



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH



**REPORT ON IN-DEPTH MONITORING OF THE OPERATIONAL PLAN
“Hospital Services Management (2nd Revised)”**

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ACRONYMS AND ABBREVIATIONS

ADP	Annual Development Program
ASD	Autism Spectrum Disorder
BCC	Behavior Change Communication
CCU	Coronary Cardiac Unit
CEmONC.	Comprehensive Emergency Obstetrics and Neonatal Care
CMSD	Central Medical Store Depot
CPTU	Central Procurement Technical Unit
CS	Civil Surgeon
CT	Computerized Tomography
DG	Director General
DGHS	Directorate General of Health Services
DH	District Hospitals
EBP	Evidence Based Practice
EOC	Emergency Obstetric Care
GOB	Government of Bangladesh
HNPSP	Health, Nutrition and Population Sector Program
HPNSDP	Health, Population and Nutrition Sector Development Program
HPSP	Health and population Sector Program
HR	Human Resource
HSM	Hospital Service Management
ICU	Intensive Care Unit
IMED	Implementation Monitoring and Evaluation Division
JICA	Japan International Cooperation Agency
KII	Key Informants Interview
LD	Line Director
MCH	Medical College Hospital
MDG	Millennium Development Goal
MOHFW	Ministry of Health and Family Welfare
MWM	Medical Waste Management
NEMEW	National Electro Medical Engineering Workshop
NGO	Non-Government Organization
OP	Operational Plan
OPD	Out Patient Department
OPIC	Operational Plan Implementation Committee
PIP	Programme Implementation Plan
PMMU	Program Management Monitoring Unit
PPA	Public Procurement Act
PPP	Public Private Partnership
PPR	Public Procurement Rules
RMO	Resident Medical Officer
SBT	Safe Blood Transfusion
SH	Specialized Hospital
SOP	Standard Operating Procedure
SRS	Simple Random Sampling
SWAp	Sector Wide Approach
TOR	Terms of Reference
TQM	Total Quality Management
TTI	Transmission Transmitted Infection
UNDP	United Nation Development Program
USG	Ultrasonography
WHO	World Health Organization

Executive Summary

This study was conducted to learn about the physical and financial progresses of the Operational Plan (OP)' Hospital Services Management (2nd Revised)"; progress of the OP level indicators; utilization situation of the supplied equipments in the hospitals at the user level and to find out bottlenecks in regard to underutilization of those; to describe some of the procurement packages; to review some of the important OP components and also overall comments in regard to potential threats and challenges towards effective implementation of the OP. The main objective of the Ministry of Health and Family Welfare to undertake this OP is to strengthen Secondary and Tertiary level health care facilities especially the Public hospitals by providing effective, affordable, client centered quality care; which is accessible to poor, children, women with establishing right and community participation. Specifically, improving the quality of care in the health care services, introducing Structured Referral System and Standard Waste Management, supplying medical equipment and other logistics to the upgraded and newly constructed secondary and tertiary hospitals, establishing women Friendly Hospital facilities and effective introduction of Safe Blood Transfusion program country-wide are important planned activities being implemented under this important OP.

The study is descriptive in nature and thus, in-depth data collection was the principal approach. Data used in this study is primary in nature and were collected both from the fields and the offices, whichever was necessary to address the objectives of the study. Considering the wide spreading status of the components of the OP in the secondary and tertiary hospitals in all over the country (along with a holistic picture of the available equipments in hospitals), the hospitals were selected by Simple Random Sampling. Total duration of this study was only 06 months starting from January 2015 to June 2015. The quality of the study was continued throughout the study in spite of shortage of time.

Total number of respondents was about 660 and Key Informants 44. There were couples of study instruments including checklists (exit interview, equipments such as x-ray, ultra sonogram, CT scan, Key informants Interview, safe blood transfusion, Shishu Bikash Kendra etc.) which were pre-tested before implementation. Two days training was organized for five (5) interviewers/ field investigators who were selected by IMED competitively through advertisement in the newspaper. Training included discussion on study scheduled, methodology, study instruments, role playing with the instruments, data collection ethics,

ideas on equipments, basic knowledge on procurement procedure etc. They worked for 1 (one) month in data collection process. Both the consultants and IMED officials under the Education and Social Sector supervised the data collection process. The study findings are expressed in terms of percentage and most of the data are also shown in tables and charts.

Findings:

The study draws attention to the fact that 45% stated that this was their first visit to the hospital. It was found that few proportion of patients opined that they visited the hospital to get medicine and about 44% replied that they visited the hospital as they were not cured. This indicates that the hospitals need improvement in terms of its service delivery. However, amongst various causes, a large proportion of the respondents stated that they visited the hospital to get medicine.

As 81% respondents visited the hospitals by their own choice, it clearly indicates that referral system was not functioning or did not exist. The waiting time at the OPD to see doctor was high and about 49% of the patients had to wait for the doctor for more than 01 hours.

Further investigations reveal that very few respondents stated that they received medicines in full at OPD, and absolute majority of the patients either did not get or received partly. The poor patients visited the hospital to get adequate medicine for quick recovery.

Regarding diagnostic investigations, less than fifty percent of the patients of OPD did their investigations in the hospitals. In most of the hospitals, lack of expert human resource, trained technologists, shortage of machineries, long waiting time, and machines are not up to the mark were the main reasons appeared for doing the investigations outside of the hospitals. Most of the reasons can easily be managed by the top management and also the quality of services may be improved.

Although the number of x- ray machines in studied hospitals under the OP budget was 29, almost 90.0% of them were found functioning which indicates that only about 10% were non-functioning. Considering the total X-ray machines supplied (including out of the current OP fund), non-functioning of the X-ray machines was highest (62.11%) in the medical colleges' hospitals. Almost a similar picture was prevailing in the district hospitals. However, the situation in the specialized hospitals was much better. The HR situation in all the hospitals

was gloomy. It appeared from the findings that all the hospitals have kept their X-ray department functioning by hiring personnel from other departments, and most of them are non-technologists even.

All the ultra-sonogram machines supplied under this OP budget were functional. While considering all the USG machines in hospitals including out of the current OP budget, about 64.86% of ultra sonogram machines were not functioning. It has been found that about one fifth of the machines of the medical college hospitals were non- functioning.

Most of the hospitals do not have CT scan machine. Out of 06 medical college hospitals, 05 have CT scan machine, but only 04 district hospitals (out of 12) have CT scan machine. With the modernization of technology, and increase in the needs, government should be more inclined in procuring machines and other modern facilities to further improve the service delivery system.

The basic document that capitalizes the entire health, nutrition and population sector programs was not well known by the health service providers in 76.20% informants. This has happened due to non- exposure of the higher level personnel with this document and the policy issues relating to health and population. The results of the study also indicate that most of the respondents did not have proper idea about what is HPNSDP, and thus answered aimlessly. Most of the managers of the hospitals (85.71%) had problems in operating the hospitals, and they mentioned that acute shortage of HR was the pivot of all the problems. Heavy rush / demand of bed was also there, and thus, need to increase the number of beds and overall space for the patients.

It was also found that about one third of the top managers of the health service faced problems in receiving machines from CMSD. The reasons of facing difficulties were also mentioned. Most of the hospitals (22.73%) did not have Blood Bank. Blood screening facilities were available in all of the hospitals.

It depicted that the practice of modern hospital waste management exists in few hospitals. Very few hospitals prescribed 4 color bins (32%) with methods of disposing the waste. Although few hospitals collect the waste in different bins, but keep outside the hospital for city corporation to take the wastes for final disposal. Health hazards remain the same as all toxic substances including chemicals, infectious substances and sharp instruments mixed

together. Practice of old/ traditional methods were still the primary means of waste disposal. There was no transport of their own to carry the waste in an appropriate place.

Although women friendly hospital environment was not found, but perhaps without understanding the real / core meaning of that, all the respondents mentioned that the environment was prevailing. It was also found that TQM committee was not in place in most of the hospitals. Only 4-5 hospitals had committees, but they could not work properly without the guide lines from appropriate authority.

Recommendations:

Waiting time in the hospital OPD may be reduced by timely attendance of the service providers. Segregation of the patients' category (simple, complicated, emergency), and avoiding Medical Representative's visits at peak hour, vitalizing help desks should be activated. All the vacant posts of the medical technologists and other categories should be filled-up with appropriate manpower as a priority for proper utilization of the supplied equipments / laboratory and to reduce investigations outside the hospitals. Segregation of waste at the point of generation as per Government approved color code should be in place with activation of the waste management committee at different administrative levels. Dedicated manpower to be assigned for medical waste management at the hospitals and the segregation of medical waste must be ensured at all levels both within hospitals and outside the hospitals till final disposal. Modern strategy of waste management should be in place at all levels. The referral system must be functional and strengthened. Impact of non-referral system has adverse effect on secondary and tertiary level hospitals, which create load on the service providers, and thus, maintenance of quality of services becomes difficult. Provision of medicine at OPD may be rationalized depending on the actual need of the hospitals as well as prevalence of diseases, and inter-district / inter-hospital adjustment may be established to ensure equity at the field level. Blood transfusion units may be strengthened by introducing mechanism for separating blood components in all specialized and medical college hospitals. Other modern methods of use of blood should be ensured. Non-functioning equipments may be identified through a country-wide survey. Repair / maintenance as well as calibration may be done for the useable equipments through outsourcing. NEMEW must be strengthened and posts of Biomedical Engineer may be created and recruited at the divisional level, and if required at the district levels based on the necessity of the human resources. Scaling up of essential ASD and other neurodevelopment disabilities screening diagnostic

and intervention facilities throughout the country. More awareness should be created with facilities of skills development and job opportunities, family support with appropriate social norms and proper schooling of the ASD children should be there. There is an urgent need to develop and execute appropriate strategies, with high level of political commitment and necessary funding to facilitate service provision for persons with Autism and other neurodevelopmental disabilities part of the integrated development and health agenda of Bangladesh.

CHAPTER 1: INTRODUCTION

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1.1 BACKGROUND OF THE OPERATIONAL PLAN

Improving Service Provision for the secondary and tertiary level hospitals is one of the major components (1B) of the strategic plan of HPNSDP. To ensure the goal of HPNSDP, it is necessary to ensure the quality and equitable health care services for all citizens by improving access to poor and vulnerable groups. In order to ensure quality and equitable service delivery for the secondary and tertiary level of hospitals, which are the most visible utilization area of the clinical service delivery, the operational plan has formulated with the details objective described in the PIP.

- 2 With the increasing demand on services, Secondary & Tertiary level hospitals will be upgraded & strengthened by providing logistics & increasing service area. In this context, the first aim of the OP-HSM is to continue support for the hospital services which was previously initiated in HNSP for proper functioning.
- 3 By developing the capacity of the service provider, necessary tool kits & provides necessary logistics for the effective implementation of the activities like “Standard Waste Management, Referral system, EOC, Management development program, Management of club foot deformity, Shishu Bikash Kendra & Safe blood transfusion program” in the secondary & tertiary level hospitals.
- 4 In order to ensure Quality Assurance, which is the main challenges for clinical service delivery , intensive orientation, training, motivation, development of leadership & ownership, development of SOP, monitoring tools kit & supply of necessary logistics for the activities likes “Total Quality Management (TQM), Quality Assurance, Development of National Health Care Standards, Clinical Protocols, Evidence Based Practice (EVP), Infection control, Poisoning management, Women friendly Hospital, Gender & Equity, Hospital & Laboratory Accreditation” are going to initiate for the next sector program.
- 5 Hospital autonomy, Decentralization & Regulatory frame work are the huge challenges at present in the hospital management. Hospital autonomy will be introduced after passing the bill in the parliament, initially for the tertiary level hospitals piloting. Administrative and financial autonomy will be explored for better management of the existing secondary and tertiary level public sector hospitals. Management Committees at hospitals will be

strengthened for better and effective service delivery by conducting regular coordination meeting. Overall monitoring and supervision will be strengthened for the effective implementation of the operational plan

- 6 Hospital services is one of the most visible and major component of the health care delivery system. The Public hospital offers almost three quarter of all hospital based health care services. Within the Poverty Reduction Strategy policy framework of the Government of the People's Republic of Bangladesh regarding health care delivery system, the GOAL is to achieve sustainable improvement in health, nutrition, reproductive health, including family planning particularly of vulnerable groups including women, children, elderly and the poor within the ultimate aim of their economic emancipation and physical, social, mental and spiritual well being and thus contribute to the poverty reduction of the country.
- 7 Functionally the hospital services are divided into three level, namely (i) Primary, (ii) Secondary and (iii) Tertiary level. Director, Hospital & Clinics of DGHS is working as "Line Director, Hospital Services Management" and he is looking after the development activities of the Secondary and Tertiary level hospitals. Secondary level (District level hospital, bed ranges from 100 to 250 bed) hospitals are providing specialized care in addition to primary health care services. Tertiary level (Specialized & Medical College) hospitals are providing super-specialized health care services; some of them are also function as Teaching hospital.
- 8 The main objective of Hospital Services Management (HSM) is "Work by partnership with all the stakeholders with sincere effort for ensuring accessibility, effective, responsive, affordable, modern quality of care and equity of access at the secondary and tertiary level hospitals". The major responsibility of the Line Director (LD) is to operationalize newly constructed and/or bed upgraded hospital but construction of the facility, procurement of assets and recruitment of manpower is the responsibility of the other LD, so strong coordination with other LD's is always needed for commissioning of the newly constructed/ upgraded hospital. Under HNPSP the progress of the activities of LD-HSM suffered due to non-satisfactory performances on timely procurement and supply of logistics (Instrument/ Equipment /furniture/ vehicle etc), delayed recruitment of manpower and coordination with LD-construction.

1.2 JUSTIFICATION FOR SELECTING THE OPERATIONAL PLAN

The Ministry of Health and Family Welfare had been implementing Sector Wide Approach (SWAP) since 1998. Already two phases of the program had been implemented. The current 3rd program strategic plan attached top priority in improving service provision for the secondary and tertiary level hospitals. Hence, to ensure the goal of Health Population Nutrition Service Delivery Program (HPNSDP), it was deemed necessary to ensure the quality and equitable health care services for all citizens by improving access to poor & vulnerable groups. In order to ensure quality & equitable service delivery at the secondary & tertiary levels of hospitals, which are the most visible utilization area of the clinical service delivery, the operational plan 'Hospital Service Management' was formulated.

The Operational Plan 'Hospital Services Management (Revised)' (2011-2016) has been taken with a view to increasing demand on services, to upgrade & strengthen secondary & tertiary level hospitals by providing logistics & increasing service area coverage. Under the HPNSDP the "Hospital Service Management (Revised)" OP is implemented in procuring equipments for the districts hospitals and other specialized hospitals and providing facilities for improved service delivery. Medical waste management, development of referral system, practicing different hospital standards, quality care in service delivery, development of emergency services are some more activities which are also being implemented under this operational plan. Ministry of Health and Family Welfare monitors the progresses of these activities through Operational Plan Implementation Committee (OPIC), ADP/RADP review meeting, piece-meal project/OP meeting and other meeting as and when necessary.

1.3 BACKGROUND OF THE IN-DEPTH MONITORING STUDY

IMED is responsible for monitoring and evaluation of the development projects under the Annual Development Program (ADP) of the Government of Bangladesh. IMED officials visit the ongoing projects at the sites of implementation and prepare progress reports on the basis of actual findings along with recommendation which are shared to the respective Ministries. In regard to completed projects, IMED prepare the report on the completed projects. Besides, IMED evaluates the impact of the completed projects and also conduct in-depth monitoring of the ongoing projects under the non-development budget fund. With a view to reach the set target, IMED as per set rules of business of the organization, under the purview of current financial year revenue budget (2014-2015), IMED has been appointed two individual national

consultants through outsourcing to facilitate the implementation of the OP to perform the responsibility of the in-depth monitoring of this OP.

As per schedule, negotiation has been completed on 23//12/14 and agreement was signed on 30/12/14 between consultants and DG (Education and Social Sector), IMED. According to the terms of agreement with the consultants, the submitted Inception Report cleared by the technical committee first and then by steering committee on 12 March, 2015.

1.4 SCOPE OF WORK OR TOR OF THE ASSIGNMENT

- a) To assess the physical and financial progresses of the Operational Plan - Hospital Service Management;
- b) To review the targets and actual progress of the OP against the approved OP level Indicators;
- c) Identify potential threats and challenges towards effective implementation of ongoing activities of the OP;
- d) To review some of the important OP component (such as waste disposal, Blood transfusion, Women Baby friendly Hospital, TQM, Shishu Bikash Kendra), see the progress and further suggestion;
- e) To examine whether the procurement process (Invitation of tender, evaluation of tender, approval procedures, contract awards etc) of some selected packages under the OP done as per PPA-2006/PPR-2008;
- f) To identify the challenges towards effective implementation of SBK including autism; and
- g) To find out the bottlenecks regarding functioning of women and baby friendly hospital.
- h) To find out the utilization situation of the goods (equipment) supplied at the user level;
- i) To explore the bottlenecks in regard to installation of equipment and their proper operation;

1.5 BRIEF OF THE OPERATIONAL PLAN

Location of the Project/ OP: All over the country (District & above)

Executing authority: Ministry of Health & Family Welfare

Implementing Agency: Directorate General of Health Services

1.6 Objectives of the Operational Plan:

General Objective:

To strengthen Secondary and Tertiary level health care facilities especially the Public hospitals by providing effective, affordable, client centered quality care; which is accessible to poor, children, women with establishing right and community participation.

1.7 Few relevant Objectives:

- To strengthen and upgraded Secondary and Tertiary level hospital services for improvement of patient care and accessibility to client.
- To improve the quality of care in the health care services by introducing of National Health Care Standards, Quality Assurance program, Total Quality Management (5S-Kaizen-TQM).
- To introduce Structured Referral System in the hospital services for the proper functioning of health care system.
- To supply equipment furniture and other logistics to the upgraded and newly constructed secondary and tertiary hospitals for provision of the expected range of services.
- To introduce Standard Waste Management (Phase wise) in both Public and Private sector.
- To control TTI by effective introduction of Safe Blood Transfusion program country-wide.
- Further strengthening and expanding the women and baby friendly hospital;
- To increase the capacity of the health system for enhanced service delivery to effectively meet the behavioral, communication and educational needs of persons with autism.

1.8 Estimated Cost (According to Financing Pattern) - In Lakh Taka

Financial Year	OP Version	GOB (FE)	Cost					Source of Fund
			Project Aid (PA)					
			RPA		DPA	Total Project Aid (PA)	Total	
			Through GOB	Others Through GOB				
1	2	3	4	5	6	7 (4+5+6)	8 (3+7)	9
Year-1-3 (2011-14)	2 nd Revised	25680.91	74038.74	683.10	1098.25	75820.09	101501.00	Pool, WHO, UNICEF JICA
	1 st Revised	25758.08	75545.90	800.79	2073.78	78420.47	104178.55	
	Original	520170.84	68392.53	00.00	8101.65	76494.18	128512.02	
Year-4 (2014-15)	2 nd Revised	17000.00	33035.61	234.39	716.08	33986.08	50986.08	
	1 st Revised	29542.48	9184.81	00.00	5839.22	15024.03	44566.51	
	Original	16472.12	8580.49	00.00	3799.18	12379.66	28851.78	
Year-5 (2015-16)	2 nd Revised	7696.40	29805.27	5545.35	697.50	36048.12	43744.52	
	1 st Revised	29661.51	22.00	00.00	7787.00	7809.00	37470.51	
	Original	16472.11	8580.48	00.00	3799.17	12379.66	28851.77	
Total	2 nd Revised	50377.31	136879.62	6462.84	2511.83	145854.29	196231.60	
	1 st Revised	84962.07	84752.71	800.79	15700.00	101253.50	186215.57	
	Original	84962.07	85553.50	00.00	15700.00	101253.50	186215.57	

1.9 Priority Activities under the Operational Plan:

- 1) Continuation of the Public Sector Hospital support services (District Hospitals, Medical College Hospitals and Specialized Hospitals)- by providing pay & allowances, operating cost and logistic support to the secondary and tertiary level hospitals running under development budget till its transfer to revenue budget.
- 2) Introduction of Medical Waste Management at Public & Private Hospitals- Introduction of MWM at public and private sector health care facilities by capacity development, supply of logistics, development mass awareness and introducing monitoring tool kits through inter-ministerial involvement and PPP.
- 3) Scale up of the structured Referral System- is to be rolled out countrywide from Primary, Secondary & Tertiary level hospitals provider, supply of logistic & introduction of monitoring tool kits will be needed for the activity implementation.

- 4) Development & introduction of Hospital & Laboratory Accreditation- in Bangladesh, the quality of health care will be ensured at international standard both in the public and private sector gradually. An independent & autonomous National Medical Accreditation Body will be formed. Capacity development of the service provider & introduction of monitoring tool kits will be needed for the activity implementation.
- 5) National Health Care Standards, Quality Assurance Program and TQM- Quality Assurance will be strengthened by introduction Standard Operating Procedure (SOP), patient's satisfaction survey and monitoring tool kit in DH & UPC Primarily. Activation of National Steering Committee, National Technical Committee, National Task Force by holding regular meeting. TQM is newly introduced Program, which will be introduced by the secondary DH as a piloting project under the technical assistance of JICA, 5S-Kaizen-TQM will be the main approach, step by step, improvement of the hospital environment will be the main focus for TQM implementation.
- 6) Safe Blood Transfusion- Procurement and supply of equipments, reagents, blood bags, capacity development of service provider, development of national blood transfusion standards involving transfusion medicine services in both public & private sector and Monitoring and supervision of the SBT activities.
- 7) Strengthening of the Hospital Services through Decentralization/ Autonomy-Hospital autonomy will be introduced initially after passing the bill in parliament, for tertiary level hospitals. Financial delegation will be introduced for better hospital management.
- 8) Strengthening of the Hospital Service Delivery- It is necessary to introduce of Clinical protocols, Development of National Health Care Standard, Infection control Program, Emergency Service Management & Evidence Based Practice (EBP) gradually- in the hospital service delivery which will play important role for effective & Quality Clinical Service Delivery. For this purposes huge capacity development of the service provider will needed fin the Secondary & Tertiary level hospitals. Coronary Care Units (CCU) in all district hospitals and ICU at medical college hospitals and districts hospitals in phases with supply of necessary equipments and logistics will be established gradually. The 24/7 CEmonC service will be ensured in all district hospitals. Strengthening of the reconstructive surgery in different tertiary level hospitals will be done by providing necessary fund, logistics.

- 9) Strengthening of the NEMEW and TEMO- For better hospital equipment, instrument and logistic maintenance, NEMEW and TEMO should be strengthened. With the strengthening of these departments, substantial amount of government fund can be saved, and that amount of money can be used in other emerging sectors of the HPNSDP.
- 10) Strengthening the Woman and Baby Friendly Hospital to focus the specific female issues and the health problems. During planning for a hospital, designated female waiting area with separate female toilets and breast feeding corner should be taken care off.
- 11) Establishment and strengthening of Shishu Bikash Kendra for those suffering from autism and neurodevelopment disorders. Necessary strategies should be in place to have a strong network amongst different platforms / organizations working for autism and neuro developmental disorders. The core approaches to address the problems of autism and other related health issues should be addressed with strategies like creation of awareness about these problems, increasing the anti natal and post natal visits, taking appropriate care during peri-natal period, ensuring proper nutrition for the pregnant mothers, early diagnosis of the problem etc. should be in place in all the hospitals of the country.

1.10 Indicators of the Operational Plan

ROP Level indicators	Unit of Measurement/Means of Verification	Baseline	Target MID-2014	Target-2016	Source
Number of Hospitals (DH & above introduced standard in-house medical waste management)	Number of hospitals (Admin report)	14 (2012)	10-MCH, 8-Spec, Hosp; 12-DH	14-MCH; 8-Sec. Hosp; 28-DH	
Number of Facilities (UHC and above) introduced Safe Blood Transfusion services.	Number of health care facilities (Admin report)	191 (2012)	214	317	
Number of hospitals introduced TQM concept (5-S-CQI-TQM)	Number of hospitals (Admin/Status report)	3-DH (2012)	6-MCH (Gynae & Paed); 7-DH; 4-UHC	8-MCH (Gynae & Paed); 10-DH; 8-UHC	
Number of hospitals declared as Women and baby Friendly Hospital	Number of hospitals (Admin/Status report)s	15-MCH- 06DH; 3-UHC (2012)	1-MCH, 22-DH, 2-UHC	3-MCH, 28-DH, 5-UHC	
Number of Shishu Bikash Kendra established	Number of hospitals (Admin/Status report)	10-MCH; (2012)	15-MCH; 5-DH	18-MCH; 17-DH	
Number of hospitals introduced structured Referral system	Number of hospitals (Admin/Status report)	6-MCH; 24-DH; and all Corresp UHCs- (2012)	11-MCH; 41-DH and all Corresp UHCs	20-MCH; 64-Dh and all Corresp UHCs	

1.11 Important Components of the Operational Plan

1.11.1 A. Continuation of the Public Sector Hospital Support Services Through this activity (i) Pay and allowance for officer and staff's of 5-District hospital and 2-Specialized Hospital was provided, those who are not yet absorbed in the revenue head, (ii) Operational cost (Supply and services) and Repair & Maintenance of logistics for 32 spillover secondary & tertiary level hospital from HPSP to HNPSp and also Upgraded / newly constructed Secondary & tertiary level hospital, and (iii) Procurement of Assets for all secondary & tertiary level hospital / different activities. To improve the accessibility of the patients especially women, children and poor we need to increase out bed capacity by upgrading the public hospitals beds, establishing new hospital, and also continuing the existing support.

1.11.2 B. Introduction of Medical Waste Management in the Public & Private Hospitals

Medical waste management is one of the critical issues among the issues targeted by MOH&FW. MWM is also used as a performance indicator by the DP's. The management of waste poses to be a major health problem in Bangladesh like developing countries, especially the hospital waste. It also invites serious health problem. health care. The in-house MWM is the responsibility of individual health care facility / MOH&FW and out-house MWM (Collection, transportation, final treatment and disposal) is the responsibility of City Corporation /Powroshova that is MoLG&RD. In that meeting it was also decided that if MoLG&RD have not enough capacity, out-house management should be contracted out to NGOs. Task need to be taken for improvement MWM activity.

- Proper application of the Waste management rules.
- Development of alternative treatment option for medical wastes, targeting on “Short term/long term” basis and “Big city/small city”.
- Capacity development of the service providers on in-house waste management at public & private sector.
- Development of proper coordination mechanism among the different stake holders.
- Incorporation of Medical waste management in the Medical and Nursing course curriculum.
- Capacity development of MoLG&RD with bridging the cooperation & coordination mechanism.

- Activation of City corporation/Powroshova for out-house MWM by coordination with MoLG&RD
- Orientation of the mass people through Bill board, Neon sign, video film, TV clip.
- Mobilization of proper resources.
- Incorporation of the MWM rules in the Clinic Ordinance 1982 for establishing proper regulatory framework.
- Activation of different committee formed for facilitating MWM.

1.11.3 C. Scale up of Structured Referral System

In order to bring down mortalities and disabilities following any disease condition or accidental injuries, availability of an operational referral system is one of the prerequisites where it will help the patient to receive optimal Health care from the next level of referral care. Referral system network need to start from the Union sub centre (USC), Upa-zilla Health Complex (UHC) & upwards. Equal importance should be given to the downward referrals as well. Extension of the referral activities will be in other Medical College Hospitals, district hospitals, UHC, community clinics and sub-centers. We already agreed that a patient attending the lower level of health care preserved the right to have the health care at highest level with proper acknowledgement. Structured referral system is the right answer, although the task is hugely challenges. So, we need to continue referral activities and it is expected that all the public hospitals will be under this program is phase-wise.

1.11.4 D. Safe Blood Transfusion

A safe, effective blood transfusion service is the essential component to the provision of adequate health service. The Government is convinced by the fact and is committed to ensure that all patients must have access to enough appropriate safe blood and blood products whenever needed free from HIV, viral hepatitis and other Transfusion Transmissible Infections (TTIs) and recognizes the consequences of unsafe blood and its scarcity. The proposed NBTC and RBTC will be implemented by mobilizing resources for procurement equipment, furniture, vehicles and supply services and the related budget will be reflected in the Operational Plan of SBTP for the 2011 to 2016. The estimated cost for construction work, land development, renovation of existing centers will be done by MoH&FW of their relevant wing and budget will be reflected under operational plan of Construction of

MOHFW from where the activities related to construction will be implemented. The proposed manpower for NBTC and RBTC would be recruited under revenue budget. The project will be completed in three years time. The manpower will be recruited in 3rd year before functioning of the centers

1.12 Activities of this component are:

- Formation of a National HCQA Steering Committee with outlining roles and responsibilities.
- Formation of a QA Steering Body (at DGHS level) with outlining roles and responsibilities.
- Formation of Trained QA Teams in Upa-zilla and District health facilities, Medical College hospitals, and specialized hospitals under MOH&FW.
- Formation of trained QA Teams in Private and Non-Government health facilities through PPP initiative.
- Introducing functional QA system in PHC services under MOH&FW.
- Forming a functional hospital accreditation body in association with Improved Hospital Service Management (IHSM) initiative of DGHS.
- Building capacity and awareness of QA teams & service providers (GO, NGO & Private) on QA methods and approaches as well as its applications.
- Developing supervision, monitoring and evaluation system for measuring QA performances in both PHC and district health care services.
- Developing a functional QA reporting system in association with MIS system of DGHS.
- Capacity building of national level QAP personnel on different technical aspects to make QA initiatives sustainable through attending different national and international trainings, courses and conferences.
- Procuring necessary goods, items, software, equipments, vehicles, machineries, furniture, etc.
- To appoint necessary human resources for execution of HCQAP activities.

- Procuring necessary consultancy, services (TA) for getting technical jobs done of HCQAP.
- Nation client/patient satisfaction survey by HCQAP/ Health research Firm once in every two years.
- Small scale QA impact survey by HCQAP once in a year.
- Availability of Citizen Charter in all health facilities.

1.12.1 E. Quality Assurance (QA) Program

Quality Assurance is all activities that contribute to defining, designing, assessing, monitoring, and improving the quality of healthcare. **Activities of this component are:**

- Formation of a National HCQA Steering Committee with outlining roles and responsibilities.
- Formation of a QA Steering Body (at DGHS level) with outlining roles and responsibilities.
- Formation of Trained QA Teams in Upa-zilla and District health facilities, Medical College hospitals, and specialized hospitals under MOH&FW.
- Formation of trained QA Teams in Private and Non-Government health facilities through PPP initiative.
- Introducing functional QA system in PHC services under MOH&FW.
- Forming a functional hospital accreditation body in association with Improved Hospital Service Management (IHSM) initiative of DGHS.
- Building capacity and awareness of QA teams & service providers (GO, NGO & Private) on QA methods and approaches as well as its applications.
- Developing supervision, monitoring and evaluation system for measuring QA performances in both PHC and district health care services.
- Developing a functional QA reporting system in association with MIS system of DGHS.
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- Procuring necessary goods, items, software, equipments, vehicles, machineries, furniture, etc.
- To appoint necessary human resources for execution of HCQAP activities.
- Procuring necessary consultancy, services (TA) for getting technical jobs done of HCQAP.
- Nation client/patient satisfaction survey by HCQAP/ Health research Firm once in every two years.
- Small scale QA impact survey by HCQAP once in a year.
- Availability of Citizen Charter in all health facilities.

1.12.2 F. Strengthen of the Hospital Services through Decentralization/Autonomy

1.12.3 G. Development & Introduction of Hospital and Laboratory Accreditation

Under this program, Draft outline on Hospital action and Laboratory Accreditation Program already submitted to MOHFW. Piloting of Risk Management program in two district Hospitals & two Medical College Hospitals, Introducing QA program in seven district Hospitals also done under this program as a part of the activity. So, it needs to continue to make it final shape and also for piloting the formulated design.

1.12.4 H. Total Quality Management

TQM is a people-focused management system that aims at continue increases in customer satisfaction at continually lower real cost. TQM system approach and an integral part of high level strategy, it works horizontally across functions and department, involves all employees, top to bottom and extends backward and forward to include the supply china and the chin. TQM stresses learning and adaption to continual change as keys to organization success.

The intervention needs to address the following areas: (a) Development of 5S-Kaizen- TQM adaptation model, (b) Identification hospitals for intervention and baseline assessment, (c) Formation of committees and preparation of inventories, (d) Capacity developments (e) Local level plan, (f) Implementation on the basis of LLP; (g) Performance appraisal; The Health sector Management of Bangladesh needs modernization and introduction of the TQM is the

right choice. (h) Development of National Health Care Standard is one of the important activity under this component.

1.12.5 I. strengthening of the Hospital Services delivery

The accreditation of 4 Districts Hospitals and 3 Upa-zilla health complexes as Women Friendly facilities is an important step in the right direction. But there is a need to do more considering the inequality and availability of hospital beds, social barriers to women's independent access to health care facilities and not having access to proper Emergency Obstetric Care Facilities. Expanding the women friendly public sector facilities, prioritizing those with EOC delivery services need to be expedited. There are 6 one-stop crisis centers to address violence against women at 6 divisional medical college hospitals. But limitations of appropriately trained service personnel constrain the availability of some services. The activities regarding gender and VAW need to be scaled up at lower tiers of health services.

1.12.6 J. Autism and Neurodevelopment Disabilities



Two decades ago, Autism was a little-known, uncommon disorder. Today, autism is more common than childhood disorders such as congenital heart diabetes and cancer. Autism Spectrum Disorder (ASD) is a complex developmental disorder that affects a person's ability

to communicate, form relationships with others, and respond appropriately to the environment.

WHO definitions of Autism, "Autistic spectrum disorder is used to describe a group of pervasive developmental disorders characterized by qualitative in reciprocal social interactions and in pattern of communication and by a restricted, stereotyped, repetitive repertoire of interests and activities".

ASDs may include persons with severe learning disabilities, with little or no verbal communication, to those with an average or high IQ. ASDs include a number of subgroups and individual variations, but all persons with ASD exhibit a triad of impairments and difficulty in:

- Understanding communication, both verbal and nonverbal type
- Understanding social behavior which interferes with their ability to interact with other people
- thinking and behaving in a flexible manner

Neurodevelopment Disabilities Statistical Manual of Mental Disorders, Fifth Edition, 2013
the neurodevelopmental disabilities are: (Ref: DSM 5, APA, 2013)

- **Intellectual Disabilities**
 - Intellectual Disability (Intellectual Developmental Disorder)
 - Global Developmental Delay
 - Unspecified Intellectual Disability (Intellectual Developmental Disorder)
- **Communication Disorders**
 - Language Disorder
 - Speech Sound Disorder (previously Phonological Disorder)
 - Childhood-Onset Fluency Disorder (Stuttering)
 - Social (Pragmatic) Communication Disorder
 - Unspecified Communication Disorder

- **Autism Spectrum Disorder**
 - Autism Spectrum Disorder
- **Attention-Deficit/Hyperactivity Disorder**
 - Attention-Deficit/Hyperactivity Disorder
 - Other Specified Attention-Deficit/Hyperactivity Disorder
 - Unspecified Attention-Deficit/Hyperactivity Disorder
- **Specific Learning Disorder**
 - Specific Learning Disorder
- **Motor Disorders**
 - Developmental Coordination Disorder
 - Stereotypic Movement Disorder
 - Tic Disorders
 - Tourette's Disorder
 - Persistent (Chronic) motor or Vocal Tic Disorder
 - Provisional Tic Disorder
 - Other Specified Tic Disorder
 - Unspecified Tic Disorder
- **Other Neurodevelopmental Disorders**
 - Other Specified Neurodevelopmental Disorder
 - Unspecified Neurodevelopmental Disorder

CHAPTER 2: METHODOLOGY

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The study was descriptive in nature and thus, in-depth data collection was the principal approach. Data used in this study is primary in nature and were collected both from the fields and the offices, whichever was necessary to address the objectives of the study. Most of the data are expressed in terms of percentages and pie charts. Few of them are also depicted in tables.

2.1 Study Design: This is a descriptive study where all the findings described through different tables, graphs, charts and others. No statistical tests on the collected data/information done.

2.2 Sampling methods: Data were collected through simple random sampling (SRS) technique. Hospitals were selected through simple random sampling (SRS) from the existing District hospitals (64), specialized hospitals/ institutions (21), medical colleges (29). Study samples were selected from seven divisions which represent whole Bangladesh. Samples had also been taken from secondary hospitals of 100-250 bedded. It may be mentioned that hospitals which are executing under the revenue budget, also get equipments from the development budget (HSM-OP budget) as per requisition from the hospitals authority.

One department of the selected hospitals selected purposively for collecting data related with the equipments procured under the HPNSDP fund. The selected department was Radiology and Imaging. These departments had been considered purposively due to use of the costly medical equipments in this department within a hospital.

The exit interviewee selected through SRS. The KII (Key Informants Interview) selected conveniently.

Indicators were selected purposively and priority given to the indicators which are involved countrywide.

2.3 Sample Size: In general, at least 20 percent of the entire program portfolio should be subject to evaluation (UNDP, Handbook of Planning, 2009). Under this in-depth monitoring, about 20% of hospitals/ institutions including district hospitals and other higher level hospitals where the equipments supplied considered under this study to collect data.

2.4 List of Hospitals/ Institutions selected for data collection:

S.L	Division	Medical College Hospitals (MCHs)			Sadar (District) Hospitals			Specialized Hospital	
		No. of existing MCH	Selected MCHs	No. of selected MCHS	No. of existing DHs	Selected DHs	Selected No. of DHs	No. of existing SHs	Selected SHs
1	Dhaka	11	Shahid Shwordi MCHs	1	18	Jamalpur	4		
						Manikgonj			
						Gopalganj			
						Madaripur			
2	Chittagong	5	Chittagong MCH	1	11	Bandarban	2		
						Laxmipur			
3	Sylhet	1	M.A.G Osmani MCHs	1	4	Sunamgonj	1		
4	Rajshahi	4	Rajshahi MCH	1	7	Nowgaon	2		
						Bogra Sadar			
5	Rangpur	2	--	1	8	Gaibandha	2		
						Kurigram			
6	Khulna	4	Khulna MCHs	1	10	Narail	1		
7	Barishal	2	Sher-e-Bangla MCHs	6	6	Jhalokati	1		
Sub-total		29	--	6	64	--	13		3
Total selected Institution/ Hospital =22 (among them 6 MCHs, 13 DHs and 3 are SHs)									

2.5 List of hospitals with the number of respondents.

S.L	Type of Hospital	No. of selected Hospital	No. of Interviewee	KII Interview (Director/ Super/ DD/ AD/ Head of Dept./ Professor/ Technologist)
	MCHs	6	$30 \times 6 = 180$	$2 \times 6 = 12$
	DHs	13	$30 \times 13 = 390$	$2 \times 13 = 26$
	SHs	3	$30 \times 3 = 90$	$2 \times 3 = 6$
Sub-total=			660	44
Total=		704 Respondents		

2.6 Data collection:

Both primary and secondary data collected for this study. Primary data collected through **Exit Interview** of the hospital clients particularly from Out Patient Department (OPD) and **Key Informant Interview (KII)** of the OP managers, hospital managers and related stakeholders.

Secondary data such as OP implementation progresses (both financial & physical), progresses of OP indicators and others collected from OP office, MOHFW, IMED, PMMU (Program Management Monitoring Unit). Data on procurement of equipments received from the different DHs, MCHs and Specialized hospitals and some of the packages were post-procurement reviewed. Still photographs of Hospitals and Equipments taken and incorporated in the in-depth monitoring report.

2.7 Interviewer selection and training

Five (5) interviewers selected by IMED through advertisement in the newspaper and through competitive selection process. They worked for 1 (one) month in data collection process. They were given training on data collection ethics, instruments, ideas on equipments, basic knowledge on procurement procedure before going to the field. They participated in the pre-testing of the questionnaire at Shahid Shohrawardi Hospital. Data collection supervised for quality control by the Individual Consultants and IMED officials.

2.8 Data collection instruments:

A pre-structured questionnaire with open and closed questions prepared for Exit Clients and KII (Key Informants Interview) interview. An observation checklist for hospital was part of the questionnaire. A check list related to OP indicators also added. A checklist prepared for collection of information on the equipment procurement and their utilization. The field level information on procurement of equipments tallied with the procurement process of respective package from CMSD.

The exit interview was taken with the clients of outdoor and emergency patients for assessment of client's satisfaction in terms of their expectation, quality of services, provider's behavior, privacy maintained, cleanliness of the hospitals, condition of waiting time, availability of medicine and other commodities.

The entire questionnaire pre-tested at the field for validity and reliability. The questionnaire revised/ updated in line with the findings of the pre-testing.

2.9 Data for Collected for Procurement Performance:

As a procuring entity normally performs the following 11 key activities:

a.	Invitation for tender
b.	Submission of tender
c.	Constitution of Tender Opening Committee (TOC) and Tender Evaluation Committee (TEC)
d.	Evaluation of tender
e.	Preparation and approval of Tender Evaluation Report (TER)
f.	Contract awards
g.	Delivery/ completion of contract
h.	Payment of bills
i.	Complaints handling
j.	Contract amendment, and
k.	Contract dispute resolution

The procurement file of a package contains the paper cuttings of the newspapers that published the IFT, the tender opening report, the tender evaluation report and its approval, the

copies of the letters of correspondence made with World Bank and the tenderers, the copy of the letter of NOA, the contract completion certificate and the information about payments made to the concerned contractor/ supplier, etc. A file for a package was studied for this in-depth study.

2.10 Ethical Issues:

There was no risk of the respondents in the interview process. Informed consent was taken from the respondents before the interview start. The identity of the Interviewee is kept confidential.

2.11 Data Editing, Entry, Cleaning

After data collection, the filled-in questionnaire from the field was submitted to Team Leader, then checked and re-edited. Coding e done for the open questions by the data editors and coders. Meanwhile, computer program use for data entry and data inconsistency checking. Then data entered and checked for consistency and data cleaned to be ready for analysis. The analysis of data done by using **SPSS** software.

2.12 Data analysis:

Data coded and recoded as necessary. Data analyzed through SPSS version 13.0. Statistical indices used to summarize data (descriptive statistics).

2.13 Some Operational Definitions:

Procurement: "Procurement" means the purchasing or hiring of Goods or acquisition of Goods through purchasing and hiring, through the fund estimated in the OP “ Hospital Services Management”.

Operational Plan (OP): Means the OP planned for improved hospital management at district and above level hospitals under the Health, Population and Nutrition Sector Development Programme (HPNSDP) (2011-2016) executed by Director (Hospitals and Clinics) under DGHS of the Ministry of Health and Family Welfare

Equipment: Medical machineries procured under the OP-Hospital Service Management for the Radiology and Imaging/ Cardiology department from July 2011- June 2014.

Departments: Department means Radiology and Imaging, Cardiology departments.

Blood Transfusion Unit: A unit under any hospital working for safe collection or distribution blood or blood products having permanent and experienced manpower for this purpose.

Time-Bound Activities Flow Chart

<i>Activities</i>	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>Comments</i>
Signing of the Contract					
Review of the Project					Progress of the activities would depend on few specific external and internal environment, support from members, availability of fund etc.
Team Formation					
Threadbare Consultation with the Team Members					
Questionnaire Formation					
Training on data Collectors					
<i>Pre-testing of the Questionnaire</i>					
Data Collection and Compilation					
Data Cleaning					
Data Analysis					
Draft Report Writing					
Workshop					
Final Report Submission					

2.14 Limitations of Study:

There was a time constraint in conducting on time/time bound study as the nation passed hard time during the first 3-4 months at the beginning of the year 2015.

The list of equipments supplied from this OP could not be separated from the total list of equipments supplied, because equipments are purchased from four sources of fund such as (i) From OP under development budget; (ii) Budget from non-development Budget; (iii) Goods purchased and supplied by Development partners; and (iv) Fund Precede by Institution itself.

There were somewhat differences in distinguishing source of fund as the vouchers or receipts are not clear.

CHAPTER 3: FINDINGS

CHAPTER 3: FINDINGS & RESULTS

3.1 A. OUTDOOR SERVICE DELIVERY

All the activities under the OP “Hospital Services Management” are aimed to improve the service delivery for the secondary and tertiary level hospitals. Therefore, some questions were asked to get information on outdoor service recipients’ satisfaction. The findings are described below:

Table 1: Percentage of numbers of visits in the hospitals for the same health problem (n = 660)

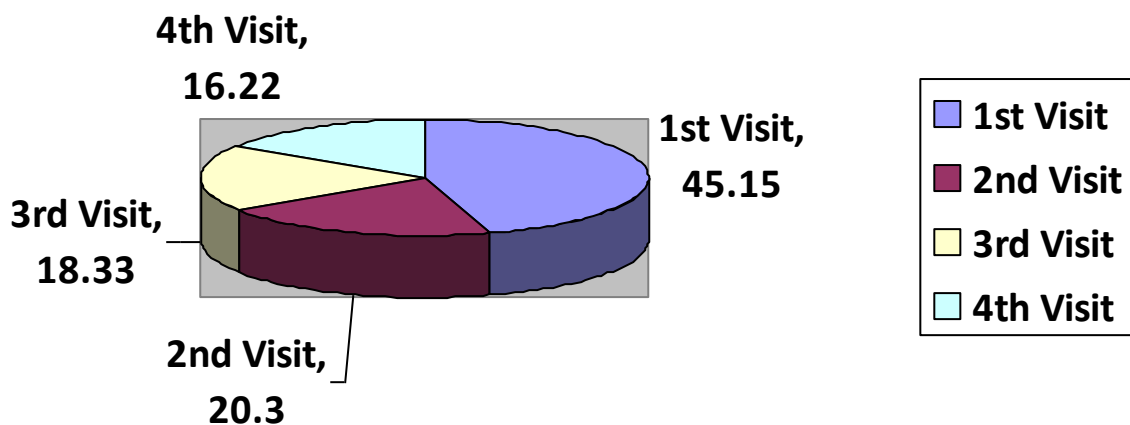


Figure 1 No of visits of the respondents for same illness

The above table and chart show that out of 660 respondents, 45.15% stated that this was their first visit to the hospital for this disease episode. About 20.30% patients visited the hospital for more than 02 times for the same illness, while 18.33% for the 3rd and 16.22% for the 4th visits.

Table 2: Percentage of patients visiting hospitals for more than once (n=362)

Reasons for visit to hospital	No of patients	Percentage (%)
Not cured (Disease as before)	160	44.20
Not completely cured	58	16.02
To take medicine	65	17.96
For follow up (as doctor suggested)	79	21.82
Total	362	100

Table 2 shows that majority (44%) of the patients who had more than one visits was due to they did not cure by the previous medication. The minimum numbers of patients for multiple visits was due to incomplete cure i.e. 16.02%.

Table 3: Percentage of patients referred by others to visit the hospital (n=660)

Whether patient was referred (not formal) or self	Number	Percentage (%)
Referred	123	18.64
Not-referred	537	81.36
Total	660	100.00

The respondents here were asked whether they came to the hospital having advice from other or their own self, about 81.36% said they came of their own about and 18.64% were referred by any health personnel any person.

Table 4: Patients waiting time in the hospitals' OPD (n=660)

Category of Hospital	< 1 hours	1-2 hours	2-3 hours	3-more hours	Total
Secondary	232	138	42	7	419
Tertiary	103	60	51	27	241
Total	335	198	93	34	660
Percentage (%)	50.75	30.00	14.09	5.16	100

The table revealed that the waiting time is higher in tertiary hospitals. Highest waiting time is less than 1 hour which is about 50.75% and lowest is 3+ hours which is about 5.15%.

Table 5: Percentage of patients who obtained medicine in different proportion (n=660)

Have you received desired medicines?	Fully	Partly	Very few	Not at all	Total
	49	270	163	178	660
Percentage %	7.43	40.90	24.70	26.97	100

The table shows that the respondents stated that only 7% received medicines in full, and rest of the patients received partly (41%), very few (25%) and not at all 27%.

Table 6: Percentage distribution of patients who did their investigations in Hospitals (n=660)

Type of hospitals	Number	Percentage (%)
Government Hospital	410	62.12
Other than government Hospitals	250	37.88
Total	660	100

Table 6 shows the response while they were asked about where they do their investigations. The result show that only 62.12% of the patient does investigations in the hospitals and about 37.88 % do their investigation outside the government hospitals.

Table 7: Reasons for doing investigations outside the hospital (n=250)

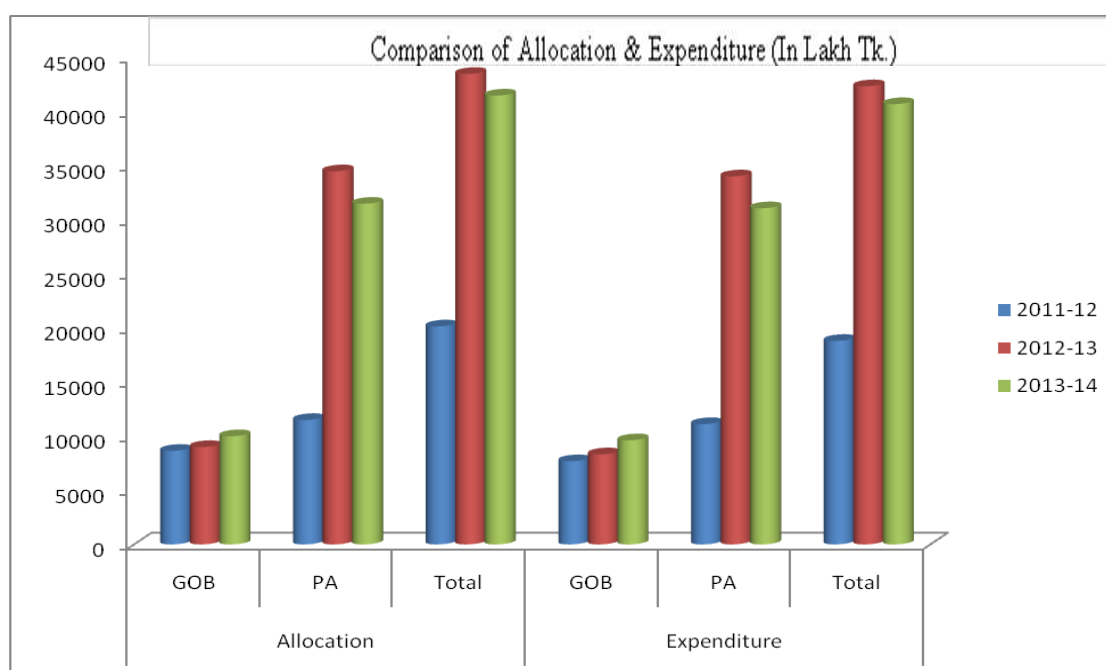
Reasons for not using Govt. hospital	No of patients	Percentage (%)
No expert Technologists	76	30.40
Long waiting time	115	46.00
Machine not up to the mark.	59	23.60
Total	250	100

The above table reveals that long waiting time in the government hospitals are the main reason in 115 cases (46.00%) for doing the investigations outside of the hospitals. 76 respondents (21.82%) answer that there are not expert technologists in the government hospitals.

3.2 B. FINANCIAL AND PHYSICAL PROGRESSES

Comparison of Allocation & Expenditure (In Lakh Tk.)

FY	Allocation			Expenditure		
	GOB	PA	Total	GOB	PA	Total
2011-12	8650	11500	20150	7691.6	11119.81	18811.41
2012-13	9000	34485	43485	8328.62	34015.15	42343.77
2013-14	10000	31485	41485	9622.95	31069.81	40692.76



3.3 Chart 1: Bar chart showing last 3 FYs financial progress

- Findings depicts that in the first 3 financial years (July 2011 to June 2014) of the OP implementation period, the total expenditure was 101430.40 lak out of revised OP cost of 196231.60 lak taka which is about 51.70 % of the total cost of the 2nd ROP.

11. In this current financial year 2014-15, out of 14126.22 lak taka ADP allocation, 5962.38 lak taka has already been spent till April, 2015 which is about 42.20% of the current financial year allocation against this OP.
111. The cumulative expenditure of the OP from July 2011 to April 2015 is about 107392.38 lak taka, which is about 54.72% of the total OP estimated cost. It is evident that the remaining unallocated amount of the estimated OP cost is about 88839.22 lakh taka for the remaining period of about 1 year and 3 months. The trends of allocation and expenditure indicate that it would not be possible to allocate this remaining amount in the ensuing FY. Hence there would be necessary to trade-off the action plan for the FY 2016-17.

3.4 List of some important Physical Progress

1. Support to Up-graded National Institute of Cancer Research and Hospital from 100 to 300
2. Approval of the National Club Foot Program of Bangladesh under Development Budget.
3. Support to up-graded Thakurgaon District Hospital from 100 to 250 bed.
4. Functioning of ICU at 5(Five) District Level Hospitals.
5. Conversion and Functioning of Railway Hospital to Railway General Hospital under Ministry of Health and Family Welfare
6. Establishment and functioning of Sk. Fazilatunnessa Mujib KPJ Memorial Specialized Hospital by providing Logistic support.
7. Functioning of the 48 Govt. Secondary and Tertiary Level Hospitals by providing operational cost, repair & maintenance cost and logistic support under development budget.
8. Logistic support to the existing Secondary and Tertiary Level Hospitals
9. Establishment and functioning of 23- SCUNB at Secondary and Tertiary Level Hospitals under financial support of Pool fund, JICA, UNICEF and giz fund.
10. Support to the newly established Medical College Hospitals.
11. Expansion of MWM program to Rangpur City C and Dinajpur Powroshava including the previous operating zone.
12. Establishment and functioning of Women & Baby Friendly Hospital
13. Introduction of Safe Blood Transfusion program Countrywide.
14. Establishment of Shisu Bikash Kendra at Secondary and Tertiary Level Hospitals for providing care of children with neurodevelopment disorder including Autism.
15. Capacity Development of the Health Care Service Provider including the Managerial people both locally and abroad with an aim to ensure quality, accessible, Client centered and affordable health care.

3.5 C. UTILIZATION SITUATION OF SUPPLIED EQUIPMENTS



Very senior Radiography Technologist Stanley besides a non functioning X-ray Machine.

Table 8: Functional status of X-ray machines supplied

Hospitals types	OP Budget (n=25)			Other Budget/Beyond This OP Period (n=95)		
	Functioning (%)	Non – functioning (%)	Total (%)	Functioning (%)	Non – functioning (%)	Total (%)
Medical College Hospitals	4 (13.79)	1(3.44)	5(17.24)	25(26.32)	34(35.79)	59 (62.11)
District Hospitals	19 (65.51)	2 (6.89)	21 (72.42)	19 (2.0)	8 (8.42)	27 (28.42)
Specialized Hospitals	3 (10.34)	0	3 (10.34)	9 (9.47)	0 (0.0)	9 (9.47)
Total	26 (89.66)	3 (10.34)	29(100.00)	53(55.79)	42 (44.21)	95 (100.00)

Table 8 shows that there were different X-ray machines supplied from different sources of fund and also at different period. The data on machines procured from this OP budget and other than this OP budget (non-development/ special allocation) data were collected. Out of 29 X-ray machines supplied, only 3 (10.34) were non-functional. In case of Off-OP budget, 44.21% was non-functional.



X-ray Machine Supplied by CMSD Tk. 70 Lakh did not Work for Single da

Table 9: Human resource situation in the Radiology and Imaging department

X-ray machines	In Position (1)	Vacant (2)	Total Sanctioned Post (3=1+2)	Deputation (From other Department) (4)	Total Manpower (5=3+4)
Medical College Hospitals (6)	31	13	44	20	64
District Hospitals (13)	12	07	19	22	41
Specialized Hospitals (3)	07	03	10	08	18
Total (%)	50 (40.65%)	23 (18.70%)	73 (59.35%)	50 (40.65%)	123 (100.00%)

Table 9 shows that out of the total manpower about 60.0% are posted in sanctioned posts and about 40.0% on deputation. If we consider the posting situation on the basis of sanctioned posts, out of 73 only 50 are on normal posting (68.50%) and hence the vacant posts are about 31.50%.



CDR (Computer Direct Radiography) Machine Pushed Supply by CMSD (Tk. 1crore) to MAG Osmaini MCH last year is not functional as yet.

Table 10: Reasons for Non-functioning X-ray machines (n=43)

Reasons of non-functioning	Medical College Hospitals	District Hospitals	Specialized Hospitals	Total
No electric connection	2	3	1	6
Electric volt problem	1	1	0	2
Not yet opened	1	3	0	4
No manpower for assembling	1	3	2	6
Very old	4	1	2	7
Shortage/No film	4	2	0	6
Lack of technician	6	1	0	7
Lack of proper lab	5	0	0	5
Total (%)	24 (55.81)	14(32.56)	5 (11.63)	43 (100.00)

Table 10 states the reasons for non-functioning of the X-ray machine. Non-functioning is highest in medical colleges (55.81%) and lowest in specialized hospitals (11.63%). The most important reason is lack of technician to run the machines.



Out of 10 USG machine only one functioning at MAG Osmaini MCH

Table 11: Functional status of USG Machines

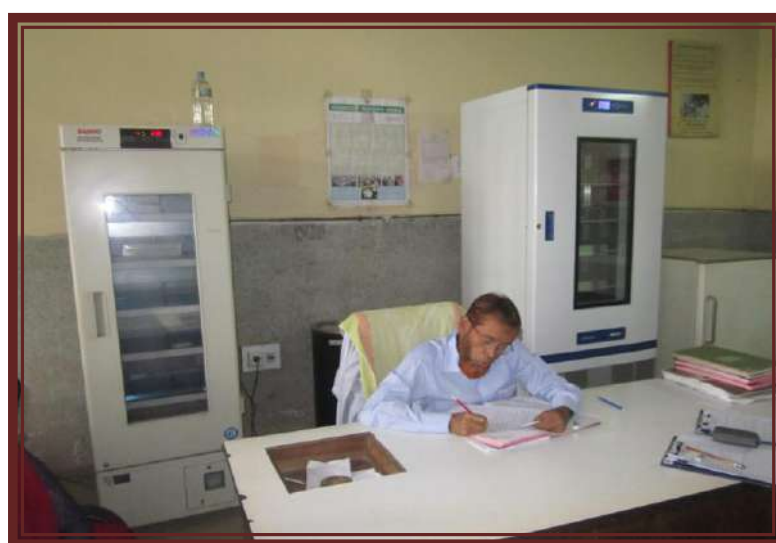
Hospitals types	OP Budget (n=19)			Other Budget/Beyond This OP Period (n=37)		
	Total (%)	Functioning (%)	Non-functioning (%)	Total (%)	Functioning (%)	Non-functioning (%)
Medical College Hospitals	2	2	0	15 (40.54)	8(21.62)	7 (18.92)
District Hospitals	12	12	0	19 (51.35)	3(8.11)	16(43.24)
Specialized Hospitals	5	5	0	3(8.11)	2 (5.40)	1(2.70)
Total	19	19	0	37(100.0)	13 (35.13)	24(64.86)

The table 11 shows that only 19 USG machines were procured under the OP and all of them were functional. But in case of Off-Budget procured USG machines, 35.13% was non-functioning (13 out of 37 machines).

Table 12: Functional status of CT Scan machine supplied

Hospitals' types	OP Budget (n=3)			Other Budget/Beyond This OP Period (n=8)		
	Functioning (%)	Non – functioning (%)	Total (%)	Functioning (%)	Non – functioning (%)	Total (%)
Medical College Hospitals	0	0	0	5	0	5
District Hospitals	2	0	2	2	0	2
Specialized Hospitals	2	0	2	1	0	1
Total	4	0	4	8	0	8

Table 12 states that from this OP budget only 4 CT scan machines have been procured in the study hospitals and all are functional. Off-OP budget CT machine number is 8, all are functional.



Blood bank in CMCH functioning well

3.6 D. ACHIEVEMENTS OF OP INDICATORS

I. Progresses of Safe Blood Transfusion

Table 13: Percentage of status of separate blood transfusion unit (n=22)

Type of Institutions	Yes (%)	No (%)	Total (%)
MCH	05 (22.73)	01(4.55)	6 (27.27)
DH	7 (31.18)	04 (18.18)	13 (59.09)
SH	03(13.64)	0 (0)	3(13.64)
Total	17 (77.27)	5 (22.73)	22 (100)

(MCH=Medical College Hospital, DH=District Hospital, SH= Specialized Hospital)

Table 13 reveals that out of 06 medical college hospitals 05 have Blood unit, but only 07 district hospitals (out of 13) have Blood unit.

Table 14: Blood transfusion Units having screening, storage and other equipment facilities

Type of Institutions Facilities	MCH (n=6)		DH(n=13)		SH(n=3)	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Screening (Hepatitis, HIV, VDRL, Malaria, HCV)	06(100)	0(0.0)	13(100)	0(0.0)	3 (100)	0(0.0)
Separating Blood Cells	06(100)	0(0.0)	13(100)	0(0.0)	3(100)	0(0.0)
Blood Bank Refrigerator	06(100)	0(0.0)	11(84.61)	02(15.39)	3(100)	0(0.0)
Plasma Thawer	4(66.66)	2(33.34)	0(0.0)	13 (100)	2 (66.66)	1(33.34)
Autoclave	6 (100)	0(0.0)	3(23.08)	10(76.92)	3 (100)	0(0.0)

The table 14 depicts that in all studied hospitals (100%) screening and separation of blood cells are done against 5 diseases. In MCH and SH, refrigerators are available in working condition in all of them, while in DH about 85% have the same.



Bandarban SH having outside 3 bins and different Colour bins for indoor use.

II. Findings in Waste Management:

Table 15: Percentage of use of different colored bins in different hospitals (n=22)

Color Types / Types of Hospital	4 bins	3 bins	2 Bins	1 bin	Total
MCH	2	3	1	0	6
DH	2	4	7	0	13
SH	3	0	0	0	3
Percentage	31.81	31.81	36.37	0	100%

The Table 15 shows that in about 65% hospitals 3-4 defined colored bins. The 3 SH (100% of SH) uses 4 bins waste collecting system.

Table 16: Scenario of final waste disposal in different hospitals (multiple responses)

Methods of Disposal	MCH (n=6)	DH (n=13)	SH (n=3)
Burn out	6	13	3
Throw in Dust Bin	6	13	3
Dumping in Pit	6	5	3
Filling Land	1	0	0
NGO / Pourashava / CC takes away	3	4	3

Multiple responses

The data reveals no hospitals have modern hospital waste disposal system.

3.7 Total Quality Management (TQM)

All the respondents agreed that they received limited training for TQM, but those could not be applied due to lack of supply of recourses, proper guideline, lack of initiatives from the government. In few hospitals digital display of medicines, digital signaling. Most of the places hand written medicine lists, guiding arrows, service lists, signs for various activities were found. TQM committee is not in place in most of the hospitals, only 4-5 hospital have committees. but they cannot work properly without the guide line from central office.

3.8 Findings of Shishu Bikash Kendra

In our study areas, there were 05 Shishu Bikash Kendra (Neorodevelopmental disorder including autism) which were functioning at the out-door facilities with 4-5 personnel, one physician, one psychologist, one development therapist, one receptionist and one MLSS. Daily average patients registered is 8-10, of which 50% are referred by doctors, different children wards and other private sources. Doctors and other staff of the unit visit children ward and gynaecology ward to create awareness among the mothers, so that they bring their children to check the fitness of the baby from day one. And it has a very positive response among the mothers. For psychological tests, it takes at least 2-3 hours. So, in a day

they can examine maximum 02 patients which is not in line with the demand of the patients. So, it is very urgent to increase the post of psychotherapist as well as other posts. Doctors working in that unit reported that they face shortage of medicine, specially for epileptic patients. The common drugs used in the management of these patients are expensive as well. For further improvement they suggested regular coordination meeting with the top management of the hospital, and if required, there should be co-ordination meetings amongst all the directors of the hospitals where the unit for the autistic patients are existing. Representatives from the parents should also be there to explain the problems they face day to day with the children. The doctors also mentioned that the working space allocated for them is also not adequate. They suggested regular training of the service providers to update their knowledge.

3.9 E. FINDINGS OF KII INTERVIEW:

Table 17: Percentage distribution of knowledge on HPNSDP

Knowledge on HPSNSDP	Number	Percentage (%)
Yes	10	23.80
No	32	76.20
Total	42	100

Results of the study indicate that the basic document that capitalizes the entire health, nutrition and population sector programs was not well known by the majority of the health service providers (76.20%).



Key Informant Interview with Civil Surgeon Madaripur District hospital.

Table 18: Support from the Hospital Service Management OP

Types of Support	Number* (n=10)
Logistic support Instruments for OT & various machineries	13
Logistic support to Blood Bank-	15
Machineries Supply	14
Training	16
MSR	15

- Multiple responses

In response to the question, only 10 could answer, and conceptual ideas and thoughts were limited. Among the responses, support in training was highest and supply in OT/Instrument was the lowest.

Table 19: Percentage distribution of responses in regard to problem in the hospitals

Problem in hospitals	No	Percentage (%)
Yes	36	85.71
No	6	14.29
Total	42	100

Table 20: Problems in the hospitals (n=36)

Types of Problem	No*
Acute Shortage of HR	36
Difficulties in maintenance of machine	32
Shortage of bed and space	34

*Multiple responses

Table 19 and 20 reveal that most of the managers of the hospitals (top management) have had problems in operating the hospitals, and they mentioned that acute shortage of HR is the pivot of all the problems.

Table 21: Percentage distribution of receiving equipment from CMSD

Problem in equipment receive	Number	Percentage (%)
Yes	14	33.33
No	28	66.66

Table 22: Responses about problem in receiving equipments from the CMSD

Types of Problem	No*
No standard Machine	14
Machineries not supply as per specifications	12
Shortage of X-ray, Ultra sonogram, ECG,	13
Repair X-ray, Ultra sonogram	14
Nebulizer need	11

* Multiple responses

Table 21 and 22 show that about one third of the top managers of the health service face problems in receiving machines from CMSD. The reasons of facing difficulties were that problems include lack of standard, not matched specification, repair of equipments etc.

Table 23: Percentage of hospitals having women friendly activities

Women Friendly	Number of hospitals	
	Yes	No
MCH	05	1
DH	13	0
SH	03	0
Total	21	1
Percentage (%)	95.45	4.55

About women friendly hospital almost all respondents said they practice the activities in their hospitals, but practically found that all characteristics of women friendly are not present. The reasons for non-establishing the women friendly hospitals are: absence of protocol, inadequate training, frequent change of manpower, less privacy for women and so on. There were few pilot project run by UNICEF, where clearly found signs, poster, advertisement and facilities. Absence of protocol, sitting arrangement congested, not enough privacy for breast feeding, frequent transfer of trained personnel, no separate wash room playing negative role for women friendly hospitals.

3.10 G. PERFORMANCE IN PROCUREMENT PROCESS

Ministry of Health and Family Welfare purchase medical equipments through following funds: (i) From OP under development budget; (ii) Budget from non-development Budget; (iii) Goods purchased and supplied by Development partners; and (iv) Fund Precede by Institution itself. It can be mentioned here that hospital being under non-development (revenue) budget can get machineries from development budget based on demand and national priority. At the same time as per national priority machineries bought from revenue budget could be transfer to development budget. Therefore, the equipments procurement under the development budget is not easy to distinguish in regard to source of fund. Data on procurement aspects gathers from the field (voucher) tracks the source of fund only by the memo number.

According to the assignment, the motive for this assessment was to check the procurement process whether the process complied the rules/regulations of the PPA-2006 and PPR-2008. The required information was gathered from the Central Medical Store Depot (CMSD), as this acts as the central authority of procurement for the goods in favor of the Director General of Health Services under the Ministry of Health and Family Welfare. Autopsy of one package of goods procurement process was considered for this in-depth study. IMED helped to collect the required documents by writing a request letter to the Ministry of Health and Family Welfare as well as CMSD.

The filing system of the procurement for the goods was well organized. Issues of each package/lot were recorded in a single file. The package number, name of the tender, procurement method, source of fund, financial year, estimated cost, etc. are recorded in the in the back cover of the first page. All the activities of the procurement process were also recorded with specific dates of accomplishment and also with page number.

Formation of TEC and TOC: There were 7 members in the Tender Evaluation Committee under the Chairmanship of ADG (Planning and Research). As per Rule7, scheduled-2, two outside members were from Department of Printing & Publications and Directorate of Land Records and Surveys. The committee was formed by the Ministry of Health and Family Welfare. Other members were Director, CMSD; DS (Repair and Maintenance), MOHFW; Director (CDC); Desk Officer-3, CMSD. The TOC was comprised of Director (CMSD), DD (CMSD) and Desk Officer-3.

Description of the Package # G-1150: Procurement of “Integrated Computerized ECG Monitoring System Stress ECG and Halter Monitoring System.

The procurement plan was prepared in the year **2011-12 under the Procurement Plan Version: 1** and Ministry of Health and Family Welfare gave permission to procure the items on 27 August, 2011. The Package name was CPV, Cardiosuit and ESMR with the estimated cost 2,060.00 lakh Taka.

Technical Sub-Committee (TSC): A Technical Committee for Specification of Goods was constituted comprising 5 actual members headed by ADG (Planning), DGHS and co-opted about 21 members for 9 different packages including this package. This committee was then shortened by another order specifically for this package by 9 members including DG, DGHS as Chair. All these committee formation was done by Director , CMSD.

The draft bid document prepared and sent to World Bank on 12 December 2011. On 29 December, 2011, the WB reviewed the IFB and DBD with some comments On 29 December, 2011 as follows:

Invitation for Bids (IFB)

1. Clause 6 (iii): the supplier is required to have experience of trading in ‘Incinerator product(s)’ which does not appear to be appropriate for this contract. Please check and correct it.

Bidding Data Sheet (BDS)

2. Clause 14.5: The incoterms condition should be revised to Incoterms 2010.
3. Clause 16.6 (b) (iii): Kindly review whether it would be more appropriate to use: CPT, Central Medical Stores Depot, Tejgaon, Dhaka (instead of CPT, port of discharge/ unloading) for this contract.

Post Qualification Requirement:

4. Paragraph Nr (b): The supplier is required to have experience in ‘Incinerator product(s)’ which does not appear to be appropriate for this contract. Please check and correct this.
5. Paragraph Nr (b) (iv)3: The SCC Clause references for warranty should be corrected to :28.3

Technical Specifications:

1. Item Sphygmo Cor CPV: Please check this with the Line Director if this item is required. From our discussions we understand that Sphygmo Cor CPV is not required and, therefore, be removed from this contract package.
2. Item 2, Cardio suite : This is a specific product of Nassif Associates of USA and the specifications exactly correspond to those found in Nasiff’s product data sheet for the Cardio suite Cardiology Workstation. Kindly reword the specifications to remove restrictive references and we have suggested the basis of a nonrestrictive specification in the attachment, which you can modify as required. Further refinement of the specifications could also be agreed after a pre-bid meeting.

3. Item 3: ESMR (Extra-corporal Shockwave Myocardial Revascularization): This is restrictive specification that refers to the system manufactured by Cardiospec and we are not aware of the manufacturers that offer this equipment. Please revise the specification, refer to the IDA's Guidelines, which states that standards and technical specifications quoted in bidding documents shall promote broadest possible competition and is necessary to quote a brand name, the words 'or equivalent' shall be added as such reference. Please also provide the justification of procurement of ESMR.

Accordingly, the revised draft document of the package was again sent to WB on 15/1/2012 for consideration. World Bank cleared the bidding document on January 19, 2012 with the following comments:

1. We recommend that you separate G # 1150 into 2 packages as there are considerable differences in the technical nature of the 2 equipments-ECG and ESMR. As the estimated of 9 units of ECG divided (ECG monitoring, Stress and Holter Monitoring System) is less than US\$ 600000. It will be post-review package. Please ensure that a new package number is given for the ECG machine. This packages is correctly reflected as a post review in CMSD, s procurement.
2. Requirements for the treadmill which now reads (use capacity of 500 lbs or less) should be user capacity 500lb or more. Please correct this.
3. With these changes CMSD may initiate the procurement of units of ECG devices.
4. We are sending a separate communication to the Line Director of HSM regarding the for an ESMR system. Please do not initiate the procurement process for ESMR system at this.

The tender was advertised in the Daily Jugantor on 27 January, 2012 and in the New Age on 24 January 2012. The BD price was 2000/-. Last date of Bids submission was 12/03/2012 at 11:00 am. The tender was published in the CPTU website on 25 January 2012.

The pre-bid meeting was held on 14.02.2012 at 11:30 pm in presence of 8 potential bidders, under the Chairmanship of Director (Store and Supply) along with 3 members. Out of 4 members in the pre-bid meeting, only 2 were present. The record notes of the conference were sent on 16 February, 2012 to the representatives of the 8 bidders. At this stage, again a **Technical specification committee** was formulated headed by Director (Hospital), DGHS including 4 other members and 4 co-opted members. Then, the specification committee had a meeting on 23/2/2012 when only 1 member was present and on 29/2/2012 when 4 members were present. This technical committee changed the title of the procurement in line with the

Contract Package No.	Contract Description	Units	Qty/ No	Estimated Price (BDT)	Procurement Method	Procurement Guideline	Prior review
G-1150	ECG Machines	Nos	24	2060.00	ICB	PPA/BG	Yes

suggestions of the WB. As per decision of the specification committee, and bidder observation, the revised bidding document was sent to WB on 5 March, 2012. On 12.3.2012 WB gave concurrence with the suggestion for relaxing ITB clause 14.6 (B) (1) and (c) (iii)

Tenderer Informed	NOA Issued	Date of Signing contract	Lowest Bidder	Country of Origin	Date of LC Opening	CMSD Received	Date of delivery
22/6/12	25 June 2012	26 June 2012	Lab tech Ltd	Hungry	30/9/12	27/6/13	27/6/13

on a case by case basis.

The corrigendum was issues in the Daily Jugantor on 10/3/2012 and New Age on 9/3/2012. CMSD requested to DG market and CPTU for publishing in their website.

A technical evaluation sub-committee was formulated by 6 members on 8/5/2012. Meeting of TSC was held on 9/5/2012, 3/6/2012 and 5 to 6 members were present. Individual declaration was given by members. The sub-committee included a cardiologist.

The Findings of the Package: The procurement plan of this package was an admixture with other OPs procurement, which might be separated. Finalization of procurement plan at the beginning of the month August was a good attempt. The package was technically not appropriate as there were considerable differences in the technical nature of the 2 equipments-ECG and ESMR. There are two standing TEC committees for all procurement under CMSD constituted by MOHFW, depending on financial ceiling. The technical sub-committee was formulated 3 times. No official estimate was done for this package. The supplied equipments correspond with the received at the field level.

3.11 Bottlenecks and potential challenges and threats

The study findings have provided lot of windows of opportunities to think about the bottlenecks and the potential threats including the opportunities of the implementation of this OP. Each and every arena of the OP (procurement, out door services, HR position, patient satisfaction levels, equipments, logistics, infra-structure, blood bank, mother friendly environment, basic facilities for the patients in the hospital, shishu bikash kendra etc.) has provided us some lights on the potential opportunities and challenges of smooth implementation of the activities of the OP including the bottlenecks. Some of the key issues in regard to smooth functioning of the OP are listed below:

1. Waiting time for the OPD patients are too long, and thus evokes a negative impression about health services management.
2. As there is no separate room or waiting facilities for the female patients in the OPD, privacy for the female patients was in question. There was a heavy demand of separate space / room for the female and children patients in the hospital.
3. There was dearth of medicine supply in the hospital both for the OPD and the in-patients of the hospitals. As a result, many of the patients had to come (many times) to the hospital to get medicine. Cure rate was also poor and thus, deserves special attention to find out the causations.
4. There was lack of confidence of the patients on the hospital machineries, lack of appropriate human resources in the pathology and other departments, and long waiting time. Expenditure related to the investigations were also perceived to be high.
5. In most of the hospitals, there was shortage or absent of common equipments like X-ray machine, Ultrasonogram, and CT Scan. There was even shortage of blood separators and other equipments that are commonly used in the blood bank.
6. Procurement process and the modalities of receiving the machineries from the CMSD was also found not satisfactory by many of the key informants. The process of procurement should involve a step where there is scope to discuss between the demand and supplier side.
7. Most of the hospitals were neither baby friendly nor women friendly in actual terms. In few hospitals, there was a sign board of baby friendly hospital, but in reality, it was

not, and thus the essence of converting the hospitals in to baby and women friendly still remains a theoretical concept.

8. Fund disbursement and expected utilization is still a challenge, and thus, should be considered seriously to expedite and simplify the process of allocation and expenditure of the fund against the OP.
9. Autism and other NDD are newly emerging health problems in Bangladesh. There are national and international committees and commitments to tackle the problems of autism and other NDDs, but in reality, very few meaningful steps have so far been taken. There is a small corner / unit of autism in few hospitals, but functioning very poorly.
10. Waste management is still a big challenge and none of the hospitals visited were found to have a sound mechanism of safe and scientific disposal of the hospital waste (chemical, solid and sharp).
11. Utilization of the hospital facilities at all levels are increasing in a significant fashion, and thus the accommodation facilities including supplies (medicine, equipments, HR etc.) have become a potential challenge.

CHAPTER 4: DISCUSSION

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4.1 Outdoor Services Recipients

IMED is the highest government authority responsible for monitoring and evaluation of the government projects and programs implemented by various ministries or offices under the ministries. The Operational Plan - OP (Hospital Services Management - Revised) under the present study is one of the OPs under the MOH&FW. Top level monitoring and evaluation of the implementation status is the responsibility of the IMED. There are some specific roles of planning wing / unit of each ministry in between the roles of implementers and IMED. Most of the times, individual ministry also undertake their own monitoring of the projects. But, finally, government rely on the monitoring report of the IMED on each and every OP / project of any ministry.

To undertake the activities of the study, a team was formed having data collectors and supervisors including computer operators. Training was provided to them on the methodology of data collection. Few questionnaires were also developed and they are:

- a. Exit interview
- b. Equipments of the hospitals: x-ray, ultra sonogram, CT scan.
- c. Key Informants interview
- d. Achievements on the key performance indicators: safe blood transfusion and medical waste management.

Questionnaires were developed with the monitoring team including suggestions and comments came from the technical committee. All of the questionnaires were pre-tested before finalizing them. All the data collectors were trained on the questionnaires.

The data of the study were collected and compiled before cleaning of the data. SPSS program was used to analyze the findings. Results are presented in the tables, and expressed in graphs and charts. Financial analysis of the results is mostly provided in the annexure of the report.

The study findings are expressed in terms of percentage, pie chart, graphs and other methods of expressing the findings / data. A total 704 (660 patients, and hospital service providers + 44 key informants) were the respondents. Out of 660 individuals, 45.15% stated that this was their first visit to the hospital. This simple question revealed that still majority of the people do not visit any hospital for illness, which are probably minor in nature or most of the people visit more than one time for any health problem.

It has been revealed that about 45.15% of the patients visited the hospital before and among them again, about 20.30 % visited for 02 times for the same health problem. About 20.03% patients visited the hospital for more than 02 times for the same illness. The findings have some practical implications and suggests that there must be some causes for visiting the hospital by the patients with the same cause for more than 02 times. The problems may be hidden with the medicine supply, with follow up, with degree of satisfaction, with health services quality, investigation etc.

In regard to more than one visit, it revealed that 44% opined that they visited the hospital as they did not cure by the previous medication. 16.2% replied that they were not completely cured. This indicates that the hospitals need improvement not only in terms of its infrastructure but also in its service delivery. However, amongst various causes, majority of the respondents stated that they visited the hospital to get medicine.

The respondents here were asked whether they came to the hospital having advice from other or their own self, about 81% said they came of their own. This clearly indicates that referral system not functioning as yet. Impact of non-referral system has adverse effect on secondary and tertiary level hospitals. Every day more than thousands out-patient come to the hospital to receive medical services. So most of the time it has become impossible to handle all the patients properly.

The results revealed that the waiting time to see doctor is really high and about 30% of the patients had to wait for the doctor for about 02 hours, and 20% wait for about 3-4 hours at tertiary level. The findings are important for the higher management authority as this is a good food for thought for them to solve the problems of waiting time.

The respondents stated that only 7% received medicines in full, and rest of the patients received partly (41%), very few (25%) and not at all 27%. The poor patients visited the hospital to get adequate medicine for quick recovery, but the picture provides a gloomy scenario. These aspects of service delivery should be improved immediately to get social support and confidence of the patients.

The respondents were asked about where they do their investigations. The results show that only 62% of the patients do investigations in the hospitals. In most of the hospitals, lack of expert human resource, trained technician and shortage of machineries were mainly responsible for not being use of the investigation facilities of the government hospitals.

The results reveals that shortage of technologists, long waiting time, machines are not up to the mark and high cost for investigations were the main reasons for doing the investigations outside of the hospitals. Lack of expert technologists is highest in this case about 30.40%, while 20.80 in case of cost more than perceived from the patients point of view. Most of the reasons can easily be managed by the top management and the quality of services can be improved within a short span of time.

4.2 Financial Progress

The cumulative expenditure of the OP from July 2011 to April 2015 is about 107392.38 lakh taka, which is about 54.72% of the total OP estimated cost. It is evident that the remaining unallocated amount of the estimated OP cost is about 88839.22 lakh taka for the remaining period of about 1 year and 3 months. The trends of allocation and expenditure indicate that it would not be possible to allocate this remaining amount in the ensuing FY. Hence there would be necessary to trade-off the action plan for the FY 2015-16.

4.3 Situation of use of the Supplied Equipments

4.3.1 X-Ray Machines

Although the number of x- ray machines under the OP budget in hospitals under this study were 25, but only 22 of them (88.00%) were found functioning. But in case of Off OP budget/ X-ray machines supplies before July 20011, about 44.21% was non –functional i.e. out of available 95 machines 42 were non-functional. The table regarding to the HR situation is gloomy. It appears from the findings that all the hospitals have kept their X-ray department

functioning by hiring personnel from other departments, and most of them are non-technologists. In the past, in most of the upgraded hospitals in all levels X-ray department had few sanctioned posts. But now-a-days Radiology and Imaging Department have extended their services in various dimensions like ultrasonogram, CT scan, mammography and MRI. But new posts of technologists and subject specialist not created as yet. These shortages of HR immensely affecting health service delivery.

Many of the X-ray machines were found not functioning, and the most sufferers were the medical college hospitals. The reasons of non-functioning were mentioned and the reasons vary from hospitals to hospitals and locations to locations.

4.3.2 Ultra sonogram Machine

The results revealed a strange situation that is prevailing in the hospitals pertaining to dept. of ultra sonography. It reveals that no position of technologists has yet been created, and HR from other dept. through local arrangement to support the functions. This should be considered critically and posts should be created with sufficient manpower to improve the health service delivery of the hospitals.

Under the OP budget, out of 14 USG machines, all are functional. . But in case of Off-Budget procured USG machines, 35.13% was non-functioning (13 out of 37 machines).

4.3.3 CT scan machine

Results reveal that most of the hospitals do not have CT scan machine. Out of supplied 03 CT scan machines, all are functional. With the modernization of technology, and increase in the needs, government should be more inclined in procuring machines and other modern facilities to further improve the service delivery system. Although all the CT Scans were found functioning, there was no manpower has been allocated against the machines / dept.

4.4 Key Informant Interview

Most of the respondents (72.27%) did not have proper idea about what is HPNSDP, and thus answered aimlessly. Results of the study also indicate that the basic document that capitalizes the entire health, nutrition and population sector programs (HPNSDP) was not well known by the health service providers. This has happened due to non-exposure of the higher level personnel with this document and the policy issues relating to health and population. In

response to the question, only few could answer, and conceptual ideas and thoughts were limited. However, all the key informants, particularly those in charge of management of the hospitals should be trained on HPNSDP and other health projects.

It has been revealed that most of the managers of the hospitals (top management) have had problems (81.81%) in operating the hospitals, and they mentioned that acute shortage of HR is the pivot of all the problems. Heavy rush / demand of bed was also there, and thus need to increase the number of beds and overall space was also necessary.

It has been found that about one third of the top managers of the health service face problems in receiving machines from CMSD. The reasons of facing difficulties were also mentioned. It was found that no standard machines or lack of repair /maintenance were major problems.

4.5 Achievements of the targets of the Indicators

4.5.1 Safe Blood Transfusion

Results reveal that in many hospitals i.e. about 77.27% have Blood unit. The situation of the districts hospitals is not satisfactory. Only 07 hospitals have blood units out of 13 district hospitals amongst the study hospitals. After in depth monitoring and supervision it was found that most hospitals do not have Blood Bank. In one district hospital it was noticed only few tables and chairs with deep dust on it, Blood Unit was not noticed. Blood screening facilities are fully available in studied hospitals. The study finds that very essential machineries like plasma thawer, blood separator, cell counter, blood bag rotator, Freezer are very few. It shows that safe blood transfusion target so far established in 214 hospitals all over the country by mid- 2014, in fact excepting the screening other facilities need to be established.

4.5.2 Hospital Waste Management

In about 65% hospitals 3-4 defined colored bins. The 3 SH (100% of SH) uses 4 bins waste collecting system. Each single hospital usage multiple conventional methods. The highest method is the burn out and Throw in Dust Bin, while filling land is the lowest method within all studied hospitals. Although few hospitals collect the waste in different bins, but outside the put it in one bins and City Corporation take the wastes for final disposal. Health hazards remain the same, all toxic and sharp instruments mixed together and various infections spreading around. The old methods like, burning, filling the land, keeping underground still

exists. There are no transports of themselves to carry the waste in an appropriate place. The indicator “Number of Hospitals -DH & above introduced standard in-house medical waste management” is yet to be achieved. It was found that full-fledged waste management established in 10-MCH, 8-SH and 12 DH till mid-2014 as per ROP, but findings does not clearly match with the achievements.

CHAPTER 5: CONCLUSION & RECOMENDATIONS

CHAPTER 5: CONCLUSION & RECOMENDATIONS

5.1 CONCLUSION

The tenure of the study was for 05 months only. The time allocated for the study, in terms of the TOR was not sufficient and thus, study population sample was reduced to 704 from about 780. However, as a result of reducing the numbers of respondents, the quality of the study was not compromised and the results obtained as expected and anticipated.

The study findings are expressed in terms of percentage. Total number of exit interview respondents were 704. It has been revealed that about 20% of the patients visited the hospital before with the same problem. It was found that 18 % opined that they visited the hospital to get medicine and 44% replied that they were not cured. This indicates that the hospitals need improvement not only in terms of its infra-structure but also in its service delivery. As 81% respondents visited the hospitals by their own choice, it clearly indicates that referral system not functioning as yet. Impact of non referral having adverse effect on secondary and tertiary level hospitals. The results revealed that the waiting time to see doctor is really high and about 30% of the patients had to wait for the doctor for about 02 hours.

The results reveals that to get the hospital services, doctors are the service providers who help the patients most to get the hospital services. The hospital management give thought to establish a information desk in every hospital which really becomes meaningful and serve the purposes of the patients. The respondents stated that only 7% received medicines in full. The respondent were asked about where do they do their investigations. The results show that only 62% of the patient do investigations in the hospitals. In most of the hospitals, lack of expert human resource, trained technician and shortage of machineries were mainly responsible for not being use of the investigation facilities of the government hospitals.

Shortage of technologists, long waiting time, machines are not up to the mark and high cost for investigations were the main reasons for doing the investigations outside of the hospitals. Most of the reasons can easily be managed by the top management and the quality of services can be improved within a short span of time.

Out of 59 X ray machines, only 25 were found functioning which indicates that only about 40% were functioning. Almost a similar picture was prevailing in the district hospitals. However, the situation in the specialized hospitals was much better.

Results show that the HR situation is gloomy. It appears from the findings that all the hospitals have kept their X-ray department functioning by managing personnel from other departments, and most of them are non technologists.

The most striking finding was that there was a specialized hospital where there was no ultra sonogram machine. It has been found that more than 50% of the machines of the medical college hospitals were not functioning. The results also revealed a strange situation that is prevailing in the hospitals pertaining to dept. of ultra sonography. It revealed that no position of technologist has yet been created, and HR from other dept. were locally managed to support the functions. This should be considered critically and posts should be created with sufficient manpower to improve the health service delivery of the hospitals.

Results also revealed that most of the hospitals do not have CT scan machine. With the modernization of technology, and increase in the needs, government should be more inclined in procuring machines and other modern facilities to further improve the service delivery system. None of the hospitals had any manpower for this position, and HR arranged locally from other departments were functioning in some of the hospitals. Results of the study reveal that only few hospitals have MRI machines.

Results of the study also indicate that the basic document that capitalizes the entire health, nutrition and population sector programs was not well known by the health service providers. This has happened due to non exposure of the higher level personnel with this document and the policy issues relating to health and population. The results of the study also indicates that most of the respondents did not have proper idea about what is HPNSDP, and thus answered aimlessly. It has been revealed that most of the managers of the hospitals (top management) have had problems in operating the hospitals, and they mentioned that acute shortage of HR is the pivot of all the problems. Heavy rush / demand of bed was also there, and thus need to increase the number of beds and overall space was also necessary.

It has been found that about one third of the top managers of the health service face problems in receiving machines from CMSD. The reasons of facing difficulties were also mentioned. The results shows that there are already identified problems, and the problems are of minor in

nature. These problems should be addressed and quality of health service delivery should be improved.

Results revealed that most of the hospitals do not have complete Blood Bank. Only two hospital have modern Blood Bank with all facilities. Blood screening facilities were also not fully available in many hospitals.

From the survey it is found that the practice of modern hospital management is partly done. Very few hospital have prescribed color 4 bins and methods of deposing. Although few hospitals collect the waste in different bins, and city corporation take the wastes for final disposal. The old methods like, burning, filling the land, keeping underground is still existing.

The concept of women friendly hospital was there among the top management, but in reality, the activities were not there. There were few pilot project run by UNICEF, where clearly found signs, poster, advertisement and facilities.

TQM could not be applied due to lack of supply of recourses, proper guideline, lack of initiatives from the government. TQM committee is not in place in most of the hospitals.

5.2 RECOMMENDATIONS

Short term:

1. Waiting time in the hospital OPD may be reduced by timely attendance of the service Providers;
2. Segregation of the patients' category (simple, complicated, emergency), avoiding Medical Representative's visits at peak hour, vitalizing help desks should be activated.
3. The vacant posts of the medical technologists should be filled-up with appropriate manpower as a priority for proper utilization of the supplied equipments / laboratory and to reduce tests outside the hospitals;
4. Both financial and physical progresses must be expedited as per planned activities in the approved Revised Operational Plan by monitoring and controlling the Annual Work Plan and Annual Procurement Plan. The Critical Path Method may be followed;
5. Health personnel (particularly top and mid level managers) may be aware about

HPNSDP including different activities under the OPs through national/divisional level workshops or by other means so that they may participate to fulfill the need of their hospitals.

6. Designated / relocate female waiting room, separate female toilet and having a breast feeding corner with complete privacy.
7. Segregation of waste at the point of generation as per Government approved color code should be in place with activation of the waste management committee at different administrative levels.
8. Bridging the gap between Ministry of Local Government, Ministry of Environment and Forest and Ministry of Health and Family Well Fair;
9. Building capacity of the health workforce will maximize opportunities in early detection, management and intervention;
10. A thorough investigation should be conducted to reduce the system and time loss of both the suppliers (CMSD) and the recipients (Hospital authority) of the machineries and equipments, and also to avoid procurement of the unwanted machineries; and

Mid-term

1. The referral system must be functional and strengthened. Impact of non-referral system has adverse effect on secondary and tertiary level hospitals, which create load on the service providers, and thus, maintenance of quality of services becomes difficult;
2. Supply of medicine may be rational on the actual need of the hospitals as well as prevalence of diseases, and inter-district / inter-hospital adjustment may be established to ensure equity at the field level;
3. Blood transfusion units may be strengthened by introducing mechanism for separating blood components in all specialized and medical college hospital, s. Other modern aspects of use of blood should be ensured.;
4. Doctors, nurses and other health personnel should be posted in a rationale way so that the utilization of the health manpower becomes effective and productive;
5. All the hospitals should be sufficient space and appropriate rooms to install the new machines including the radioactive machineries;
6. Scaling up of essential ASD and other neurodevelopmental disabilities screening diagnostic and intervention facilities throughout the country.
7. CMSD should develop online data-base system; and
8. Decentralization of procurement process of CMSD should be in place.

Long-term:

1. Non-functioning equipments may be identified through a country-wide survey. Repair / maintenance as well as calibration may be done for the useable equipments through outsourcing;
2. In long-term, posts of Biomedical Engineer may be created and recruited at the divisional level, and if required at the district levels based on the necessity of the human resources;
3. Dedicated manpower to be assigned for medical waste management at the hospitals and the segregation of medical waste must be ensured at all levels both within hospitals and outside the hospitals till final disposal. Modern strategy of waste management should be in place at all levels.
4. TQM activities should be emphasized and proper training of the managers of the health service should be ensured.
5. Need-based and time based issues of equipments and other services must be ensured in procurement processes;
6. Operational research should be conducted regularly and findings must be shared to the related stakeholders to ensure knowledge based management and clinical practice at the hospitals;
7. More awareness should be created for skills development and job opportunities, family support with appropriate social norms and proper schooling of the ASD children should be there. There is an urgent need to develop and execute appropriate strategies, with high level of political commitment and necessary funding to facilitate service provision for persons with Autism and other neurodevelopmental disabilities part of the integrated development and health agenda of Bangladesh; and
8. Separate independent study regarding procurement of logistic, specially highlighting the specification price of the individual items.

5.3 Annexure-A

(In Lakh Taka)

SL. NO.	Component as per OP/DPP (Activity-wise, not economic codewise)	Provision as per ROP / PP			Cumulative Achievement up to last June			Target of the Current FY 2014-15			Progress up to the Month April-2015 of the current FY2014-15						
		Physical	Financial		Physical	Financial		Physical	Financial		Physical	Financial					
			Total	GOB		PA (DPA)	Total		GOB	PA (DPA)		Total	GOB	PA (DPA)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Continuation of Public Sector Hospital Services		160,079.09	79,641.32	80,437.77	-	95,779.49	24,125.26	71,654.23	-	12,269.52	7,475.30	4,794.22	-	5,113.32	3-,368.59	1,744.73
2	Introduction of Medical Waste Management at Public & Private Hospital		1,409.50	508.69	900.81	-	651.68	160.07	491.61 (14.09)	-	175.00	100.00	75.00	-	44.87	34.51	10.36
3	Scale up of Structured Referral System		205.65	16.69	188.96	-	143.72	11.86	131.86	-	-	-	-	-	-	-	-
4	Development & Introduction of Hospital and Laboratory Accreditation		150.60	26.00	124.60	-	84.45	4.83	79.62	-	-	-	-	-	-	-	-
5	Total Quality Management (TQM)		750.46	296.11	454.35 (105.00)	-	152.21	27.10	125.11 (50.85)	-	250.00	-	250.00 (150.00)	-	61.74	-	61.74 (61.74)
6	Safe Blood Transfusion		1,230.86	632.20	598.66	-	255.66	77.26	178.40	-	81.00	15.00	66.00	-	11.01	0.41	10.60
7	Quality Assurance Program		537.24	197.74	339.50	-	326.21	87.89	238.32	-	45.00	20.00	25.00	-	-	-	-
8	Strengthening of the Hospitals Service through Decentralization/ Autonomy		74.74	63.74	11.00	-	5.36	5.36	-	-	-	-	-	-	-	-	-
9	Capacity Development of Line Director-Hospital Services Management		435.82	305.74	130.08	-	246.60	153.28	93.32	-	95.00	95.00	-	43.74	43.74	-	-
10	Hospital Based Emergency Obstetrics Care (EOC) Services & Gender Sensitivity		1,508.52	60.00	1,448.52 (1,328.72)	-	82.34	-	82.34 (42.54)	-	160.00	-	160.00 (100.00)	-	-	-	-
11	Women and Baby Friendly Hospital Initiative		1978.44	68.00	1910.44 (1877.44)	-	952.70	-	952.70 (939.70)	-	350.00	-	350.00 (350.00)	-	63.38	-	63.38 (63.38)
12	Improved Poisoning Management at Secondary and Tertiary Hospitals		183.44	-	183.44	-	130.04	-	130.04	-	41.00	-	41.00	-	-	-	-
13	Reconstructive Surgery of Cleft Plate/ Lip, Post-bum Contracture and Artificial Limb		305.00	305.00	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Further Strengthening of Post Mortem Services at MCH and District Hospitals		282.94	61.12	221.82	-	76.72	-	76.72	-	-	-	-	-	-	-	-
15	Strengthening of NITOR Sher-E-Bangla Nagar, Dhaka		356.87	356.87	-	-	834.33	419.35	414.98	-	95.00	-	95.00	-	95.00	-	95.00
16	Revitalization of the National Electro-Medical Equipment Workshop (NEMEWS), Mohakhali, Dhaka.		149.15	89.40	59.75	-	29.10	9.36	19.74	-	-	-	-	-	-	-	-
17	Revitalization of Transport, Equipment Maintenance Organization (TEMO)		1420.75	854.90	565.85	-	500.71	39.90	460.81	-	120.00	70.00	50.00	-	79.98	29.99	49.99
18	Establishment of Shishu Bikash Kendro at Secondary and Tertiary Level Hospital		1486.37	1220.09	266.28	-	596.57	474.74	121.83	-	260.00	220.00	40.00	-	131.35	131.35	-
19	Establishment of Central Medical Gas Pipe Line, Oxygen Plant at Secondary and Tertiary Level Hospitals		60.00	60.00	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Establishment of Evidence Based Practice (EBP)		148.77	22.12	126.65	-	116.76	0.12	116.64	-	2.20	2.20	-	-	2.20	2.20	-
21	Further Strengthening of Hospital Emergency & Casualty Department/ Services		311.82	17.00	294.82	-	94.81	-	94.81	-	40.00	-	40.00	-	-	-	-
22	Management Development Program for the Hospital Services Providers		151.00	25.00	126.00	-	62.63	-	62.63	-	-	-	-	-	-	-	-
23	Development & Implication of Clinical Management Protocol		75.39	48.34	27.05	-	7.39	0.4	7.05	-	2.50	2.50	-	-	2.50	2.50	-
24	Strengthening of the Regulatory Framework for Public and Private Medical Services		69.74	22.00	47.74	-	54.73	19.93	34.80	-	-	-	-	-	-	-	-
25	Strengthening of Clinical Services Delivery through Infection Prevention at Secondary and Tertiary Level Hospital		1014.57	64.00	950.57 (550.00)	-	206.85	26.33	180.52	-	40.00	-	40.00	-	-	-	-
26	Walk for Life		1522.50	-	1522.00 (1522.00)	-	-	-	-	-	50.00	-	50.00 (50.00)	-	-	-	-
27	WHO BAN Program		10,316.34	-	10,316.34 (10,316.34)	-	39.34	-	39.34 (39.34)	-	50.00	-	50.00 (50.00)	-	313.29 (313.29)	-	313.29 (313.29)
	Total		186,215.57	84,962.07	101,253.50 (15,700.00)	-	101,430.,40 54%	25,642.98	75,787.42 (1,086.52)	-	14,126.22	8,000.00	6,126.22 (700.00)	-	5,962.38	3,613.29	2,349.09 (438.41)

ADP % 42% 45% 38%
Release % 63% 60% 69%

5.4 Annexure-B

Photographs of part of data collection of some hospitals



5.5 Annexure -C

List of Key Informants

Sl.No.	Name of the interviewee	Name of the MCH/DH/SH	Designation	Phone Number
01	Md Fazlul Bari Lt	Gaibanda DH	Lt: X-ray department	
02	Dr Shekh Mohammad Arbab Hossain	Gaibanda DH	Superintended	01715-107056
03	Dr. Mostafizur Rahman	Bagura Mohammad ali DH	RMO	01714-380620
04	Dr. Mazraahul Islam	Naogaon DH	Civil sergeant	01711-578378
05	Dr. Anjuman Ara	Naogaon DH	Superintend	01711-802338
06	Prof. Mobarak Ali	NCIHD	Professor	
07	Prof. Rushidul Hasan	NIKDU	Director	01711-561498
08	Prof. Md, Delwar Hossain	NIKDU	Professor	
09	Dr Farhana Islam	NIKDU	Professor	
10	Dr. Sunil Das	NITOR	Deputy Director	01717-289373
11	Prof. Dr. Md. Shahidul Islam	NITOR	Radiologist	
12	Dr. Zane Alam	NITOR	Deputy Director (EX)	01712-018616
13	Dr. Al Amin masud	Kurigrame DH	MO	
14	Dr. Md. Nazrul Islam	Kurigrame DH	RMO	
15	Dr. Aktaruzzaman	Kurigrame DH	Superintend	01712-003558
16	Dr. Nirmalandu Choudhury	Gaibanda DH	Civil Sergeant	01713-790533
17	Dr. Md. Al Mamun Hossain	Gaibanda DH	RMO	01712529811
18	Dr. Md. Kamrul Hasan	Shere-e Bangla MCH	Director	01711-15397

19	Dr. Syeed Maksudul Hasan	Shere-e Bangla MCH	Assistant Professor	01552-419859
20	Dr. Abdul Azam	NICVD	Director	01713-013064
21	Dr. Md. Shafiqul Islam	Madaripur DH	RMO	01715-133852
22	Dr. Dilip Kumar Das	Madaripur DH	Civil Sergeant	01712-865853
23	Dr. Nilkantha pal	Sylhet MCH	Radiology	01715-003032
24	Dr. Md. Abdus Salam	Sylhet MCH	Deputy Director	01715-236060
25	Dr. Md. Ferdous Hasan	250 beded General hospital Jamalpur	RMO	01711-185621
26	Dr. Md. Abdullah Al Amin	250 beded General hospital Jamalpur	Assistant Director	01712-095085
27	Dr. M.M Masud Alam	250 beded General hospital Jamalpur	Junnior Consultant	01712-062508
28	Dr. Farid Islam	250 beded General hospital Jamalpur	Assistant Director	01711-052912
29	Dr. H.M Ramirul Islam	Jhalukhathi DH	Medical Officer Radiology	01711-311282
30	Dr. Manash Krishna Kunta	250 baded Jhalukhathi DH	RMO	01914-466958
31	Dr. Helal uddin Bhuya	250 baded Manikgong dH	M.O. Radiology	01715-992273
32	Md. Aktaruzzaman	250 baded Manikgong DH	Superintendent	01771-579101
33	Dr. Saleh Ahmed Alamgir	250 baded Sunamgong DH	Junior Consultant Radiology	01718-077765
34	Dr. Barkatullah	Rajshahi MCH	Deputy Director	0721-77318
35	Prof. Dr. musaddek	Rajshahi MCH	Head, Transmissi on Medicine	01712-142378
36	Md. A. K. Ajad	Barisal DH	Superintended	01711-950345

37	Dr. Auny sui Prue Marma	Bhandorbon DH	RMO	0361-02544
38	Dr. Anup Dewan	Bhandar ban DH	Civil Sergeant	01819-883494
39	Dr. Md. Farhad Ali Razu	CMCH	MO	01711-726044
40	Dr. Jamal Mostafa Chawdhory	CMCH	Store Keeper	01819-326303
41	Md. Mohiuddin Khan	Lakhipur DH	Store Keeper	01712-562651
42	Dr. Anowar Hosain	Lakhipur DH	RMO	01712-739378
43	Dr. Saidur Rahman	DGHS	AD (Hospital)	01817567303
44	Dr Arzuman Sultana	Shishu Bikash Krndra	MO	01715816612

Annexure-D

Questionnaire/ Checklist