3 kinds of training, 10 nurses x 2 kinds of training and 3 or 4 NCD Corner's Nurse x 1 kind of training from each UHC.

*6: For 16 GODs supported by the project, approx. 2 doctors x 16 GODs x 3 kinds of training, approx. 2 para-health professionals x 16 GODs x1 training.

5-3 Efficiency

Since the Project will directly support the 4th HPNSP and activities are expected to be included in the general activities of the MOHFW, it is expected to ensure the efficiency of its operation.

# Chapter 1 Outline of the Data Collection Survey

## 1-1 Background of the Survey

The Ministry of Health and Family Welfare (hereinafter referred to as "MOHFW") of the People's Republic of Bangladesh (hereinafter referred to as "Bangladesh") together with the Development Partners (hereinafter referred to as "DPs") developed the '4th Health, Population and Nutrition Sector Program' (hereinafter referred to as "4th HPSNP") as a comprehensive development plan in the sector. The main objective of the 4th HPSNP is to incorporate appropriate strategies and activities for focused improvements in the access to medical services and quality of health care, development of nutrition and improvement of equity along with financial protection to realize the objectives of Universal Health Coverage by 2030. The 4th HPNSP coincides with the adoption of the Sustainable Development Goals (herein after referred to as "SDGs"), in particular, Goal 3: Ensure healthy lives and promote well-being for all at all ages.

The Japan International Cooperation Agency (hereinafter referred to as "JICA") has been supporting the efforts of the Government of Bangladesh (hereinafter referred to as "GOB") especially in the areas of maternal, neonatal and child health and health system strengthening through a technical cooperation project. From 2006 to 2016, 'Safe Motherhood Promotion Project' (hereinafter referred to as "SMPP") (Phase 1 and 2) implemented the health sector development models called the 'Narsingdi model.' This model was highly evaluated by GOB and implemented throughout the country. In 2017, JICA started 'Project for Strengthening Health Systems through Organizing Communities' (hereinafter referred to as "SHASTO"). This project applies 'Narsingdi model' for non-communicable diseases (hereinafter referred to as "NCDs") control. Moreover, since 2016, 'The Project for Capacity Building of Nursing Services' has been implemented in order to develop human resource and strengthen health service.

And throughout Japan's ODA Loan Projects, 'Maternal, Neonatal and Child Health Improvement Project (Phase 1) (Health, Population and Nutrition Sector Development Program)' (hereinafter referred to as "ODA Loan Project Phase 1") and 'Maternal, Neonatal and Child Health（MNCH）and Health System Improvement Project' (hereinafter referred to as "ODA Loan Project Phase 2"), JICA supports the 'Health, Population and Nutrition Sector Development Program' (hereinafter referred to as "HPNSDP") as the third comprehensive development plan in the health sector..

JICA discussed with the officials of GOB and agreed to explore the possibility for cooperation

in NCD control and Urban Health. A data collection survey team for promoting Universal Health Coverage in Bangladesh was formed. The survey was carried out from August 2017 to February 2018 to collect necessary information and provide project ideas for cooperation.

## 1-2 The Purpose of the Survey

The purpose of the survey is to provide consideration of financial support by JICA to Bangladesh during the 4th HPNSP focusing on the areas of NCDs and Urban Health using the health sector development models called the 'Narsingdi model' that were developed through the SMPP.

## 1-3 Scope of the Survey

### 1-3-1 Survey Area

The survey covers selected areas[1] throughout Bangladesh.

### 1-3-2 Basic Structure of the Survey

(1) Project ideas formulated will contribute to the 4th HPNSP.

(2) Proposed project ideas will contribute to the achievement of Universal Health Coverage under SDGs.

(3) Project ideas based on Japan's know-how, existing cooperation policies and past results with the GOB.

(4) Synergy with other JICA's projects focus on the health field.

(5) Project ideas are selected using the DAC evaluation criteria.

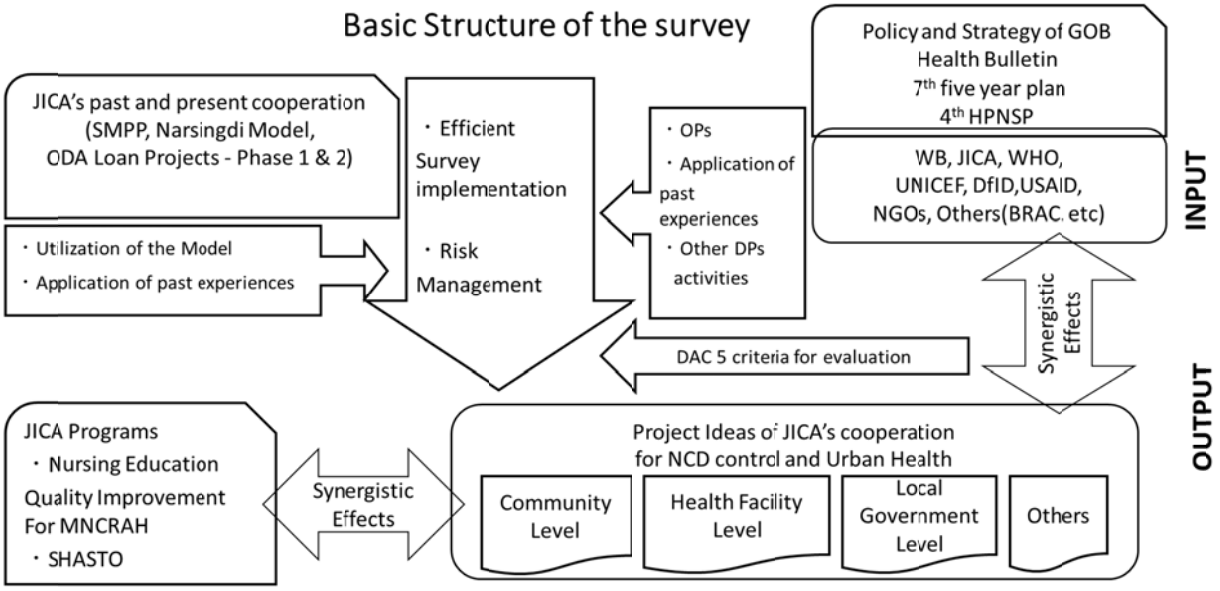



Figure 1-1 Basic Structure of the Survey

[1] See 6-2-1 Pilot Referral Network

## 1-4 Survey Methods

### 1-4-1 Methods to Gather Necessary Information

To formulate project ideas, the survey is designed to collect information effectively through;

(1) Selecting the Operational Plans (herein after referred to as “OPs”) from the 4th HPSNP in relation to NCD control and Urban Health. Based on the selected OPs and interviewing with the Planning Wing in the MOHFW to enhance cooperation with present JICA project.

(2) In the MOHFW, NCD Control (hereinafter referred to as “NCDC”), Community Based Health Care (hereinafter referred to as “CBHC”), Physical Facilities Development (hereinafter referred to as “PFD”), Health Service Management (hereinafter referred to as “HSM”) are the main interviewees for the cooperation idea formulation.

(3) Interviewing other lines or departments such as the National Electro-Medical Equipment Maintenance Workshop & Training Center (hereinafter referred to as “NEMEMW & TC”), the Health Engineering Department (hereinafter referred to as “HED”) of the MOHFW and the Public Works Department (hereinafter referred to as “PWD”) Health Wing under the Ministry of Housing and Public Works to gather information on construction, cost, procurement of equipment and maintenance.

(4) Interviewing the health workforce on the present status of their capacity and needs in the Community Support Group (hereinafter referred to as “CSG”), Community Group (hereinafter referred to as “CG”), Community Clinic (hereinafter referred to as “CC”), Upazila Health Complex (hereinafter referred to as “UHC”), and District Hospital (hereinafter referred to as “DH”).

(5) Facility and equipment survey on the CC, UHC and DH

(6) Interviewing DPs, such as the World Health Organization (hereinafter referred to as “WHO”), Asia Development Bank (hereinafter referred to as “ADB”) and gathering information on NCD control and Urban Health

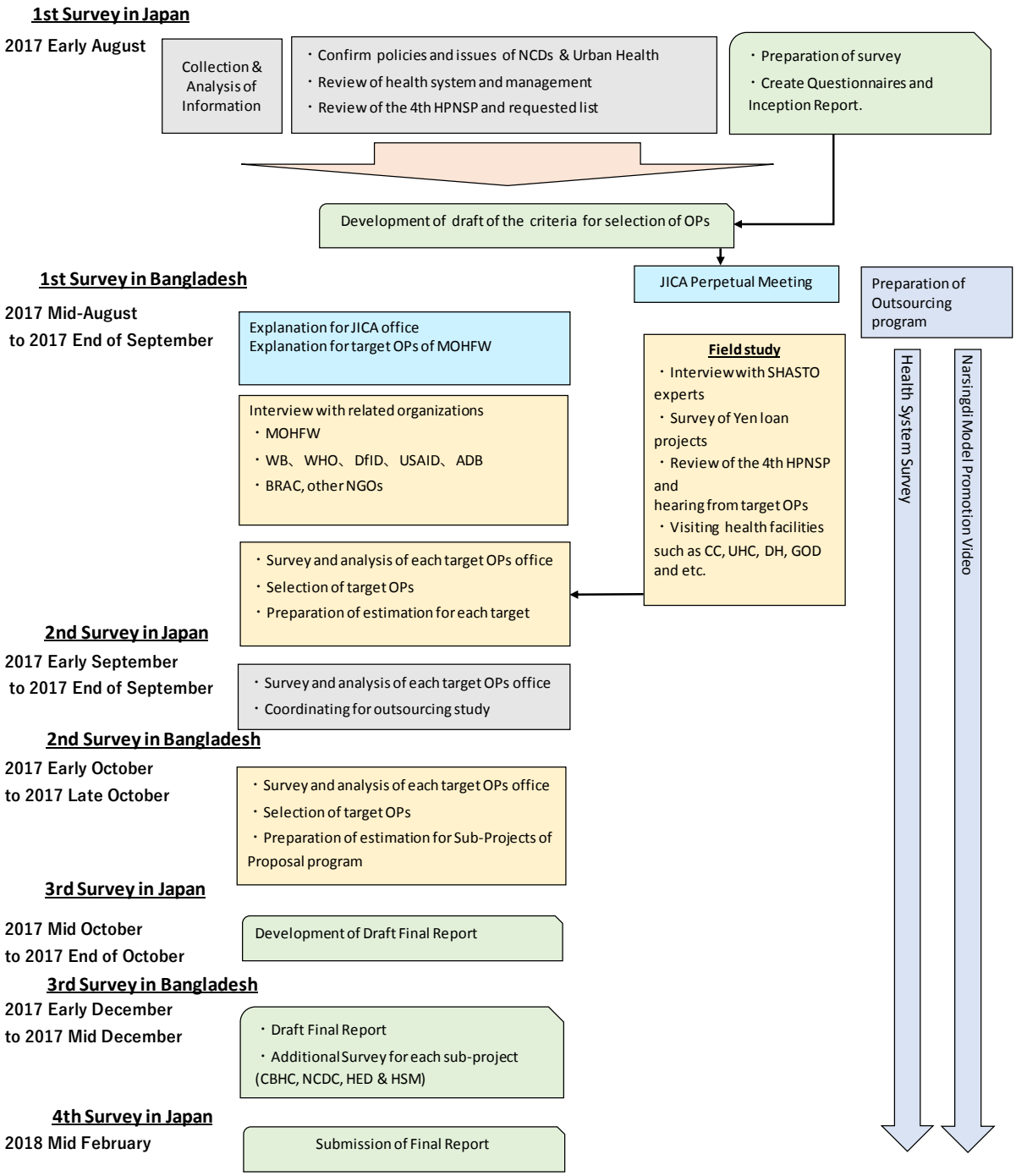



Figure1-2 Workflow

## 1-5 Survey schedule

The total survey period is seven months spanning from August 2017 to February 2018. The survey consists of the parts shown in the Figure 1-2.

1-5-1 1st Domestic Survey (Japan, 2017, early August to mid-August)

(1) Information collection and analysis
(2) Reviewing policies and strategies of NCDs and Urban Health of the GOB, and preparation of survey
(3) Reviewing the state of health service delivery mechanisms in Bangladesh
(4) Development and analysis of a table of candidate OP activities to be supported by JICA to the 4th HPNSP
(5) Preparation of the inception report

1-5-2 1st Overseas Survey (Bangladesh, 2017, mid-August to end of September)

(1) Explanation of the survey plan to JICA's Office in Bangladesh
(2) Explanation of the survey plan to the Planning Wing and each target OP office of the MOHFW
(3) Study and analysis of the ODA Loan Projects
(4) Study and analysis of the 4th HPNSP relating to NCD control and Urban Health
(5) Study and analysis of strategies and outlines of other DPs for the health sector
(6) Study and analysis of health system (Health facilities related to the strategies of NCD control and Urban Health such as CC, UHC, DH, and allocation of medical equipment and referral system).
(7) Preparation for outsourcing studies of the health system (Health facilities related to the strategies of NCD control and Urban Health such as CC, UHC, DH, and allocation of medical equipment and referral system).
(8) Preparation for Narsingdi Model Promotion Video
(9) Survey and analysis of each target OP office to select activities which contribute to the reduction of NCDs and the improvement of Urban Health
(10) Providing project ideas for which JICA should support in future and preparation of the cost estimation for each target activity of the OP in MOHFW
(11) Collection of information to consider the necessity of environmental and social consideration survey

1-5-3 2nd Domestic Survey (Japan, 2017, early September to end of September)

(1) Coordination and discussion with JICA on the Project ideas
(2) Contact and coordination with outsourcing resources

1-5-4 2nd Overseas Survey (Bangladesh, 2017, early October to end of October)

(1) Development of Project ideas and considering priority area and direction of JICA support

for NCD control and Urban Health.

(2) Development of Project ideas based on the results of the survey and analysis of each selected OP

(3) Survey and analysis of implementation of the Project ideas about each selected OP and procurement management

(4) Confirm cost estimation and implementation schedule for each target OP activity based on the result of the surveys and analyses of each selected OP

1-5-5 3rd Domestic Survey (Japan, 2017, mid-October to end of October)

(1) Develop detailed cost estimation for the Project implementation

(2) Development of the Draft Final Report

(3) Finalization of the results of the outsourcing survey

1-5-6 3rd Overseas Survey (Bangladesh, 2017 early December to mid-December)

(1) Confirmation of the estimate for project costs for the plan to rehabilitate the Government Outdoor Dispensary (hereinafter referred to as “GOD”)

(2) Confirmation of the price for candidate equipment for NCD Control

(3) Information collection for project monitoring plan

1-5-7 4th Domestic Survey (Japan, 2018 mid-February)

Finalization of the Final Report

Chapter 2 Situation in Bangladesh


Figure 2-1 Map of the People's Republic of Bangladesh

## 2-1 Country Information

Bangladesh is located in South Asia and has a total land area of 147,570 square kilometers (56,977 square miles) as well as a population of 161,000,000 (World Bank, 2015). It is the world's eighth most populous country. It is densely populated with further growth expected. In 1971, Bangladesh became independent from Pakistan. Bangladesh is a member of the Commonwealth of Nations.

Bangladesh is categorized as a Least Developed Country (hereinafter referred to as "LDC") according to the World Bank. Gross National Income (hereinafter referred to as "GNI") per capita was 1,330USD in 2016, a twofold increase over the previous decade[2]. GDP growth was 6.6% in 2015. The principal industries include garments, textiles, tea and ceramics. 14.4% of the population has access to the Internet, and 81.9% of people have cellphone service (World Bank, 2015).

The GOB consists of six tiers of administration including a national level. The country is divided into 8 administrative divisions under the national government. Within these, there are a total of 64 districts which form the third tier of administration. The fourth consists of 489 Upazilas (sub districts), and under these there are 4,553 Unions. There are 40,977 Wards which form the lowest administrative level as of December 2016. Commonly, each Union has nine Wards.

## 2-2 Health situation and Development issue

### 2-2-1 Epidemiological transition

The health of the people in Bangladesh has been improved greatly over the past two decades, and health issues have shifted from infectious diseases to chronic health problems. Life expectancy at birth has increased by 10 years for both sexes to 71.8 years. However, the general level of health remains relatively low. In the past, lower respiratory disease was the principle killer, but now the main cause of death and disability is cerebrovascular disease (Table 2-1).

The percentage of deaths caused by NCDs has increased from 43.4% in 2005 to 66.9% in 2015, (World Bank, 2015). Also, the 1st and 2nd causes of Disability-Adjusted Life Years (hereinafter referred to as "DALYs") [3] are NCDs.

[2] GNI per capita in Bangladesh is 560 USD and in 2016 is 1,330 USD (World Bank, 2006)

[3] DALYs are calculated as the sum of the Years of Life Lost (YLL) due to premature mortality in the population and the Years Lost due to Disability (YLD) for people living with the health condition or its consequences, according to WHO HP.

Table 2-1 Top 5 causes of death

| | Cause of death | % |
|---|---|---|
| 1 | Cerebrovascular disease | 16.0 |
| 2 | Ischemic heart disease | 14.3 |
| 3 | COPD | 8.2 |
| 4 | DM | 5.4 |
| 5 | Lower respiratory infect | 3.9 |

*COPD: Chronic Obstructive Pulmonary Disease

Table 2-2 Top 5 causes of DALYs

| | |
|---|---|
| 1 | Cerebrovascular disease |
| 2 | Ischemic heart disease |
| 3 | Neonatal encephalopathy |
| 4 | Lower respiratory infect |
| 5 | Low back & neck pain |

Source: Institute for Health Metrics and Evaluation, 2015

2-2-2 Non-Communicable Diseases (NCDs)

Due to epidemiological transition, there is a need for controlling the increase of NCDs. According to the WHO, NCD Country Profile 2014, NCDs are estimated to account for 59% of the total cause of deaths in Bangladesh, with table 2-3 showing the top 5 causes of NCD death. In consequence, there has been an increased need to control of their risk factors, such as tobacco use, an unhealthy diet, low physical activity, etc. These risk factors contribute to the progression of the NCDs through a few intermediary risk factors: obesity, high blood pressure, abnormal glucose tolerance, and abnormal blood lipids.

So far, the studies on NCDs at the national level have been inadequate. According to the NCD risk factor survey Bangladesh 2010, hypertension (hereinafter referred to as “HTN”), obesity and hyperglycemia were more common in urban areas than in rural areas, and moderate exercise and fruit and vegetable intake were less common in urban areas than in rural areas. Table 2-4 shows the results of the survey.

Consequently, the GOB implements NCD prevention countermeasures, which include health promotion, health education for primary prevention of preventive medicine[4], early detection and prompt treatment for secondary prevention. GOB is promoting individual’s behavioral change through these supports throughout the communities.

The GOB has formulated integrated programs for NCD prevention and developed the 4th

[4] Preventive medicine consists of primary prevention, secondary prevention and tertiary prevention. The primary prevention is health promotion, health education and specific promotion (e.g. control of environmental hazards, such as air pollution). The second prevention is early detection and prompt treatment and tertiary prevention. The tertiary prevention is prevention of activity limitation and rehabilitation.

HPNSP. Concerning NCD prevention, the 4th HPNSP has comprehensive programs for promoting health promotion/health education, early detection and prompt treatment.

Table 2-3 The Top 5 Causes of NCD death in Bangladesh in 2014

| | Cause of death | % |
|---|---|---|
| 1 | CVD | 17 |
| 2 | COPD | 11 |
| 3 | Cancers | 10 |
| 4 | DM | 3 |
| 5 | Other NCDs | 18 |

Source: WHO NCD Country Profile 2014

Table 2-4 Critical Issues Uncovered by the NCD Risk Factor Survey Bangladesh 2010

| No. | Critical issues |
|---|---|
| 1 | Almost all adults (25+ years), 98.7% had at least one risk factor and a substantial proportion of people had two or more risk factors. |
| 2 | Approximately14.8% of the surveyed population was diagnosed to have HTN. |
| 3 | Approximately 3.9 % had documented diabetes as reported by the patients themselves. |
| 4 | Approximately 26.2% of adults were smokers or smokeless tobacco-users. |
| 5 | 95.7% did not consume adequate fruits or vegetables on an average day. |
| 6 | 27.0% of the subjects fell into the low physical activity category. |

Source: NCDs Risk Factor Survey Bangladesh, MOHFW, 2010

2-2-3 Urban Health

Bangladesh has been experiencing rapid urbanization over the last decade or so 34% population in 2015 (World Bank, 2015). Also, 60% of the urban population are slum dwellers, and 21% of urban population lives below the poverty line[5]. The combined effect of inadequate access to water, poor sanitation and poverty associated with urban slums creates significant public health hazards, causing excessive pressure on the existing health care services. In the urban area, the causes of communicable diseases (hereinafter referred to as “CDs”) death remain at a high level compared to rural area, also the NCDs continue to be high, therefore a double burden of CDs and NCDs exists.

The National Urban Health Strategy[6] was finalized in 2014. The strategy targets the creation of an environment for urban people (especially the poor) with equitable access to public and

[5] The poverty line is under 1.25 USD daily, according to World Bank,2014.
[6] Local Government Division Ministry of Local Government, Rural Development and Cooperatives, National Urban Health Strategy 2014.

private sector health services as well as improving the overall health indicators of the country through a strengthened essential health care system for the urban population.

Healthcare services in urban areas are provided broadly by three categories of service providers, public providers, Non-governmental Organization (hereinafter referred to as "NGO") (supported by DPs and often collaborated with public service providers) and private providers. The public-sector healthcare services are provided by the MOHFW and Ministry of Local Government, Rural Development and Cooperatives (hereinafter referred to as "MOLGRD&C"). Each category of service provider provides healthcare services for urban people, while cooperating with each other. However, due to the lack of adequate collaboration throughout the sector, correct information about the location of health dispensaries is not shared. Therefore, it results in disparity of access to health services since some communities have two health dispensaries while the others do not have any.
Since the MOHFW is responsible for providing primary, secondary and tertiary (including specialized) health care services (refer to 2-3-1 (2)) to all national, the MOHFW operates GODs to provide primary level of health and medical service in the urban area.

City corporations and municipalities are responsible for providing Primary Health Care (hereinafter referred to as "PHC") to city dwellers[7] in 5 city corporations through 11 hospitals and 29 dispensaries. In the urban areas, all commodities (vaccines and contraceptives) for immunization and family planning respectively, being distributed by the city corporations through the NGOs, are provided by the MOHFW. There are also parallel programs implemented by NGOs with support from DPs in urban areas for provision of PHC services. Since different service providers cover extensive areas, health care services are readily available to the urban population. The Bangladesh Urban Health Survey 2013 revealed that 95% of communities in the slums and 90% of those in other urban areas have a health facility located within two kilometers.

In urban areas, it is easy to receive healthcare as health facilities are located closed to dwellers. However, there are issues with dilapidated facilities, and shortages of equipment, medical staff and healthcare providers in terms of quantity and quality. Also, the referral system is not functioning properly in the GOD. Consequently, there are many patients visiting tertiary level hospitals.

[7] Local Government (City Corporation) Act, 2009 and Local Government (Municipalities) Act, 2009

## 2-3 Health System

### 2-3-1 Health Service Network

#### (1) The Ministry of Health and Family Welfare

The MOHFW is responsible for formulating national level policy, planning, and decision making. National level policies, plans and decisions regarding health and healthcare, are translated into nationwide actions by delivery systems, such as health facilities and schools. Figure 2-2 shows the MOHFW organigram.

There are two divisions in the MOHFW which cover medical services and family welfare; the Health Service Division and the Health Education and Family Welfare Division. These two divisions work independently to provide comprehensive healthcare services to the people of Bangladesh.

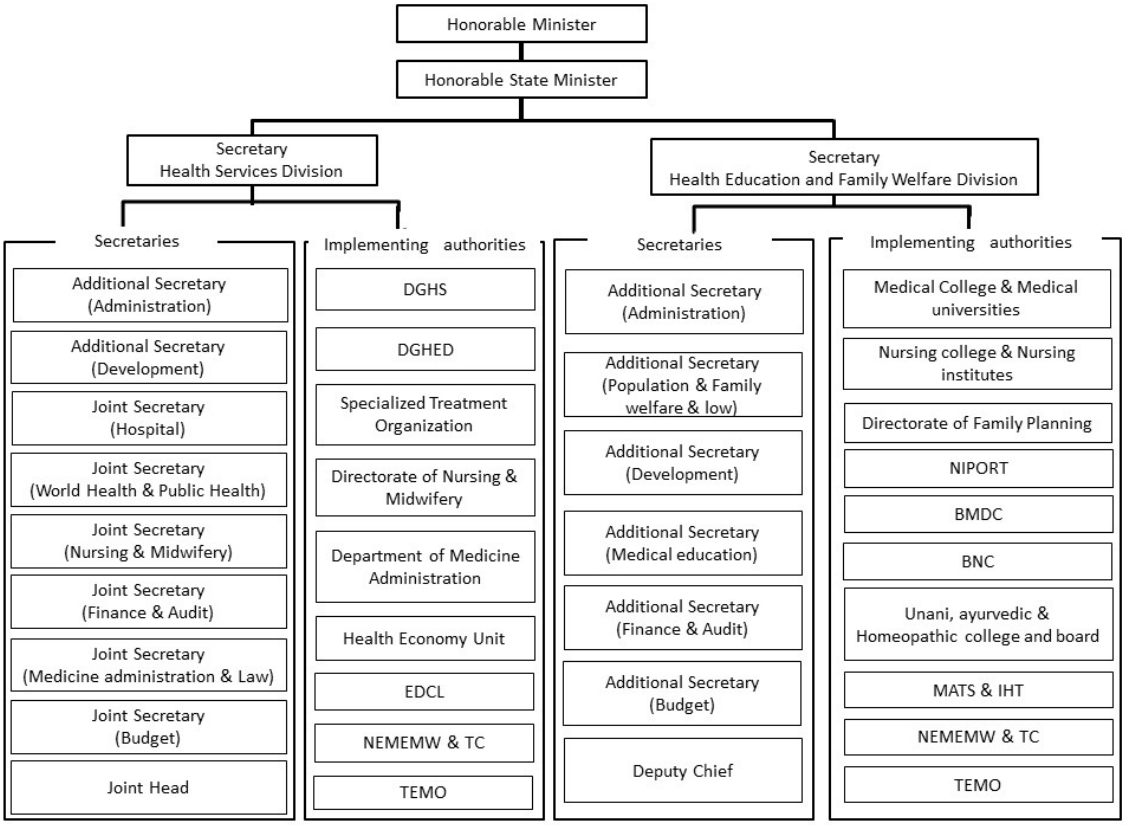



Figure 2-2 MOHFW organogram

The healthcare infrastructure under the Directorate General of Health Services (hereinafter referred to as “DGHS”) is comprised of six tiers; national, divisional, district, Upazila (sub district), Union, and Ward (Figure 2-3). At the national level, there are institutions both for public health functions as well as for postgraduate medical education/training and specialized

treatment for patients. Each institutions are managed by directors.

The divisional director for health is responsible for divisional management. Divisional health facilities provide tertiary level care.

The Civil Surgeon is the district health manager responsible for delivering secondary and primary care services. In each district, there is a DH. Some DHs have superintendents to supervise the hospital management. In others, Civil Surgeons supervise the DHs.

The Upazila health & family planning officers are the health manager at the Upazila level. They manage all public health programs, especially the primary healthcare services in the Upazila, and supervise the UHCs.

At the Union level, each Union level health facility employs a medical officer among other staff.

| Governmental level (No.) | Health Facility | Managerial hierarchy |
|---|---|---|
| National level | ・Public Health Institute<br>・Postgraduate Medical Institute & Hospital with Nursing Institute<br>・Specialized Health Center | ・Director of Institute |
| Division level (8) | ・Medical College and Hospital, with Nursing Institute<br>・General Hospital with Nursing Institute<br>・Infectious Disease Hospital etc. | ・Divisional Director (Health)/ Director(Medical College Hospital)<br>・Principal, Medical College |
| District level (64) | ・District Hospital with Nursing Institute<br>・General Hospital with Nursing Institute<br>・Chest Disease Clinic<br>・Tuberculosis Clinic<br>・Leprosy Hospital etc. | ・Civil Surgeon<br>・Superintendent, District Hospital |
| Upazila level (489) | ・Upazila Health Complex (UHC) | ・Upazila Health & Family Planning Officer (UHFPO) |
| Union level (4,553) | ・Union Health & Family Welfare Center (UHFWC)<br>・Rural Health Center<br>・Union Subcenter | ・Medical Officer (MO)<br>・Health Inspector (HI) |
| Ward level (40,977) | ・Community Clinic | ・Community Health Care Provider (CHCP) |

Source: Health Bulletin 2016, MOHFW

Figure 2-3 Healthcare facilities under the DGHS

(2) Health and Medical Service delivery systems

The health care system in Bangladesh is comprised of three levels; tertiary referral hospitals, secondary district level hospitals and PHC facilities located at the Ward, Union and Upazila levels. In addition, the CC at the Ward level is the lowest tier of the health facilities and aims to be a one stop service outlet for basic health, family planning and nutrition services. CC staff

who provide health promotion and health education, such as family planning and healthy diet and so on, are required to provide simple treatment and refer patients to higher levels of health care. There also are rural health centers, Union health & family welfare center (UHFWCs) at the Union level and UHC at the Upazila level. UHC is providing the primary level of health and medical services in prevention, examination and treatment.
The secondary and the tertiary healthcare facilities provide more advanced or specialized care to patients. As secondary healthcare service providers, DHs provide a wide range of curative care services including delivery care, post abortion care, Integrated Management of Childhood Illness (hereinafter referred to as "IMCI"), neonatal sepsis management, birth asphyxia management, communicable disease management, NCD management, etc. Specialized hospitals provide tertiary health care services on specific areas (e.g. CVD, eye care, renal diseases, etc.).

(3) Essential Service Package (Table 2-5 and Table 2-6)

The Essential Service Package (hereinafter referred to as "ESP") sets standards for healthcare service procedures, as well as equipment, medicine, facility and human resources in Bangladesh.

2-3-2 Human Resources for Health (HRH)

(1) Allocation and training system for health workers

There are work descriptions for health workers. Yet healthcare service for citizens at the community level and patients at facility level were different.

Community Health Care Providers (hereinafter referred to as "CHCP"), Health Assistants (hereinafter referred to as "HA") and Family Welfare Assistants (hereinafter referred to as "FWA") work in the community. CHCP provides health promotion and screening for citizens, and HA and FWA visit each household and assist with health promotion.

At Union Health and Family Welfare Centers (hereinafter referred to as "UHFWC"), there are Sub Assistant Community Medical Officers (hereinafter referred to as "SACMO")/ Medical Assistants (hereinafter referred to as "MA"), Family welfare visitor (hereinafter referred to as "FWV"), Midwives, Medical officer, Pharmacist and Health Inspectors. Their main work is to assist normal delivery.

UHCs are primary health facilities, function as referral facilities from CC and UHFWC, and have Wards for inpatients. Medical officers, Dental Surgeons, Nurses, Midwives, SACMO/MA, Laboratory Technicians and Radiology technicians, FWV, Pharmacist and Sanitary Inspector

(hereinafter referred to as “SI”) work there.

Table 2-5 shows the training period and contents for the service provision system, and Table 2-6 shows minimum standards for human resources and service from the community to secondary level facilities

Table 2-5 Staff categories involved in the provision of the ESP

| Category | Training (period) | Skills/ Capacities |
|---|---|---|
| Health Assistant (HA) | 21 days | Antenatal Care (hereinafter referred to as “ANC”), Postnatal Care (hereinafter referred to as “PNC”), Essential Newborn Care (hereinafter referred to as “ENC”), Family Planning: (hereinafter referred to as “FP”) Expanded Program on Immunization (hereinafter referred to as “EPI”), Social and Behavior Change Communication (hereinafter referred to as “SBCC”), home visits |
| Family Welfare Assistant (FWA) | 21days | ANC, PNC, ENC, FP, EPI, SBCC, home visits |
| Community Health Care Provider (CHCP) | 3 months | Management of common conditions. ANC, PNC, ENC, FP, EPI, SBCC |
| Community Based Skilled Birth Attendant (hereinafter referred to as “CSBA”) | 6 months on top of any of the above | ANC, PNC, ENC, FP, EPI, SBCC. Normal deliveries. Identification of risk and danger signs. |
| Family Welfare Visitor (FWV) | 18 months | ANC, PNC, ENC, FP (incl. Menstrual Regulation and IUD), SBCC, normal deliveries |
| Medical Technologist<br>-Laboratory<br>-Radiology | - BSc: 4 years or Diploma: 3 years<br>-Certificate: 12 months | Basic lab and X-ray techniques |
| Sub-Assistant Community medical officer (SACMO)/ Medical Assistant (MA) | Diploma: 3 years | Management of common conditions, including IMCI and others. Neonatal sepsis. |
| Pharmacist | Diploma: 3 years | Requisition, stock management & dispensing |
| Nurse | - BSc: 4 years or Diploma: 3 years | Nursing and preventive care (excludes prescription) |
| Midwife | - Certificate: | Midwifery including ANC, PNC, FP (incl. |

| | | |
|---|---|---|
| | 12-18 months (for Nurse-midwife)<br>- Diploma: 3 years<br>- BSc: 4 years<br>- Integrated in nursing | Menstrual Regulation), normal deliveries. |
| Dental Surgeon | BDs: 4 to 5 years | Dentistry |
| Medical Officer and Consultants | MBBS 5 years + 1 year internship specialization | Preventive and curative care, normal and complicated deliveries. Others: according to specialties |

Source: Bangladeshi essential service package (ESP), Aug.2016

Table 2-6 Minimum standard for human resources and service by the primary and the secondary level facilities

| Facility | CC | UHFWC | UHC | DH |
|---|---|---|---|---|
| Human resource | HA,<br>FWA,<br>CHCP,<br>CSBA | HAI, HI, FPI, FWA,<br>CHCP,<br>SACMO/ MA,<br>Pharmacist, Midwife<br>Medical Officer (General practitioner (GP)) | FWV,<br>Medical technologist (Laboratory &Radiology),<br>SACMO/ MA, SI,<br>Pharmacist,<br>Nurse, Midwife,<br>Dental Surgeon,<br>Medical Officer(GP) | FWV,<br>Medical technologist (Laboratory& Radiology),<br>Pharmacist,<br>Nurse,<br>Midwife,<br>Dental surgeon, Medical Officer (GP & Specialized practitioner) |
| Health service | NCD Screening<br>SBCC<br>EPI/IMCI<br>FP (short term)<br>Growth Monitoring<br>ANC/PNC<br>Lim. curative care | Pre-term NB(*1)<br>Newborn Sepsis<br>NCD management<br>Normal Newborn<br>N.V. Deliveries(*2)<br>NCD Screening<br>SBCC, EPI/IMCI<br>FP (short term)<br>Growth Monitoring (GM),<br>SAM Management(*3),<br>ANC/PNC<br>Lim. curative care | Severe cases<br>Basic Emergency Obstetric and Newborn Care (hereinafter referred to as "BEmONC")<br>Pre-term NB<br>Newborn Sepsis<br>NCD management<br>Normal Newborn<br>N.V. Deliveries<br>NCD Screening<br>SBCC, EPI/IMCI<br>FP (short term), GM,<br>SAM Management,<br>ANC/PNC<br>Lim. curative care | Severe cases<br>Comprehensive Emergency Obstetric and Newborn Care (hereinafter referred to as "CEmONC"), BEmONC<br>Pre-term NB<br>Newborn Sepsis<br>NCD management<br>Normal Newborn<br>N.V. Deliveries<br>NCD screening<br>SBCC, EPI/IMCI<br>FP (short term), GM,<br>SAM Management,<br>ANC/PNC<br>Lim. curative care |

Pre-term NB(*1): Pre-term New Born
N.V. Deliveries(*2): Normal Vaginal deliveries
SAM Management(*3): Severe Acute Malnutrition Management

Source: Bangladeshi essential service package (ESP), Aug.2016

(2) Administration of HRH Employment

According to the World Health Statistics 2015, there are only 3.6 doctors per 10,000 people in Bangladesh while the averages 13.9 in the world and 5.9 in the South East Asian region.

Additionally, there are 2.2 nurses per 10,000 people in Bangladesh, which is lower than the world and South East Asian region average. There are 28.6 in the world and 15.3 in the South East Asian region.

In Bangladesh there are community healthcare providers such as CHCP, HA and FWA in the community, and they belong to the CCs. Each CC covers 6,000 people. One CC assigns one CHCP. Also, there are many NGOs working at the community level.

Human Resources for Health (hereinafter referred to as "HRH") face three major challenges: a shortage of workers for the health sector, insufficient quality of human resource management and wide disparities between the urban and rural area in terms of quantity and quality of HRH. The WHO recommends that the number of healthcare workers (counting only physicians, nurse and midwives) should be no less than 23 workers per 10,000 people. However, Bangladesh falls far short of this target, having only 6 health workers per 10,000 people, with the number of nurses particularly lacking.

2-3-3 Health Facilities, Drugs and Medical equipment

HED of the Health Service Division of the MOHFW is responsible for constructing new primary level health facilities and maintenance, renovation and upgrading of existing same level health facilities. The Health Wing in the Public Works Department of the Ministry of Housing and Public Works is responsible for the construction of new secondary and tertiary level health facilities as well as the maintenance, renovation and upgrading of existing same level health facilities. These activities are conducted under both the development and operation budgets in the PFD of the MOHFW.

The Directorate General of the Drug Administration of the Health Service Division is the drug regulatory authority of Bangladesh. It supervises and implements all prevailing drug regulations in the country and regulates all activities in import, procurement, manufacturing and distribution of all kinds of medicinal products.

The procurement of medical equipment for public health facilities is required to conform to the Public Procurement Rule 2008 (hereinafter referred to as "PPR2008") and Public Procurement

Act 2006 (hereinafter referred to as "PPA2006"). In addition, the procurement is required to conform to the "Guidelines Procurement of Goods, Works, and Non-Consulting Services under the International Bank for Reconstruction and Development (IBRD) Loans and International Development Association (IDA) Credits and Grants by World Bank Borrowers" if the funding resources are Reimbursable Project Aid (hereinafter referred to as "RPA") by a pool fund. In the 4th HPNSP, CBHC is responsible for medical equipment of primary level facilities and HSM is responsible for medical equipment of secondary and tertiary level Health facilities. The procurement process is managed by the Central Medical Supply Depot (hereinafter referred to as "CMSD") of the DGHS for tendering under the MOHFW's approval.

2-3-4 Health Financing

The total health expenditure (THE) is 4.8 billion USD and 3.7% of GDP (World Bank, 2015). THE per capita is 31 USD, which is slightly lower than that of India.

The following Table 2-7 shows the recent budget for the MOHFW. The GOB allocated 4-5% of its budget to the MOHFW which is lower than the Abuja declaration[8]. The maintenance budget is around 2% of the total budget.

Table2-7 MOHFW budget

(Unit: million Taka)

| Fiscal Year | 2014 FY | 2015 FY | 2016 FY |
|---|---|---|---|
| Total budget | 111,762.40 | 127,256.3 | 175,160.5 |
| Government budget | 90,811.55 | 96,502.26 | 132,497.9 |
| Donor budget | 20,950.85 | 30,754.04 | 42,662.6 |
| MOHFW budget allocation within the government budget | 4.5 % | 4.3 % | 5.1 % |
| Budget for maintenance | 2,472.7 | 2,404.7 | 3,144.0 |
| Budget for operation | 68,270.3 | 73,944.2 | 112,815.100 |
| Expenditure | 93,452 | 102,424 | N/A |

Source: MOHFW Home Page

Since public medical insurance is neither common nor compulsory in Bangladesh, the majority does not have any specific knowledge about public medical insurance or its merits. Private health insurance schemes exist but are limited only to certain accredited medical institutions.

[8] Abuja declaration is heads of state of African Union countries pledged to set a target of allocating over 15% of government annual budget to improve the health sector, in 2001.

Moreover, most households lack the economic means to pay for private insurance premiums. Therefore, out-of-pocket (hereinafter referred to as "OOP") expenditures are high compared with other LDCs. Households, on average, pay approximately 63% of the cost of care, although the rate of OOP of households is decreasing[9]. The result is that most poor households lack sufficient access to healthcare services simply because they cannot afford them.

[9] The OOP in Bangladesh, in 1997 was 76% and in 2015 was 63%, according to the Bangladesh national health account, 2015.

# Chapter 3 Strategy in Health Sector

## 3-1 Health Sector Strategies related to the Project ideas

### 3-1-1 4th Health, Population and Nutrition Sector Program

(1) Strategy

The 4th HPNSP describes strategy below. Stronger governance and stewardship role of the MOHFW, building capacities in leadership, management and regulation for better quality services are emphasized.

a. Restructuring MOHFW to increase performance, efficiency and accountability while removing duplication and waste
b. Rolling out of an upgraded ESP with greater functional integration of services at district level and a functional referral system
c. The development of new approaches and partnerships with the private sector and the community to ensure basic services reach the poor, the hard to reach, the disabled, elderly and those left behind
d. A focused improvement in the quality of care, including ensuring the implementation of a comprehensive health workforce strategy and action plan
e. Promoting the importance of public health and increased investment in prevention, primary care and strengthening community engagement
f. Tackling the rising burden of NCDs through cross-sectoral work to establish healthy lifestyles and healthy environment
g. Tackling the burden of established and new CDs
h. The adoption of new technologies to strengthen surveillance, data quality and information systems to provide a strong evidence-based decision making
i. Greater investment in health, ensuring a focus on managing demand, increasing efficiency and developing the evidence-based future health funding

(2) Structure of implementation of 4th HPNSP

In order to implement the 4th HPNSP, the MOHFW set the Programme Implementation Plan (hereinafter referred to as “PIP”) which consists of 29 OPs such as NCDC, Hospital Service Management, Community Based Health Care, and so forth. OP describes details of strategy, implementation plan with budget arrangement, targets, and Monitoring and Evaluation. The existing PIP was approved and effective in 2017.

Each OP implements specific activities of the program keeping linkages with other OPs and supports activities of other participants to achieve the strategic objectives of the 4th HPNSP. Implementing structure of the 4th HPNSP is described in Chapter 7 in detail.

The establishment of a large 'pooled fund', financed by the DPs has certainly contributed to improve the working relationships between the government and its DPs since the beginning of Sector Wide Approaches (hereinafter referred to as "SWAp") in 1998.

Some major DPs continue to provide complementary support through each specific disease control or health issue since they are not well integrated with the government implementation arrangements. During the 4th HPNSP the work would be done to improve coordination and to bring in the off-budget contributions into the GOB and DPs coordination platforms.

3-1-2 The Strategy to control conventional NCDs (CVD, Diabetes, COPD and Cancer) under the 4th HPNSP

The Mid Term Review (hereinafter referred to as "MTR 2014") of the HPNSDP recommended that the health system activities should be reconsidered by realigning efforts to tackle NCDs in a comprehensive manner. Use of media was warranted for creation of awareness and lifestyle change. Also, the MTR 2014 gave special importance to urban health as it related to pollution and sanitation.

(1) General Objective:

In order to reduce mortality and morbidity of NCDs in Bangladesh, evidence-based measures for control of risk factors are strengthened and health service delivery options for early detection and management are developed.

(2) Specific Objectives:

a. To promote the development and implementation of effective, integrated, sustainable, and evidence-based public policies for NCD control, their risk factors, and determinants.
b. To develop and strengthen the capacity for surveillance of chronic NCDs, their consequences, risk factors, and the impact of public health interventions.
c. To foster, support, and promote social and economic conditions that address the determinants of chronic NCDs and empower people to increase control over their health and to adopt healthy behaviors.
d. To improve the capacity and competencies of the health system for the integrated early detection, management of chronic NCDs and their risk factors.

(3) Actions

a. Screening of Conventional NCDs (CVD, Diabetes, COPD and Cancer):

the network of community and the primary level health facilities such as CCs, Union health facilities and UHCs will be used for the prevention of NCDs through public awareness, screening and early detection, treatment and referral. Testing for risk factors of NCDs will be conducted at community level - HTN, DM, high cholesterol, COPD. Health Workers (Health Assistant: hereinafter referred to as "HA"), FWAs, CHCP, AHI and HI will be trained. The cases of NCDs identified in the community and community clinic will be referred to the UHC for further advice. At the individual level NCD treatment will be established at the UHC for diagnosis, management and advice for HTN, DM, high cholesterol, COPD, breast and cervix cancer.

For early diagnosis and management of NCDs and their risk factors the major activities will include the following (selective from the 4th HPNSP):

a) Provision of training of doctors and paramedical professionals. 50,000-60,000 doctors, HA, FWA, CHCP will be trained on healthy lifestyle education using the Healthy Lifestyle Module.
b) Provision of Quality care of NCDs at the level of primary health care (CC, Union Health Complex and Family Welfare Center (hereinafter referred to as "UHC & FWC")/Union Sub Centre (hereinafter referred to as "USC"), Upazila Health Complex, secondary level (DH); tertiary level (MCH & Specialized Institutes). A strong referral linkage with feedback will be established from CC to UHC and further referral to DH/MCH/Specialized institutes.
c) Essential medicines for the treatment and prevention of diabetes, HTN and heart diseases and essential technologies will be provided at UZHC (X-ray, ECG, Nebulizer, Glucometer, BP machine, Measurement tape, weighing scale) and at UHFWC, UHC, CC (BP machine, glucometer, urine sugar strip).
d) Free/subsidized treatment for NCDs will be provided for the poor at a minimum.
e) Refine ESP of essential NCD services
f) Development of service protocol for the diagnosis and treatment of NCDs, and screening of cancer of breast, cervix and oral cavity.
g) Collaboration of NCDC with CBHC and HSM, will be strengthened.
h) Health education for NCD patients and skills development on NCDs for health workers
i) Development of Referral System: There is no structured referral system in Bangladesh, from 'where' the patients will go and the system is yet to develop a formal inter-facility referral system. Development of a referral system and back referral with advice for the care of NCD patients will be made through coordination of NCDC with CBHC and HSM. This will be more applicable for the subjects referred from the CC or Union facilities when diagnoses are confirmed, and treatment initiated at the UHC and the supply of drugs

ensured at the CC.

j) Establishment of an NCD Corner at UHCs to strengthen the referral system at UHCs where primary screening is conducted.

b. Health promotion and risk reduction (Healthy Lifestyle and Practices):
Healthy lifestyle and practices will be promoted at the community level and at facility levels

a) At the community level, a massive and rapid public health campaign will be made on diet, reduce salt intake, the harmful effects of tobacco use, the reduction of exposure to indoor air pollution, exercise promotion. Awareness will be created using purposefully developed flip chart on NCD risk factors (prepared for HA and CHCP, and other health and FP workers), school health programs, opinion leader's orientation, observance of NCDs related days, community radio programs and other relevant methods of Behavior Change Communication (hereinafter referred to as "BCC"). A network of NGOs, local clubs and other organizations will be promoted.

b) At all health facilities, a regular communication program will be arranged (by Upazilla Health education unit proposed in National Health Policy) related to diet, tobacco cessation, exercise promotion, salt intake reduction, and reduction of exposure to indoor air pollution.

3-1-3 The Strategy for improvement of Urban Health

Following 'National Urban Health Strategy 2014' developed by the GOB (MOHFW and MOLGRD&C), the current strategy for Urban Health under the MOHFW is described in 4th HPNSP as below.

(1) The facilities under the MOHFW will provide primary, secondary, tertiary and specialized health care services to urban, peri-urban and rural population. Specialized hospitals will provide services on specific areas (e.g. CVD, eye care, renal diseases, etc.). The MOHFW operated the GODs in large city corporations will also provide services on various CDs and NCDs.

(2) 35 GODs and 4,000 satellite centers will provide outpatient service for EPI and Maternal and Child Health to the urban population.

(3) The MOHFW will continue to provide all the commodities (vaccines and contraceptives) of immunization and family planning respectively in the urban areas, to be distributed by the City Corporations through the NGOs.

(4) Further expansion of the GODs will be made for quality PHC services (including services for reproductive health, nutrition and health education). The referral system will be developed and implemented between the GODs and the secondary/tertiary level hospitals. The General Practitioner (hereinafter referred to as "GP") system will be piloted in this

regard.

(5) Coordination between the MOHFW and MOLGRD&C will be strengthened through operationalizing the guidelines of 'National Urban Health Strategy 2014.' Coordination and collaboration will also be strengthened with the private sector and NGOs in extending the existing health care service network in urban slums.

(6) The capacity of the various service providers under the MOHFW, MOLGRD&C, NGOs and private sector working in urban slum areas will be strengthened to enhance service quality.

(7) The provision and establishment of Primary Health Care Centers (hereinafter referred to as "PHCC") for the provision of ESP for the catchment population in urban secondary hospitals (DHs) and tertiary hospitals (MCHs- public and private)- dual role- service of ESP, segregating referred cases plus teaching the healthcare professional students and trainees.

(8) The capacity building of healthcare providers in secondary and tertiary hospitals in providing primary healthcare.

3-1-4 Gender Consideration

(1) The Concept of Gender Equality and Women's Empowerment enhancement activities

According to the 4th HPSNP, gender equity should be considered during the implementation of the 4th HPNSP.

With the revitalization of community based health service provision, the access of the poor, particularly women and children to PHC service has increased considerably. Advancements have been made during the previous HPNSDP in hearing citizen's voices through the establishment of community support groups and community groups for management of the community clinics. 'Gender Equity Strategy 2014 (hereinafter referred to as "GES 2014") and 'Gender Equity Action Plan (2014-2024),' a comprehensive plan for 10 years were published. The goal of the GES 2014 is to improve the health of the people of Bangladesh through better utilization of services especially for women, children, adolescents, the marginalized population and the poor.

(2) Arrangement for the Gender Consideration

There has been increasing recognition of the importance of improved gender equity in health sector plans and programs. The implementation of policies and plans to improve gender equity was limited mainly due to weak institutional mechanisms and leadership. Therefore, the roles of line directors of NCDC and CBHC are essential for training of health service providers and

members of CGs and CSGs. At the same time, designing facilities based on gender equity should be considered.

Gender, Equity, Voice and Accountability (hereinafter referred to as “GEVA”) are the central theme of the 4th HPNSP. It aims at enhancing availability of quality services to women and creating a congenial environment for women and adolescent girls. Specific progress in GEVA issues includes a situation analysis of the GOB Initiatives called as Attaining Gender Equity in health, nutrition and population (hereinafter referred to as “HNP”) sector, approval of the GES 2014 and the Gender Equity Action Plan (2014-24). The HPNSDP, through implementation of CC-based services, provision of separate toilets, breast feeding corners and other facilities in the women friendly hospitals, etc. has contributed to increasing access to HNP services by poor women.

# Chapter 4 Past JICA's Cooperation and Selected Development Partners Activities in Health Sector

## 4-1 ODA Loan Projects

### 4-1-1 Outline of Maternal, Neonatal and Child Health Improvement Project (Phase 1) (Health, Population and Nutrition Sector Development Program) (ODA Loan Project Phase 1)

ODA Loan Project Phase 1 is provided to meet the financial demand of the first three years of HPNSDP. Phase 1 was completed almost as planned. The activities for five OPs supported by Phase 1 are listed in the following Table. (As of December 2017)

Table 4-1 Activities Supported by the ODA Loan Project Phase 1

| OP Name | Activities | Progress |
|---|---|---|
| MNCAH(*1) | Providing CEmOC | The listed equipment was procured and distributed by GOB according to the Annual Procurement Plan in FY2012/13 and FY2013/14. |
| CBHC | Training for CHCP, CG, CSG and local government representative | 22,193 CHCPs, 170,799 CGs, 588,387 CSGs and 19,154 local government representatives were trained as of Sep. 2017.<br>Local government Representatives Training: in FY 2015/16, the election of local government all over the country. The election took a long time in the second half of FY 2015 /16. On account of the training will be accomplished at FY 2016/17 and FY 2017/18. |
| HSM | Equipment (Dhaka Shishu Hospital) | The procurement of listed equipment was completed. |
| | Support for TQM | TQM training was completed. |
| MCRAH(*2) | Training for FWVs on EmOC and midwifery | 2 courses of training was completed. |
| PFD | Expansion (6 UHCs) and Upgradation (5DHs)<br>Expansion of only OT (1 DH) | Expansion of 6 UHCs from 31- to 50- bed hospitals and upgrading of 5 DHs were completed.<br>Expansion of only OT (1 DH) is ongoing. |

(*1) MNCAH: Maternal, Neonatal, Child and Adolescent Health

(*2) MCRAH: Maternal, Child, Reproductive and Adolescent Health

As for the training part, ODA Loan Project Phase 1 has been supporting the training provided by the CBHC OP, HSM OP and MCRAH OP since 2011 through coordinating with the technical cooperation project, SMPP (Phase 2) by JICA. The summary of the activities, including trainings is shown in Table 4-1.

### 4-1-2 Outline of the Maternal, Neonatal and Child Health（MNCH）and Health System

Improvement Project　(ODA Loan Project Phase 2)

ODA Loan Project Phase 2 is planned to meet the financial demand of the last three years of the HPNSDP. Phase 2 has been proceeding almost as planned.

(1) Training

The ODA Loan Project Phase 2 has been used to support CBHC trainings since 2016. CSG training, Supervision & Monitoring and Training for supervisor on different levels is to be accomplished in FY 2017.

(2) Medical Equipment

Provision of medical equipment at the renovated and/or expanded DHs is currently under procurement. Provision of skill lab equipment for Bachelor of Science (hereinafter referred to as "BSc") nursing colleges has yet to start. (As of December 2017)

(3) Constructions

New construction of student hostel buildings in BSc nursing colleges and extension of the academic buildings there are under procurement. Therefore, provision of furniture for student hostel buildings at the BSc nursing colleges has yet to commence.　New construction of CCs is underway. (As of December 2017)

The activities for the five OPs supported by Phase 2 are listed in Table 4 -2. (As of December 2017)

Table 4-2 Activities Supported by the ODA Loan Project Phase 2 within the HPNSDP

| OP Name | Activities | Progress |
|---|---|---|
| CBHC | Training of CSG<br>Supervision & Monitoring training on different level supervisor | Ongoing |
| MCRAH | Midwife training for FWVs | Ongoing |
| | Emergency Obstetric Care (EmOC) Trainings for FWVs | Ongoing |
| | Distribution of Maternal and Child Health kits and FWC kits to UHFWCs | In preparation |
| HSM | Provision of medical equipment at the renovated and/or expanded DHs | In preparation |
| NES(*) | Provision of skill lab equipment for BSc nursing colleges | In preparation |
| | Furniture for students' hostel building in BSc nursing | In preparation |

| | | |
|---|---|---|
| | colleges | |
| PFD | New construction of students' hostel building in BSc nursing colleges | Under procurement |
| | Extension of academic buildings in BSc nursing colleges | Under procurement |
| | New construction of CCs | Ongoing |

(*)NES: Nursing Education and Services

As sub-projects out of the HPNSDP, establishment of new imaging diagnostic centers are planned for seven MCHs. Dhaka medical division are divided into 2 divisions, Dhaka and Mymensingh. A new imaging diagnostic center will be established in the Mymensingh MCH using Bangladesh government funding.

4-1-3 Relation with the Project ideas

The potential project is planned to provide GOB's effort to NCD Control and Urban Health under 4th HPNSP. The seven MCH imaging diagnostic centers project of ODA Loan Phase 2 is for strengthening diagnosis of NCDs. Those MCHs are the top referral hospitals in each division. Therefore, imaging diagnostic centers in MCHs are expected to become referral centers to confirm NCDs diagnosis of patients who were referred from UHCs and DHs. The potential project may support to strengthen NCD Control at these UHCs and DHs.

## 4-2 Technical Cooperation

4-2-1 Safe Motherhood Promotion Project (SMPP: Phase1 and 2)

SMPP has initiated its interventions in July 2006 in the Narsingdi District. The first phase was completed in 2011 with successful development of replicable models ('Narsingdi model') which are described in the figure below. The second phase started in 2011 and ended in 2016 to attempt to expand the models that were developed in the first phase and thus to manage effectively safe motherhood and child illnesses.

SMPP developed approaches which implement maternal and child health activities along with (1) community, (2) healthcare facility and (3) local government. Further, it developed coordination models among three sectors, expanded their activities nationwide, and contributed to improvement of maternal and child health

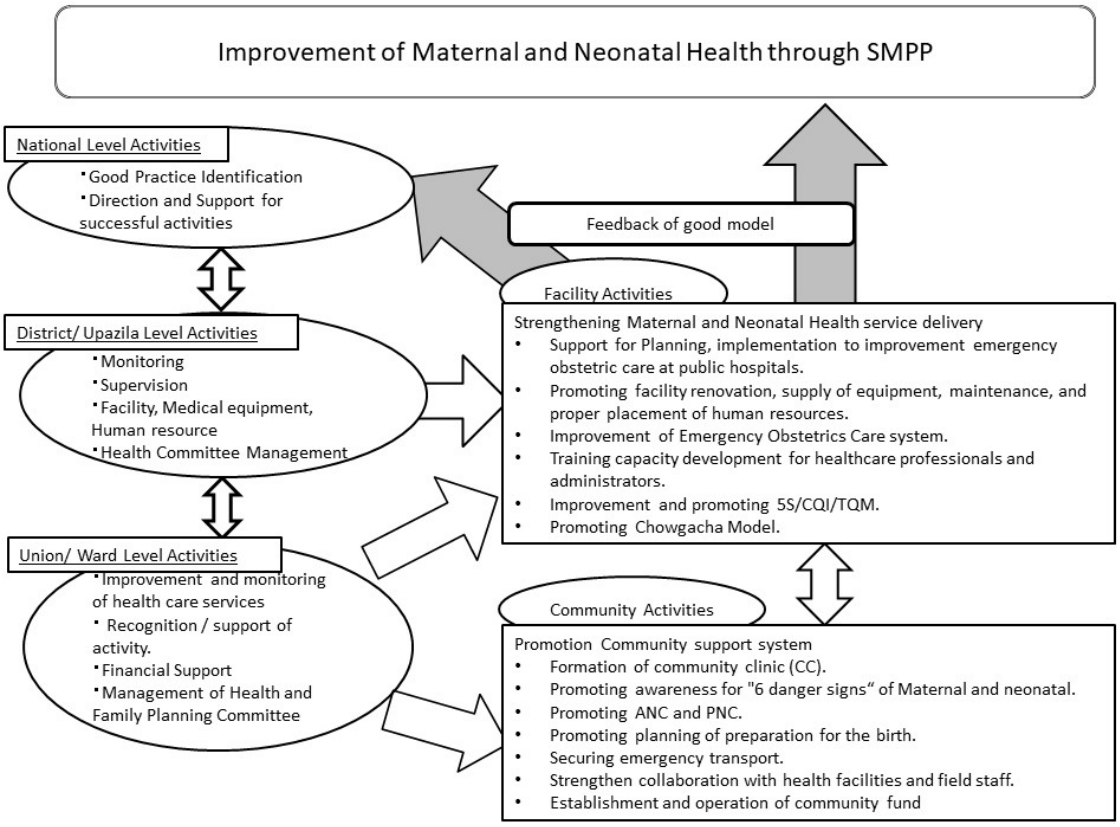



Figure 4-1 Activities under the Safe Motherhood Promotion Project (SMPP)

*This figure was developed by the survey team on basis of SMPP material.

The 5S/CQI/TQM[10] approach became a national guideline, and CmSS (Community Support System)[11] activities expanded not only to the project area but to nationwide by the national government and other development partners.

These approaches could be utilized for NCD control. The enhancement the capacity of CSGs and CGs with local government support is a key to solve the NCD problems.

4-2-2 The Project for Strengthening Health Systems through Organizing Communities (SHASTO)

SHASTO started in 2017. The basic idea of the project is to tackle the NCD problems using the experiences and approaches from SMPP Phase 1 and 2.

- To develop and expand a model for integrated service delivery of NCD control

10 5S/CQI/TQM integrate three capacity development approaches; 5S (Sort, Set, Shine, Standardize, Sustain) ,CQI (Continuous Quality Improvement) and TQM (Total Quality Management).

11 CmSS which had been implemented during SMPP Phase 1 was integrated into operation of MOHFW as the form of CG and CSG. It was disseminated throughout the country.

- To improve services at various level of health facilities such as at the CCs, UHCs, and DHs
- To promote healthy behavior to the community through strengthening community level of activities

Since synergy with other health sector activities is one of the important concepts for project planning, the potential project is expected to maximize the synergistic effect with SHASTO.

## 4-3 Other DPs activities and coordination with them

### 4-3-1 Mechanisms to facilitate DPs coordination

DPs has been collaborating with the 4th HPNSP. Several DPs continue to contribute financial support to the funds administered by the World Bank for the implementation of the 4thHPNSP. Several DPs contribute to various joint Task Groups and Technical Committees which are formed to operate the OP activities under the 4th HPNSP. The Local Consultative Group in Health is a coordination mechanism between the GOB and DPs. However, in the 4th HPNSP, it was recommended that the MOHFW and the DPs work more closely to make the sub-groups under The Local Consultative Group in Health more effective.

The establishment of a large pooled fund, financed by the development partners has certainly contributed improved working relationships between the government and its development partners. In this aid modality practice since the beginning of the SWAps in 1998, the World Bank has undertaken the responsibility to manage the pool fund on behalf of the DPs.

To strengthen the coordination between the GOB and DP, the Local Consultative Group Working Group on Health with nine Task Groups will be continued on a quarterly basis as was done during the HPNSDP for program appraisal, policy discussion and guidance.

### 4-3-2 Development Partners Activities related to the Project

a. World Health Organization (WHO)

'The Strategic Agenda of the Country Cooperation Strategy 2014–2017' is aligned with the HPNSDP and 'the Bangladesh United Nations Development Assistance Framework (UNDAF) Action Plan 2012–2016.' The five strategic priorities of the current Country Cooperation Strategy are described below.

- Strategic priority 1: Reduce the burden of communicable diseases, including vaccine preventable diseases, tuberculosis, malaria, HIV/AIDS, and neglected tropical diseases
- Strategic priority 2: Reduce the burden of NCDs through health promotion, risk reduction and cost-effective management

- Strategic priority 3: Reduce health, nutrition, environmental and occupational risk factors throughout life
- Strategic priority 4: Promote universal health coverage with strengthened health systems based on primary health care
- Strategic priority 5: Reduce mortality, morbidity and societal disruption resulting from epidemics, natural disasters, conflicts, environmental, and food-related emergencies, through prevention, preparedness, response and recovery activities that build resilience and use a multi-sectoral approach

As for NCD control, the WHO has set a strategic priority; Reduce the burden of NCD health promotion, risk reduction and cost-effective management.
Increase access to interventions to prevent and manage NCDs, including CVD, diabetes, cancers, and chronic lung diseases, and their risk factors using a primary care approach

Strategic approaches

- Provide support in evidence generation and implementation of the global monitoring framework on NCDs, which includes setting national targets for prevention and control of indicators to monitor trends and assess progress made in the implementation of national strategies and plans
- Support the piloting and scaling-up of the Package for Essential NCD Interventions developed by the WHO in the Upazila health system to improve access of communities to NCD services through a multi-sectoral approach
- Provide policy advocacy support for effective implementation of the NCD Prevention Strategic Plan 2011–2015[12] with a special focus on the Tobacco Control Act involving different ministries with a view to implement the WHO Framework Convention on Tobacco Control (hereinafter referred to as "WHO FCTC")
- Increase access to services for mental health and substance use disorders[13]
- Reduce risk factors for road traffic injuries, blindness and deafness, while increasing the access to services for people with disabilities.

b. The Asian Development Bank (ADB)

ADB has been prioritizing Urban Health over the past fifteen years in its health sector cooperation. The ADB supported Urban Primary Health Care Project (UPHCP) is one of the largest public-private partnerships (hereinafter referred to as "PPP") in the delivery of PHC in

[12] Strategic Plan for Surveillance and Prevention of Non-Communicable Diseases in Bangladesh 2011-2015, WHO
[13] Drug and alcohol abuse

South Asia. GOB with the assistance of the ADB implemented the First Urban Primary Health Care Project (UPHCP-I) from March 1998 to June 2005. The Second Urban Primary Health Care Project (UPHCP-II), supported by the ADB and the Governments of the United Kingdom and Sweden, commenced in July 2005 and was completed in December 2012.

A provision of 50 million USD has been made for the Bangladesh Urban Primary Health Care Services Delivery Project (UPHCSDP) in the ADB's lending pipeline for 2012 in addition to a 400,000 USD grant support for Supporting the Urban Primary Health Care Services Delivery Project in 2012. The UPHCSDP and the grant continue the provision of urban PHC, among others, through successful PPPs pioneered by UPHCP-I and II. With a density of 2,756 people per square kilometer ($km^2$) in urban areas and 843 people per $km^2$ overall, Bangladesh is the most densely populated country in the world (excluding a few city-states). Bangladesh is urbanizing at a rapid pace and the country's urban population is expected to reach 89.5 million (from 39.5 million in 2005) by 2030. According to one estimate, the urban poor population could be as high as 40%-60% of the urban population by 2020[14]. Notwithstanding higher economic growth in urban areas, the absolute number of poor households is increasing in urban Bangladesh due to migration of rural poor into urban areas. Studies have shown that the health indicators of the urban poor are as worse as those of the rural poor because of poorer living conditions, and limited urban PHC. Failure to provide urban PHC can have serious negative externalities - spread of communicable diseases, debilitating epidemics, reduction in economic productivity, among others.4th phase is now under project formulation starting from 2018.

c. World Bank

The World Bank launched the Health Sector Development Program as a project for the implementation of the HPNSDP in 2011 and loaned 358.9 million USD to the Government of Bangladesh. In 2016, they loaned another 150 million USD using PforR (Program-for-Results: focusing on results). Priority issues are maternal and child health, nutrition improvement, NCD control, strengthening of healthcare facility functions, health administrative governance, health workforce resource development, health finance, health information system, etc.

The indicators of maternal and child health of Bangladesh need further improvement. Therefore, the country is positioned to be a secondary investment country of the Global Financing Facility for Every Woman and Every Child (hereinafter referred to as “GFF”) which is led by the World Bank. Japan is also a member of the GFF.

[14] 21% at 2014, the World Bank

The GFF is a grant provided to developing countries, in cooperation with the IDA. The GFF is included in the 4th HPNSP (15 million USD). Japan will provide funds in collaboration with GFF, rather than through direct trusts. The conditions for the GFF and the related IDA expenditures are set for each country, the scenario and investment plan for improving maternal and child health, and the specific health finance strategy. An IDA of 500 million USD and a GFF funds of 15 million USD are estimated for the 4th HPNSP.

d. United States Agency for International Development (USAID)

In the 'Country development cooperation strategy for 2011-2016' of USAID, the health sector has three pillars (1) Improve family planning and reproductive health services through awareness activity, (2) Improve essential service of family planning, health and nutrition in rural and poor urban areas, and (3) Strengthen health system and governance from the national level to community level through improvement of monitoring and evaluation ability, etc.

High-quality family planning, health, and nutrition services remain limited in Bangladesh, particularly among poor people in rural areas, as well as in the overcrowded urban areas. In response, USAID integrates family planning, nutrition, and maternal, newborn, and child health services into a package of basic healthcare available in clinics throughout the country. This one-stop approach also provides nutritional supplements for pregnant women and young children, and promotes exclusive breastfeeding for infants during the first six months of life.

To continue gains made in maternal and child health, USAID trains community health workers and community clinic staff to help them provide high-quality care during childbirth. USAID outreach and mobile health initiatives also encourage pregnant women and their families to ensure that they attend antenatal checkups and give birth under the supervision of a skilled birth attendant.

USAID assists Bangladesh to strengthen its public health systems with an emphasis on improving primary healthcare delivery at the community level. At the national level, USAID programs work with public health leaders to improve policy and planning, financial management, monitoring and evaluation, procurement, and logistics. (through MEASURE Evaluation[15] Project)

USAID also supports the government's national tuberculosis (hereinafter referred to as "TB") program, providing financial support and technical assistance to upgrade TB laboratory

[15] The name of the USAID project: https://www.measureevaluation.org/

technology – including GeneXpert rapid testing. USAID assistance also helps Bangladesh to procure drugs to treat multidrug resistant TB patients and develop a mobile phone application to treat TB patients in their communities.

# Chapter 5. Results of the Field Study and Analysis

## 5-1 Non-communicable Diseases (NCDs)

### 5-1-1 Prevention

Promoting a healthy lifestyle is essential in controlling NCDs in the 4th HPNSP. MOHFW is implementing health promotion activities to reduce salt intake for the prevention of HTN and to stop smoking for the prevention of cancer and respiratory diseases through posters and a TV campaign.

However, at CC level, measures for preventing lifestyle-related diseases, including measures to prevent smoking, to increase physical activity through exercise, and to improve eating habits, have not been sufficiently adopted. Taking such measures should be essential to prevent NCDs in the future at CC level. Also, to actualize those health promotion activities, health education at the community level is necessary in addition to national level TV and poster campaigns.

Health promotion activities for the community members through heath education training and mobilization of CG and CSG are required. The training provided by CBHC for the CHCPs stationed at CCs is a primary health care skills, including measures for NCD control, such as measuring vital signs, blood pressure, height/weight measurement, etc. There are no manuals or guidelines for CHCP, specializing in NCD prevention.

In the Charsindur community in Narsingdi District, when a patient was diagnosed with diabetes at the UHC or other hospitals, CSG or CG members advise the patients on well-balanced diets, low-sodium diets, and proper sleep to control and prevent NCDs. However, the main activities of the CSG and CG members are to promote safe delivery, breast-feeding, use of hygienic toilets, etc. Therefore, measures to prevent NCDs are not sufficiently being implemented at present. Also, some CSG and CG members do not possess sufficient knowledge on NCD prevention.

At the Paurulia CC in the Satikhira District, the CHCP understood the responsibility for implementing health education on NCD control, but implementation of those activities was not sufficient due to, for example, insufficient provision of the test strip of glucometer.

### 5-1-2 Screening at Community Clinics

CCs in the Narsingdi, Manikganj, and Satkhira Districts were investigated using a questionnaire concerning the NCD screening status at the community level.

For patients in bad health, the CHCP measures their vitals (pulse, respiration, body temperature,

blood pressure, level of consciousness, etc.) and measures blood sugar using a glucometer, if available. At the CC in the Paurulia in the Shatkhira District, glucometers were available though there were no measurement sheets available. Therefore, measurements could not be conducted.

When any abnormality is discovered, the CHCP fills the necessary information in the referral slip (a medical referral letter to a higher-level medical facility containing the patient's address, name, age, and gender, CC name and code number, the reason for introduction, the name of the disease, diagnosis results, etc.), gives the slip to the patient, and tells the patient to go to a UHC. The patient visits the UHC with the slip to receive a medical examination. This is referred to as a 'patient referral to a UHC,' and the function to introduce a patient to higher-level medical facility is referred to as 'patient referral function.' Diseases that should be referred by the CC are specified by the department in charge, CBHC. As a referral standard, when an abnormality in blood pressure or blood sugar level is discovered, when an irregular pulse/abnormal breathing is discovered using a stethoscope, etc., or when a symptom is clearly suspected to be a result of a NCD, the patient is referred to the UHC. The CHCP understood the referral standard described below. However, their explanation to the patients being referred to the UHC was not sufficient so the patients did not know which department of the UHC to visit. Supervision by the UHC staff to the CCs is implemented, but cooperation between the UHC and the CCs is not sufficient. Also, medical check-ups for community people with no symptoms were not being implemented.

Diagnoses are only made by a doctor, and disease identification is not conducted by the CHCP. Doctors at the UHC level or at a higher-level facility diagnose and administer treatments to the patients, but the subsequent continuous blood pressure and blood sugar monitoring can be implemented by the CHCP.

According to the ESP, regulated in 2016, CC is required to check obesity for patients for NCD screening. Body Mass Index (hereinafter referred to as "BMI") is one of the basic indexes for NCD screening. Even though body weight measurement was performed, height measurement was not, or even if body weight and height measurements were performed, BMI was not calculated. Measurement of abdominal circumference is generally conducted in Japan, but it is not a common screening method in Bangladesh. It is desirable to incorporate training of how to use the above methods in screening training provided by the NCDC.

Referral standards per major NCDs are as follows.

(1) Hypertension

Blood pressure is measured at a CC, and a referral slip is issued if a patient's blood pressure exceeds the standard level. The patient is referred to UHC and undergoes a medical examination by a doctor.

(2) Ischemic Heart Disease

At the CC, when an abnormal sound or an irregular pulse is detected using a stethoscope, a referral slip is issued. The patient is referred to the UHC and undergoes a medical examination by a doctor.

(3) Diabetes

At the CC, the blood sugar levels of patients with a considerable risk of diabetes are measured twice, when he/she is fasting and 2 hours after a meal. A referral slip is made for patients whose blood sugar levels are higher than the standard value. The patient is referred to the UHC and undergoes a medical examination by a doctor.

In addition, interview was conducted for the Survey for SDGs Business (part of the JICA Public-Private Partnership program).

- Purpose for the survey:
  To study a feasibility of the business plan, in which providing easy-access medical checkup services to a majority of people including the vulnerable populations in rural areas.
- The outline of the survey (as of December 2017):
  In the survey, the business plan is assumed as follows. With the combination of remote diagnosis (tele-medicine) by mobile medical equipment and ICT, together with AI technology, their services will be provided through the community clinics, thereby reducing the mortality of NCDs in vulnerable populations in rural areas. Whether the community clinics are capable for operating medical checkup items, such as health interviews, blood-sugar measurements with glucometers, blood pressure, BMI calculations from height and weight measurement etc., will be confirmed through the survey.

This survey is to start in 2018. Since the planned business will focus on NCD control at community level, it is expected to contribute to the NCD control leaded by GOB if the feasibility of the business plan is confirmed and started its operation.

5-1-3 Diagnosis/Treatment at UHCs and the DHs

UHCs and DHs in Narsingdi, Manikgani, and Shatkhira Districts were studied to analyze the status of NCD referral and diagnosis/treatment. Interviews with hospital staffs were conducted

using a questionnaire, and the state of the facility and equipment were inspected.

At the UHCs, doctors examine outpatients and give instructions on the necessary examinations, and then the outpatients undergo those examinations. In the case of referred patients from CCs, doctors refer to the content of the referral slip to conduct medical examinations. However, the number of referred patients from the CCs is not known by the UHCs. At present, MOHFW promotes the provision of a special department for taking measures for NCDs at NCD Corner in UHCs. The NCD Corner consists of 1 to 2 doctors and 2 to 3 nurses who specially oversee the diagnosis and treatment of NCDs. Due to insufficient manpower and budget, the NCD Corner services are provided not in all the UHCs. At the Debhata UHC in the Shatkhira District, there was a NCD Corner though it was closed due to the transfer of the doctor(s). Among medical facilities surveyed this time, the only one UHC in Narsingdi District had a fully functioning NCD Corner. Other facilities did not have NCD Corners at all or conducted mixed medical examinations and treatments with other departments. Moreover, in Narsingdi District, the UHC accepts not only NCD patients but also plays a role in sorting all patients except for emergency patients. Therefore, the system to deal particularly with NCD patients has not been established, so doctors are swamped in dealing with patients. Referral of patients from the UHCs to CCs (reverse referral[16]) has not been implemented.

When health service providers cannot conduct medical examinations using the equipment in UHCs, patients are referred to undergo medical examinations at a higher level medical facility. Patients with circulatory disease (HTN, etc.) or COPD are referred to a DH or a tertiary medical facility using a referral slip. Patients with diseases of the endocrine system (diabetes, etc.) are referred to a private hospital specializing in diabetes operated in each district. In a practical sense, however, all UHCs cannot perform the same tests because the allocation of medical equipment and supplies and technical capacity of service providers differ depending on the UHC. At many UHCs surveyed, some kinds of medical equipment for NCD diagnosis such as x-ray, ECG and nebulizer were not functional due to exceeding service life. At the Debhata UHC in the Shatkhira District, the x-ray examination room was closed because there were no technicians. Also, free medical supplies are not enough in UHCs, patients who were not given medicine at the UHC go to a pharmacy in the city to buy the medication prescribed by the doctor.

At DHs surveyed, most of medical equipment is functional. However, some NCD examinations, such as x-ray diagnosis and ultrasonography, could not be conducted due to

[16] When the doctor diagnose as the symptoms can be treated at CC level, UHC refers the patient to CC. NCDs require daily lifestyle management and constant medication. It is important to operate lifestyle management of NCDs patients at CC level.

aging equipment and lack of service providers.

Diagnosis/treatment concerning major NCDs at UHCs and DHs are as follows.

(1) Hypertension

At the UHC, the doctor measures blood pressure of a referred patient from the CC again. Also, the doctor performs tests and examines the patient to determine if a dangerous complication has developed and checks for the possibility of other diseases. Blood of the patient is taken in the examination room, and a blood serum analysis of blood sugar, triglycerides , cholesterol, etc. is conducted. The tests are not free of charge, so there are cases when tests are not conducted due to a patient request. HTN is closely related to kidney disease, so blood tests of the creatinine and urea nitrogen which are related to the kidney function can be carried out at DHs.

Both levels of hospitals provide patients with free guidance on low-salt diets and exercise therapy as well as free medication in the form of antihypertensive drugs. In the case that there is not a constant stock of medicines at the hospitals, patients need to buy the necessary medication at a pharmacy outside of hospital.

(2) Arteriosclerosis

At UHC, a patient with a smoking habit or suffering from obesity undergoes a serum test to check for diabetes and hyperlipidemia. Also, examinations of arteriosclerosis are visually performed using ultrasonic diagnostic equipment. As the results of those tests, if the patient is highly suspected to be suffering from either, the patient is referred to a DH or a higher level medical facility.

At DH or a higher level medical facility, examination of the fundus using a fundus camera (taking a photograph of arteriocapillary at the fundus of the eye) should be conducted. Arteriocapillaries are the only blood vessel which can be directly observed in human body. In this test, arteriocapillaries are photographed to check for progress of arteriosclerosis and diabetes.

(3) Ischemic Heart Disease

At UHC, an electrocardiogram is taken at the same time as the patient interview to check for abnormal wave patterns and an irregular pulse. Using ultrasonic diagnostic equipment, deterioration of the cardiac muscle contraction, which is associated with myocardial ischemia, is checked. If it is determined that the patient is at risk, the patient is referred to the DH or a higher level medical facility.

At the DH, the patient undergoes desirably a detailed electrocardiogram check with a 12-channel electrocardiograph and abnormal blood flow check with a Color Doppler Echo. The Satkhira DH was performing examinations with a specialized electrocardiograph department.

(4) Diabetes

At UHC, after the doctor's interview, the patient undergoes a urine test and a fasting blood glucose and oral glucose tolerance test (judged by 5 to 6 blood collections over a 2-hour period, and if the value exceeds the standard value, the patient is diagnosed with diabetes). In case that the UHC cannot perform monitoring or treatment, patients diagnosed with diabetes are referred to a higher level medical facility.

At DH, the referred patient undergoes a blood collection for retesting and monitoring. The patient's hemoglobin A1C is measured and treatment is started. Diabetic treatments are diet control, exercise therapy and oral diabetic medication. If improvement by medication is not observed and the condition worsens, insulin injection treatments begin. It is desirable that the following tests and treatment for complications can be performed on patients with advanced diabetes at DHs or higher medical facilities.

a. When diabetic nephropathy developed with the progress of diabetes

A dialysis unit is being established to perform blood purification 1 to 3 times a week using the peritoneal dialysis or the artificial dialyzer. (Cost of a dialyzer filter is 2,500 Taka. Artificial dialysis is only available at the MCH or at private hospitals specializing in diabetes.)

b. In the case of diabetic retinopathy

Due to hyperglycemia caused by diabetes, extra fine intraretinal vessels are damaged causing bleeding. Then blood and nutrition do not reach the visual cells ultimately resulting in retinal detachment (loss of eyesight). Examination of the fundus is performed to check the progress of the symptoms. (At the MCH, photocoagulation which partially burns the retina using a laser is available.)

c. In the case of diabetic neuropathy

The limbs of the body are affected by acroteric mortification. A small injury on a desensitized leg caused by neuropathy if unchecked can require dismemberment of the affected limb. However, thorough treatment of such symptoms is difficult, so the diabetes association in Bangladesh conducts counseling with patients to promote self-management (blood sugar

control) by telling them that dietary restriction and exercise therapy are important for treatment to avoid the need for amputation.

5-1-4 Health Facilities

Concerning the survey on health facilities condition, the summary is below without categorizing by the prevention, diagnosis and treatment.

(1) Interview to Health Engineering Department (HED)

HED is the department which undertakes construction of the primary level of health facilities such as UHC and CC. HED undertakes all the works for UHCs and CCs such as designing, construction tender, construction and maintenance.

The standard for determining specifications and cost estimation methodology that HED applies in its work is defined in the 'SCHEDULE OF RATES 2014 FOR CIVIL WORKS FOURTEEN EDITION' for construction planning and 'SCHEDULE OF RATES 2014 FOR ELECTRICAL/MECHANICAL WORKS 9TH EDITION' for utility planning, issued by PWD, Ministry of Housing and Public Works.

(2) The Field Survey

A field survey was conducted for DHs and UHCs with a good access to MCHs, in which imaging diagnostic centers will be established by the Japan's ODA Loan Project Phase 2. Also, access from Dhaka (less than two hours by car) was used as criteria for selection of the survey area for survey efficiency.

1) District Hospital

a. Manikganj (New Building)

The hospital building, which has eight floors, was expanded in 2015 using the Japan's ODA Loan Project Phase1. The new and old hospitals have a total of 250 beds. Though 2 years have passed since its opening, it is still operated with the old buildings. During the survey, reinforced concrete wall and wooden doors of CT room without proper shielding, though the CT was not installed yet, was found. For the radioactive facilities in Bangladesh, such as CT rooms, there is a standard of Bangladesh Atomic Energy Commission. However, the standard is not met in the CT room at the moment. Shielding work to the concrete wall and wooden door by using lead sheets should be required at the CT room prior to use.

b. Manikganj (Existing Building)

The building's date of construction is not known. The building is an old reinforced concrete structure. Floors are tiled, and the building is a brick-mortar construction with painted walls, using a contact ceiling as interior finishing material. Principally, it utilizes natural ventilation, and even the X-ray room lacks an air conditioner (hereinafter referred to as "A/C"), using a ceiling fan instead. HED carries out the maintenance for the facility.

2) UHC

a. Shaturia UHC, Manikganj District

Six to seven years have passed since the facility was built. The UHC is a 3-story building with a total floor area of 1,809 $m^2$ (603 $m^2$ x 3 floors) including 31 beds and a total site area of 20,241 $m^2$. The building is made from reinforced concrete. As the facility has no elevator, a slope is used for transportation of patients and material. Floor level is raised to 1m above the ground level as a measure against flooding. To date, there has been no damage due to flooding. The facility has 2 Operating Theaters (hereinafter referred to as "OT") and 1 delivery room. As a power failure occurs 2 to 3 times a day, back-up kerosene lamps are available. Water supply depends on deep well water whose quality is good enough to drink without treatment. Toilet drainage is dealt with by a septic tank. Air conditioning is accomplished by natural ventilation. The OT and post OT are equipped with A/C units. Meals for inpatients are prepared in the kitchen and provided free of charge as the expenses are borne by the government. Laundry is out-sourced. Construction of a new building is planned and will be a 19-bed, 3-story structure including an Outpatient Department (hereinafter referred to as "OPD") with a total floor area of 1,680 $m^2$. It has been discussed that the new structure be built on the site after the current building is demolished.

b. Keraniganj, Dhaka District

There are a hospital building and relevant facilities such as 3 buildings for staff quarters on this wide tract of land. Nearby, there are ponds and housing. The south and east sides of the facility are facing roads, and the main gate is located at the south side. 33 years have passed since the 2-story hospital building was completed in 1984. The facilities are affected by the age deterioration. The 3 buildings of the hospital are connected by corridors, and have natural illumination and ventilation. Though the level of the ground floor is 10 to 20 cm above the ground level, there has been no flood damage. There have been no problems after the roof top water leak was repaired. Though the facility has 1 OT and 1 Post OT, they carry out 2 medical operations simultaneously by dividing the OT into 2 places when the need arises. As outpatients and inpatients are combined in the waiting area due to the limited space, congestion is an issue.

The entire facility is well utilized. Back-up power is supplied by a single standby generator. Well water is supplied, and its quality is good enough to drink directly. Toilet drainage is accomplished by a septic tank. In the kitchen, wood is used as fuel. Oxygen for medical use is provided by a gas cylinder. The rooms for the medical officer and OT are equipped with an A/C unit. In December 2017, the facility receives 450 to 550 outpatients per day and with an average occupancy rate of 31 inpatients (94 to 95% occupancy) and once experienced hospitalizing more than 40 cases in a day. There is a request for the development of a new building which can accommodate outpatients, while inpatients can be treated in the old buildings. There are also requests for upgrading a pharmacy, a wider waiting space, an education space and establishing an emergency department. Provided that the existing facility is judged obsolete, there may be the option of newly constructing a 50-bed facility.

c. UHC facility plan

The survey team obtained information from the HED concerning room components required for a standard 50-bed UHC facility and the following information is provided in Table 5-1. The scale of the facility is prescribed as a 4-story building with a total floor area of 4,005.00 $m^2$.

Table 5-1 Room Components Required as UHC

| Story | Room Component | No. |
|---|---|---|
| Ground Floor | Emergency (male) | 01 |
| | Emergency (female) | 01 |
| | Emergency Medical Officer (EMO) | 01 |
| | Minor OT | 01 |
| | Consultant Surgery | 01 |
| | Junior Consultant | 06 |
| | Consultant Gyneacology | 01 |
| | Dental | 01 |
| | X-Ray | 01 |
| | Ultrasonography | 01 |
| | Laboratory | 01 |
| | Waiting | 01 |
| | Kitchen | 01 |
| | Cook | 01 |
| | Store, pantry | 01 |
| | Wash room (male) | 01 |

| | | |
|---|---|---|
| Floor Area-G | 1,026.02 $m^2$ | |
| 1st Floor | Upazila Health and Family Planning Officer | 01 |
| | Multipurpose | 01 |
| | General office | 01 |
| | Statistician | 01 |
| | Health Inspector (HI), Sanitary Inspector (SI) | 01 |
| | Medical Officer /Assistant surgeon | 01 |
| | Upazila Family Planning Officer | 01 |
| | FP officer | 01 |
| | Assistant Upazila Family Planning Officer (UHFPO) | 01 |
| | Family Welfare Visitor room | 01 |
| | Medical Record room + Nurse room | 01 |
| | Store | 01 |
| | Woman's privacy counsel | 01 |
| | Breast feeding | 01 |
| | Waiting room | 01 |
| | Vaccine | 02 |
| | Wash room (female) | 01 |
| Floor Area-1 | 1,083.46 $m^2$ | |
| 2nd Floor | OT | 03 |
| | Washing roo,s | 01 |
| | Labor delivery | 01 |
| | Recovery | 01 |
| | Eclampsia room | 01 |
| | Change Room (male and female) | 02 |
| | Sterilization | 01 |
| | Doctor | 01 |
| | Nurse | 01 |
| | Female Ward (10 beds + 8 beds) | 01 |
| | Duty doctor | 01 |
| | Waiting room | 01 |
| | Drug store | 01 |
| Floor Area-2 | 1,017.81 $m^2$ | |
| 3rd Floor | Female and children Ward (11 beds) | 01 |
| | Male Ward (11 beds + 7 beds) | 01 |

| | | |
|---|---|---|
| | Cabin | 04 |
| | Duty doctor | 01 |
| | Nurse | 01 |
| | Wash rooms (male, female) | 02 |
| Floor Area-3 | 877.71 $m^2$ | |
| Total Floor Area | (G+1+2+3) 4,005.00 $m^2$ | |

3) CC

a. Panaijury, Manikganj District

The facilities were constructed on a 323 $m^2$ site in 2016. The building has a floor area of 51.1 $m^2$ and is a single-story RC structure with a build-end to extend it to a two-story structure in the future. The facility has a CHCP's office, HA/FWA room, store, toilet, and waiting area. The floor level was raised 60 cm above the ground as flood prevention. In August 2017, the water level rose to 30 cm above the ground but failed to reach the floor. However, due to the height, some patients experience difficulty accessing the facility from the front road. The floor has a mortar finish, and the wall has mortar with a paint finish on the bricks. The ceiling has a furred finish.

As the waiting room has no shutters there is a worry of rain water infiltration during heavy rains and winds. Service wiring for power supply is brought for the facility together with the neighboring school. The water supply is secured by well water which is pumped to a roof water tank. The quality is said to be adequate. Each room is naturally ventilated, and no A/C is available, but a ceiling fan is provided.

b. CC facility plan

The standard drawing provided by HED shows the ordinary Type-A plan and a raised-floor Type-B plan assuming flooding. Both types have 73.33 $m^2$ of floor area in total including a porch. Ground floor level of the Type-B plan is 7 ft. (2.1 m) above the ground level. Table5-2 shows the room components required for CCs.

Table 5-2 Room Components Required for CC

| Room Component | No. |
|---|---|
| Birthing Room (with delivery table) | 01 |
| Health & FP | 01 |
| CHCP | 01 |
| Store Room | 01 |

| | |
|---|---|
| Waiting Room | 01 |
| Washroom (male, female) | 02 |
| Total Floor Area: 73.33 $m^2$ | |

5-1-5 ESP for NCD Control

MOHFW developed ESP in 2016 which determines minimum services at each level of the health facilities. Also, ESP determines health service procedure, human resources and necessary equipment. As of October 2017, however, MOHFW had not disseminated ESP to the health officers at all level of the health facilities and is currently preparing its implementation. Table 5-3 shows ESP at Community Clinics, the Upazila Health Complex and DHs.

Table 5-3 ESP for NCD control at CC, UHC and DH

| Component & sub-component | CC | UHC | DH |
|---|---|---|---|
| HTN | | | |
| Promote healthy lifestyle for HTN and other NCD control | Y | Y | Y |
| Diagnosis of HTN | Screening | Y | Y |
| Management of HTN | | Y | Y |
| Lab follow-up of HTN cases | | Y | Y |
| Identification and referral of CVD | Y | Y | Y |
| DM | | | |
| Diagnosis of DM | Screening | Y | Y |
| Management of Type II DM | | Y | Y |
| Management of Type I DM | | | Y |
| Identification and referral of long-term complications | Y | Y | Y |
| CVD SCREENING AND MANAGEMENT BASED ON TOTAL RISK ASSESSMENT (WHO PEN APPROACH) | | | |
| Screening for Risk Factors of CVD:<br>-Family History of CVD/DM/kidney disease<br>-Smoking<br>-Overweight<br>-High Total Cholesterol<br>-High Blood Sugar | Clinical | Clinical & lab | Clinical & lab |
| Determine risk of CVD in next 10 years | Partial & refer | Y | Y |

| | | | |
|---|---|---|---|
| Manage conditions and identification & referral of complications | | Y | Y |
| CANCER | | | |
| Counseling on screening of cervical and breast cancers | Y | Y | Y |
| Breast Cancer | | | |
| Teaching of breast self-examination | Y | Y | Y |
| Clinical Breast Examination | Y | Y | Y |
| Cervical Cancer | | | |
| Screening for cervical cancer (Visual Examination Acetic Acid) | | Y | Y |
| Chronic Obstructive Pulmonary Disease (COPD) | | | |
| Counseling on smoking cessation | Y | Y | Y |
| Diagnosis and management of ambulatory cases | | Y | Y |
| Diagnosis and management of inpatient cases | | Y | Y |

5-1-6 Major Issues in NCD control

The survey team analyzed major issues in the NCD control at three different levels that are prevention, screening and treatment. Results of the analysis are described as below.

(1) Prevention (Health Promotion)

a. (Awareness) Activities for the community awareness about the risks of NCDs is not enough. CG and CSG do not have adequate knowledge about risk behaviors which would cause NCDs, and mobilization of CG and CSG are not always functional. Therefore, the awareness of NCD risk behavior is limited, and awareness of importance of NCD medical check-ups is not common at the community level.

b. (Human resources and facility) The technical capacity on health promotion of CHCP is relatively low. As the CHCP at CC has little knowledge of NCD control and low awareness of primary health care, the opportunity for promoting people to change their behavior is limited. CC facilities are old and damaged. These conditions hinder the community members from visiting to the CC to receive health services.

c. (Human Resources) Medical staff at UHC does not have the capacity to operate health promotion. The activities on health promotion at the NCD Corner at the UHC is limited since health workers at the NCD Corner do not have time to instruct patients on healthy behavior.

(2) Screening

a. (Human Resources, equipment and facility) CC is the primary facility to accept patients from the community and is expected to have the capacity for NCD screening. However, the capacity of CHCP for NCD screening is not enough as facilities are old and equipment is limited to conduct primary test for the patients.

b. (Human Resources, equipment and facilities) The upper level health facilities (UHC and DH) are required to provide secondary level NCD screening and diagnosis. However, especially at the UHC, these health facilities are not able to provide the required screening because of the lack of human resources, shortage of supplies, old facilities and inadequate equipment. At the same time, it is required to provide necessary equipment to the DHs for NCD control since NCD diagnosis at DH doesn't always meet the ESP.

c. (Human resources and equipment) Even if there is an NCD corner in the UHC, it is not functioning properly because of limited human resources and equipment. The capacity for screening is not enough, especially at the NCD corner because it also needs to deals with patients suffering from other symptoms.

(3) Treatment

a. (Equipment, human resources and management) It is observed that the capacity of NCD treatment at the UHC is not sufficient due to inadequate equipment and a shortage of expendable supplies. Moreover, knowledge and experience of the medical staff at the UHC is limited. Thus, they are not capable of meeting the required level for administering fundamental NCD treatment as prescribed in the criteria of the ESP. At the DH, it is necessary to deploy adequate number of technically qualified staff and to provide the necessary equipment to meet the ESP.

b. (Management/Referral) The referral systems for NCD control are not properly established. Since knowledge and awareness for referral system of CHCP are limited, referral system from CC to UHC is not functioning well. While referral slips are used by the CC and UHC, data of the referred number of patients is not recorded. Moreover, paper-based medical records of patients are not used to manage and treat patients. Also, back referral from a UHC to a CC to manage patients' daily behavior does not exist.

## 5-2 Urban Health

### 5-2-1 Prevention

GOD is the primary level health facility of MOHFW in an urban area. While it partially takes responsibility of health promotion activities in the community, their outreach is not sufficient. From interviews with medical doctors, they implement nothing but the EPI and Vitamin A

supplementation in the community. Dhaka City Corporations operate prevention and promotion activities mainly on maternal and child health, as the actual operation activity is entrusted to NGOs. NGOs independently implement various prevention activities, such as NCD control health promotion, maternal and child health, health education on infectious disease prevention etc.

5-2-2 Medical Service (Diagnosis. etc.) and Referral System

In the urban area, health facilities under MOHFW providing medical service are GOD and tertiary health facilities such as MCH. By MOHFW, the two DHs with 500 beds were upgraded from the secondary health facilities to the tertiary health facilities. According to interviews and information from the Planning Wing of MOHFW, it is confirmed that strengthening function of 16 GODs and installment of PHCCs at the tertiary health facilities are being given priority.

(1) GOD

1) General current situation and Human resources

GOD is the primary level health facility of MOHFW in urban areas. The number of outpatients is from 50 to150 patients per day. GOD has two functions, one is health care service provider for outpatients and the other is as an on-site pharmacy. Medical doctors check the body temperature, blood pressure, pulse rate etc. Then the medical doctor makes a diagnosis and treatment based on the results of the vital signs and some simple tests. As for the on-site pharmacy, subsidized and free treatments are available at GOD. However, such treatments are insufficient to meet all patient needs. Should the diagnosis results in the patient requiring medicines which is not available at GOD, they must go to an outside pharmacy to purchase their prescription at their own expense. Should the patients' diagnosis not be available at GOD, the patients are instructed to be referred to tertiary level health facilities. As for the health care services for outpatient, there are ANC, PNC, EPI, Family planning etc. In terms of labor, only the Motijheel GOD has a delivery room for normal labor, however, other GODs of Dhaka city have no delivery room.

3 medical doctors, 1 pharmacist, 2 MA and work assistants (including office Shohayok (office assistant) and cleaners etc.) are normally assigned to GOD. The training of health workers is provided in each OP in the 4th HPNSP. The budget for training is allocated for in each OP budget. From the interviews with the medical doctors, the training was implemented at the time of campaigns of Tuberculosis, EPI and so on though the training on NCDs was not included.

Supervision for GOD is performed by the Civil Surgeon at the Dhaka Civil Surgeon Office who inspects GOD and implements technical support for the operation and staff of GOD by using a

checklist. Although there is no detailed or specific implementation plan, the supervision activity has to be conducted every month. Due to the heavy daily duties of the Civil Surgeon and frequent traffic jams in Dhaka, the activities are not conducted sufficiently. Instead of the Civil Surgeon, the Deputy Civil Surgeon is known to conduct these duties from time to time.

Concerning the referral system, in Dhaka city, GOD directly refers its patients to tertiary level health facilities. As there is no counter referral practice from the tertiary level hospital to GOD, this has become one of the reasons for the serious congestion at tertiary level health facilities.

Dhaka District Civil Surgeon Office submits reports to the Division Directors about the administration of 5 UHCs and 16 GODs, and the Division Directors report to DGHS in turn. 5 UHCs are in the Dhaka District and 16 GODs are in Dhaka City.

Concerning the relationship of Dhaka Civil Surgeon office with City Corporations[17], they rarely cooperate with one another. However, they may cooperate in the case of health issues requiring mass treatment such as EPI, the vitamin A supplements campaign and Chikungunya Fever, etc. Each City Corporation reports directly to the MOHFW about EPI.

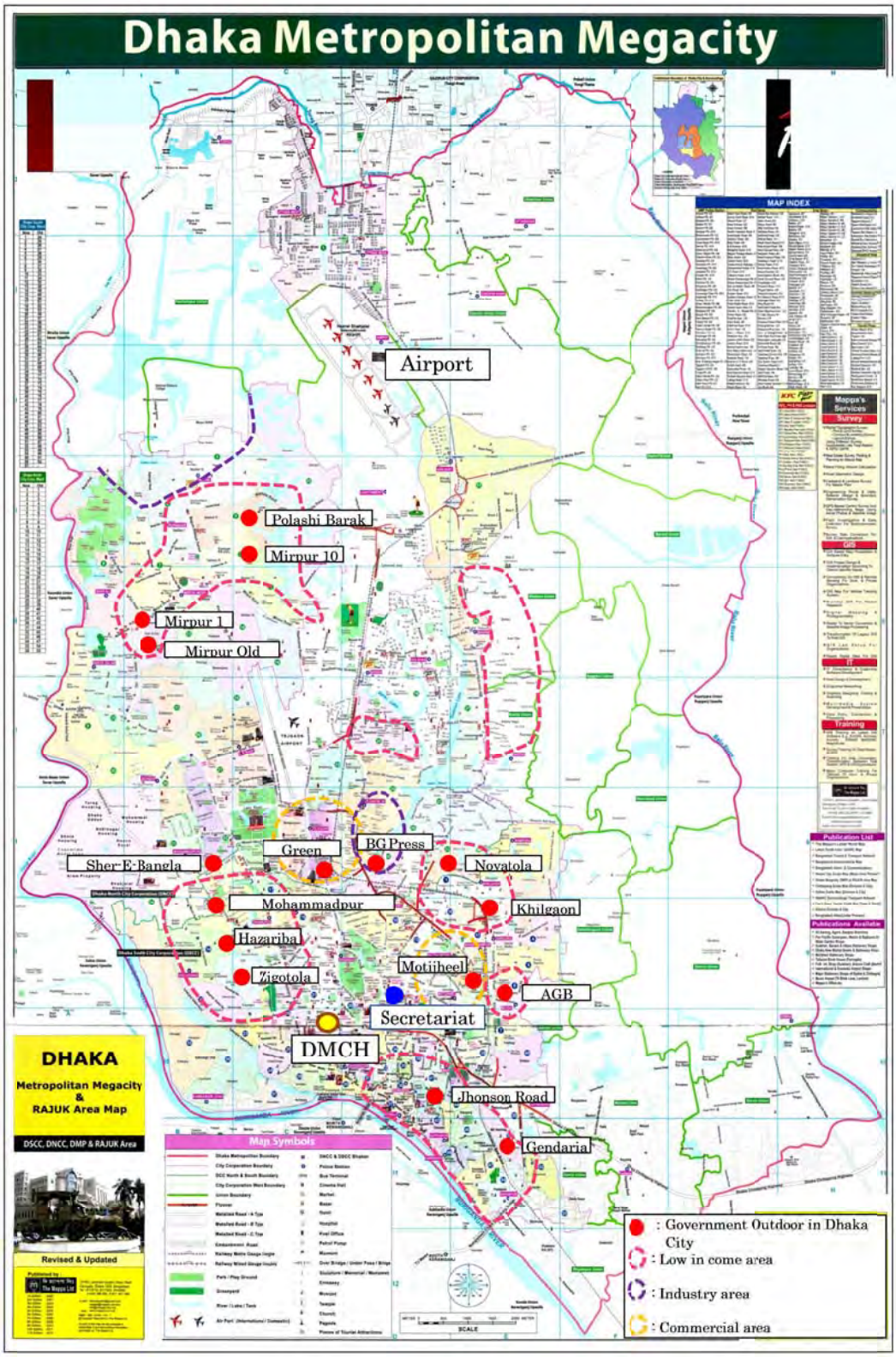
Table 5-4 shows the name and facility type and location characteristics of GOD in Dhaka city and the Figure 5-1 is a location map of GOD in Dhaka City.

Table 5-4 GOD in Dhaka City

| No. | Name of facility | Facility type | Characteristics of location |
|---|---|---|---|
| 1 | Motijheel GOD | Individual | Commercial area |
| 2 | AGB GOD | shared | Residential/ Low income area |
| 3 | Sher-E-Bangla Nagor GOD | shared | Residential area |
| 4 | Jhonson Road GOD | shared | Residential/ Low income area |
| 5 | Genfaria GOD | individual | Residential / Low income area |
| 6 | Khilgaon GOD | shared | Residential / Low income area |
| 7 | Noyatola GOD | shared | Residential / Low income area |
| 8 | BG Press GOD | shared | Industry/ Residential area |
| 9 | Hazaribag GOD | individual | Low Income/ Industrial |

[17] There are Dhaka North City Corporation and Dhaka South City Corporation in Dhaka.

| | | | |
|---|---|---|---|
| | | | area |
| 10 | Zigotola GOD | shared | Low income area |
| 11 | Mohammadpur Royerbazar GOD | shared | Low income/ residential area |
| 12 | Green Road GOD | shared | Commercial area |
| 13 | Mirpur-1 GOD | shared | Low income area |
| | | | Low income area |
| 14 | Mirpur-10 GOD | individual | Low income/residential area |
| 15 | Milpur Old Colony GOD | individual | Low income area |
| 16 | Parashi Barak GOD | Individual facility in the land owned by NGO | Commercial area |




*DMCH: Dhaka Medical College Hospital

Figure 5-1 Location of GODs in Dhaka

2) Health Facilities (GOD)

PWD Health Wing is responsible for the design, tender, construction and maintenance of GODs based on the required function of GOD provided by CBHC.

More than 50 years have passed since facilities surveyed were built. A common finding was that reinforced concrete has deteriorated due to oxidation of the reinforcing steel bars. Generally, in Japan, 60 years has become the standard for renovation of reinforced concrete structure buildings. Many signs of water leakage from the roof or wall were found. Such water leakage hinders medical activities. The cracks found on the floor signified structural failure of the building such as differential settlement. Prior to any detailed designs, the PWD should confirm the level of obsolescence of the structure.

For facilities utilizing a part of the existing building as GOD, the renovation work could not affect the main structure of the facility, thus limiting the renovation to interior finishing materials for partitions and the ceiling. Severe damage has been caused by flooding, and some facilities have experienced water level rises of up to 60 cm above the ground level. Therefore, planning is required to set the proper floor level so as not to let the ground floor flood.

As the waiting space is limited, the area is crowded and thus there is an urgent need for reconstruction. Major room components required for GOD are described in the Table 5-5. The total floor area of the GOD is around 2,000 sqft (185.8 $m^2$). The necessity of adding a laboratory is under consideration.

Table 5-5 Room Components required for GOD

| Room Component | No. |
|---|---|
| Medical Officer' Room | 03 |
| Pharmacy | 01 |
| Store Room | 01 |
| Delivery/labor Room (one room) | 01 |
| Post delivery Room | 01 |
| （Laboratory） | |
| Small kitchen | 01 |
| Washing room (for female, male, mother) | 03 |
| Waiting room | 01 |
| Total Floor Area: 2,000 sqft/185.8 $m^2$ | |

As infrastructure such as a power supply, water supply, and drainage are not adequately

prepared, such infrastructure should be included in the facility plan. As power failures are a daily event, it is essential to secure a back-up power supply utilizing an emergency generator or Photovoltaic (PV) system. Though they utilize city water and well water as water sources, most of the water is not suitable for drinking, so water sterilization should be considered. As toilet drainage is mostly accomplished using a septic tank (sedimentation separation tank) in a simplified manner and soaked into the land, contamination of well water is a concern. It would be ideal to have toilet drainage and general drainage treated by a Sewage Treatment Plant.

3) Medical Equipment

Equipment used at GOD for NCD control are BP machine, stethoscope, weight/height scale and tape measure for abdomen, as less equipped compared to a CC. Fundamental screening can be operated by doctors, but screening items would be limited without equipment such as a glucometer and Electrocardiograph (hereinafter referred to as "ECG") to screen NCDs.

4) Field Survey

A survey team investigated 7 GODs in Dhaka city.

a. Motijheel GOD

The building was constructed in 1960 and includes an 8-bed maternity ward. The building has one delivery room, family planning room, ticket room, and a pharmacy. As 57 years have passed since its construction, it is already obsolete and requires renovating. During floods, the water level reaches 30 cm on the ground level. The structure of the building consists of reinforced concrete columns, beams and floors. The external walls are brick finished with mortar and painting. There are some structural cracks and differential settlement of the floor, as well as mortar peeling on the roof slabs. The toilet drainage is accomplished with a septic tank. Power shut downs occur around 4 times a day. Natural ventilation is used with no A/C available. A ceiling fan is used in the facility.

The facility has 2 doctors, 5 pharmacists, 3 senior nurses, 1 assistant nurse, 3 Office Shohayok (office assistant), 2 SACM (Service Assistant Community Medical Officer), 1 storekeeper, 1 ambulance driver, 1 security guard, and 3 sweepers. The number of outpatients is 120 to 180 a day, and the number of deliveries is 10 to 15 cases a month. It is recommended that the ground level should be raised by spreading earth on the ground, and the existing structure to be dismantled to construct a new 2-story building.

b. Gendaria GOD

The building is a single-story structure that was constructed during the British colonial era, so it

is at least 50 years old. A GOD facility is located in the back and an NGO operated 3-story clinic is in the front and to the right. The facility has 5 rooms including a store room with one room at the back for a doctor family dwelling. No major damage was not left by flooding in 1919 and 1988. As the city water supply is available, there is no water stoppage to affect the operation of the facility. Drainage is accomplished by a septic tank. Due to frequent daily power shut downs two or three times a day, the facility has chargeable battery cells to provide illumination. Natural ventilation is used, and no A/C is available, but there is a ceiling fan.
The facility has 3 doctors, 1 pharmacist, 4 Office Shohayok (office assistant) and 2 sweepers as staff members, and 90 outpatients/day on average with a maximum of 100. Operating hours are from 8:00 to 14:30. The parking space in front of GOD facility could be a new construction site. Also, demolishing and reconstructing existing facilities would be another choice.

c. Hazaribag GOD

The building was completed in 1947 and is a single story. There is a river to the rear of the property and the area is spread before the bank. Around 70 years have passed since the construction, so the reinforcing steel of the roof slab is exposed, and the concrete shows high degrees of deterioration requiring immediate rebuilding. The facility has 3 rooms including a store. Though drugs and documents are kept in the store, the room is not suitable due to water leakage. The floor level has been raised up to around 10 cm above ground level though ineffectual during the heavy flood of 1988 which caused 60 cm of flooding on the floor. Toilet drainage is accomplished with a septic tank. Power failure occur once or twice a day. Natural ventilation is used, and no A/C unit is available, but a ceiling fan is used.
The facility has 3 doctors, 1 pharmacist, 3 Office Shohayok (office assistant) and 1 sweeper, and 150 outpatients a day on average with a maximum of 200. Because a site is wide as a reconstruction plan of the 2,000sqft (185.8$m^2$) approximately, site area for reconstruction will be enough.

d. Mirpur 10 GOD

Around 45 years have passed since the building was built. The building is of an obsolete single story. There co-exists a private hospital operated by an NGO and GOD on the property. GOD is accessible from a side road and through the hospital. Near the land there is a market, and a primary school is located on the opposite side of the side road. The land is not subject to flooding even during major floods, but the road is. The frame of the building is of reinforced concrete. The external wall is mortar on brick with a paint finish. The roof is flat and made of reinforced concrete with mortar for waterproofing, and the floor is prepared with local terrazzo. Water outages occur 1 to 2 times/day, and its quality is not so good. Toilet drainage is

accomplished with a septic tank. During a power failure, the facility shares a generator with a private hospital. Natural ventilation is used with no A/C unit available, but a ceiling fan is.
The facility has 3 doctors, 1 assistant doctor, 1 pharmacist, 3 Office Shohayok (office assistant), and 1 sweeper, and 80 to 100 outpatients a day on average with a maximum of 100. It is recommended that the existing building be demolished and replaced with a new 2-story building.

e. Mirpur Old Colony GOD

The facility is an L-shaped single-story building and surrounded by a fence. The external wall is made from mortar on brick with a painted finish. The rooftop is flat and of CR structure covered with a corrugated iron plate. The floor is mortar with a painted finish. The furred ceiling is mortar with a painted finish. As city water is available, water is provided through a roof top plastic tank. Toilet drainage is treated using a septic tank. Natural ventilation is used, and no A/C is available, but a ceiling fan is.
The facility has 3 doctors, 1 assistant doctor, 1 pharmacist, 1assistant administrator, and 1 sweeper, and receives more than 100 outpatients per day on average. As the property is narrow, it is recommended that the existing building should be removed prior to reconstruction.

f. Polashi Barak GOD

More than 25 years have passed since the single-story building was completed. The exterior doubles as a fence. The neighboring area is utilized as a high school, a plaza and so on. The majority of the U-shaped building is occupied by the training institute operated by NGO MUSLIM AID. The external wall is mortar on brick with a painted finish, and the roof is of galvanized iron. The floor is made from mortar with a painted finish. City water is supplied. Toilet drainage is treated using a septic tank. Power failures are not uncommon. Natural ventilation is used, and no A/C is available, but a ceiling fan is.
The facility has 3 doctors, 1 pharmacist, 2 Office Shohayok (office assistant) and 1 sweeper, and receives more than 100 outpatients per day with a maximum of 150. It has been discovered that approval not only from the NGO MUSLIM AID but also from the neighboring community will be required. As most of the building is used for other purposes than those of GOD, it is necessary to confirm if only the GOD parts of the building can be renovated.

g. Green Rd GOD

The building is in public facility, and it has waiting room, two consultant rooms, Family Planning room, pharmacy, store room, and toilet. The facility has 3 doctors, 1 pharmacist, and 2 assistants. The facility level is the primary health care facility and to the services include ANC, PNC and FP

beside outpatient. There is only a bed for consulting that is not for inpatients. The facility receives 40 to 50 outpatients per day. It can refer to tertiary hospitals such as the Dhaka Medical College Hospital (DMCH).

(2) Primary Health Care Center (PHCC)

The main purpose to establish PHCC requested by MOHFW was for conducting primary screening of patients with symptoms at tertiary and secondary hospitals throughout the country to decide whether the patients should be treated in the hospital or be referred to a lower health facility such as a UHC or GOD. This plan would contribute to the reduction of the present congestion at the tertiary and secondary hospitals, enabling them to provide higher quality medical services to their patients. The plan for the PHCC should be based on the OP of HSM, 'Establishment of PHCC in tertiary hospitals and related activities (4 Medical College Hospital)' with the consideration of implementation plan listed below.

From the interviews with the HSM, the following pilot projects are planned

(1) Set up PHCCs at outpatient facilities at each tertiary level and secondary level health facility

(2) Develop capacity of Health Workers on primary screening for all the diseases at the PHCC

(3) Provide medical equipment and expendable supplies for primary screening

(4) Establish a coordination system among the city council, CBHC, HSM, hospital and other sections in regard to the PHCC

(5) Make guidelines and implementation plans for the PHCC

5-2-3 ESP on Urban Health

In the ESP, there is no clear description for the regulation of the services at GOD. However, according to MOHFW, ESP at GOD is the same level as that of the PHCC of which there is description in the ESP. Assumed GOD fundamental services are listed as follows, as defined from PHCC regulations described in the ESP.

(1) Maternal Health
- Antenatal care
- Postnatal care
- Normal delivery

Although normal delivery is not defined as an essential service of the PHCC in the ESP, it is planned to be conducted at GOD according to CBHC.

(2) Child Health
- Integrated Management of Childhood Illness (IMCI): Management of acute respiratory infection (ARI), management of diarrhea and management of fever

- EPI

(3) Family Planning except male & female sterilization

(4) Nutrition
- Maternal, child and adolescent nutrition
- Prevention of malnutrition
- Management of acute malnutrition

(5) Communicable Diseases
- TB: Prevention and Directly Observed Therapy Short course (DOTS)
- Sexually Transmitted Infection (STI): Syndromic management
- Leprosy: Clinical diagnoses
- Intestinal Parasites: Deworming

(6) NCDs
- HTN: Promotion of healthy lifestyle for HTN and other NCD control, Diagnosis and management by medication, and identification and referral (i & r) of long-term complications
- CVD: Screening risk factors, management of condition and identification and referral of long-term complication
- DM: Diagnosis, management of Type II. Identification and referral of Type I and long-term complications
- Cancer: Counselling on screening of cervical and breast cancer, teaching of breast self-examination and clinical breast examination
- Chronic Obstructive Pulmonary Disease COPD: Counselling on smoking cessation, diagnosis and management of ambulatory cases

(7) Emergency: First aid in minor injuries

5-2-4 Survey on NGOs activities

The campaign of BRAC has been conducted over 35 years in a house located in a slum area. Program Organizer (Hereinafter referred to as "PO") implemented the general medical check-up such as height, body weight, abdominal circumference, blood pressure, blood glucose, and visual acuity test. Shasthya Shebikas (health service provider of the community) assisted PO in implementing the program. Wellness/Health promotion Activities using teaching materials combined with a medical check-up was not conducted. No medical check-up data was recorded other than the card given to the patients to be filled in periodically. PO and SS did not record any data for themselves. Moreover, at the medical check-up, there was no education materials such as brochure, etc. The price of a general medical check-up is 100 BDT per time. Beside general medical check-ups, distribution of vitamin tablet and paracetamol as incentive was

conducted. The referral facilities were the Dhaka Medical College Hospital (DMCH) or the tertiary health facilities in Dhaka.

BRAC paid the salary of staff members. Staff attended the various trainings constantly by BRAC. To apply higher position, the training is also required. Supervision was conducted by the regional manager → branch manager → PO → Shasthya Kormis [18] → Shasthya Shebikas. Supervisors visit the health facilities constantly, and support health providers with knowledge and technical skills.

Concerning the Smiling Sun Franchise Program（SSFP） activities, the Satellite Clinic in the survey district in the area managed three Mobile Satellite Clinics. Community Service Providers conducted home visits for health awareness promotion. In the case of the Mobile Satellite Clinic, simple mobile basic equipment kits such as blood pressure machines were carried from the Satellite Clinic every day. At the Satellite Clinic, there were two health workers, one paramedical professional and one Health Service Promoter. Main activities were health education and health awareness promotion for citizens, ANC/PNC, FP, and health check-ups such as measurement of height, body weight, abdominal circumference, blood pressure, and blood glucose. In the community visited at the survey, a support group had been established. Group members are required to meet several conditions: 1) well understanding of the community 2) consciousness of social contribution, etc. The gender balance was considered. Their activities consisted of 1) monthly meeting in order to share their activity plans and to get information about pregnant woman in the community, households requiring their support and health education (ANC/PNC, FP, NCDs and Domestic Violence), 2) home visits to get comprehensive information of the community and promotion for health awareness among community members; 3) Support for patients transfer from Mobile Satellite Clinics to Satellite Clinics.

5-2-5 Organizational issues for Urban Health

The organization responsible for coordinating urban health issues in MOHFW is Planning Wing. CBHC is responsible for GOD, and HSM is responsible for the PHCC at the tertiary and secondary health facilities. MOHFW is planning to strengthen urban health and developing a concrete strategy and implementation plan with each of the responsible OPs.

At the beginning of the survey, the responsible organizations for GOD facilities had not been

[18] Shasthya Kormis provide health services at community. Shasthya Kormis and Shashtya Shebikas are mainly health services provider, and Shasthya Kormis is supervisor for SS.

decided though CBHC was responsible for its functions. During the survey, PWD was decided to be the responsible department for facility construction and maintenance by a request from MOHFW. Thus, PWD is responsible for the design, tender, construction and maintenance of GODs based on the required function of GOD provided by CBHC.

5-2-6 Major Issues on Urban Health

The survey team analyzed major issues of urban health at three different levels as follows.

(1) Prevention:

a. (Awareness and Human resources) The capacity of health promotion and prevention for the community of GOD, the primary health facility, is not sufficient, since awareness and knowledge of service providers on health promotion for NCD control was lacking.
b. (Facility) The relatively less number of outpatients use GOD, because its age-old facilities, settled in a part of other government building and only limited medical services are available.

(2) Screening:

a. (Human resources, equipment and management) The capacity of NCD screening at GODs is not sufficient to meet ESP due to the limited human resources, equipment and supplies.
b. (Facilities) Facilities of GODs surveyed are too old to provide necessary screening services. However, there was no clear consensus of renovation of GOD among organizations responsible for the GOD facilities, while MOHFW is responsible for the services at GOD under the ESP.

(3) Case Management of NCDs (treatment)

a. (Human resources and equipment) Capacity of diagnosis and treatment on NCDs at GOD is not enough due to limited equipment and the insufficient capacity of medical staff when it comes to diagnosis and treatment.
b. (Management and referral function) Issues of GOD described above cause many patients to avoid GOD and choose a tertiary or secondary level hospital as their primary health facility. While the second and tertiary level hospitals are supposed to give a higher level of medical services, the outpatient department will be flooded with patients. Therefore, the upper level hospitals will have a reduced capacity to provide the quality medical services described in the ESP.

In conclusion, in Urban Health, there are serious issues on the lack of capacity to provide health services at GOD because of limited human resource, deterioration of facilities and the lack of

diagnosis equipment. Since the establishment of PHCC in line with the ESP is still in the planning stages, it is difficult to assess their effectiveness now.

# Chapter 6 Project ideas

## 6-1 Project Outline

The survey team proposes JICA's project ideas below to provide solutions to issues that were identified through the survey.

### 6-1-1 Project Name: Health Services Strengthening Project (hereinafter referred to as "the Project")

### 6-1-2 Objectives

The objectives of the Project are to develop a health system for strengthening NCD control by improving referral system through the primary and secondary level health facilities in all divisions, and to improve access to health services by urban poor populations in Dhaka by improving health services at the primary level of health facility, thereby contributing to the health promotion of the people in Bangladesh.

### 6-1-3 Scope of the Project

The scope of the Project is NCD control and Urban Health improvement. After discussion with MOHFW, appropriate project activities were selected from the OP. Therefore, the Project must be implemented under the 4th HPNSP.

(1) NCD Control

The system is established by strengthening the services provided for prevention, screening and diagnosis/treatment. To strengthen the services at each step, a 'Pilot Referral Network' is formed as the framework of the NCD control system.

The project focuses on the control of four major NCDs:

a. CVD,
b. COPD,
c. Cancers, and
d. DM

(2) Urban Health Improvement

The access to the health services by the urban poor population is improved by strengthening the screening and diagnosis/treatment services provided at the primary level. To strengthen the services at the primary level, the capacity of GOD, the closest health facility for the urban poor, is to be enhanced.

### 6-1-4 Utilization of approaches developed by the Safe Motherhood Promotion Project (SMPP)

The approaches developed by the SMPP (refer to 4-2-1) will be used for the project design. The three different approaches to improve maternal and child health were developed through previous JICA technical cooperation in the SMPP Phase 1. Three approaches were initiated and were expanded throughout the country during the SMPP Phase 2. The first approach was the empowerment of the community through the development of community support groups and the strengthening of their activities. The second is the improvement of quality of services at health facilities with 5S/CQI/TQM method. The third is strengthening of horizontal learning mechanisms among the local governments.

JICA's new technical cooperation, SHASTO has been planning to utilize those approaches for NCD control. The Project supports training, facility improvement and equipment provision to strengthen those approaches in collaboration with SHASTO activities

(1) Community health based on CC is enhanced by conducting training to control NCDs for health workers, CG, and CSG. Thus, community awareness will increase which is one of the crucial interventions to control NCDs through behavioral change.
(2) The second is improvement of hospital services by reconstructing and expanding facilities and providing necessary equipment to health facilities.
(3) The third is to carry out training of local government representatives to gain their understanding and support.

## 6-2 NCD Control

### 6-2-1 Pilot Referral Network

A Pilot Referral Network is defined as the network which consists of MCHs strengthened by the Japan's ODA Loan Project Phase 2as the top referral, DHs in the catchment of MCH as the secondary level, UHCs in the catchment of selected DH and CCs in the catchment of selected UHCs. The criteria described below is used for selecting candidate sites.

(1) Composition of the Pilot Referral Network

| | |
|---|---|
| Tertiary Level: | Medical Collage Hospital (1 hospital) |
| Secondary Level: | District/General Hospital (1 hospital) |
| Primary Level: | UHCs (3-5 hospitals) |
| Community Level: | CCs (all) |

(2) Selection Criteria of the Pilot Referral Network

DHs:

The one District/General Hospital in each of the eight Divisions which has the highest Health System Strengthening Score[19] (HSSS) between September 2016 and August 2017 is selected. In addition to the above, all the DHs are selected in the districts where JICA is considering to implement SHASTO to enhance synergy between the projects. As of September 2017, the candidate project sites of SHASTO were Narsingdi and Jessore Districts. The reason of using HSSS is that higher score health facilities could be considered as having higher management capacity.

UHCs:

The top three to five (3-5) UHCs located in the selected Districts above with HSSS between September 2016 and August 2017 are selected, because of the same reason as with DH. As for SHASTO sites, five UHCs in Narsingdi and five UHCs in Jessore are selected using the same criterion.

CCs

All of CCs in the catchment area of the selected UHCs are selected.

The number of DH is eleven (11). The Narsingdi District has two and the other District has one. The number of UHC is 46 (one UHC in each Upazila) and the number of CC is 1,227.

Table 6-1 and Figure 6-1 shows targets area of the Project for NCD control.

Table 6-1 Target areas of the Project for NCD control

| Division | District (10) | Upazila (46) | No of CC (1,227) |
|---|---|---|---|
| Barisal | Pirojpur | Nazirpur | 28 |
| | | Nesarabad | 27 |
| | | Mathbaria | 37 |
| | | Kawkhali | 12 |
| | | Bhandaria | 21 |
| Chittagoang | Laksmipur | Kamolnagar | 21 |
| | | Ramganj | 24 |
| | | Raipur | 34 |
| | | Ramgati | 21 |
| Dhaka | Munshiganj | Tungibari | 11 |
| | | Gazaria | 17 |
| | | Serajdikhan | 32 |
| | | Louhajang | 17 |
| | | Sreenagar | 25 |

[19] Health System Strengthening Score is consolidated by the Directorate General of Health Services.

| | | | |
|---|---|---|---|
| | Narsingdi | Shibpur | 37 |
| | | Palash | 14 |
| | | Monohardi | 39 |
| | | Raipura | 56 |
| | | Belabo | 24 |
| Khulna | Jessore | Chowgacha | 26 |
| | | Keshabpur | 27 |
| | | Monirampur | 43 |
| | | Abhoynagar | 28 |
| | | Jhikargacha | 32 |
| | Chuadanga | Alamdanga | 44 |
| | | Damurhuda | 28 |
| | | Jibannagar | 20 |
| Mymensingh | Netrokona | Purbadhala | 34 |
| | | Atpara | 16 |
| | | Barhatta | 19 |
| | | Madan | 14 |
| | | Durgapur | 27 |
| Rajshahi | Naogaon | Patnitala | 31 |
| | | Manda | 48 |
| | | Raninagar | 22 |
| | | Dhamairhat | 21 |
| | | Mohadevpur | 36 |
| Rangpur | Panchagarh | Debiganj | 31 |
| | | Atwari | 13 |
| | | Boda | 25 |
| | | Tetulia | 14 |
| Sylhet | Moulvibazar | Barlekha | 18 |
| | | Sreemangal | 29 |
| | | Kulaura | 36 |
| | | Kamalganj | 25 |
| | | Rajnagar | 23 |

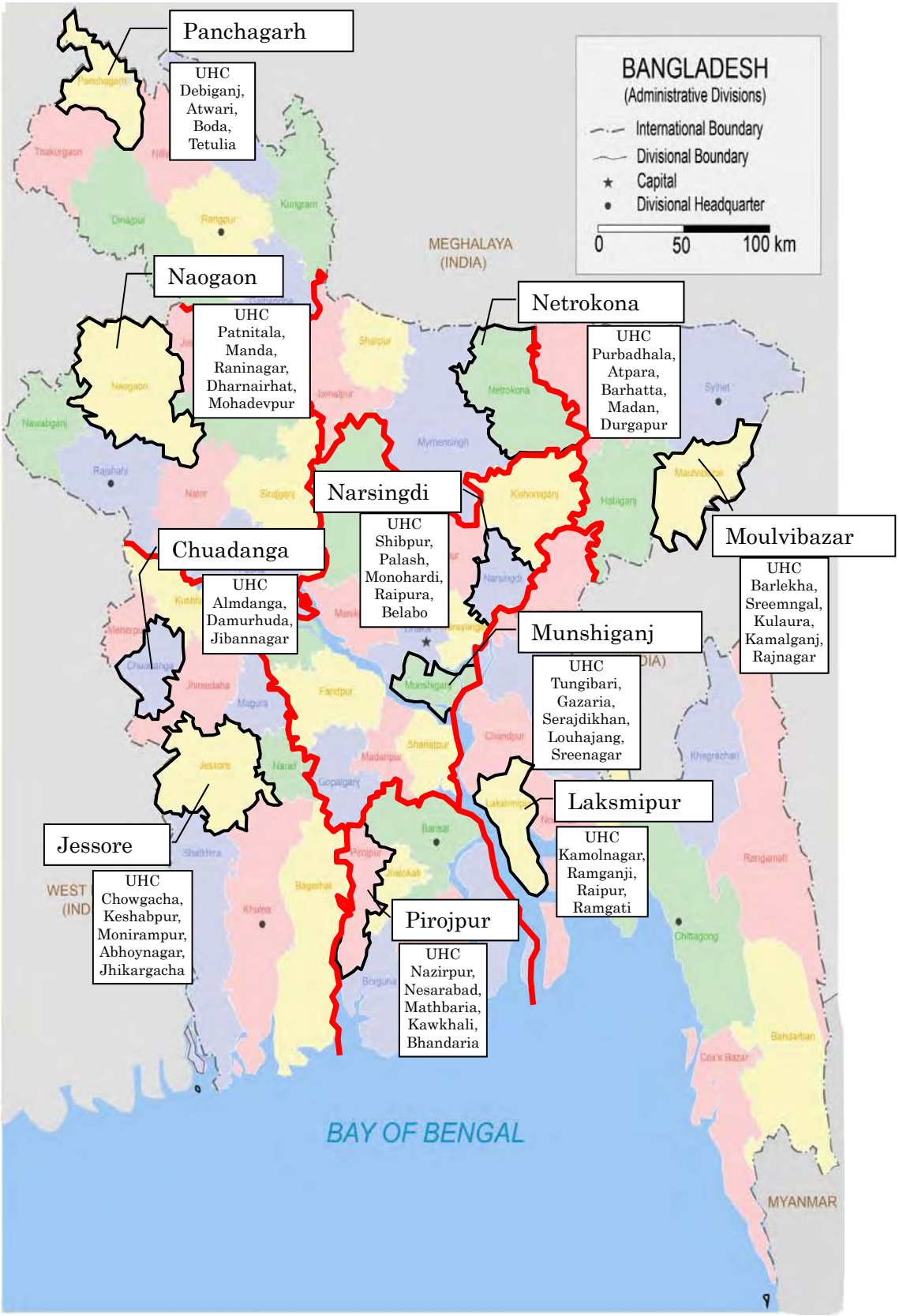



Figure 6-1 Location of the Target areas of the Project for NCD control

6-2-2 Conceptual Framework for NCD Control under the Project (Prevention, Screening, and Treatment)

(1) Prevention

Approaches developed by SMPP on the enhancement of community engagement are applicable for this project. Once the CG and CSG are strengthened to promote healthy behavior at the community level, the prevalence rate of the NCDs is expected to decline. At the same time, supply side knowledge at various levels of the health workers (doctors, nurses, CHCP and others) on healthy behavior should be strengthened. The following activities were identified.

a. To expand awareness on promoting prevention and behavioral changes of people, the capacity development of the CG, local government representatives, and CSG is important. Since the training of CSG is still on-going over the 4th HPNSP under the ODA Loan Project Phase 2, it does not fall within the project plan.
b. Developing the capacity of the CHCP in primary health care services through the training to CHCP on NCDs prevention
c. The role of service providers at UHCs is to promote a healthy lifestyle such as the reduction of salt intake, stopping smoking and exercise to out-patients. For this purpose, the training on the prevention of NCDs to medical doctors and nurses at UHC (NCD Corner in the same UHC) is conducted

(2) Screening

To control NCDs, it is necessary to identify not only NCDs but also the intermediary risk factors. The population at risk of NCDs should be screened at the community clinic level (obesity, high blood pressure, high blood sugar). At the UHC and DH level, the secondary level of screening is required. The risk factors screened along with ESP are obesity, high blood sugar, high blood pressure, abnormal respiration and abnormal pulse for both levels of hospital and abnormal glucose tolerance, abnormal blood lipids, and arteriosclerosis at only the DH.

a. Developing capacities of service providers (especially CHCP) and provision of equipment at CC for the primary level of screening
b. Increasing capacity at primary level health services (CCs and NCD Corner in UHCs) for screening of NCDs. This capacity development leads to establishment of NCDs corners at UHC
c. Improvement of quality of services through reconstruction of decrepit CC facilities
d. Improvement of quality of services through expansion of UHC and reconstruction of the one being decrepit to strengthen the capacity to receive patients

(3) Treatment

Once a NCD case is identified, the person should be properly treated. Hospitals such as UHC and upper level are responsible for NCD diagnosis and treatment. The treatment includes instruction on a healthy lifestyle for NCD control to NCD patients.

The role of UHC for NCD diagnosis is mainly screening of NCD risk symptoms along with the ESP. The treatment at UHC is medication and instruction on a healthy lifestyle. The role of the DH is to confirm the diagnosis, management and treatment of NCDs along with the ESP in rather difficult cases.

Once a patient is found to need further treatment at UHC, the UHC should refer the patient to a secondary or tertiary level hospital such as a DH or MCH. Therefore, the referral system should be strengthened from the UHC to the DH. At the same time, the referral system between the CC and the UHC is also important to control the risk population and to track NCD cases. The referral at this level should include the reverse referral function from the UHC to the CC through which NCD patients and people with risk factors could control their NCDs.

a. Strengthening capacity of NCD treatment at the primary level (UHCs)
b. Ensuring provision of the diagnostic equipment at the primary (UHCs) and the secondary (DHs) along with ESP
c. Strengthening both types of referral systems in both direction for NCD cases between the CC and UHC through training CHCP and medical staff

6-2-3 Conceptual Framework for NCD Control under the Project (Pilot Referral Network)

The proposed activities of referral system from community level through the tertiary level of health facilities are shown below.

(1) Community Level

The community engagement is strengthened through necessary training including healthy behavior for NCD risk (smoking, unbalanced diet and lack of exercise[20]) to the CG and local government representatives. This secures continuous healthy behavioral changes which will enable individuals to manage NCDs on their own. Also, this will encourage the people to receive necessary screening voluntarily.

Training CHCPs on the first level of screening is important to identify NCD patients as well as individuals at risk. Thus, the CHCP, who is in the closest position to the community as a

[20] According to WHO Bangladesh, alcohol intake is not major problem for NCD control in Bangladesh.

health service provider, can identify the persons at NCD risk and track and monitor NCD patients.

Referral from the CC to the UHC is the first level of the referral function and serves as confirmation of the situation of the clients. The training on referral can improve the CHCPs knowledge about the referral system so they can properly refer the case to the upper level health facility for further diagnosis and treatment.

Provision of the primary level with screening equipment and improvement of the physical facilities of the CC are necessary inputs to strengthen the screening capacity at the CC level. Because of this intervention, the number of persons who visit and receive services at CC is expected to increase. Training on community engagement for CGs and local government representatives.

Proposed Activities:

- Training on referral system to CHCP
- Training on NCD screening to CHCP
- Provision of NCD screening equipment to CCs
- Reconstruction of CCs

(2) UHC level

The UHC is the first level hospital for the community having doctors and nurses. Therefore, improvement of services at the UHC is one of the keys to improve the issues of NCDs. It is required to strengthen the screening capacity to identify NCD risk factors of outpatients. At the same time, service providers can provide necessary health education to the outpatients to have a healthy life. For this purpose, training on NCD screening, provision of necessary equipment, expanding ward and improvement of old facilities are important to properly manage NCD patients.

As for the referral system, service providers are required to understand the meaning of the referral system, to refer necessary patients to upper level hospitals, and to refer them back to the CC for monitoring. Especially, reverse referrals from the UHC to the CC is important to conduct daily management of patients at the community level who have received diagnosis and treatment at a UHC. Therefore, continuous technical supportive supervision from the UHC to the CC is important. The training on the referral system and supportive supervision should be conducted.

Proposed Activities:

- Training on NCD screening, diagnosis and treatment for medical doctors and nurses
- Training on technical supportive supervision for the health workforce and supervisors at the Upazila and Union level
- Provision of NCD screening equipment for early detection and treatment
- Reconstruction of old facilities, and upgrading of facilities to expand wards

(3) DH level (secondary level)

Quality care in diagnosis and treatment of NCDs at the DH should be strengthened along with ESP criteria. Thereby, lower level health facilities will be able to refer patients to the DH for further diagnosis and treatment. The diagnosis is to confirm diseases and treat cases properly, and if it is needed, patients are to be referred to the upper level facilities (MCH and other specialized hospitals). Necessary equipment for diagnosis at this level should be provided.

Proposed Activities:

- Provision of NCD diagnosing equipment for early detection and treatment of NCDs

(4) Tertiary Level (outside of the scope of the Project, only for reference)

The Japan's ODA Loan Project Phase 2 is supporting the establishment of Diagnostic Imaging Centers in the top MCHs in each Division. Through this establishment, these hospitals will be able to serve to confirm diagnoses and treatments of complex issues of patients suffered from NCDs and referred from DHs.

6-2-4 Concrete Plan of Activities

(1) Support for facility reconstruction/upgradation

a. UHC

The UHC is the referral hospital that receives cases referred from the CC. The GOB side put high priority on upgrading UHCs to have 50-bed facilities to resolve current congestion and reconstructing old facilities that have limited quality of services.

Four UHCs are selected as candidate target facilities described in the PFD OP of the 4th HPNSP. Two are considered for upgradation and the rest for reconstruction. The main component of the upgradation is expansion of bed capacity from 31 to 50, and the main component of the reconstruction is reconstruction of 31-bed ward of 50-bed UHC. The development plan for the reconstructions and upgradations includes infrastructure works such as civil works and service wiring for electric supply works. Also, the development plan for reconstructions includes the removal of old buildings.

Table 6-2 UHC Development Plan

| No. | Name | Contents of Implementation |
|---|---|---|
| 1 | Rajnogor | Upgradation: construction of 19-bed building, repair of existing building, external work (civil & electrical works) |
| 2 | Barhatta | Upgradation: construction of 19-bed building, repair of existing building, external work (civil & electrical works) |
| 3 | Alamdanga | Reconstruction: removal and construction of 31-bed building, external work (civil & electrical work) |
| 4 | Kawkhali | Reconstruction: removal and construction of 31-bed building, external work (civil & electrical work) |

b. CC

Because operation of CCs is hindered by an old leaky roof according to the HED, an immediate measure is desired. The number of target CC which needs repair is 63 facilities among pilot referral network of 1,227 CCs. All of the 63 CCs will be reconstructed. According to the HED calculation from the previous experience, the share of type A (standard floor plan: 60cm above ground) is 60% (38 CCs) of the all and type B (raised-floor plan assuming flooding: 210cm above ground) is 40 % (25 CCs).

The reconstruction works include external works, that is, civil and electrical works in both types of buildings. Furthermore, the dismantling cost is added in the case that existing facilities are to be dismantled.

Table 6-3 Development plan for CCs

| Type | No. | Contents of the Plan |
|---|---|---|
| A | 38 | Reconstruction: construction, furniture, external works (civil & electrical), dismantle (if necessary) |
| B | 25 | Reconstruction: construction, furniture, external works (civil & electrical), dismantle (if necessary) |
| Total | 63 | |

(2) Support for procurement of medical equipment

The target medical facilities are; eight DHs in eight Districts selected in each of the eight Divisions and three DHs in two Districts where JICA Technical cooperation (SHASTO) for NCD control will be implemented. A total number of 11 DHs are selected. The maximum five UHCs from each of the selected Districts and all CCs in the same Upazila are selected as shown

in Table 6-1.

a. CC

➢ Reasons for selection of equipment

To meet the standard prescribed in the ESP for effectively controlling NCDs at CC, necessary equipment should be procured. According to the OP of HPNSDP, the previous sector program, CBHC has procured necessary medical equipment. However, some equipment was broken or expired due to age, including the equipment for NCD control. In the NCDC OP of the 4th HPNSP, providing replacement of broken and expired medical equipment for NCD control is planned.

➢ Required measures (solution)

To supply good quality and durable BP machines, ready stocks of glucose test paper, height/weight scales and measuring tapes for abdominal measurements for the NCD control. Measuring tapes are required as BMI is important for screening of obesity, which is one of the risk factors of NCDs.

➢ Proposed Equipment List for NCD control in CC

Proposed CC equipment for NCD control is shown in the following Table. The number of planned locations is 1,227 CCs.

Table 6-4 Equipment for dealing with NCDs in CCs

| No. | Equipment | Qty | Function for NCDs |
|---|---|---|---|
| 1 | Stethoscope | 1 | Breathing observation for COPD, blood pressure measurement |
| 2 | Pedometer | 1 | Observation of calorie consumption of obese patients |
| 3 | Measuring tape | 1 | Obesity abdominal measurement |
| 4 | Glucometer | 1 | Diabetes patients' blood glucose measurement |
| 5 | Glucometer strips with needle (25 strips/box) | 1 | Diabetes patients' blood glucose measurement test strips |
| 6 | B.P Machine | 1 | Blood pressure measurement |
| 7 | Scale | 1 | Weight measurement of obese patients |
| 8 | Height/Weight Scale | 1 | Obese patients' height/weight measurement |

b. UHC

➢ Reasons for selection of equipment for UHC

To meet the standard prescribed in the ESP for effectively controlling NCDs at UHC, providing medical services and necessary medical equipment should be provided at UHC. CBHC provided

necessary medical equipment for UHC, including those for NCD control, according to the ESP. However, some equipment is broken or expired due to age, notably, ECG is available not at NCD corner but in the emergency department or ward in the UHC. In the NCDC OP of the 4th HPNSP, replacement of broken or expired BP machines is planned. The furniture, cabinets and delivery beds should be considered separately.

- Required measures (solution)

To provide high quality durable BP machines, digital ECG for diagnosis of cardiac diseases which does not require regular supply of recording paper. The advanced equipment for diagnosis confirmation is not provided by the Project because of the lack of technical staff and difficulty in supply of consumables.

- Proposed Equipment List for NCD control in UHC

Proposed equipment for NCD control is shown in the following Table. The number of planned location is 46 UHCs.

Table 6-5 Equipment for NCD control in UHC

| No. | Equipment | Qty | Function for NCDs |
|---|---|---|---|
| 1 | Stethoscope | 1 | Breathing observation for COPD, blood pressure measurement |
| 2 | Pedometer | 1 | Observation of caloric consumption of obese patients |
| 3 | Measuring tape | 1 | Obesity abdominal measurement |
| 4 | Glucometer | 1 | Diabetes patients' blood glucose measurement |
| 5 | Glucometer strips with needle (25 strips/box) | 1 | Diabetes patients' blood glucose measurement test strips |
| 6 | B.P machine | 2 | Blood pressure measurement |
| 7 | ECG machine | 1 | Cardiac function measurement |
| 8 | Nebulizer | 1 | COPD patients' treatment |
| 9 | Scale | 1 | Weight measurement of obese patients |
| 10 | Height/Weight Scale | 1 | Obese patients' height/weight measurement |

c. DH

- Reasons for selection of equipment for DHs

To function as secondary referral facilities, DHs are required to receive patients referred from primary health facilities and to refer the patients to tertiary facilities. However, the necessary equipment as secondary facilities for lab tests and imaging tests, required for diagnosis, are not available at many of the DHs (as of December 2017), although spaces to place equipment and

department to operate are available. In the Narsingdi DH, the available lab equipment and testing capabilities are almost similar to that of the UHCs, and the tube of the X-ray Bucky table is broken. The Civil Surgeon of Narsingdi District raised the necessity of the biochemistry analyzer and radiological equipment for diagnosis at DH.

- Required measures (solution)

To supply imaging and laboratory equipment. These equipment strengthen definitive diagnosis, treatment and monitoring of diseases in the DHs, focusing on NCDs.

- Proposed Equipment List for NCD control in DHs

The following Table is a list of diagnostic imaging equipment and lab test equipment for 11DHs.

Table 6-6 Imaging and Laboratory Equipment for DH

| No. | Equipment | Qty | Function for NCDs |
|---|---|---|---|
| 1 | Digital X-ray system | 1 | COPD Lung, cardiac hypertrophy shooting |
| 2 | Color doppler echo with heart sector prove | 1 | Cardiac blood flow, valve function, myocardium monitor |
| 3 | Electronic spirometer for COPD | 1 | COPD lung function test |
| 4 | Hemoglobin A-1 C analyzer | 1 | Diabetic monitor |
| 5 | Binocular microscope, inverted | 1 | Cancer and diabetic observation of cell pathology |
| 6 | Autoclave medium sized | 1 | Sterilization for NCDs instrument |
| 7 | Centrifuge | 1 | Serum separation for NCDs |
| 8 | Shaker | 1 | Blood uniform mixture for NCDs |
| 9 | ELISA | 1 | Antigen-antibody reaction test for COPD |
| 10 | Electrolyze analyzer | 1 | NCDs patients' ion measurement |
| 11 | Hematology analyzer | 1 | NCDs patients' blood cell · hemoglobin analysis |
| 12 | Biochemistry analyzer | 1 | NCDs patients' serum factor analysis |
| 13 | Refrigerator | 1 | Storage of reagents for analyzer |
| 14 | Air conditioner split type 2 tons | 2 | Environmental protection for radiology and laboratory equipment |

(3) Support for training

1) Selection of training and scope:

Needs of training for NCDs was confirmed with a total 8 training sessions which are planned by the NCDC OP and CBHC OP in the 4th HPNSP. Trainings consist of 4 training sessions of the

NCDC OP and 4 training sessions of the CBHC OP. As for the contents of the training, 4 training sessions of NCDC are to promote capacity building in terms of health promotion activities, screening, diagnosis and treatment about major NCDs. The CBHC training consists of 4 training sessions: the first training is community engagement training to promote capacity building of the CG in terms of health promotion activities in the community; the second is also community engagement training to promote support from the local government representatives for CC management; the third is referral system training in order to strengthen the referral system from the CC to the UHC after finding possible patients by screening at the CC; and the fourth is supervision training in order to improve health care services at CC.
The target participants are medical doctors, nurses, supervisors and other health service providers at CC, UHC and local government representatives and CG members.
Subject areas are the selected 46 UHCs, 444 Unions, 1,227 CCs and the CGs under the 46 Upazilas.

Reasons for selection are described for 2 levels which are "prevention" and "screening, diagnosis and treatment".

Prevention (health promotion)

a. Community engagement training for CG

Reasons for selection: Continuous enhancement of the CG member is necessary to enhance health promotion such as health awareness, social mobilization and social environment in the community and to strengthen capacity of CG members to support the CC operation.

b. Community engagement training for local government

Reasons for selection: To secure budget for health promotion activities by CC through enhancing local government members' understanding and support of the CC management.

c. Training for CHCP and nurse on NCD management

Reason for selection: To strengthen health education for the citizen and patients to encourage behavioral changes for a healthy lifestyle through the promotion of the knowledge and skills of the CHCP and Nurse who belong to NCD Corner on NCD management. Furthermore, CHCP and the nurse are received same training in order to strengthen mutual understanding for referral system from CC to NCD Corner in UHC. And to strengthen CHCP's and nurse's capacity for continuous treatment of NCD patients using home remedies.

Screening, diagnosis and treatment

a. Training of doctors, nurses on HTN & CVD

b. Training of doctors on stroke & other neurological diseases

c. Training of doctor & nurses on NCDs of pregnant mothers

Reason for selection: To strengthen capacity of medical doctors and nurses on standardized NCD screening, diagnosis and treatment and health education at UHC level.

d. Referral System Training

Reason for selection: To strengthen referral system from CC to UHC for decreasing the burden of patients with NCDs risk. Also, to strengthen communication between CC and UHC for cooperation especially at emergency referral.

e. Training on supervision & monitoring

Reason for selection: To enhance effectiveness and quality health care services in the CC and strength the relationship between the the UHC and CC.

2) Contents of each training program

The contents of each training are described for two groups, which are prevention and screening, diagnosis and treatment.

Prevention

Table 6-7 Community engagement training for CG

| | |
|---|---|
| Name | Community engagement for CG[21] |
| OP | CBHC |
| Duration: | 2 days |
| Participant | CG members (17 persons per CG) |
| Total Participant and breakdown | 20,859 persons.<br>Breakdown：1,227 (No. of the target CG）X 17persons (No. of the target participant）=20,859 persons |
| No. of Participant per batch | 34 persons. |
| Total batch and break down | 614 batches. Breakdown: 20,859 persons (No. of total participant)/ 34persons＝614 batches |
| Venue | Upazila level facilities, Union Parishad, School etc. |
| Objective | To create a health movement in the community for bringing improved health outcomes. |

[21] There is one CG for each CC.

| | |
|---|---|
| Contents | CC management, operation, community awareness, roles & responsibilities, fund generation |
| Methods | Participatory method |
| Material | Guideline and text |
| Goal | Community engagement for better management of CC is strengthened. |

Table 6-8 Community engagement training for local government

| | |
|---|---|
| Name | Community engagement for local government |
| OP | CBHC |
| Duration | 2 days |
| Participant | Local government representative (total 14 persons: 1 union chairmen, 9 union parishad members, 3 female members, 1 secretary) |
| Total Participant and breakdown | 6,216 persons.<br>Breakdown: 14 persons (No. of the target) X 444 Unions =6,216 persons |
| No. of Participant per batch | 28 persons. |
| Total batch and breakdown | 222 batches. Breakdown：6,216 persons (No. of total participant)/ 28 persons=222 batches. |
| Venue | UHC/ Training Institutions (Bangladesh Academy for Rural Development (BARD), Rural Development Academy (RDA), Rural Reconstruction Foundation (RRF) etc.) |
| Objective | Capacity building of local government representative to strengthen understanding of local fund management and proper management of CC |
| Contents | Management and operation of CC, community mobilization, roles & responsibilities of CC, fund generation and allocation |
| Methods | Participatory method |
| Material | Guideline and text |
| Goal | Local government representatives will be well motivated with active participation in CCs management & improvement. |

Table 6-9 Training for CHCP and Nurse on management of NCDs

| | |
|---|---|
| Name | Training for nurses & para-health professionals (SACMO, Medical Technologists etc.) on management of NCDs |
| OP | NCDC |
| Duration | 3 days |
| Participant | CHCP (Community Health Care Provider) and nurse |
| Total Participant | 1,380 persons. Breakdown：1,227 CHCPs (No. of the target CCs) + 153 persons (3or 4 nurses |

| | |
|---|---|
| and breakdown | X 46 UHCs) |
| No. of Participant per batch | 30 persons |
| Total Batch and breakdown | 46 batches. Breakdown：1,380 persons（No. of total participant）/30 persons＝46 batches |
| Venue | Bangladesh University of Health Science (BUHS) etc. |
| Objective | CHCP to understand management on NCDs and enhance health promotion |
| Contents | Overview, symptoms, basic pathogenesis, risk factors, healthy diet, physical exercise, counseling and behavioral change communication. |
| Methods | Lecture, hands-on and participatory method |
| Material | “Prevention, early detection and management of NCDs in Bangladesh” (MOHFW) |
| Goal | Capacity and competencies of CHCP on the management and control of the risk factors of NCDs is strengthened. |

Screening, Diagnosis and Treatment

Table 6-10 Training for doctors, nurses on HTN & CVD

| | |
|---|---|
| Name | Training for Doctors, Nurses on HTN & CVD |
| OP | NCDC |
| Duration | 3 days |
| Participant | Medical doctors and nurses |
| Total Participant and breakdown | 1,150 persons. Breakdown：15 persons（No. of medical doctor per UHC）+10 persons（No. of nurse per UHC）X 46 Upazilas=1,150 persons. |
| No. of Participant per batch | 30 persons. |
| Total Batch and breakdown | 39 batches. Breakdown：1,150 persons（No. of total participant）/30 persons＝39 batches. |
| Venue | National Heart Foundation Hospital & Research Institute (NHFH&RI) etc. |
| Objective | Doctors and nurses to review pathology for HTN and CVD. Doctors and nurses to obtain knowledge and skills for diagnosis and standard treatment of HTN and CVD. |
| Contents | Overview, symptoms, pathogenesis, risk factors, screening, diagnosis, treatment and management of patients of HTN and CVD. |
| Methods | Lecture, hands-on training and participatory method |
| Material | “Prevention, early detection and management of NCDs in Bangladesh” (MOHFW) and advanced text (being prepared) |

| | |
|---|---|
| Goal | Capacity and competencies of the doctors and nurses for the integration of early detection, management and control of the risk factors of NCDs is strengthened. |

Table 6-11 Training for doctors on stroke & other neurological diseases

| | |
|---|---|
| Name | Training for doctors on stroke & other neurological diseases |
| OP | NCDC |
| Duration | 3 days |
| Participant | Medical doctors |
| Total Participant and breakdown | 690 persons. Breakdown：15 persons（No. of medical doctor per UHC） X 46 Upazilas=690 persons. |
| No. of Participant per batch | 30 persons. |
| Total Batch and breakdown | 23 batches. Breakdown：690 persons（No. of total participant）/30perosns ＝23 batches. |
| Venue | National Institute of Neurosciences Hospital (NINS) etc. |
| Objective | Doctors to review pathology for stroke & other neurological diseases. Doctors to obtain knowledge and skills for diagnosis and standard treatment of stroke & other neurological diseases. |
| Contents | Overview, symptoms, pathogenesis, risk factors, screening, diagnosis and treatment of patients of stroke and other neurological diseases |
| Methods | Lecture, hands-on training and participatory method |
| Material | “Prevention, early detection and management of NCDs in Bangladesh” (MOHFW) and advanced text (being prepared) |
| Goal | Capacity and competencies of the medical doctors for the integration of early detection, management and control of the risk factors of NCDs is strengthened. |

Table 6-12 Training of doctors & nurses on NCDs of pregnant mothers

| | |
|---|---|
| Name | Training of Doctors & Nurses on NCDs of Pregnant Mothers |
| OP | NCDC |
| Duration | 3 days |
| Participant | Medical doctors and nurses |
| Total Participant and breakdown | 1,150 persons. Breakdown：15 persons（No. of doctor per UHC）+10 persons（No. of nurse per UHC） x46 Upazilas= 1,150persons. |
| No. of Participant per Batch | 30 persons |

| | |
|---|---|
| Total Batch and breakdown | 39 batches. Breakdown：1,150 persons（No. of total participant）/30 persons＝39 batches. |
| Venue | Institute of Child & Mother Health etc. |
| Objective | Doctors and nurses to review maternal on physiology. Doctors and nurses to obtain knowledge and skills for diagnosis and standard treatment of NCDs for pregnant mothers. |
| Contents | Overview, symptoms, pathogenesis, risk factors, screening, diagnosis, and treatment of pregnant women for NCDs. |
| Methods | Lecture, hands-on training and participatory method |
| Material | “Prevention, early detection and management of NCDs in Bangladesh” (MOHFW) and advanced text (being prepared) |
| Goal | Capacity and competencies of the doctors and nurses for the integration of early detection, management and control of the risk factors of NCDs is strengthened. |

Table 6-13 Referral system training

| | |
|---|---|
| Name | Referral system |
| OP | CBHC |
| Duration | 1 day |
| Participant | CHCP, HA, FWA |
| Total Participant and breakdown | 3,681perosns. Breakdown：1,227CCs（No. of target CC）X 3 persons=3,681persons. |
| No. of Participant per Batch | 30 persons. |
| Total batch and breakdown | 123 batches. Breakdown：3,681 persons（No. of total participant）/30persons=123 batches. |
| Venue | UHC |
| Objective | CHCP, HA and FWA to understand their role in the referral system and develop their referral capacity |
| Contents | Orientation on the referral system with CC's roles and responsibilities.<br>Referral mechanism & strategy |
| Methods | Participatory method |
| Material | Guideline and material（being prepared） |
| Goal | Effective referral from CC to upward facilities at emergency and complicated cases is ensured. |

Table 6-14 Training on supervision & monitoring

| | |
|---|---|
| Name | Training on Supervision & Monitoring for different levels of supervision, Training of Master Trainers; TOT (Training of Upazila and Union level supervisors) |
| OP | CBHC |
| Duration | 2 days |
| Participant: | 20 Persons per Upazila (details as follows)<br>Second Line Supervisor: 1 UHFPO (Upazila Health and Family Planning Officer), 1 UFPO (Upazila Facility planning officer), 1 MO (Medical Officer), 1 MODC (Medical Officer Disease control), 1 MOUSC (Medical Officer Union sub center)<br>First Line Supervisor: 2 HIs (Health Inspector), 1 SI(Sanitary Inspections), 10 AHI (Assistant Health Inspector), 1 MTEPI (Medical Technologists EPI), 1 Statistics |
| Total Participant and breakdown | 920 persons. Breakdown: 20 persons (No. of the target participant) x46 Upazilas (No. of the target Upazila) =920 persons |
| No. of Participant per Batch | 30 persons |
| Total Batch and breakdown | 31 batches. Breakdown:920 persons（No. of total participant）/30 persons＝31batches. |
| Venue | UHC |
| Objective | The second line and first line supervisors to supervise CC properly in a defined way/strategy |
| Contents | Background, activities & progress on CC, management of CC, monitoring & supervision of CC,<br>Involvement of 1st line supervisors in CC, registers used in CC, hands-on training. |
| Methods | Participatory method |
| Material | Guideline and text (draft) |
| Goal | Supportive supervision for effective and quality service delivery at CC is provided by supervisors. |

## 6-3 Urban Health

### 6-3-1 Scope of Urban Health NCD Control:

- The target population is the urban low-income population.
- Priority is given to NCD control while considering other health issues through strengthening health systems.
- The project will focus on the Dhaka City area since Dhaka is an urban area in Bangladesh with the largest population including slum dwellers. 16 GODs in Dhaka City are candidates for the Project.
- PHCC is outside of the Project scope although ESP defines PHCC. Because there is no

concrete plan, the feasibility cannot be confirmed. The survey team would recommend to consider PHCC plan after the pilot project of PHCC will be implemented and confirmed as effective.

6-3-2 Conceptual framework to strengthen Urban Health improvement under the Project

To improve the health services provided for urban low-income populations, the following activities prescribed in the ESP are proposed to strengthen the capacity of the GODs. Furthermore, an increase in the number of outpatients at the GODs is expected to contribute to the reduction of congestion at the tertiary level health facilities. There are no public secondary level health facilities in Dhaka.

(1) Prevention

Capacity development of health promotion to health service providers at GODs is required.

This will serve to improve the knowledge of service providers on healthy lifestyles and behavioral changes of people. They will effectively introduce better behavior to people. For this purpose, the training on NCD screening and behavioral change would be implemented.

(2) Screening

Improvement of the screening capacity at the GOD can improve its referral function to the upper level health facilities (MCH and other specialized hospitals). The trainings of doctors on screening, diagnosis and treatment as well as reconstruction of GODs and provision for screening equipment would be planned under the Project

(3) Treatment

To improve the doctors abilities for appropriate treatment on NCDs to meet the ESP, NCD diagnosis and treatment training of GOD doctors will be conducted.

6-3-3 Concrete Plan of Activities

(1) Support for facility reconstruction of the GODs

The facility improvement of the GODs leads to the quality improvement of service delivery provided at the primary level. There is a great desire to strengthen the functions of the GODs by expanding the laboratory function to deal with the patients requiring primary level health services and furthermore, to ease the congestion occurring at the tertiary level institutions.

As the facilities surveyed have been found to be obsolete, immediate reconstruction is required. Of the 16 facilities, 6 facilities will be considered for reconstruction because of their deteriorated facility condition.

For Parashi Barak GOD, an issue of landownership should be solved before the construction. Reconstruction of facilities should be considered to include external works such as civil and electric works with service wiring. The dismantling of building in reconstruction of target facilities is a responsibility of GOB.

Table 6-15 Development Plan for GODs

| No. | Name | Contents of Implementation | Remarks |
|---|---|---|---|
| 1 | Motijheel GOD | Reconstruction, external works (civil & electrical) | |
| 2 | Genfaria GOD | Reconstruction, external works (civil & electrical) | |
| 3 | Hazaribag GOD | Reconstruction, external works (civil & electrical) | |
| 4 | Mirpur-10 GOD | Reconstruction, external works (civil & electrical) | |
| 5 | Milpur Old Colony GOD | Reconstruction, external works (civil & electrical) | |
| 6 | Parashi Barak GOD | Reconstruction, external works (civil & electrical) | Issue on land property |

(2) Support for provision of medical equipment for GODs

Provision of necessary medical equipment is selected based on the ESP. In the GODs, the function of primary diagnostic and treatment, equivalent to that of NCD corner at UHC, is required as doctors are available for diagnosis. Most of the equipment for NCD control is broken or has expired in the GODs. Especially, there is a lack of diagnostic equipment such as ECGs which are essential equipment for primary diagnosis by doctors. Therefore, supply of new equipment and replacement of broken and expired equipment for the NCD control is needed. The essential equipment for primary diagnosis and treatment of the NCD control is planned to be provided for 16 GODs. Furniture, cabinets and delivery beds are the responsibility of GOB.

Table 6-16 Proposed Equipment for GODs

| No. | Equipment | Qty | Function for NCD control |
|---|---|---|---|
| 1 | Stethoscope | 1 | Breathing observation for COPD, blood pressure measurement |
| 2 | Pedometer | 1 | Observation of caloric consumption of obese patients |

| | | | |
|---|---|---|---|
| 3 | Measuring tape | 1 | Obesity abdominal measurement |
| 4 | Glucometer | 1 | Diabetes patients' blood glucose measurement |
| 5 | Glucometer strips with needle (25 strips/box) | 1 | Diabetes patients' blood glucose measurement test strips |
| 6 | B.P machine | 2 | Blood pressure measurement |
| 7 | ECG machine | 1 | Cardiac function measurement |
| 8 | Nebulizer | 1 | COPD patients' treatment |
| 9 | Scale | 1 | Weight measurement of obese patients |
| 10 | Height /Weight Scale | 1 | Obese patients' height/weight measurement |

(3) Support for Training programs

Urban health training focuses on health promotion activities, screening, diagnosis and treatment about main NCDs, training, planned in the NCDC OP in the 4th HPNSP. The target participants are medical doctors and para health professionals in 16 GODs.

1) Prevention (health promotion) and screening, diagnosis and treatment

a. Training of para-health staff (SACMO, etc.) on NCD Management

b. Training of Doctors, Nurses on HTN & CVD

c. Training of Doctors on Stroke & other Neurological diseases

d. Training of Doctor & Nurses on NCDs of pregnant mothers

Reason for selection:

NCDs have become a serious problem[22] in urban areas. GOD is the nearest public primary health facility for urban citizen including the low-income population. It is necessary to strengthen the capacities of doctors and para-health staff on health promotion, screening, diagnoses and treatment at GOD.

2) Contents of each training program

Table6-17 to Table 6-20 describe 4 trainings as concrete contents.

Table 6-17 Training for para-health staff on management of NCDs

| | |
|---|---|
| Name | Training for Nurses & Para-health Professionals (SACMO, Medical Technologists etc.) on management of NCDs |
| OP | NCDC |

[22] STEP Survey 2010 MOHFW, WHO, et al

| | |
|---|---|
| Participant | Para-health professionals (SACMO, etc.) |
| Duration: | 3 days |
| Total participant and breakdown | 30 persons. Breakdown:16 GODs X approx. 2 persons (No. of Para-health professionals per GOD). |
| No. of participant per batch | 30 persons. |
| Total Batch and breakdown | 1batch. Breakdown: 30 persons（No. of total participant）/ 30 persons =1batch. |
| Venue | Bangladesh University of Health Science-BUHS (Institution) etc. |
| Objective | Para-health professionals to understand management on NCDs and enhance health promotion. |
| Contents | Overview, symptoms, basic pathogenesis, risk factors, healthy diet, physical exercise, counseling and behavioral change communication |
| Methods | Lecture, hands-on training and participatory method |
| Material | "Prevention, early detection and management of NCDs in Bangladesh" (MOHFW) and prevention of NCDs |
| Goal | Capacity and competencies of the para-health professionals for the management and control of the risk factors of NCDs is strengthened. |

Table 6-18 Training for doctors on HTN & CVD

| | |
|---|---|
| Name | Training for Doctors on HTN & CVD |
| OP | NCDC |
| Participant | Medical doctors |
| Duration | 3 days |
| Total Participant and breakdown | 30 persons. Breakdown:16 GODs X approx. 2 persons (No. of doctor per GOD). |
| No. of Participant per batch | 30 persons. |
| Total Batch and breakdown | 1batch. 30 persons（No. of total participant）/ 30 persons =1batch. |
| Venue | National Heart Foundation Hospital & Research Institute(NHFH&RI) etc. |
| Objective | To be able to review pathology for HTN and CVD<br>To be able to obtain knowledge and skills for diagnosis and standard treatment of HTN and CVD. |
| Contents | Overview, symptoms, pathogenesis, risk factors, screening, diagnosis, treatment and management of those patients of HTN and CVD. |

| | |
|---|---|
| Methods | Lecture, hands-on training and participatory method |
| Material | "Prevention, early detection and management of NCDs in Bangladesh" (MOHFW) and advanced materials (being prepared) |
| Goal | Capacity and competencies of the medical doctors for the integration of early detection, management and control of the risk factors of NCDs is strengthened. |

Table 6-19 Training for doctors on stroke & other neurological diseases

| | |
|---|---|
| Name | Training for Doctors on Stroke & other Neurological diseases |
| OP | NCDC |
| Participant | Medical doctors |
| Duration | 3 days |
| Total Participant and breakdown | 30 persons. Breakdown:16 GODs X approx.2 persons (No. of doctor per GOD). |
| No. of Participant per batch | 30 persons |
| Total Batch and breakdown | 1batch. Breakdown: 30 persons（No. of total participant）/ 30 persons =1batch. |
| Venue | National Institute of Neurosciences Hospital (NINS) etc. |
| Objective | Doctor to review pathology for stroke & other neurological diseases<br>Doctor to obtain knowledge and skills for diagnosis and standard treatment of stroke & other neurological diseases |
| Contents | Overview, symptoms, pathogenesis, risk factors, screening, diagnosis and treatment of patients of stroke and other neurological diseases |
| Methods | Lecture, hands-on training and participatory method |
| Material | "Prevention, early detection and management of NCDs in Bangladesh" (MOHFW) and advanced materials（being prepared） |
| Goal | To strengthen the capacity and competencies of medical doctors for the integration of early detection, management and control of the risk factors of NCDs is strengthened. |

Table 6-20 Training of Doctors on NCDs of Pregnant Mothers

| | |
|---|---|
| Name | Training of Doctor on NCDs for Pregnant Women |
| OP | NCDC |
| Participant | Medical doctors |
| Duration | 3 days |
| Total Participant | 30 persons. Breakdown:16 GODs X approx. 2 persons (No. of doctor per GOD). |

| | |
|---|---|
| and breakdown | |
| No. of Participant per Batch | 30 persons |
| Total Batch and breakdown | 1 batch. Breakdown: 30 persons（No. of total participant）/ 30 persons =1batch. |
| Venue | Institute of Child & Mother Health etc. |
| Objective | Doctors to review pathology for stroke & other neurological diseases.<br>Doctors to obtain knowledge and skills for diagnosis and standard treatment of stroke & other neurological diseases. |
| Contents | Overview, symptoms, pathogenesis, risk factors, screening, diagnosis and treatment of pregnant women for NCDs. |
| Methods | Lecture, hands-on training and participatory method |
| Material | “Prevention, early detection and management of NCDs in Bangladesh” (MOHFW) and advanced materials (being prepared) |
| Goal | To strengthen the capacity and competencies of the medical doctors for the integration of early detection, management and control of the risk factors of NCDs is strengthened. |

## 6-4 Estimation of the Cost of the Project

### 6-4-1 Cost of the Project

Table 6-21 shows the cost of this Project.

Table 6-21 Project Cost

Confidential

Confidential

Confidential

6-4-2 Facilities Cost

a. UHC

Project cost of each UHC is shown in Table 6-22.

Table 6-22 Reconstruction/Upgrading Cost of UHC

Confidential

Cost breakdown of the UHC Facility is shown in Table 6-23.

Table 6-23 Cost Breakdown of the UHC Facility

Confidential

b. CC

Project cost of each CC is shown in Table 6-24.

Table 6-24 Reconstruction of CC

Confidential

The cost of breakdown for the CC is shown in Table 6-25.

Table 6-25 Breakdown of the Cost for the CC Facility

Confidential

c. GOD

Project cost of each GOD is shown in Table 6-26.

Table 6-26 Reconstruction of GODs

Confidential

The cost of breakdown for GOD is shown in Table 6-27.

Table 6-27 Breakdown of Cost for GOD Facility

Confidential

6-4-3 Equipment Cost

Summary of equipment cost for each level of the health facilities are shown in the following Table.

Table 6-28 Summary of Equipment Cost

Confidential

Cost breakdown of the equipment for DH, UHC, GOD and CC are shown in Table 6-29, 6-30 and 6-31 respectively.

Table 6-29 Cost of equipment for NCD control at DH

Confidential

Confidential

Table 6-30 Cost of equipment for NCD control at UHC and GOD

Confidential

Table 6-31 Cost of equipment for NCD control at CC

Confidential

6-4-4 Training Cost

Table 6-32 shows the cost of NCDC training and Table 6-33 shows the cost of CBHC training.

Table 6-32 Summary of the NCDC training cost

Confidential

Table 6-33 Summary of the CBHC Training Cost

Confidential

## 6-5 Project Implementation Schedule

Confidential

Confidential

# Chapter 7 Implementation and Maintenance Mechanisms

## 7-1 Implementation Mechanisms for the 4th HPNSP

### 7-1-1 Project Steering Committee

The implementation mechanisms for the Project is shown in Figure 7-1. The Project will be supervised by the Project Steering Committee chaired by the Secretary of Health Service Division in the HOMFW. The main members are; Additional Secretary (Development), Additional Secretary (Financial Management and Audit), Joint Chief, Director General of Health Service and related representative from Ministry of Planning, Ministry of Finance, Ministry of Administration, representative from DGHS, Drug Administration Directorate, Directorate General of Nursing and Midwifery, representative from HED and Health Economics Unit and Line Directors (hereinafter referred to as "LD") of relevant OPs under MOHFW.

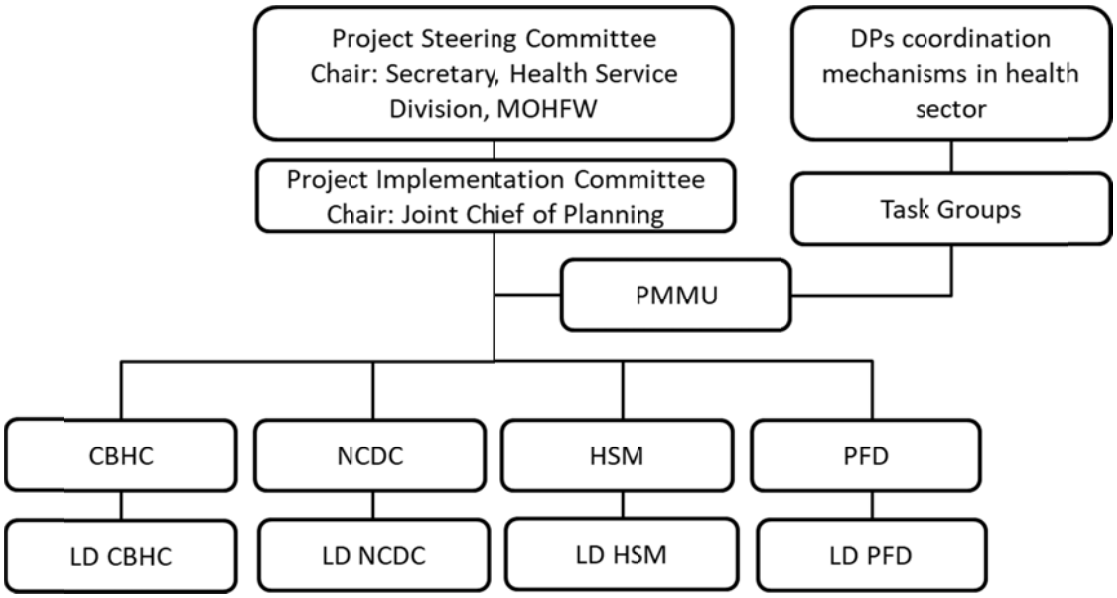



Figure 7-1 Operational Plan Implementation Committee

### 7-1-2 Operational Plan Implementation Committee

The Operational Plan Implementation Committee chaired by the Joint Chief of Planning Wing is responsible for the implementation of the Project. This committee monitors progress and coordination of each activities of the Project among related OPs. The members are the LDs in charge of each activity such as the CBHC, NCDC, HSM and PFD. The Joint Chief of Planning Wing is responsible for the coordination of related DPs.

### 7-1-3 Implementation Structure of OPs

Since the Project supports GOB implementation of OPs in the 4th HPNSP, the Project will be implemented by following mechanisms of the OP implementation in the 4th HPNSP.
Since the candidate Project activities are listed up from the extraction of activities in the OPs in the 4th HPSNP, the project activities should be implemented by following the mechanisms of the OP implementation.

The financial and administrative leader in each OP is the LD. S/he is the overall supervisor of the implementation carried out in each respective OP. S/he maintains liaison with other OPs, units/wings of MOHFW, implementing agencies, DPs and with other relevant stakeholders. The financial management and control in the OP is also his/her responsibility. (LD is the focal person to disseminate the latest status of implementation and hence should have sound ideas about the execution of various activities under the OP.) In this regard, s/he is required to report progress in the form of periodic reports or other documentation modality. The MOHFW initiates the process of engaging short-term consultants, if required.

The LDs are supported by Program managers (hereinafter referred to as "PM"). Under the leadership by the LD, PM carry out the day-to-day activities of the respective component(s). S/he also coordinates, as needed, with other PMs, LDs of other OPs or of other agencies depending on the nature of his/her activities. S/he regularly updates the LD with his/her progress and supports LDs in the required documentation process. PMs are supported by Deputy Program Managers (hereinafter referred to as "DPM"). DPMs are responsible for the implementation of the respective activity or group of activities in a particular component of the OP.

Each OP receives an annual allocation of funds from the Annual Development Program (hereinafter referred to as "ADP"), which is re-appropriated at the end of the 3rd quarter based on need and efficiency of the fund absorption. Depending on the cost and the volume of funds allocated, there can be one Accountant assisted by one Accounts Officer for each OP. The Accountant is supervised by one of the DPMs assigned with the responsibility of financial management. The Accountant makes expenditures as per the prior approved plan; maintain proper records of the expenditures; and help the LD to monitor and ensure the required level of internal control of the expenditures. S/he supports the LD in developing annual budgets and periodic expenditures as well as auditing reports for the OP. The following figure shows the OP implementation structure.

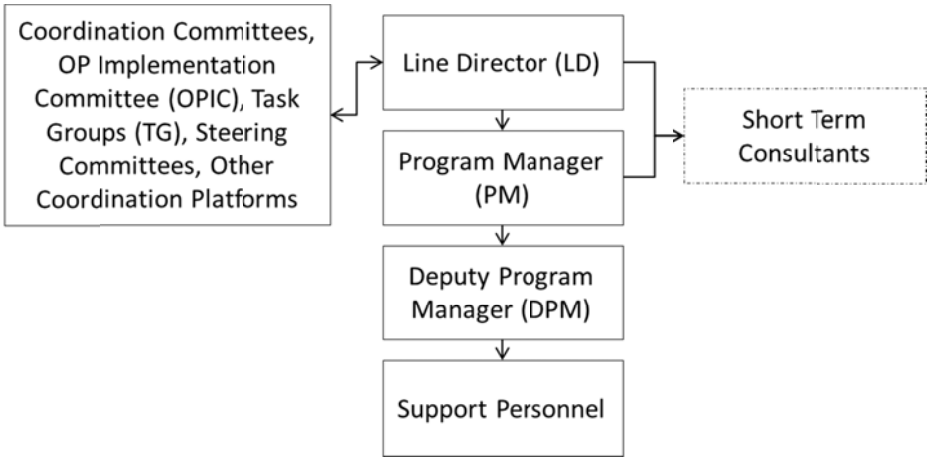



Figure7-2 OP Implementation Structure

7-1-4 Coordination Mechanisms with other related institutions

(1) NCD Control

According to the 4th HPSNP, NCD control coordination is limited across sectors. Several NCD interventions exist in public and non-Government sectors, but with limited national coordination. NCD control activities from the MOHFW are carried out from NCDC OP. There is no clear coordination mechanism to control NCDs so far. Collaboration with other OPs in the MOHFW is inevitable for NCD control/improvement.

(2) Urban Health

The National Urban Primary Health Care Provider (NUPHCP) Steering Committee are formed between the MOHFW during the 4th HPNSP. However, functions, members, and other details are not clear as of December 2017. Functionalizing NUPHCP is recommended for further effective urban health program.

## 7-2 Implementation System for Facility Construction

In construction of the health facility, PFD make construction plan under the instruction of CBHC. Designing, procurement and construction management for UHC and CC are implemented by HED and for GOD by PWD. Procurement for public utilities in Bangladesh is required to conform to the Public Procurement Rules 2008 (published by the Ministry of Planning in April 2008: hereinafter referred to as “PPR2008”) and the Public Procurement Act 2006 (published by the Ministry of Law, Justice and Parliamentary Affairs Legislative and Parliamentary Affairs Division in July 2006: hereinafter referred to as “PPA2006”). In case of such small construction under the Project, facility procurement can be bidding (National Competitive Tender; hereinafter referred to as “NCT”) by domestic constructor.

## 7-3 Implementation System for Provision of Equipment

### 7-3-1 Procurement of Medical Equipment

There are two major operation plans for medical equipment in the health facilities. For the application of these two OPs, the ministry divides public health facilities into those with less than approx. 100 beds, such as a CBHC, and those with more than approx. 100 beds, such as an HSM. The OP for the CBHC is applied to CCs, UHFWCs and UHCs, while that for an HSM is applied to DHs, MCHs and specialized hospitals. Almost all the plans for procurement and maintenance of medical equipment managed by the MOHFW are included in the two OPs (certain equipment including that for nursing care and vaccinations is not included in the OPs.) They describe procurement plans and maintenance/ inspections of medical equipment among the priority issues.

Procurement of medical equipment for public health facilities is required to conform to the PPR2008 and the PPA2006.

Actual procurement of medical equipment is managed by the CMSD of DGHS for tendering under the MOHFW's approval. The procurement of medical equipment for secondary and tertiary hospitals is managed by HSM OP, and those for primary health facilities is managed by CBHC OP.

The Civil Surgeon is the district health manager responsible for delivering secondary and primary care services. In some DHs, superintendents are available. S/he is responsible for hospital management.

a. DH

The Civil Surgeon has the responsibility to provide and install medical equipment at the DH. First, DHs make requests for medical equipment through their Civil Surgeon. The CMSD delivers the equipment to the Civil Surgeon's office or person in charge of the hospital.

b. UHC

For procurement and installation of equipment for the UHC, the Civil Surgeon is also responsible. The procedure of procurement for the UHC is the same as that for a DH. There is the District Health Superintendent (DHS) who is in charge of support management and monitoring of the activities at the UHC and CC which is located in the Civil Surgeon's office The Director of the UHC requests medical equipment which is planned in the OP of the CBHC

through the DHS and the Civil Surgeon office to the CMSD.

c. CC

The procurement and installation of equipment for CCs is also the responsibility of the Civil Surgeon. The AHI of the CC requests medical equipment which is planned in the OP of the CBHC through the DHS and the Civil Surgeon office supply from the stock in the Civil Surgeon office.

d. GOD

The procurement and installation of equipment for GODs is also a responsibility of the Civil Surgeon. The doctor of the GOD requests medical equipment which is planned in the OP of the CBHC through the DHS and the Civil Surgeon office supply from the stock in the Civil Surgeon office.

## 7-4 Implementation System of Training

The trainings are implemented by NCDC OPs and CBHC OPs.

(1) NCDC

Concerning implementation of 4 of the NCDC trainings on HTN & CVD, Stroke & other Neurological disease, management of NCDs and NCDs for pregnant mothers, NCDC procures specialized institutions for implementation and NCDC monitors the implementation, and the institutions provide plan and carry out the training. The Table 7-1 shows the example of specialized institutions for each NCDC Training.

Table 7-1 Specialized institutions for each NCDC Training

| | | |
|---|---|---|
| 1 | Name | Training for Doctors, Nurses on HTN & CVD |
| | Institution | National Heart Foundation Hospital & Research Institute (NHFH&RI), etc. |
| 2 | Name | Training for Doctors on Stroke & other Neurological disease |
| | Institution | National Institute of Neurosciences Hospital (NINS), etc. |
| 3 | Name | Training for CHCP & Nurses, and Para-health professionals (SACMO, Medical Technologists, etc.) on management of NCDs |
| | Institution | Bangladesh University of Health Science (BUHS), etc. |
| 4 | Name | Training of Doctor & Nurses on NCDs for pregnant mothers |
| | Institution | Institute of Child & Mother Health, etc. |

(2) CBHC

CBHC conduct the 4 trainings through a cascade model. The cascade model for CBHCs is composed of 3 tiers, which are Master Training, TOT and Field Training. Also, the Trainer of Master training has the role of monitoring and supervising field training. CBHCs receive technical support by specialized institutions such as the Bangladesh Academy for Rural Development (BARD), Rural Development Academy (RDA), Rural Reconstruction Foundation (RRF), and National Institute of Population, Research and Training (NIPORT). The Figure7-3 shows the cascade model of CBHC.

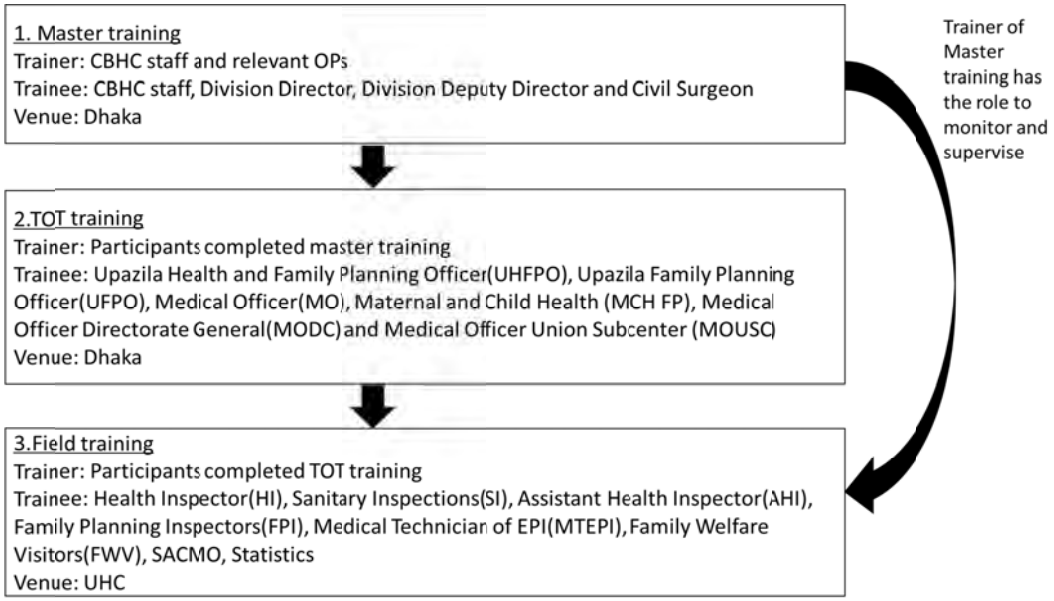



Figure 7-3 Cascade model of CBHC Training

## 7-5 Maintenance System

### 7-5-1 Facility Maintenance System

PWD and HED designs, constructs and maintains health-related facilities. The following Table shows the Management Demarcation between the 2 departments.

Table 7-2 Management Demarcation by Facility

| Facilities | PWD | HED |
|---|---|---|
| Upazila Health Complex (UHC) | | X |
| Community Clinic (CC) | | X |
| Government Outdoor Dispensary (GOD) | X | |

HED is responsible for maintenance of UHCs and CCs, and PWDs for GODs.

Table 7-3 shows the maintenance budget of HED and PWD.

Table 7-3 Maintenance Budget of Health Facilities

(Unit: Lac Taka)

| Fiscal Year | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 |
|---|---|---|---|---|---|
| HED | 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 1,440.00 |
| PWD Health Wing | 5,160.33 | 5,697.99 | 7,845.34 | 7,323.18 | 8,200.00 |

(1) Maintenance system for UHCs and CCs

HED undertakes the maintenance of UHCs and CCs. Technical staff members of the maintenance team are organized as 6 circles under a chief engineer of HED headquarters. In each circle 1 Superintending Engineer and 1 Estimator are assigned. 3 to 4 Division Offices are established as a sub-organization of the Circle, and in December 2017, 19 offices exist. In each Divisional Office, 1 Executive Engineer, 1 Estimator and 1 Assistant Engineer are assigned. Under a Divisional Office there exist 3 to 4 District Offices. District Offices are in 56 locations. In each District Office 1 Assistant Engineer and 1 Sub-Assistant Engineer are assigned. Maintenance system of HED is following Figure 7-4. Facility maintenance procedures which are daily checks, emergency repairs and outscoring services are implemented according to the maintenance and management procedure made by PWD.

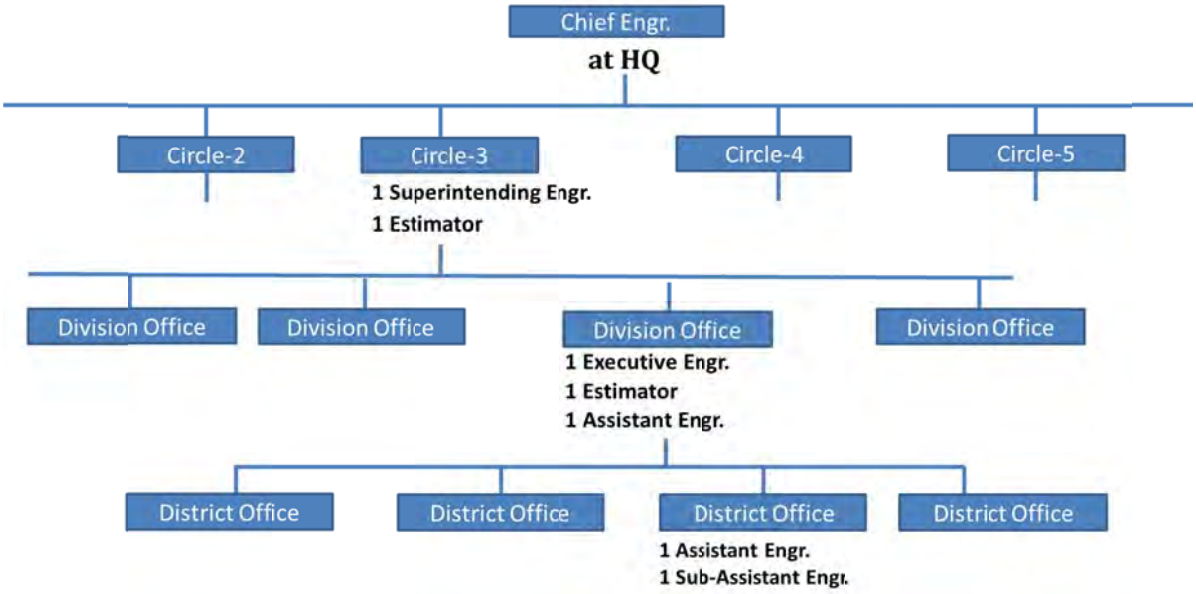



Figure 7-4 Maintenance system of HED

The HED maintenance staff carries out services for many facilities. In the case of HED maintenance staff in charge of Shaturia Upazila, for 6 UHC を for the other 6 UHCs, 1 Nursing College, 3 Mother and Child Welfare Centers, 160 CCs, 42 FWC, and 12 Union Sub Centers. However, they cannot perform proper services due to a lack of staff members who work at the site. Considering this situation, the HED has been requesting relevant authorities for an increase in the number of the staff members from 619 to 2,500.

The maintenance budget for the fiscal year (2017/18) amounts to 1,440 Lac Taka (19,8720,000 Yen). The average development budget is 1,200 Lac Taka/year for the past 5 years.

(2) Maintenance system for GODs

Figure 7-5 shows the maintenance system of the PWD. The PWD has 800 Engineers, 1,200 Technicians (diploma engineer), and 15,000 support staff members. PWD with 17,000 staff in total is responsible for maintenance for the facilities of 35 ministries and government offices all over the country.

The Health Wing of PWD is in charge of the health facilities of MOHFW. As shown in the organization chart, it has around 20 staff members (1 Additional Chief Engineer, 1 Superintendent Engineer, 2 Executive Engineers, 2 Subdivision Engineers, 7 Assistant Engineers, 8 Sub-Assistant Engineers). The MOHFW applies budget for maintenance, and the budget of the last year 8,200 Lac Taka a year (1,131.6 million Yen). Maintenance services consist of daily maintenance, urgent services, and repair orders following the procedures PWD made.

Figure 7-5 Maintenance System of PWD

7-5-2 Equipment Maintenance System

Medical equipment maintenance is implemented by the National Equipment Maintenance and Engineering Workshop & Training Center (hereinafter referred to as "NEMEMW&TC") in DGHS. NEMEMW & TC consist of headquarters in Dhaka and workshops in Medical College Hospital and District Electro-Medical Equipment Workshop (hereinafter referred to as "DEMEW"), which is in charge of some Medical College Hospitals and Districts. Technical staff and civil officers are allocated at each office and NEMEMW&TC and DEMEW provide maintenance services for all the medical equipment after a one-year guarantee, except for equipment with long-term guarantees. The maintenance budget is shown in Table 7-4 and the organization chart of NEMEMW & TC are shown in the Figure 7-6.

NEMEMW &TC provides maintenance service for Dhaka city and neighboring 13 districts and allocate about 95 staffs (including 66 technical staffs). DEMEW is located in 18 districts （Mymensigh, Tangail, Jamalpur, Faridpur, Pabna, Jessore, Kustia, Rajshahi, Rangpur, Dinajpur, Bogra, Sylhet, Comilla, Noakhali, Barisal, Potuakhali, Chittagong, Rangamati）and provides maintenance services for neighboring districts also. And each DEMEW allocates 9 staffs (including 6 technical staffs).

Due to the aging of human resources of the DEMEW, it is very difficult to provide adequate quality maintenance services. Most of the equipment utilizing the latest technology equipment includes a 5-year guarantee as a condition of procurement by the CMSD.
In the future, actual technical maintenance services should be out sourced allowing the DEMEW to concentrate on management work of the equipment. At present, medical staff has responsibility for operation and management of all the medical equipment and preparing inventory lists of equipment in each department room.

Following is the recommendation of the maintenance of equipment procured in the Project.

a. Equipment for DHs

Procurement of imaging and laboratory equipment for selected DHs are expected to include 5-year guarantees excluding basic equipment like refrigerators and sterilizers.

b. Equipment for UHCs, CCs, GODs

Procurement of medical equipment for the management of NCDs is essential equipment and therefore does not require any maintenance services.

Table 7-4 Maintenance Budget for Equipment

| Fiscal Year | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
|---|---|---|---|---|
| Repair of Machinery（HSM） | 117.00 | 642.70 | 595.08 | 791.00 |
| Supply of Logistic (NEMEMW). | 110.00 | 60.00 | 110.00 | 197.00 |
| Repair & Maintenance (NEMEMW). | 10.00 | 20.00 | 10.00 | 40.00 |
| Machinery (ESD)(*) | 10.50 | 10.50 | 10.50 | 10.50 |

(*) ESD: Essential Service Delivery. It was an OP under HPNSDP and is included in CBHC OP under the 4th HPNSP.

(Unit: Lac Taka)

The Maintenance Budget for Equipment is shown above in Table 7-4. In budget implementation, each hospital medical superintendent requests the Civil Surgeon Office to repair medical equipment, and the Civil Surgeon request the CMSD for the maintenance budget (refer to 7-3-1). However the approval of the request is very difficult due to the limited the budget. Therefore, medical equipment which requires costly maintenance includes a 5-year guarantee. And once the 5-year guarantee has elapsed, the maintenance cost will be allocated from the maintenance budget.

Further, the maintenance budget shown in the Table 7-4 is supposed to be a part of overall maintenance budget. There is no independent budget item for medical equipment in the OPs. Instead, it is included in the item, ‘machinery and other equipment,’ with other non-medical equipment. The budget for repair parts of medical equipment is also combined with that of non-medical equipment. Therefore, it is very difficult to analyze them separately.」

The figure 7-6 is organization of NEMEMW at October 2017. While 42 staffs are assigned in total, 34 positions are vacant.

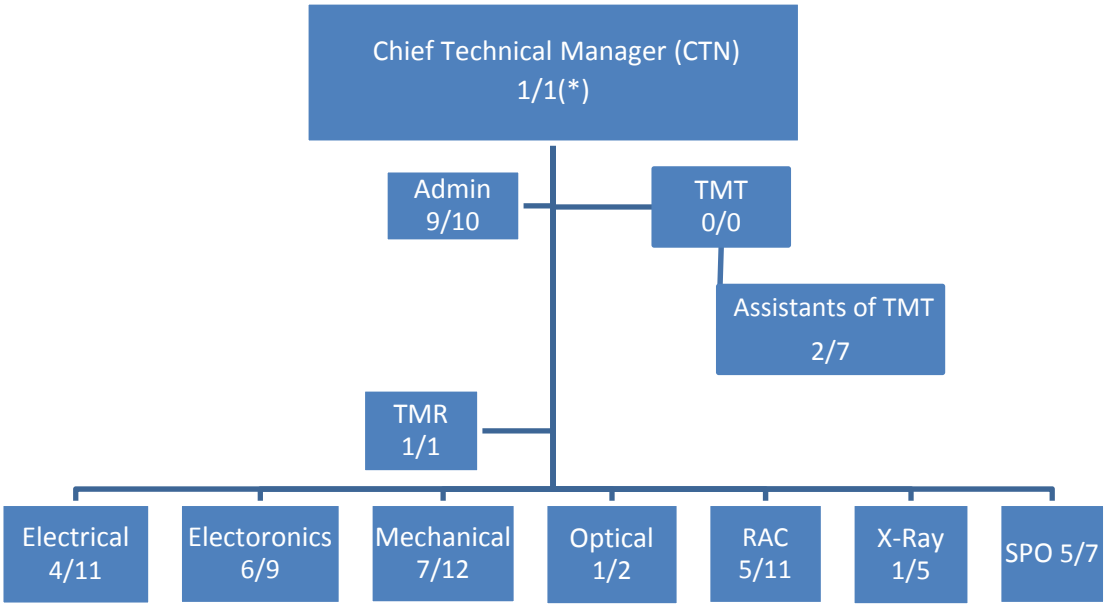



Figure 7-6 NEMEMW and TA Organization Char

TMT: Technical Manager Training

TMR: Technical Manager Repair,

RAC: Refrigerator Air Conditioner

SPO: Supply & Procurement Office

(*) Assigned number / Approved number

# Chapter 8 Project Evaluation

Pre-evaluation was made in terms of relevance, effectiveness and efficiency as follows:

## 8-1 Relevance

In Bangladesh, the health conditions have shifted from CDs to NCDs. Focusing on NCDs now to achieve Universal Health Coverage as a part of the SDGs is necessary and effective. Targeting Urban Health as the main issue is also important in Bangladesh due to its rapid urbanization as a result of its economic growth.

This Project matches the health sector program of Bangladesh by supporting the 4th HPNSP, the MOHFW health and medical development strategies. In the 4th HPNSP, NCD control and urban health improvement are among the important issues.

In relation to other JICA projects, the past experiences in the SMPP and facilities and equipment of previous ODA Loan Projects can be effectively utilized by this Project. At the same time, synergy effects with ongoing the SHASTO are highly expected. In relation to other donors, WHO works in the area of development of policy and rules and technical assistance for the reduction of NCDs, and ADB supports the MOLGRD&C on urban health.
From the above, the relevance of this Project can be evaluated as high.

## 8-2 Effectiveness

To measure the effectiveness of the Project, the survey selected direct indicators to reflect the outcome from the Project input. The purpose of the Project is to improve the quality of health services both in improvement of NCD control and Urban Health, to contribute to the health improvement of the people in Bangladesh. In NCD control, however, quality improvement of health services and health screening capacity may also cause an increase of NCDs cases, as the number of unknown disease cases in the past could be confirmed as NCDs. In Bangladesh, comprehensive surveillance system for NCDs is also needed. Therefore, the indicators were selected to measure the actual improvement of the quality in health services, avoiding the usage of the morbidity or mortality rate.

### 8-2-1 Quantitative monitoring indicators for the project output level

(1) NCD Control

a. Measurement for Establishment of Pilot Referral Network

If patients are referred from UHCs or CCs in project operation area after the project (training, facility improvement and equipment installation), the Pilot Referral Network can be regarded as established.

- Source：Project Report
- Department in charge: CBHC

b. Participants in NCD Control Training

Participating in NCD control training would contribute to the quality improvement of health service, by increasing the knowledge of participants for NCD control. Indicators are selected as the number of participants from CHCP for NCDs management training and the number of doctors and nurses for other NCDs improvement trainings.

b-1 NCD Management Training：Total number of participant from CHCP

- Source：Project Report
- Department in charge: NCDC

b-2 Total number of doctors and nurses participated in NCDs training

- Source：Project Report
- Department in charge: NCDC

(2) Urban Health

In urban health, following indicator is selected to measure the quality improvement of health services in GOD, based on the direct effectiveness of the project as much as possible.

a. Participants in NCD Control Training (Doctors and Para-Health Professionals)

In urban health, the burden of NCDs on the population is remarkably high. For health professionals of GOD, participation in NCD control training would contribute to the quality improvement of health service as well as knowledge for NCD control. Indicators are selected as the increased number of doctors and para-health professionals in GODs with appropriate knowledge and technique for examination and diagnosis in NCDs, to evaluate its capacity development for larger number of patients accepted at the facilities.

- Source：Project Report
- Department in charge：NCDC

Table8-1 Monitoring Indicators for the Project

| Indicator | Source | Base number (2017) | Target number (2024) (2 years after the completion of the Project) |
|---|---|---|---|
| 1) Indicators for NCD control | | | |
| 1. Number of CC which established the pilot referral network, referring its patients to | Project Report | - | 1,227 |

| | | | |
|---|---|---|---|
| UHC (total number of facilities) (*1) | | | |
| 2. Number of UHC which established the pilot referral network, referring its patients to DH (total number of facilities) (*2) | Project Report | - | 46 |
| 3. Number of CHCP Participants to Training on management of NCDs (total number) (*1) | Project Report | 0 | 1,227 (*4) |
| 4. Number of Participants (doctors and nurses) to NCDs Training (total number) (*2) | Project Report | 0 | 2,990 (*5) |
| 2) Indicators for Urban Health | | | |
| 1. Number of Participants (doctors and para-health professionals) to NCDs Training (total number) (*3) | DD | 0 | 120 (*6) |

*1: 1,227 CCs supported by the project.

*2: 46 UHCs supported by the project.

*3: 16 GODs supported by the project.

*4: Health professionals from each of 1,227 CCs supported by the project.

*5: For 46 UHCs supported by the project, 15 doctors x 3 kinds of training, 10 nurses x 2 kinds of training and 3 or 4 NCD Corner's Nurse x 1 kind of training from each UHC.

*6: For 16 GODs supported by the project, approx. 2 doctors x 16 GODs x 3 kinds of training, approx. 2 para-health professionals x 16 GODs x1 training.

### 8-2-2 Qualitative monitoring indicators for the Project output level

(1) NCD Control

- Knowledge and understanding for NCDs of CHCPs in CCs is enhanced, to enable them to operate health promotion programs for NCD prevention.
- Through the health promotion programs in the primary and secondary health facilities, improved health awareness for NCD prevention in the community contribute to the lifestyle change.
- Enhanced NCD referral system from UHCs to DHs.
- Enhanced NCD referral system from DHs to the tertiary health facilities.

(2) Urban Health

The project proposes (1) through enhancement of health service capacity of GODs (2) to enlarge the accessibility of urban lower income population to the health service, (3) to enhance the capacity of larger number of acceptance of the patients, and (4) to reduce the congestion of the

outpatients at the tertiary health facilities. Therefore, the qualitative indicators are selected as below:

- Increased number of outpatients and patients from urban lower income population at GODs.
- Enhanced referral system from GODs to the higher health facilities
- Decreased number of outpatients for primary health care level at the tertiary health facilities in Dhaka City.

## 8-3 Efficiency

As mentioned before, since the project will directly support 4thHPNSP of GOB and activities under the project are expected to be included in general activities of MOHFW, it is expected to ensure the efficiency of its operation.

In procurement and reporting, Bangladesh government is expected to operate extra activities to ensure the transparency to follow the JICA procurement standard.

# Chapter 9 Environmental and Social Considerations

## 9-1 Target Medical Facilities

The environmental and social considerations studies predict and evaluate the adverse impact and possible impacts that the Projects may have on the environment and on local society, and mitigation measures to avoid and minimize these issues. This Project consists of assistance for reconstruction and expansion of medical facilities, procurement of medical equipment and training.

Through the survey, necessary information to consider necessity to conduct environmental and social consideration survey was collected. According to the Guideline for Environmental and Social Considerations (April 2010), there is a high possibility of the Project to be classified as Category C (the Project is likely to have minimal or little adverse impact on the environment and society).

### 9-1-1 CC

Reconstructions of CCs are the nearest service delivery points to the community. Because the operation is hindered by a leak of water from a roof by long-term deterioration according to HED, an immediate measure is desired. The number of target CCs for reconstruction is 63 facilities among the entire pilot referral network of 1,227 CCs. Since all target facilities are reconstructed but not expanded, further land acquisition is not required. And there is a high possibility of the Project to be classified as Category C.

### 9-1-2 UHC

UHCs are the normally 50-bed hospitals that receive cases referred from CCs. The plan of upgrading and reconstruction of UHCs will contribute to the elimination of congestion, which is the present situation, and improve medical services. In 4 UHCs selected as candidate target facilities, 2 are considered for upgrading and the rest for reconstruction. All of the facilities surveyed are remarkably obsolete and thus require immediate action. (refer to Table.6-2 UHC Development Plan)

According to HED that has responsibility of construction and maintenance for UHCs and CCs, all target facilities are improved but medical function and waste management are not changed. So there is a high possibility of the Project to be classified as Category C.

### 9-1-3 GOD

GODs are the first access health facility for PHC in the (Dhaka) city. There are 2 or 3 doctor and

1 or 2 pharmacists in the facility and providing medical services of diagnostic and treatment including drug dispense for urban poor people. And there are 50 to 150 outpatients per day, some of patients are referred to higher medical facility for more detailed diagnostic. Basically, GODs have no bed and provides clinic service only, but some of GODs has 5 to 6 labor beds for normal delivery with midwife. These are 16 GODs in Dhaka city, and 6 GODs selected as target facilities to reconstruction and upgrading including outer and electric construction. According to PWD that has responsibility of construction and maintenance for GODs, all target facilities are improved but medical function and waste management are not changed. So there is a high possibility of the Project to be classified as Category C.

## 9-2 Environmental Policy and Guideline

- National Environmental Policy, 1992 (GOB)
- Environment Conservation Act (ECA), 1995(GOB)
- Environment Conservation (ECR) , 1997 : IEE, EIA(GOB)

# Annexes

# Data Collection Survey for Health Service Strengthening Project, JICA

# Final Report

December 2017

Services and Solutions International Ltd

## Executive Summary

The study team visited Narshingdhi, Manikganj, Satkhira, Rangpur, Sylhet and Khulna district hospitals, one Upzilla hospital in each district and two community clinics in that upazilla during the month of August to December 2017 under the Universal Health Coverage Promotion Project of JICA. Objective of the visits was to collect in-depth information about each facility in relation to non-communicable diseases prevention and treatment, availability of equipment, human resources and condition of infrastructure.

## District Hospitals

District Hospitals are the secondary level hospitals. In absence of efficient secondary level hospital tertiary level hospitals like medical college hospitals falls under tremendous pressure. District hospitals in Narshigdhi, Manikganj and Satkhira Districts have 250 bed facilities. There is no District hospital at Rangpur. One 100 hundred bed named as 'Shamsuddin Ahmed Hospital' at Sylhet town is treated as the district hospital which is under administrative control of Sylhet Osmani Medical College Hospital. Some Ministers of government verbally declared this hospital as a Specialized Children's Hospital. Capacity of Khulna General Hospital is 150 beds. Government allocated resources as 150 beds but it was declared as 250 beds hospital with a directive to admit 250 patients. All the District hospitals were overcrowded with patients and are unable to manage them efficiently. Shamsuddin Ahmed Hospital of Sylhet is an exception in terms of patient management with adequate number of staff and maintaining cleanliness. They are excellent in this respect but they have no emergency department, all patients are admitted through outdoor and excess/complicated patients are referred to the Osmani Medical College Hospital. Out door open from 8 am to 2 pm. Referral linkages have not been established with any upazilla hospital with this district hospital.

Non Communicable Diseases (NCDs) management has been observed at Narshigdi district hospital with separate NCD corner and dedicated staff with equipment like Nebulizer, ECG, and facilities for diabetes and hypertension screening. But in all other districts NCDs were managed with other diseases. There was no separate NCD corner and no screening initiative has been observed in other district hospitals.

Equipment such as X- ray, ECG, Nebulizer, BP machine were available. Glucometer strip for screening of diabetes was not available in any District hospital due to shortage of supply.

Before 1974-75 old District Hospital of Rangpur was utilized as a Rangpur Medical College Hospital. After completion of new Rangpur Medical College Hospital, it was shifted to the new place and old district hospital was abandoned. It has about 10 acres valuable land in the city

center, suitable for construction of a district hospital. Government may take initiative to build a district hospital here and support Rangpur Medical College Hospital from over burden. Both Khulna and Sylhet district hospital needs major reconstruction plan. Staff members were working in serious hazardous and dangerous abandoned buildings. Any moment the buildings may collapse and serious accidents may happen.

**Upazilla Hospitals**

These are 31 bed primary level hospitals situated in each upazilla/sub-district. These hospitals were not properly utilized due to lack of equipment, diagnostic facilities, and efficient human resources. Referral linkages were established with most of the community clinics. From upazilla hospitals patients usually are referred to nearby Medical College Hospitals, not to District Hospitals.

In most of the upazilla hospitals equipment such as X ray, ECG, Nebulizer, all were very old and non-functioning. Either technician was not in place or machine was not functioning for last several months. As such patient did not get diagnostic support. On the other hand, private clinics were in place and functioning well without full time staff and are competing well with government facilities. Modernization of infrastructure, provision of equipment and human resources all were very essential for proper service delivery. These upazilla health complexes are rendering both health and family planning services. Family Planning services were not highlighted to community people through these facilities. They convey very poor images to the community people through these Family Planning outlets. Anyone can observe this scenario in any upazilla hospitals. Only extension of bed of these hospitals may not change any quality improvement of services.

Except Narshigdi district upazilla, NCDs were not treated in any upazilla hospital by dedicated staff and management.

**Community Clinics**

Community clinics are the first line and one stop health care service center for the community people. Gradually these clinics have become popular. Now it is the time for quality improvement by offering better services and sharing responsibility with the community people by developing leadership.

All visited community clinics were located within the community doorstep. In most of the cases, land for community clinic were not suitable for extension of existing infrastructure in a massive way, while simple one or two room extension might be possible. In most of the cases, local people were interested to donate more adjacent land for extension of the existing

infrastructure. It was observed that clinic infrastructure is insufficient to accommodate present load of outdoor patient. After 10 years it could be impossible. In almost all cases there was a long queue of patient who cannot get a proper place for standing even. All most all patients were visiting service provider within short period of time span. As such service provider cannot give proper attention to all patients. Patients were in hurry and want to get service as quickly as possible. They were not maintaining first come first serve basis. Spread of patient was short period. If 20 to 30 patient visit within one hour time, then it would be difficult for service provider to give full attention. In the morning and late noon patient load was too low. Usually patients visit clinic from 11 to 12 noon. To solve this problem it needs training on time management.

Day by day, popularity of community clinics is increasing. There was no alternative of community clinics within the community. Now it is a time for quality improvement by giving more training and placement of more qualified service provider.

One important and remarkable point has been observed in all CCs, that is availability of most essential drugs. Now it is more important to use drug more rationally by giving training and orientation followed by supportive supervision.

NCDs risks such as high blood pressure and diabetes were screened by the CC providers and referred to the higher level of health facilities for management. The providers also give advices how to prevent these diseases. In most cases strip for glucometer to screen diabetes were not available. Modern glucometer without strip might be useful for this purpose. Prompt services to repair minor equipment like BP machine might be in place to enhance NCDs control services. More training, mentoring, supervision, encouragement of service providers and active support group engagement would be demand of coming days.

It was also observed that maternal and child health care program is well functioning in all CCs. The survey team did not observe any child delivery facility in any CCs. In some places it was started but at present it is non-functioning.

**Community Participation in Community Clinics**

It was observed that community participation is the key factor for rendering efficient primary health care service. The team found effective community participation in terms of formation of support group and community group and really active participation in Narshigdi Districts CC only. In other districts, especially Khulna and Sylhet, community participation is poor.

Supervisory staff is not well oriented regarding community participation and principles of primary health care. Only in Narshigdi district community people subscribe regularly to support community clinics. They oversee management and act as a management partner of the community clinic. It was possible as because some NGOs are working with them for long time and gave training to understand meaning of ownership of the CCs. This understanding was not available in other places. They are developing budget for supporting community clinic and they have plan for further development of the CCs in Narshigdi district. Community leaders are working as a pressure group on behalf of community people as such CC staff are very regular in their work and enthusiastic due to receiving regular encouragement and feedback. Really other CC can learn from Narshingdi model, how community participation can make change in the management of CCs.

Principles of community participation is applied in Narshigdi model of CC clinics as for example ownership, contribution, and utilization of local technology which is well demonstrated by contribution for purchasing glucometer strip from local market and used for screening and monitoring. Community people also bear cost from their fund for transportation of needy patient who is referred to the higher level of facilities. Gender equity also maintained in their all activities. In a developing country, since government cannot bear all responsibilities for delivering primary health care for all, people must participate and own the program.

## 1. Introduction

The survey team conducted a rapid assessment study on a situation analysis of facility and equipment condition and human resources for health at selected health facilities and community activities for non-communicable diseases control in the People's Republic of Bangladesh under the Universal Health Coverage Promotion Project from August to December 2017.

## 2. Background

The health sector of Bangladesh has been having some transformational changes over last two to three decades. The health of people in Bangladesh has improved greatly over the past two decades and the disease profile has shifted from infectious diseases to chronic health problems. The death rate due to NCDs increased from 52.1% in the last decade to 66.9% in 2015 (World Bank 2015). All other indicators of health sector are also indicating a trend of steady growth of NCDs consistent to the robust trend of urbanization.

Having the above background, Japan International Cooperation Agency (JICA) and the Ministry of Health and Family Welfare, Bangladesh (MOHFW) have agreed to explore the possibility to cooperate on the NCDs control and Urban Health in Bangladesh in August 2017. Based on this understanding, the Data Collection Survey Team for the Universal Health Coverage Promotion Project has been dispatched by JICA since 19th August 2017 to analyze the situation of NCDs control and urban health in Bangladesh and formulate the draft of the project design. This study was one of the sub-contractual components of the above said engagement.

## 3. Objective(s)

As indicated earlier, this was a rapid assessment type study. Based on which a situation analysis of selected health facilities conducted in terms of equipment condition and human resources. Moreover, this situation assessment/analysis also looked at the existing provisions of the selected health facilities for community level activities towards mitigating increasing non-communicable diseases control.

The objective of the study was to gather necessary information on the present conditions of facilities and equipment in the selected secondary and primary level of health facilities, and their human resource for health focusing on non-communicable diseases control and urban health. The study also covered referral linkages between different level of facilities, i.e. primary, secondary and tertiary level and the situation on activities at the community level.

General Technical Approach & Methodology

A team consist of one Senior Expert cum Team Leader who is assisted by another Junior Expert, both having elaborate background in health facility assessment has been conducted this rapid assessment type study.

The team visited 7 (seven) selected secondary and primary level health facilities and their communities. The team followed one or more pre-formulated or semi-structured questionnaires and/or protocols to interview and discuss issues and conducted one-to-one and group discussions with various stakeholders, consisting of District and/or Upazilla level health facility officials, other selected key informants and selected community agents/people. Based on which a situation analysis of selected health facilities has been developed in terms of referral linkages, equipment condition and human resources and status of infrastructure. The existing provisions of the selected health facilities for community level activities towards mitigating increasing non-communicable diseases burden also assessed in this rapid assessment.

The team also applied the direct observation method and collected existing secondary data/information for reviewing referral linkages and their human resources for health focusing on non-communicable diseases control and urban health.

## 4. Analysis of the survey

The team visited facilities in seven Districts. These are Narshingdi, Narayanganj, Satkhira, Manikganj, Rangpur, Sylhet and Khulna District hospitals, one Upazila Health Complex (UHC) and two Community Clinics (CC) in each district from August to October 2017.

4.1 Referral Services: The team found that referral linkages are functioning. Referral slip/documents are in place and used by the provider of each level. On an average about 100 patients per month are referred by the District hospital to the tertiary level Medical College Hospitals and 40-50 patients per month from UHC to District Hospital. Only 5-10 patents per month are referred by the CC to UHC. It varies from CC to CC. If community participation is satisfactory, then patient load as well as referral number of patient also increases. Community participation is better in nearby Dhaka CCs compare to Rangpur, Sylhet and Khulna District CCs. Probably due to better supervision, presence of NGOs and better community awareness. Referred patient usually traveled to the referred facility by their own cost and accompanied by their own relatives.

4.2 NCD: Non Communicable Diseases (NCD) corner at Upazila Health Complex or

specialized attention for NCDs control was present at Narshingdi and Narayanganj district. But not present in Manikganj, Satkhira, Rangpur, Sylhet, and Khulna District. In these districts facilities NCDs were served as an integrated way with other services.
Percentages of NCDs of total patient on an average are about 30-40% at District Hospitals, 25-30% at UHCs and 5-10% at CCs. But it could be high as 20 % of total patient at CC level if community participation is satisfactory, such as at Narshingdi District. In all level of health facilities, satisfactory level of referral linkages for NCDs is functioning. Due to shortages of human resources, lack of leadership training and overburden by the patient load providers in all facilities were not able to give special attention for NCD corners.

4.3 Screening for NCDs: In all levels of facilities, screening services for NCDs are available irrespective of presence of NCD corner or not. Occasionally some service delivery point suffers from shortages of supplies.

4.4 Equipment:
The team collected the list of equipment and observed those whether functioning or not and technician was available, trained or not. Most of the district hospitals were equipped with functioning equipment and trained personnel. UHCs were not such. They have few types of equipment; sometimes not functioning, technician was not trained, and/or not present. The team found functioning glucometer at few CCs only but not in all. BP machines were functioning in almost all CCs. Other equipment according to the list was available. Primary screening for major NCDs could be possible at CCs if supplies are available regularly.

4.5 Supervision:
Supervision for improvement of quality of services was not visible. Supervision for maintenance is all right. Transferring skills from one person to another was not in practice among the hierarchy of staff. Low level of confidence among senior members to train juniors with the same qualification was observed. Culturally and socially people are expecting technical supervisory guide from a more qualified person but not only by seniority of services.

Supervisory trainings which they received were inadequate to satisfy their need. Supervisory tools like use of checklist, recording and giving feedback were not in practice.

Supervisors were satisfied if all staff present in their official duty hours. This was well maintained by using electronic devises.

4.6 Training:

On the Job Training:

The idea of "on the job" training was not present in all key staff. Some staff especially who was related with IT and statistics and responsible for reporting 'on line' they initiated 'on the job' training for other related staff. 'On the Job' trainings could be possible if those are essential for their service.

Off site training:

The team does not get a record of past training programs, such as name of participants, name of training, duration, contents, venue, sponsoring agency etc. Health service providers didn't know who will get which training and when. Staff reacted passively when they call from central for training. In very rare occasion, someone disseminates information after receiving training with their fellow colleagues. Training Guidelines were not kept in place for future use.

4.7 Cleanliness

Overall cleanliness depends on patient burden, presence of adequate number of cleaners and quality of supervision. Most of the facilities were not clean adequately. Few Facilities were clean, such as Sylhet Shamsuddin Ahmed General Hospital. It has no emergency department. Office time is 8 am to 2 PM. 100 bed hospital. They did not admit patient more than their capacity. As such, this hospital is clean with adequate number of cleaners and good supervision. On the other hand, Satkhira District Hospital is overburden with double patient of their capacity as such unclean environment. It means over burden of number of patient according to capacity and inadequate number of cleaners. Therefore, quality of supervision is needed for proper cleanliness of the facilities.

**5. Report on Narsingdi District**

| | |
|---|---|
|  |  |
| 100-Bed District Hospital | Shibpur UHC |

| | |
|---|---|
|  |  |
| Charsindur CC | Community Group activity |

(Visit date: 23and 24 August, 2017)

Patient Referral Rate and NCD Percentage, Narsingdi District

| Category of Hospital | Number of Referred Patient to Higher Centre | Name of Referral Hospital / Institute | Percentage (%) of NCD of Total Number of Patients |
|---|---|---|---|
| 100-Bed District Hospital, Narsingdi | 200 – 220 / month | Dhaka Medical College Hospital, Narsingdi | 25% |
| Shibpur Upazilla Health Complex, Narsingdi | 40 – 50 / month | 100-Bed District Hospital, Narsingdi | 30% |
| Charsindur Community Clinic under Polash Upazilla, Narsingdi | 30 – 40 / month | Polash Upazilla Health Complex | 20% |

Human Resource

| Category of Hospital | Number of Beds | Number of Specialist Doctors | Number of Graduate Doctors | Number of Nurses |
|---|---|---|---|---|
| 100-Bed District Hospital, Narsingdi | 100 | - | 34 | 35 |
| Shibpur Upazilla Health Complex, Narsingdi | 31 | - | 11 | 09 |

Availability of Equipment in Different Hospitals in Narsingdi

| Name of Equipment | 100-Bed DH, Narsingdi | Shibpur UHC, Narsingdi | Charsindur CC under Polash Upazilla, |
|---|---|---|---|

| | | | Narsingdi |
|---|---|---|---|
| 1. X-Ray | No Technician | N | - |
| 2. USG | F | F | - |
| 3. ECG | F | F | - |
| 4. Nebulizer Machine | F | F | F |
| 5. Anesthetic Machine | F | F | - |
| 6. Autoclave | F | F | - |
| 7. Analyzer | F | - | - |
| 8. Stethoscope | F | F | F |
| 9. Sphygmomanometer | F | F | F |
| 10. Glucose Meter | F | F | F |
| 11.Scale (Weight/Height) | F | F | F |
| 12. Refrigerator | F | F | - |
| 13. Delivery Table | F | - | - |
| 14. Suction Unit | F | - | - |
| 15. Dental Unit | - | - | - |
| 16. Infant Warmer | F | - | - |
| 17. Microscope | F | F | - |
| 18. Laproscopy | - | - | - |
| 19. Incubator | - | - | - |
| 20. Electrosurgical | F | F | - |
| 21. Blood Fridge | F | - | - |
| 22. lit Lamp | F | - | - |

* F = Functioning, N = Not Functioning, DH = District Hospital, UHC = Upazilla Health Complex, CC = Community Clinic

**6. Report on Narayangonj District**

Visit date: 29August, 2017

Patient Referral Rate and NCD Percentage, Narayangonj District

| Category of Hospital | Number of Referred Patient to Higher Centre | Name of Referral Hospital / Institute | Percentage (%) of NCD of Total Number of Patients |
|---|---|---|---|
| Bandar Upazilla Health Complex, Narayangonj | 60 - 70 / month | Narayangonj District Hospital | 40% |

| | | | |
|---|---|---|---|
| Bandar Community Clinic under Bandar UHC, Narayangonj | 04 - 05 / month | Bandar Upazilla Health Complex, Narayangonj | 07% |

Human Resource

| Category of Hospital | Number of Beds | Number of Specialist Doctors | Number of Graduate Doctors | Number of Nurses |
|---|---|---|---|---|
| Bandar Upazilla Health Complex, Narayangonj | 31 | - | 22 | 16 |

Availability of Equipment in Different Hospitals in Narayangonj

| Name of Equipment | Bandar UHC, Narayangonj | Bandar CC under Bandar UHC, Narayangonj |
|---|---|---|
| 1. X-Ray | N | - |
| 2. USG | - | - |
| 3. ECG | F | - |
| 4. Nebulizer Machine | F | - |
| 5. Anesthetic Machine | F | - |
| 6. Autoclave | F | - |
| 7. Analyzer | - | - |
| 8. Stethoscope | F | F |
| 9. Sphygmomanometer | F | F |
| 10. Glucose Meter | F | N |
| 11.Scale (Weight/Height) | F | F |
| 12. Refrigerator | F | - |
| 13. Delivery Table | F | - |
| 14. Suction Unit | F | - |
| 15. Dental Unit | F | - |
| 16. Infant Warmer | - | - |
| 17. Microscope | F | - |
| 18. Laproscopy | - | - |
| 19. Incubator | - | - |
| 20. Electrosurgical | F | - |
| 21. Blood Fridge | - | - |

| | | |
|---|---|---|
| 22. Slit Lamp | - | - |

* F = Functioning, N = Not Functioning, DH = District Hospital, UHC = Upazilla Health Complex, CC = Community Clinic

## 7. Report on Manikganj District

Visit Date 13 September, 2017


Shaturia UHC Manikganj(1)

Shaturia UHC Manikganj(2)

Patient Referral Rate and NCD Percentage, Manikganj District

| Category of Hospital | Number of Referred Patient to Higher Centre | Name of Referral Hospital / Institute | Percentage (%) of NCD of Total Number of Patients |
|---|---|---|---|
| Shaturia Upazilla Health Complex, Manikganj | 150 - 200 / month | Manikganj District Hospital | 35% |
| Panaijuri Community Clinic under Shaturia UHC, Manikganj | 02 - 03 / month | Shaturia Upazilla Health Complex, Manikganj | 12% |

Human Resource

| Category of Hospital | Number of Beds | Number of Specialist Doctors | Number of Graduate Doctors | Number of Nurses |
|---|---|---|---|---|
| Shaturia Upazilla Health Complex, Manikganj | 31 | - | 18 | 14 |

Availability of Equipment in Different Hospitals in Manikganj District

| Name of Equipment | Shaturia UHC, Manikganj | Panaijuri CC under Shaturia UHC, Manikganj |
|---|---|---|
| 1. X-Ray | N | - |
| 2. USG | F | - |
| 3. ECG | F | - |
| 4. Nebulizer Machine | F | - |
| 5. Anesthetic Machine | - | - |
| 6. Autoclave | - | - |
| 7. Analyzer | - | - |
| 8. Stethoscope | F | F |
| 9. Sphygmomanometer | F | F |
| 10. Glucose Meter | F | N |
| 11.Scale (Weight/Height) | F | F |
| 12. Refrigerator | F | - |
| 13. Delivery Table | F | - |
| 14. Suction Unit | - | - |
| 15. Dental Unit | - | - |
| 16. Infant Warmer | - | - |
| 17. Microscope | F | - |
| 18. Laproscopy | - | - |
| 19. Incubator | - | - |
| 20. Electrosurgical | - | - |
| 21. Blood Fridge | - | - |
| 22. Slit Lamp | - | - |

* F = Functioning, N = Not Functioning, DH = District Hospital, UHC = Upazilla Health Complex, CC = Community Clinic

## 8. Report on Sylhet District

Visit date 3- 6 October, 2017

Shahid Samsuddin Ahmed Hospital

Activity in the hospital

Balaganj UHC

Patient Referral Rate and NCD Percentage, Sylhet District

| Category of Hospital | Number of Referred Patient to Higher Centre | Name of Referral Hospital / Institute | Percentage (%) of NCD of Total Number of Patients |
|---|---|---|---|
| Shahid Samsuddin Ahmed Hospital, Sylhet | 100 / month | Sylhet Medical College &Hospital | 45% |
| Balaganj Upazilla Health Complex, Sylhet | 25 / month | Shahid Samsuddin Ahmed Hospital, Sylhet | 30% |
| Osmanpur Community Clinic under Balaganj UHC, Sylhet | 03 - 04 / month | Balaganj Upazilla Health Complex, Sylhet | 07% |
| Gupkanu CC under Balaganj UHC, Sylhet | 03 - 04 / month | Balaganj Upazilla Health Complex, Sylhet | 05% |

Human Resource

| Category of Hospital | Number of Beds | Number of Specialist Doctors | Number of Graduate Doctors | Number of Nurses |
|---|---|---|---|---|
| Shahid Samsuddin Ahmed Hospital, Sylhet | 100 | - | 15 | 80 |
| Balaganj Upazilla Health Complex, Sylhet | 31 | - | 05 | 07 |

Availability of Equipment in Different Hospitals in Sylhet

| Name of Equipment | Shahid Samsuddin Ahmed Hospital, Sylhet | Balaganj UpHC, Sylhet | Osmanpur CC under Balaganj UHC, Sylhet | Gupkanu CC under Balaganj UHC, Sylhet |
|---|---|---|---|---|
| 1. X-Ray | 1F / 1N | N | - | - |
| 2. USG | No Technician | - | - | - |
| 3. ECG | F | F | - | - |
| 4. Nebulizer Machine | F | F | - | - |
| 5. Anesthetic Machine | F | F | - | - |
| 6. Autoclave | F | F | - | F |
| 7. Analyzer | F | - | - | F |
| 8. Stethoscope | F | F | F | N |
| 9. Sphygmomanometer | F | F | F | F |
| 10. Glucose Meter | F | F | N | - |
| 11.Scale (Weight/Height) | F | F | F | - |
| 12. Refrigerator | F | F | - | - |
| 13. Delivery Table | F | F | - | - |
| 14. Suction Unit | F | - | - | - |
| 15. Dental Unit | F | - | - | - |
| 16. Infant Warmer | - | - | - | - |
| 17. Microscope | F | F | - | - |
| 18. Laproscopy | F | - | - | - |
| 19. Incubator | - | - | - | - |
| 20. Electrosurgical | F | F | - | - |
| 21. Blood Fridge | F | - | - | |
| 22. Slit Lamp | F | - | - | |

* F = Functioning, N = Not Functioning, DH = District Hospital, UHC = Upazilla Health Complex, CC =

Community Clinic

Photographs of Hospitals in Sylhet District

Balaganj UHC & Gupkanu CC under Balaganj UHC, Sylhet

Construction and Maintenance

Balaganj UHC & Gupkanu CC under Balaganj UHC, Sylhet

## 9. Report on Khulna District

Visit date 10 - 13October, 2017

Photographs of Khulna General Hospital & Dumuriya UHC, Khulna

Patient Referral Rate and NCD Percentage, Khulna District

| Category of Hospital | Number of Referred Patient to Higher Centre | Name of Referral Hospital / Institute | Percentage (%) of NCD of Total Number of Patients |
|---|---|---|---|
| 150-Bed General Hospital, Khulna | 05 – 07 / month | Khulna Medical College & Hospital | 35% |
| Dumuriya Upazilla Health Complex, Khulna | 40 – 50 / month | 150-Bed General Hospital, Khulna | 40% |
| Shajiara Community Clinic under Dumuriya UHC, Khulna | 08 – 10 / month | Dumuriya Upazilla Health Complex, Khulna | 02% |
| Gutudiya CC under Dumuriya UHC, Khulna | 03 – 04 / month | Dumuriya Upazilla Health Complex, Khulna | 5% |

Human Resource

| Category of Hospital | Number of Beds | Number of Specialist Doctors | Number of Graduate Doctors | Number of Nurses |
|---|---|---|---|---|
| 150-Bed General Hospital, Khulna | 150 | - | 28 | 155 |
| Dumuriya Upazilla Health Complex, Khulna | 31 | - | 09 | 19 |

Availability of Equipment in Different Hospitals in Khulna

| Name of Equipment | 150-Bed General Hospital, Khulna | Dumuriya UHC, Khulna | Shajiara CC under Dumuriya UHC, Khulna | Gutudiya CC under Dumuriya UHC, Khulna |
|---|---|---|---|---|
| 1. X-Ray | F | No Technician | - | - |
| 2. USG | No Technician | No Sonologist | - | - |
| 3. ECG | F | F | - | - |
| 4.Nebulizer Machine | F | F | - | - |
| 5.Anesthetic Machine | F | F | - | - |
| 6. Autoclave | F | F | - | - |
| 7. Analyzer | F | - | - | - |
| 8. Stethoscope | F | F | F | F |
| 9. Sphygmomanometer | F | F | F | F |
| 10. Glucose Meter | F | F | N | N |
| 11.Scale (Weight/Height) | F | F | F | F |
| 12. Refrigerator | F | F | - | - |
| 13. Delivery Table | F | F | - | - |
| 14. Suction Unit | F | F | - | - |
| 15. Dental Unit | F | F | - | - |
| 16. Infant Warmer | F | - | - | - |
| 17. Microscope | F | F | - | - |
| 18. Laproscopy | F | - | - | - |

| | | | | |
|---|---|---|---|---|
| 19. Incubator | F | - | - | - |
| 20. Electrosurgical | F | F | - | - |
| 21. Blood Fridge | F | - | - | - |
| 22. Slit Lamp | F | - | - | - |

* F = Functioning, N = Not Functioning, DH = District Hospital, UHC = Upazilla Health Complex, CC = Community Clinic


Khulna General Hospital ( 1 )

Khulna General Hospital ( 2 )

Khulna General Hospital

Dumuriya UHC ( 1 )

Dumuriya UHC ( 2 )

**10. Report on Rangpur**

Visit date 24, 25 September, 2017

Haragach Hospital, Rangpur


Taragonj UHC, Rangpur

Dhumerkuti CC, Rangpur

Patient Referral Rate and NCD Percentage, Rangpur District

| Category of Hospital | Number of Referred Patient to Higher Centre | Name of Referral Hospital / Institute | Percentage (%) of NCD of Total Number of Patients |
|---|---|---|---|
| District Hospital | - | - | - |
| Haragach Hospital, Rangpur | 100 – 120 / month | Rangpur Medical College & Hospital | 30% |
| Taragonj Upazilla Health Complex, Rangpur | 40 – 50 / month | Rangpur Medical College & Hospital | 35% |
| Kachna CC under Taragonj UHC, Rangpur | 8 – 10 / month | Taragonj UHC | 6% |
| Dhumerkuti CC under Kaunia UHC, Rangpur | 5 – 6 / month | Haragach Hospital | 6% |
| Bokultola CC under Kaunia UHC, Rangpur | 2 – 3 / month | Kaunia Upazilla Health Complex | 9% |

Human Resource

| Category of Hospital | Number of Beds | Number of Specialist Doctors | Number of Graduate Doctors | Number of Nurses |
|---|---|---|---|---|
| Rangpur DH | - | - | - | - |
| Taragonj UHC, Rangpur | 31 | - | 06 | 06 |
| Haragach Hospital, Rangpur | 31 | - | 06 | This position has not been transferred to The Revenue Department |

Availability of Equipment in Different Hospitals in Rangpur

| Name of Equipment | DH | Taragonj UHC | Haragach Hospital | Kachna CC | Dhumerkuti CC | Bokultola CC |
|---|---|---|---|---|---|---|
| 1. X-Ray | - | F | No Technician | - | - | - |
| 2. USG | - | - | - | - | - | - |
| 3. ECG | - | No Technician | - | - | - | - |
| 4. Nebulizer Machine | - | F | N | - | - | - |
| 5. Anesthetic Machine | - | N | - | - | - | - |
| 6. Autoclave | - | F | - | - | - | - |
| 7. Analyzer | - | - | - | - | - | - |
| 8. Stethoscope | - | F | F | F | F | F |
| 9. Sphygmo-manometer | - | F | F | F | F | F |
| 10. Glucose Meter | - | F | F | N | N | N |
| 11. Scale (Weight/ Height) | - | F | - | F | F | F |
| 12. Refrigerator | - | F | - | - | - | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13. Delivery Table | - | F | - | - | - | - |
| 14. Suction Unit | - | F | - | - | - | - |
| 15. Dental Unit | - | F | - | - | - | - |
| 16. Infant Warmer | - | - | - | - | - | - |
| 17. Microscope | - | F | No Technician | - | - | - |

* F = Functioning, N = Not Functioning, DH = District Hospital, UHC = Upazilla Health Complex, CC = Community Clinic

Photographs of Different Hospitals in Rangpur District

Bokultola CC & Kachna CC, Rangpur, 2017


Sadar Hospital, Taragonj UHC & Kachna CC, Rangpur

Confidential

Confidential

**Annex 3**

# Pictures

Meeting with Planning Wing, MOHFW

Meeting with CBHC, MOHFW

Meeting with HED, MOHFW

Manikganj District Hospital, new building

Entrance to CT room, Manikganj District Hospital

Microscope

Spirometer

Doppler echo

5S activity, Narsingdi 100 bed District Hospital

Solid waste facility, Narsingdi 100 bed District Hospital

Shaturia Upazila Health Complex (UHC)

Additional bed & desk in a corridor , Keraniganj UHC

Baniajuri Community Clinic (CC)


BP machine and stethoscope at CC


Type A CC


Type B CC

Hearing with CSG, Narsingdi District

Government Outdoor Dispensary (shared facility), Dhaka

Government Outdoor Dispensary (GOD) - individual facility, Dhaka

Meeting with doctors at GOD

Roof slab steel bar rusted, Hazaribag GOD

Medicine damaged by water leakage at Hazaribag GOD