Costing
Essential Services Package
An Issue Paper

Abul Barkat
Muhd Azizul Karim
Sayeedul Haque Khan
Nazme Sabina

Prepared for presentation at the Workshop on Costing Essential Services Package

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[1>] ***Professor, Department of Economics, University of Dhaka, Dhaka, Bangladesh and Chief Advisor (Hon.), Human Development Research Centre (HDRC), Dhaka.***

[2>] ***Senior Consultant, Human Development Research Centre (HDRC), Dhaka.***

[3>] ***Professor, Department of Marketing, University of Dhaka, Dhaka, Bangladesh and Consultant, Human Development Research Centre (HDRC), Dhaka.***

[4>] ***Lecturer, Economics, School of Social Science, Humanities and Language, Bangladesh Open University, and Consultant, Human Development Research Centre (HDRC), Dhaka.***

Abbreviations

AC	Adolescent Care
AIDS	Acquired Immune-Deficiency Syndrome
ANC	Ante-natal Care
BCC	Behavioral Change Communication
CD	Complicated Delivery
CDC	Communicable Disease Control
CHC	Child Health Care
CYP	Couple Year of Protection
DALY	Disease-adjusted Life Year
DPA	Direct Project Aid
EPHS	Essential Package of Health Services
ESP	Essential Services Package
FP	Family Planning
GoB	Government of Bangladesh
HDRC	Human Development Research Centre
HEU	Health Economics Unit
HIV	Humane Immune-Deficiency Virus
HLS	Hospital Level Services
HPSP	Health and Population Sector Program
HPSS	Health and Population Sector Strategy
ICPD	International Conference on Population and Development
If	Infertility
ISS	Integrated Support Services
LCC	Limited Curative Care
MHC	Maternal Health Care
MN	Maternal Nutrition
MOHFW	Ministry of Health and Family Welfare
ND	Normal Delivery
NIPHP	National Integrated Population and Health Project
NNC	Neo-natal Care
OD	Prolonged / Obstructed Labor
OHNS	Other Health and Nutrition Services
OPHS	Other Public Health Services
PDEU	Population Development and Evaluation Unit
PIP	Program Implementation Plan
PNC	Post-natal Care
PP	Project Proforma
PPC	Project Preparation Cell

PPH	Postpartum Hemorrhage
PRNP	Policy-Regulation-NGO-Private Sector
PRU	Policy Research Unit
RG	Review Group
RHC	Reproductive Health Care
RIBEC	Reforms in Budgeting and Expenditure Control
RPA	Reimbursable Project Aid
RSD	Reorganization of Service Delivery
RTI	Reproductive Track Infection
SBP	Safe birth practices
SM	Safe Mother-hood
STD	Sexually Transmitted Disease
SWM	Sector Wide Management
TA	Technical Assistance
TEESP	Total Expenditure for Essential Services Package
TF	Task Force
THC	Thana Health Complex
UA	Unsafe Abortion
UHFWC	Union Health & Family Welfare Centre
WDR	World Development Report

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1. Background

The International Conference on Population and Development (ICPD'94, Cairo Conference) has generated a new life-cycle based Reproductive Health (RH) concept, and broadened the base of health *per se* from family planning to clients' unmet need oriented reproductive health. The strengths of the newly developed RH concept lies in the fact that it has added many more components into the population program beyond the traditional FP-MCH components. Among the newly developed components, important ones are RTI/STD, HIV, AIDS, adolescents health, women's empowerment (with equality and equity), and violence against women. In addition, the unmet need for categories, such as adolescent, men, and displaced persons (including slum dwellers, refugees) were especially emphasized. Integration of all these into the newly designed program constitutes a major challenge to the policy makers and program implementators. The challenge of instituting a cost-effective public health system which will ensure higher gains in DALY (Disability-adjusted Life Year) has been proposed as an effective and socially acceptable approach to poverty reduction by the World Development Report 1993. WDR'93 has shown that public health and essential clinical services are highly cost effective – often costing substantially less than $ 50 per DALY gained. The content of the report influenced the national governments to think about necessary reform and restructuring of the national health sectors. As a result, the policy makers, in order to design the national program in accordance with the need of the time are confronting with the issues, such as costing Cairo or, in other words, costing of Essential Services Package (ESP) of the Health and Population Sector Program (HPSP, 1998-2003) in Bangladesh.

Both necessity and interest in the estimation of the costs of ESP are increasing. It is important for the policy makers, planners, implementators and the academics to be aware of the different purposes for which **cost** and **expenditure** estimates[1>] are required. The different purposes of costing include (1) projecting the financial and fiscal implications of the HPSP in order to assess the sustainability of the program, (2) investigating the technical efficiency of delivery of services through assessment of the impact of organizational and management changes, (3) identifying the allocative efficiency of the program by incorporating unit and marginal cost analyses into an assessment of the program's impact on health status (i.e; the ratio of costs to health benefits, or DALYs gained).

In the recent implementation of the Essential Services Package (ESP) Model, it became clear that appropriate and accurate cost information is essential for estimating resources required and

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1> `Cost' and `expenditure' are not the same concepts. **`Cost'** is the value of a good or service, which is conceptually defined as the value that could be gained by using the resource in a different way, while **`expenditures'** refer to the amount of money, time, or effort spent or expense payments made in cash or checks. It is important to note that costs are often usually thought of in terms of money paid for resources used, but there is a broader way of looking at costs that can be useful in some cases. The basic idea is that things have a value that might not be fully captured in their price. That is as true of health services as it is of friendship, or of pleasant views. It is not difficult in many health programs to identify some resource inputs for which little or no money is paid: volunteers working without payment; health messages broadcast without charge; vaccines or other supplies donated or provided at a large discount by organizations or individuals. Should we say that those inputs cost little or nothing? The answer depends on what we are interested in. For some purposes, there is no need to take unpaid-for resources into account. This is true, for example, if our concern is solely to determine how much of a financial budget allocation should actually be spent. Resources for which client pays nothing do not appear as expenditure and can be ignored (i.e., their financial cost is zero). However, if we are concerned with the long-term sustainability of our program, the total cost of paying for all of its inputs – even those temporarily provided by donors or paid for at less than market rates – must be estimated. Economists use the terms "opportunity cost" or "economic cost" to describe this approach to costing. It recognizes that, even if no money is spent, the cost of using resources that could have been productively used elsewhere. Analyses using economic costs do not replace studies done with financial costs, but supplement financial cost analysis with additional information useful for decision making (for details see: Reynolds J 1993, Miller J and C Bahamon 1996, Creese A and D Parker (eds) (undated), Green A 1997).

setting intervention priorities. It also became apparent that reliable and consistent cost information of the ESP interventions are not available. Therefore, there is a great urgency to obtain appropriate costs information before the next cycle of planning and budgeting starts, as well as for the future refinement in ESP Costing.

However, before any new costing study is conducted, allout efforts need to be made to examine the various ESP-related cost estimates that are already available. For example, the Ministry of Health and Family Welfare (MOHFW) in the past has estimated the costs of the new ESP program in two different ways, one conducted by the Project Preparation Cell (PPC) and another by the Health Economics Unit (HEU). In addition, ESP-related cost studies have also been conducted by other agencies and individual researchers. Each of these cost estimates provides useful information. Appropriateness of utility of all these available information needs to be assessed. Therefore, the relative contributions and utility of these studies and their compatibility were felt necessary to be systematically reviewed.

On this backdrop, in order to facilitate the process of perfection of Costing ESP in the future, the issue paper has been prepared for this workshop to discuss about the merits and shortcomings of all available alternative approaches of and information on Costing ESP. The present study has attempted methodological review of costing but not necessarily a revision of cost estimates. ESP cost estimates as in HPSP document and in Operational Plan will stand for all practical purpose but only in future cost revisions can be undertaken following improved methodology to be agreed upon.

2. Objectives

The principal objective of this study is to identify the major issues, topics, and framework to improve upon the ESP costing, based on review of all relevant studies, one-to-one discussion with all relevant persons and participatory inputs from a workshop environment.

The specific objectives are as follows:

- To review all available ESP cost related studies and identify the major merits, shortcomings, topics, issues and possible methodological solutions. In reviewing the relevant materials, among others, the following issues (in compliance with the terms of reference) were considered: *does the approach address all elements of total cost; does the approach address all the major areas, sub-areas and conditions (disease) of ESP; can the costs be fully aggregated back to produce a budget that is reasonably close to the past budgets; are the costs sensitive to goal changes, intervention mix, or system reforms; what are the major problems in re-estimating costs; where lies the scope for improvement; what are the useful areas (elements) of cost studies which can be used in the future;*

- To prepare an issue paper in line with the above stated issues based on the review of relevant studies and one-to-one discussion with the relevant policy makers (in the government and development partners) and researchers.

- To reach a consensus regarding the critical methodological issues of costing ESP through a participatory workshop environment (face-to-face discussion and group work).

As one of the major objectives of this endeavor, the discussion in this workshop will be focussed on the needs of MOHFW in ESP Costing. First, it is expected that a consensus will be reached as to whether the current cost estimates can be reconciled to produce the type of information that the Ministry needs. Second, if further costing is needed, it is highly desirable that, based on the open and informed discussion, the participants collectively determine what and how the new cost information should be obtained.

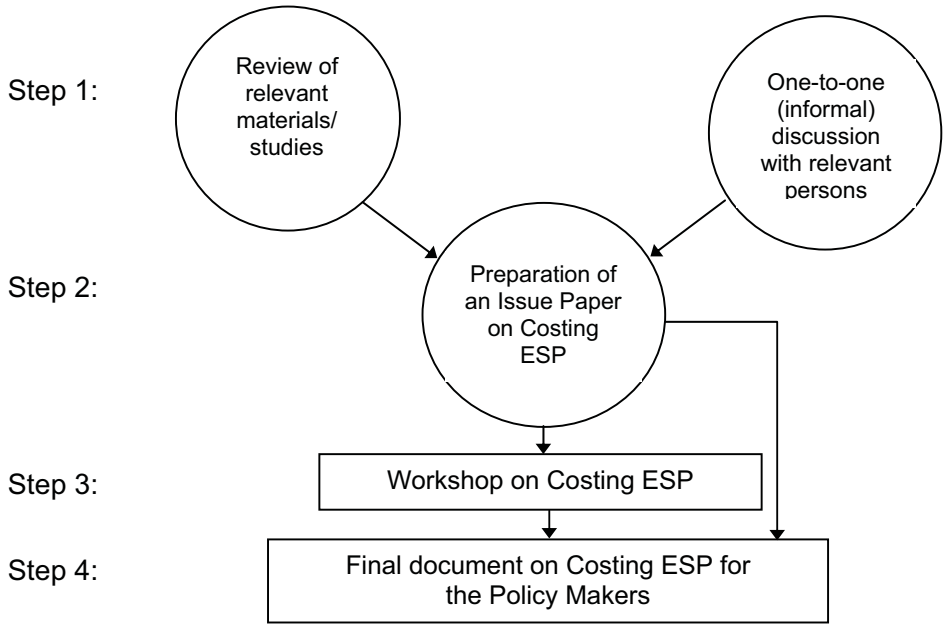
It is expected that the exercise presented in this paper and the paper which will incorporate workshop participants' views would be beneficial to various audiences:

- Information on various ways of estimating the costs of implementing ESP and their respective strengths and weaknesses can help the government in estimating future resource requirement to implement ESP.
- Knowledge gained can be used to guide the HEU (PRU) in its plan and design of any further attempts to cost out the ESP program.
- Knowledge obtained in the process can be gainfully utilized by all the Line Directors and Program Managers who are entrusted with the responsibility of preparation of Annual Operational Plans for their respective domains.
- Our national experience in costing ESP interventions can also be shared with other professionals in the international primary health care and public health service community.

3. Methodology

This review paper is an outcome of relentless efforts of four consultants technically guided by Dr. Dennis Chao, Country Manager, the POLICY project and Mr. Syed Shamim Ahsan, Senior Policy Advisor, NIPHP. As shown below, out of the four steps envisaged in the assignment, we have completed the first two steps, and in the workshop the third step will be accomplished. The final step will include appropriate incorporation of today's workshop outcome (ideas, suggestions, comments) into the review paper, and finally, development of a full-blown holistic document on methodological issues on Costing ESP for the Policy Makers.

Figure 1: Steps of Assignment



Although step 1 shows two major activities, namely review of available literature on the subject and one-to-one discussion with relevant persons, these activities were not performed, strictly speaking, simultaneously (as envisaged in the original plan). All materials and studies related to the ESP costing were reviewed first, using a checklist for content analysis. The checklist included the major issues in line with the objective of the review process. In this process, in addition to the desk research, in-house brainstorming sessions among the consultants were performed to share review outcomes, ideas and to identify salient issues and subjects to be discussed later on with each individual in the list of "persons to be discussed". Then a separate checklist was prepared to guide our discussion in the one-to-one session with 35 persons. All these 35 persons in the list were officially informed well ahead of time about the purpose of the undertaking (through an introductory letter by Mr. Syed Shamim Ahsan, and another letter from the Team Leader). Also, in order to facilitate the discussion and make the one-to-one session productive, a two-pages write up titled "Reflections on ESP Costing" (explaining the purpose and brief content of the existing literature) was sent to all 35 interviewees along with the above two letters.

In line with the objectives of this undertaking, the accompanying **Issue Paper** presents the following (in order of sequence by sections)**:**

1. A methodological introduction on Costing ESP: What to cost, how to cost and the cost components. Since costing is a technical subject, the purpose here are two-fold – to provide information about the levels and sub-levels of HPSP for which cost has been (need to be) estimated (in order to avoid misinterpretation the 'terms' used should be same as in the HPSP document[2>]); and to acquaint the non-technical (non-economist/accountants) persons about the technical concepts, definitions and classifications which are necessary in any costing exercise.
2. Results of desk research of the costing ESP-related documents, which include the major ones conducted by PPC and HEU, and some other studies pertaining to the major areas of ESP.
3. Outcomes of one-to-one discussion with the relevant persons, which include, among others, the concerns raised and suggestions provided by each person met in the process.
4. Raising of issues to be deliberated upon and discussed by the workshop participants aiming at improvement upon the ESP Costing.

4. Methodological Introduction on Costing Essential Services Package (ESP): What to Cost, How to Cost, and Cost Components

What to cost? Health and Population Sector Program (HPSP) comprises of **eight major components,** namely Essential Services Packages (ESP), Reorganization of Service Delivery (RSD), Integrated Support Services (ISS), Hospital Level Services (HLS), Sector Wide Management (SWM), Policy-Regulation-NGO-Private Sector (PRNP), Other Public Health Services (OPHS), Other Health and Nutrition Services (OHNS) (Figure 2). Although ESP is one of the 8 major components of HPSP, part of all seven other components (other than ESP, known as non-ESP) are directly or indirectly related to ESP. Thus, expenditure for ESP is a sum total of ESP service delivery and the relevant portions of ESP in the other seven components.

2> For example, some people denote Reproductive Health Care (RHC) as a component of ESP. According to HPSP, ESP is a component of HPSP and RHC is one of the five major sub-areas under ESP (GoB 1998a: 18-68).

The relative share of non-ESP components of HPSP to ESP expenditure varies by nature and purpose of the specific components (discussed later).

Since the purpose is costing ESP, an understanding about the detailed classification of HPSP components is necessary. The HPSP, as shown in Figure 2, can be divided into 8 broad **Components**; each component is further divided into **major areas** (e.g.; there are 5 major areas under the ESP component); each of the specific major areas are further divided into **sub-areas** (e.g. the major area – reproductive health care is divided into 8 sub-areas); each sub-area is divided into **sub-sub-areas** (e.g., sub area – Safe motherhood is divided into 3 major sub-sub-areas – ANC, Safe birth practices and PNC); each sub-sub-area is divided into disease/treatment **conditions** (e.g., sub-sub-area – Safe birth practices is divided into two conditions, namely normal delivery and complicated delivery); each such condition is further divided into **sub-conditions** (e.g., condition – complicated delivery is divided into sub-conditions such as postpartum haemmorhage, obstructed labour, perineal tear, etc). Thus, ideally speaking, costing ESP, should include cost from components to sub-conditions via the major areas, sub-areas, sub-sub-areas and conditions. This iteration is true not only for the direct ESP component of HPSP, but also for all other seven components to the extent they are related (directly or indirectly) to ESP (discussed later and shown in Figure 10). Costing ESP should also take care of costing by activity, sub activity and coverage, as well as by type of service delivery facilities (Figure 3).

At this stage, it would be useful to note the following:

1. Costing is the activity that estimates the costs of an action either in the future or in the past.

2. There are three major points in the planning spiral at which costing is necessary – the option appraisal stage, budgeting, and evaluation.

3. Costs involved should be well defined and sufficiently accurate.

4. Within the public sector the real costs to *society,* and not just to the *health sector,* should be assessed.

5. Cost need to be estimated as a prerequisite to setting budgets.

6. In determining the costs of any action, it is important to identify all the costs arising, and on whom they fall. For example, providing an antenatal service, may incur costs for:

    - the health service, for example, in the form of drugs or personnel;
    - the individual, in the form of charges, transport costs, or time away from home or work; and
    - the individual's employer or family, in covering for her absence (Green 1997: 188-189).

Figure 2:

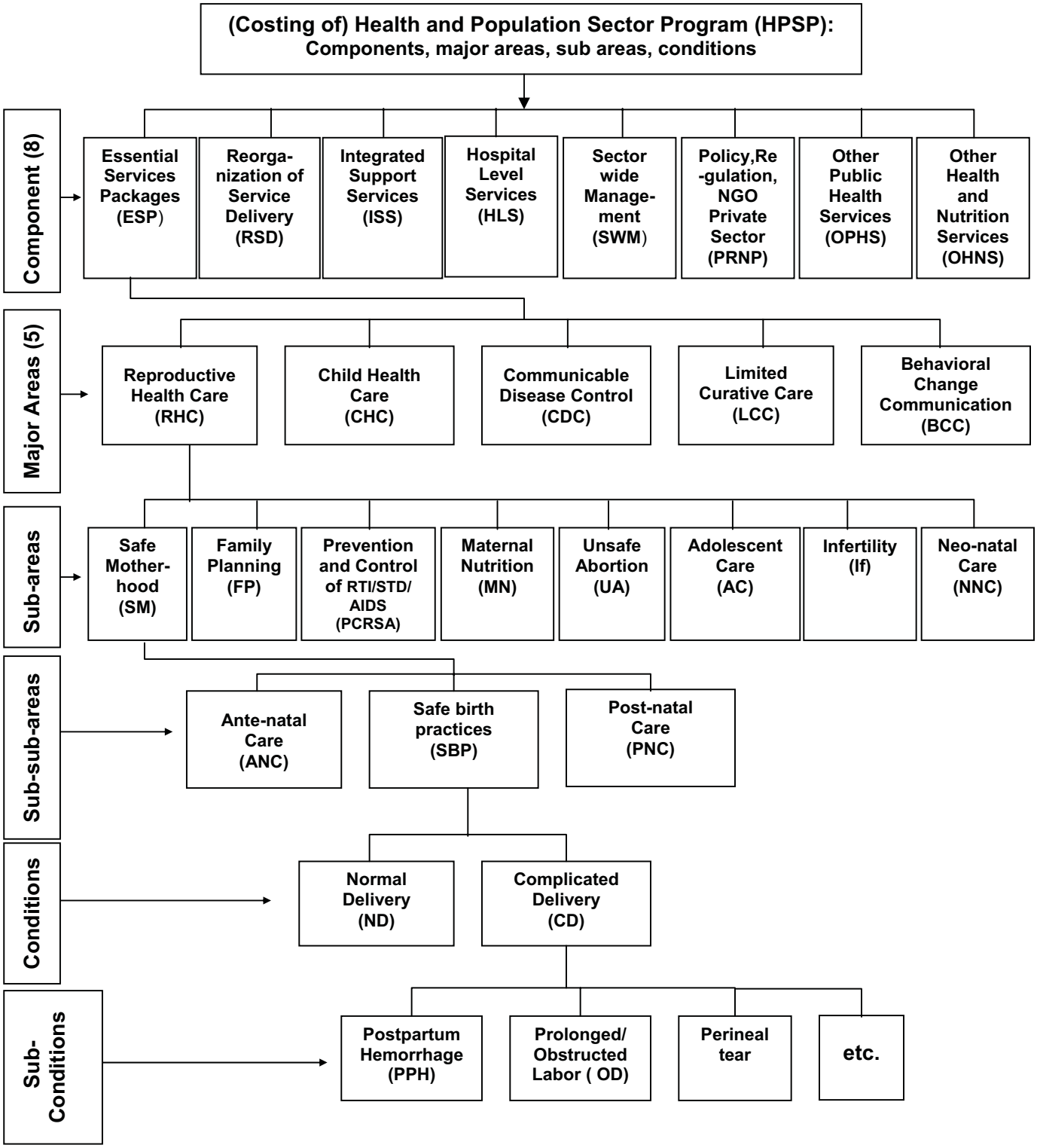

(Costing of) Health and Population Sector Program (HPSP):
Components, major areas, sub areas, conditions
Component (8)
Essential Services Packages (ESP)
Reorga-nization of Service Delivery (RSD)
Integrated Support Services (ISS)
Hospital Level Services (HLS)
Sector wide Manage-ment (SWM)
Policy,Re-gulation, NGO Private Sector (PRNP)
Other Public Health Services (OPHS)
Other Health and Nutrition Services (OHNS)
Major Areas (5)
Reproductive Health Care (RHC)
Child Health Care (CHC)
Communicable Disease Control (CDC)
Limited Curative Care (LCC)
Behavioral Change Communication (BCC)
Sub-areas
Safe Mother-hood (SM)
Family Planning (FP)
Prevention and Control of RTI/STD/ AIDS (PCRSA)
Maternal Nutrition (MN)
Unsafe Abortion (UA)
Adolescent Care (AC)
Infertility (If)
Neo-natal Care (NNC)
Sub-sub-areas
Ante-natal Care (ANC)
Safe birth practices (SBP)
Post-natal Care (PNC)
Conditions
Normal Delivery (ND)
Complicated Delivery (CD)
Sub-Conditions
Postpartum Hemorrhage (PPH)
Prolonged/ Obstructed Labor (OD)
Perineal tear
etc.

Figure 3: Program Levels of Costing

Costing (by)	Costing (by)	Costing (by) (facilities)
Activity	Components	Community Clinic
↓	↓	↓
Sub-activities	Major areas	UHFWC
↓	↓	↓
Coverage	Sub-areas	THC
	↓	↓
	Sub-sub-areas	District Hospital, etc
	↓	
	Conditions	
	↓	
	Sub-conditions	

How to Cost? From procedural viewpoint, there exist three types of costing methodologies – top-down, bottom-up and combination of top-down and bottom-up. Again, costing in each of these types can be performed through **expenditure allocation method** or **full cost accounting** (economic cost) method (Figure 4). It would be evident in the next section as to how these methodological frameworks were used in costing ESP in Bangladesh.

Figure 4:

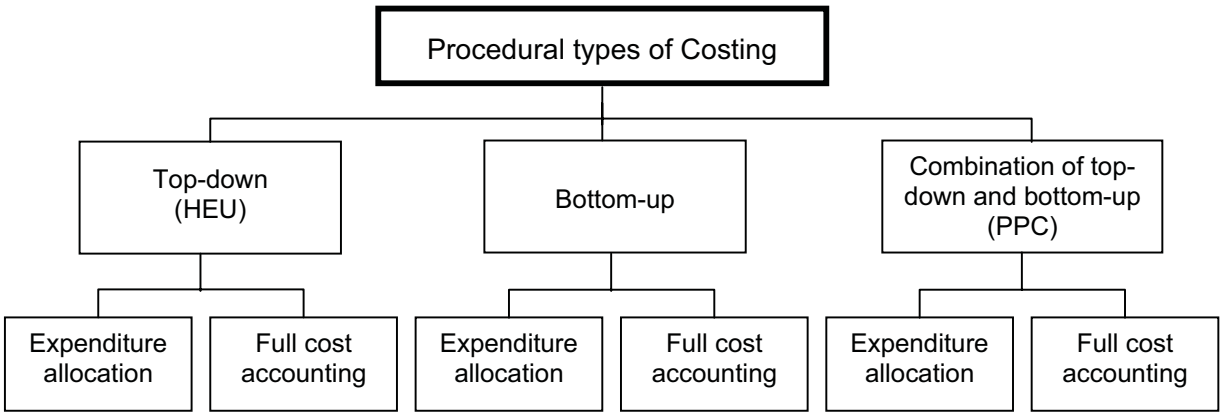
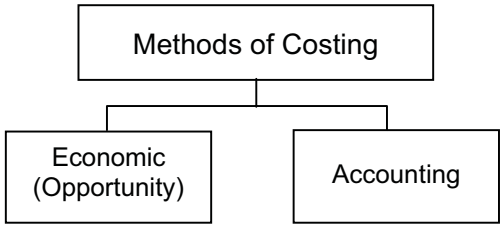


Figure 5:



Top-down costs are usually obtained by using aggregated expenditures or budgets, and then by using allocation factors (notional, normative, or after having prioritization exercises) apportion them by level and activities. Whereas, the **bottom-up** costs are derived by calculating the individual unit cost of an activity at the facility level and then aggregated (using census or survey procedures). A bottom-up method is capable of more or less accurately describing the per patient cost of use of medical supplies. However, for overhead items such as maintenance and

utilities, methods of estimating costs through apportionment are needed below static facility level. This is due to the fact that using perfect bottom-up method would be expensive and generate insufficient additional information to be of appropriate utility. As a result, as rightly stated by Tim Ensor, most costing methods will employ a combination of bottom-up accounting and top-down allocations (Ensor 1999).

Finally, the **expenditure allocation** and **full cost accounting** (Figure 4) are two other methods distinctly different from one another. These are essentially the differences between cost concept in accounting and that in economics (opportunity cost) (Figure 5). Expenditure allocations usually uses actual past, or current expenditure, or future budgets as the basis for allocating (assigning) `costs' of services. The difference between the budget and actual is basically the difference between what is and what has to be. The degree of such difference depends on whether budgets are based on normative or on practical estimation of the feasible resource envelope (Ensor 1999). The later situation will be closer to the true cost. Budget-based normative costing in health, although practised in various countries, is outdated since the norms are based on notions of capacity, which does not consider the effective treatment technologies and may lie far from the actual cost of treatment and conditions.

There are many reasons as to why costing based on top-down and bottom-up methodologies generate widely diverge results. Ensor has identified two prominent reasons for such divergence (Ensor 1999): First, expenditures as recorded by the health service management information system, may not fully record expenses incurred but only payments made. This distinction between income-expenditure and receipts-payment accounting can mean that if a payment, perhaps monthly salaries or a bill for equipment, is delayed until the next financial year then it is not recorded. As a consequence they might appear cheaper than they actually are. Full expenditure accounting must include these unpaid debts. In addition, where a patient makes up the cost of care from her own pocket, through a contribution to the cost of drugs of food, this should also be included in the cost of care. Adequate allowance must also be made for amortisation of equipment and building costs. A second reason for the divergence is that health facilities operating under resource constraints will deliver a different pattern of service activity than those working with more resources or a smaller package of services. Where resources are spread thinly, survival may mean reducing activity unless patients can make up the cost of care themselves. Since the patients are able to contribute to the cost may well differ from those most able to benefit from (essential) services, the pattern of resource use becomes distorted. As a result, costs based on ideal activity patterns will differ from those that are actually observed. Thus, Ensor rightly differentiates costs from expenditure; and this may be right to conclude that what we do by the name of costing ESP essentially falls in the category of expenditure estimation or partial costing (which may be far from true costing).[3>]

Thus, the measurement of costs is by no means an easy task. Irrespective of top-down or bottom-up methodologies, the major difficult conceptual and practical issues are related to the choice of concept – **accounting** or **economic** (opportunity) costs. Choice of concept will depend on the purpose of costing. If we need to know the (true) full cost of ESP, the choice obviously would be in favour of economic cost, which is undoubtedly important from the financial sustainability point of view. However, if we need to know only about the amount of public sector budgetary allocation for ESP (or HPSP), accounting cost will suffice. Here it would be useful to

[3>] The discrepancy between the total ESP expenditure and total ESP cost can be indicated through the following: the Year 1 total ESP expenditure is Tk.14,465 million (69.89% of HPSP; GoB 1998a: 77-78); whereas the household health care expenditure in 1994-95 was Tk. 37,894 million (with 62% on account of medicines and 10% on travel: See Rabbani et.al., 1999: 133). It is obvious that some parts (extent is not known to us) of the household health care expenditure is related to various areas of ESP.

delineate the major differences of accounting and economic costing. For example, in case of family planning (FP) program, the accounting concept includes: (a) all operating costs of famly planning clinics and outreach services required to meet the expected demands if all services were free, (b) maintenance and living expenses of clients who are admitted for hospital care (sterilization, side-effect treatment); and (c) amortization of fixed assets and equipment leased by the program. On the other hand, the opportunity (economic) cost concept consists of: (a) all operating costs by the family planning services delivery system; (b) stipends equal to the foregone earnings (or imputed time values) of those admitted for hospitalization; and (c) the estimated annual lease value or, if higher, the annual interest on the sale value of all fixed facilities operated by the program (Barkat and Khuda 1992).

Measurement of the opportunity cost of a health intervention (activity) is quite a difficult job. Ideally, the monetary value of other goods and services foregone by using resources to implement the activity, i.e., the opportunity costs, is precisely equal to activity expenditures. This occurs only when: (i) all resources used in the activity would have been otherwise employed, had the activity not been implemented; and (ii) the prices (or wages) paid for the use of those resources equals the values of the marginal products of those resources, when used in other pursuits. However, in practice, these two conditions may not hold for various reasons. Because some resources, for example, free drugs and medical care; donations for drugs or medical care; donations of land, labour or furniture; community health workers' time, might otherwise have been unemployed. Payment for these otherwise unemployed resources will probably overstate the opportunity costs involved in their use. For those items, shadow prices need to be calculated. Important to note here that, clients'/patients' opportunity costs of time to avail themselves of the services provided by the public sector facilities are not included in the costing framework. In valuating such time costs, wage rates may be a reasonable measure for clients who are employed, however, regarding those who are not in the labour force it would be necessary to develop some imputed value or shadow price of their time. Strictly speaking, financial (accounting) costs will not be equal to economic (opportunity) costs under the following circumstances: (i) when resources or inputs are donated, sole reliance on budget data will understate the true economic costs of an activity; (ii) when resources are not valued at market rates, budget data may overstate/understate the true economic costs of an activity; (iii) when capital equipment is used which provides an annual stream of benefits that is independent of the financial outlays, the use of budget data alone may overstate costs in some years and understate them in others; and (iv) when budgets take into account only past, of all the resources being used in an activity, economics costs will be understated (Kenny and Lewis 1991).

What are the Cost Components? As shown in Figures 6, 7, and 8, for various practical purposes – policy, evaluation, monitoring, efficiency – ESP costs need to be shown by broad cost components – manpower, commodity, contingency (Figure 7, shown in HPSP PIP 1); by cost items' relationship with services – direct and indirect (Figure 6); by life expectancy of cost items – capital and recurrent or operating (Figure 6); by cost-items' nature of change with program size – fixed and variable, including quasi and super fixed (Figure 6); by source of expenditure – non-development (revenue) and development (Figure 8); by type of expenditure – recurrent and capital (Figure 8). PPC's ESP costing reflects all those components presented in Figures 7 and 8 (discussed later).

Figure 6:

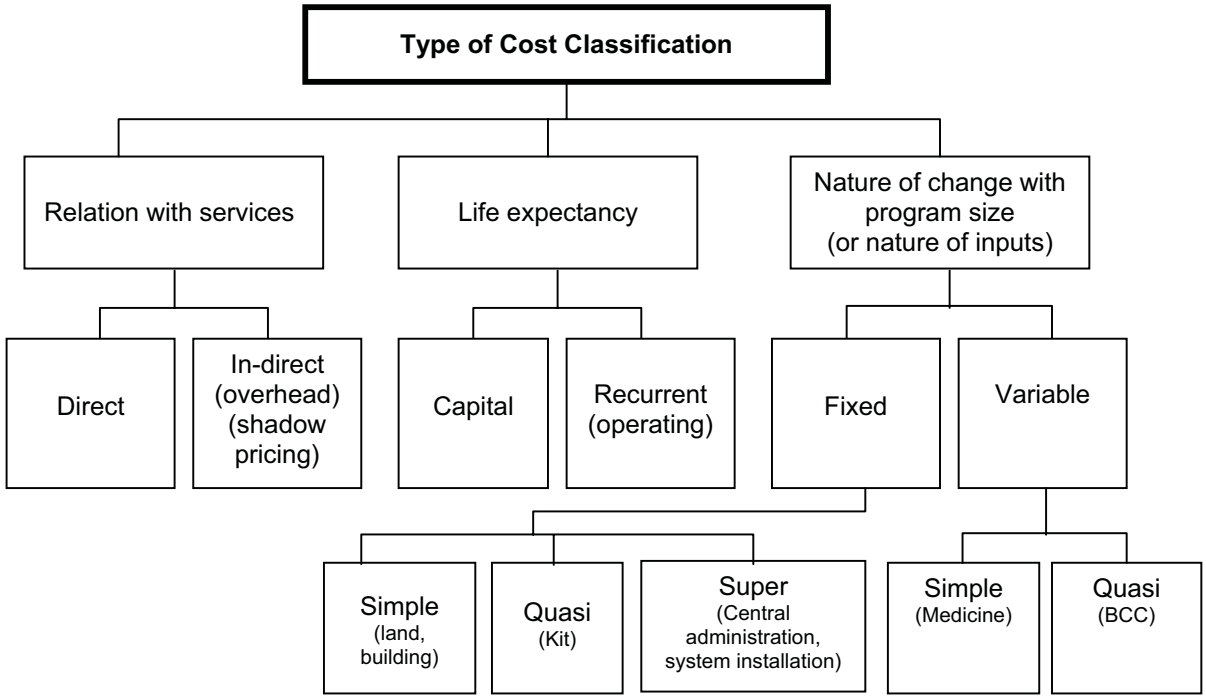


Figure 7:

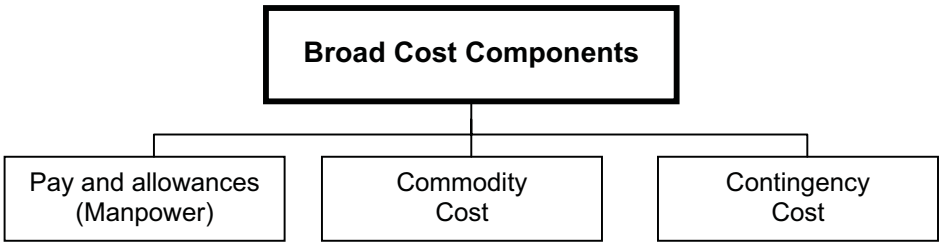
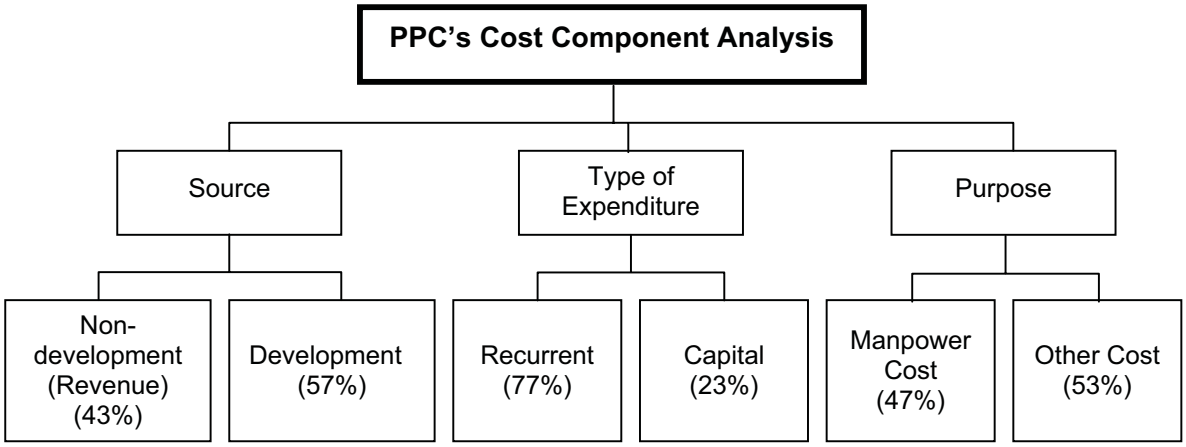


Figure 8:



Note: Figures in the parentheses show share of HPSP expenditure for the first year (GoB 1998a: 79-81)

Before entering into the review of ESP costing exercises it would be pertinent to point out the following two major issues which were confronted by all who were engaged in ESP costing:

First: computation of **capital costs** is always difficult in a situation of regular foreign currency inflow and regular inflation with different rates. How should one tackle this situation in cost measurement? Once costs have been categorized as direct, indirect, or infrastructure, they can be classified as capital (or developmental) and recurrent (or operating). Those resources that have a life expectancy of 1 year or more usually are treated as capital costs (buildings, cars, trucks, beds, medical equipment, etc). The cost of a capital item is spread over its expected life, and the analyst must calculate what portion of total cost should be attributed to the time-bound program or program component. In doing so, the annualized cost of that item, using the remaining life expectancy of the used item (not the life expectancy at the time of original purchase) should suffice.

Second, **apportionment of joint costs** is one of the most problematic areas of input valuation. In many instances one activity is combined with other activities. This is a situation of integrated inputs with multiple objectives and effects, or program activities are integrated with shared facilities. Thus, it is natural that when all such activities are simultaneously carried out by the same personnel, a situation of joint costs arises. It should be stressed that there is no single "correct" allocation methods for joint costs. In developing the best way out, distinctions are typically made between overhead and direct costs. Overhead cost is usually allotted among the various "departments" involved on some "reasonable" basis. Although there is a great variation in cost accounting systems, the final allocation of input costs is generally made, based on a "burden vehicle", i.e., in direct proportion to that department's product or output, e.g., direct cost of labour or labour hours utilized in the production of that output. These measures are usually predetermined. For example, if the overhead cost rate is given as equal to 75 percent for a family planning unit with a health operation, the direct labour cost is given as the "burden vehicle"; and each unit of clinic output is charged with Tk.0.75 for every taka of direct labour cost.

Joint cost allocation, as would be evident in our subsequent discussion, poses a major problem while (ascertaining) estimating ESP part of the other than ESP components of HPSP. There are seven such components as shown in Figure 2.

5. Costing Essential Services Package and Components thereof: Review of Experiences

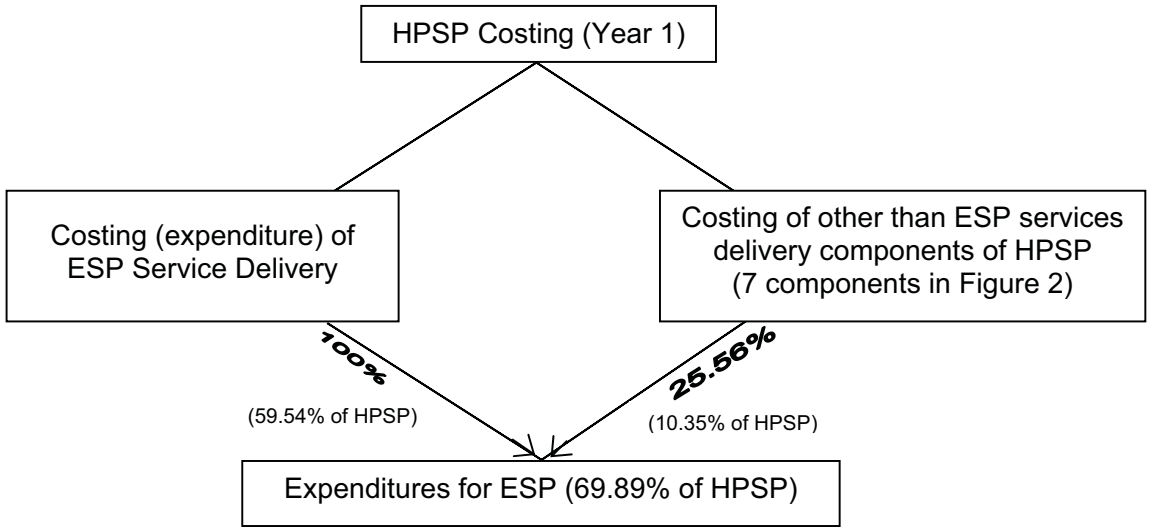
Comprehensive costing exercises for ESP introduced through the HPSP have been done by the Project Preparation Cell (PPC), and by the Health Economics Unit (HEU), both under the Ministry of Health and Family Welfare (MOHFW). Costing exercise for ESP components for thana level and below has been performed by Barkat et.al. (1999); some costing exercises for family planning and select MCH services has been conducted by Janowitz, et.al. and Rahman, et.al. (1996), costing projections for the national family planning program has been done in 1996 (Barkat, et al. 1996), facility level costing study has been conducted by Rannan – Eliya and Somanathan (1999), and studies on costing of various service components have also been undertaken in the past. Because of differences in purpose and methodological frameworks applied, the outcomes of experiences are not comparable. However, all of the above exercises provide useful information which could be gainfully utilized in developing and designing an appropriate methodology for future costing of ESP. The review of such exercise will also give ample scope to identify our knowledge-gaps on the subject.

5.1. Costing ESP: PPC's exercise

The basic purpose of PPC's costing exercise was to arrive at an **estimate of the resource requirements** as well as to **facilitate planning exercises** for HPSP. The PPC undertook the costing analysis as a basic requirement for pre-appraisal and appraisal of the HPSP. The relevant chapters of the HPSP document delineate the costs of sectoral activities and expenditure plan, the amount of resources to be available for the sector, and the possible economic, fiscal and distributional impacts of the HPSP activities, expenditure by logframe activities, and cost estimates by commodities.[4>] Since, our purpose of review is limited to costing ESP, the emphasis will accordingly be limited to this domain.

According to the PPC's methodology, **expenditures for ESP service delivery** and **expenditures for ESP** are not the same[5>]. As shown in Figure 9, expenditures for ESP (69.89% of HPSPs first year costs) is 10 percentage points higher than the expenditure for ESP service delivery (59.54% of HPSPs first year costs). Expenditure for ESP equals to expenditure for ESP service delivery (which is the first out of eight components of HPSP, Figure 2) plus expenditures on account of ESP of non-ESP components (7 out of 8 components of HPSP). The relative shares of non-ESP Components' ESP part as shown in Figure 10 range between 0% (for the component – Policy, Regulation, NGO and Private Sector) and 40% (for the component – Integrated Support Services). Whether these relative shares are notional or based on rigorous cost analyses will be discussed later on.

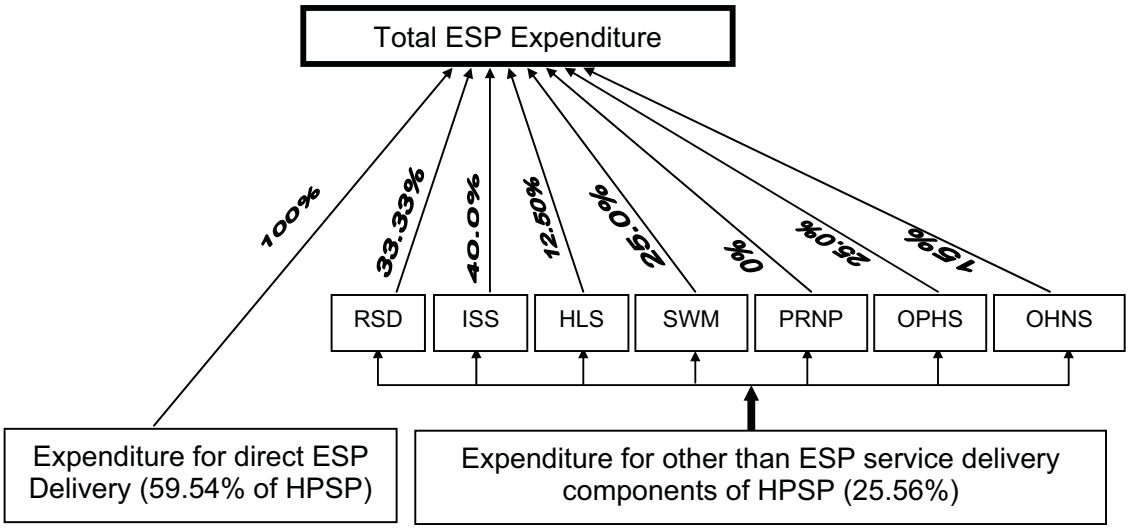
Figure 9:



[4>] For details, see HPSP, PIP-Part 1, Chapter 5 (GoB 1998a: 69-107); and HPSP, PIP-Part II, Annexure 3 and 15 (GoB 1998b: 59-178, 405-523).

[5>] HPSP document conceptualizes this as follows "the expenditure for ESP constitutes a **genus,** of which expenditure for ESP delivery is the major **species**" (GoB 1998a: 71).

Figure 10: PPC ESP Costing (Year 1)



Before proceeding further into the methodological analysis, it would be pertinent to state that initially, before the pre-appraisal, a top-down costing procedure was followed; then after the pre-appraisal, a bottom-up approach was tried; and finally, during the appraisal, a combination of top-down and bottom-up procedure was followed and final costing (or to be technically correct-expenditure estimates) was done keeping in view the realistic or available resource envelope.

PPC's method of estimating costs, as presented in the HPSP document states that "Proper formulation of an expenditure plan for a number of years requires adoption of a systematic method. The systematic method involves:

- setting the targets in terms of impacts and effects;
- quantify the volume of outputs to be produced to achieve each of the targeted impacts;
- compute the input-coefficients;
- check joint-inputs and remove duplication;
- obtain a dynamic input-output model;
- calculate costs of inputs at the market price; and
- adjusting the costs for different years using the appropriate inflator (or deflator).

But the data required for carrying out rigorous exercises using the systematic method were not available. Therefore, we had to adopt a method which combines the systematic method with the crude method: we remain systematic in approach and moved through a chain of steps, but use of notional figures in the case of a number of specific cost items could not be avoided" (HPSP, PIP, Part 1, GoB 1998a : 70-71).

PPC has estimated the expenditures for HPSP by eight components and associated activities. The components as shown in Figure 2, are:

1. Essential Services Package (ESP)
2. Reorganization of Service Delivery (RSD)
3. Integrated Support Services (ISS)
4. Hospital Level Services (HLS)
5. Sector wide Management (SWM)

6. Policy, Regulation, NGO, Private Sector (PRNP)
7. Other Public Health Services (OPHS)
8. Other Health and Nutrition Services (OHNS).

In costing total expenditure for ESP (TEESP) it has been assumed that the first component i.e.; ESP is totally (fully) included in the TEESP, and in each non-ESP (7 components) component, there is ESP in varied degree which is included in TEESP. Thus, methodologically, PPC has divided the expenditure of HPSP into two broad categories (Figures 9 and 10):

- expenditures for ESP delivery; and
- expenditures for other HPSP activities (denoted as non-ESP) including those which are directly or indirectly related to ESP delivery and hospital services.

As part of the PPC's ESP costing exercise, several Task Forces (TF) were constituted by the MOHFW to deal with the issue in line with the HPSP components. The TFs categorised the activities among seven components considering mainly the ease and convenience of management, i.e., considering which line manager will better administer which component of HPSP. As a result of such consideration, it is not possible to separate out all the activities directly related to ESP in one component (ESP delivery) from the components, which are also related to ESP delivery. Hence, some of the HPSP components other than ESP delivery also include some activities that are directly related to ESP delivery. For example, training of the grass-root levels staff and officials (at thana level or below) for ESP is an activity under the HRD component. But this is definitely an ESP activity, not included in the component 1 i.e., ESP delivery (GoB 1998a: 71).

Before the pre-appraisal mission, following a **top-down procedure**, a notional estimate of costs of ESP delivery activities was obtained. This estimate was included in the original PIP for pre-appraisal. The procedural steps adopted in this top-down exercise were as follows:

(a) notional determination of amount of expenditure for each component,
(b) allocation of amounts by activities and sub-activities.

A Working Group, formed during the pre-appraisal, revisited and further refined the estimate. After the mission, the estimate was placed at a workshop with technical group for finalization. The workshop participants pointed out several changes required in the estimate, and constituted two Review Groups for reviewing the estimate. The two Review Groups consulted a large number of concerned persons and finally obtained an estimate for each intervention by level of care (GoB 1998a : 72).

After pre-appraisal, the estimation procedure incorporated the **bottom-up** approach. According to this procedure, the personnel of the relevant departments first identified the activities and sub-activities to be conducted in the first year of HPSP to produce each ESP outcome over the targeted coverage. Thereafter they assessed the type of inputs/line items of costs and the amount of costs for each type of inputs to be used to produce each unit of outcome. Then the total costs for each outcome was estimated at the current market price, and finally the grand total of ESP delivery expenditures was obtained for the first year – 1998-99. The costs have been shown in three broad groups – manpower, commodities and contingency. In calculating the cost of manpower, the impact of the new pay scale has been considered. In calculating the cost of manpower to be engaged in ESP delivery activities in year-1, the salaries and allowances as in the earlier scale have been increased by 40 percent. The cost of commodities and contingency items has been calculated at the existing market prices. The costs for

commodities were worked out by levels of service and by interventions within each sub-program area of ESP. The input-wise costing for the first year for ESP, and all other log frame activities and outputs have been worked out.

The costs of ESP interventions for the second through fifth year have been estimated using the costs in year-1 as the base costs, and assuming that the cost of manpower will increase by 10 percent in the second and the third year and will then remain constant onward in nominal terms, while the commodity cost will continue to increase by 10 percent per annum.

The **Review Group** (RG) which costed ESP interventions also estimated the cost of each ESP component by inputs, by type of fund and by cost centres, for only year-1. In estimating costs by inputs, the RGs followed the input classification as shown in the RIBEC Model[6>] so as to facilitate comparison of costs by inputs as estimated for the health sector with the same for the other sectors in Bangladesh. In classifying expenditures by type of funding, only two types of budget were considered --- non-development (revenue) budget and development budget. The classification was considered useful to determine the quantum of foreign assistance required for HPSP. The estimation of expenditures by cost centres was done to help allocation of funds among the cost centres and monitoring of ESP activities.

As reported in the HPSP document, after the Pre-Appraisal Mission, Task Forces were requested to revisit the costs of other HPSP interventions, and estimate the costs by inputs, by type of funds, and by cost-centres for year-1. In estimating total costs of each intervention for the whole plan period, the TFs more or less used similar formula for costing manpower and commodities. However, the cost of repair and maintenance for the interventions that involve considerable amount of expenditures for facility development was assumed to be increasing at the compound rate of 10 percent per annum. The costs of other inputs for each year after year-1 were notionally determined for each outcome (GoB 1998a: 75).

During the appraisal mission it was suggested that in view of the large gap between the estimate of expenditure obtained using the bottom-up method and the realistic estimate of the resource envelope, the expenditure has to be reduced based on an appropriate priority exercise. Accordingly, the estimate of expenditure was adjusted to the amount of resources allocated to each specific item imposing a budget constraint on the expenditure. The reconciliation between the bottom-up and the top-down estimates of expenditure was brought about by reducing the magnitude of program activities in terms of coverage and the amount of services to be delivered per person.

The PPC's ESP costing (expenditure estimation) methodology and procedural steps suffer from some inadequacies, some of which are already indicated in the HPSP document itself (GoB 1998a). Some of the pertinent issues have already been dealt with by Tim Ensor (1999). Based on our analysis of the PPC's ESP Costing, it would be pertinent to raise the following issues which deserve due attention to arrive at a close to perfect costing in the future:

[6>] RIBEC (Reforms in Budgeting and Expenditure Control) model comprises of inputs by sources of funds. The sources are government and development partners divided further by RPA (reimbursable project aid) and DPA (direct project aid including commodity aid). The inputs are divided into recurrent and capital, and revenue and development. The elements of recurrent inputs include pay of officers, staff, allowances, MSR (excluding drugs), drugs (excluding surgical requisite), other supplies, repair and maintenance, training (local and overseas), other/printing forms; capital inputs include construction (land and construction), vehicle, furniture, equipment, TA, training, services/research/pilot, others/printing.

1. The combination of bottom-up commodity costs and top-down salary and operating expenditure is an appropriate way to conduct ESP Costing. However one major problem lies in the fact that the top-down salary and operating expenditure is not based on work-pattern analysis, and it assumes that existing levels of staff, skill mix, work efficiency and working routines are adequate for appropriate utilization of the commodities and equipment (costing of which is done using bottom-up procedure) in a fashion that delivers the planned level of services. The authors of the PPC document who were entrusted with the responsibility to prepare ESP Costing were aware of this, because the document suggested "while the retention or creation of these posts is required, a detailed skill-mix exercise will be conducted during the first year implementation and actual number with rationalization will decide the number and category for the other years of HPSP" (HPSP, PIP, Part 1: 77). This argument is strongly supported by other cost analyses, e.g., an intensive study of staff work pattern at thana and below reports that staff typically spend a substantial proportion of their work away from direct service provision (Barkat et.al., 1999, Janowitz et.al., 1996a,b).

2. Information about the full cost of ESP and that by ESP components are not available, which are necessary to understand technical efficiency, allocation efficiency and various dimensions of financial sustainability. The main reasons for non availability of full cost are as follows**:** staff costing is based on number of current staff and current salary levels with provisions for pay increases; data on other operating costs are included following the same way; information on non-ESP in ESP and ESP in non-ESP components are not adequately available/incomplete; information on clients out-of-pocket expenses are not available.

3. Input-coefficients have not been estimated (based on production functions – which calculates how a given resource input combination can be converted into outputs using existing technologies). As a result, operational optimal level of output and efficiency of resource allocation can not be ascertained.

4. Widespread use of `notions' and `guesses' (due to lack of appropriate information-base) on many counts (also recognized in the PPC's document) made the estimates imperfect. In order to cost the direct ESP service delivery (component # 1 of HPSP), in some cases, the `notions' and `guesses' are substantiated based on expert judgements. However, in apportioning the share of ESP part from the other seven non-ESP components of HPSP the `notions' and `guesses', in most cases, are not substantiated. Thus, in this regard, appropriate apportionment exercises need to be conducted in the future.

5. ESP as the first component of HPSP is divided into five major areas (RHC, CHC, CDC, LCC, BCC) and each of them are subdivided in sub-areas, and so on (see Figure 2). The ESP's share in the non-ESP components are shown in the PCC document, but the later did not provide cost estimates by major areas of ESP (let alone sub-areas, and so on); as a result there is no way to obtain the estimates of total costs separately for each major areas of ESP (i.e., what is the total cost or RHC, or CHC, or CDC, or LCC or BCC).

6. All resources related to the first component of HPSP i.e; ESP to be delivered at the thana level and below, as a "rule of thumb", has been considered as ESP expenditure. However, analysis of service-wise use of resources shows that some of the ESP resources may not be denoted as ESP, e.g. emergency care in Limited Curative Care.

7. Due to the reasons mentioned above the actual unit cost by ESP components (areas) are not available, let alone the unit costs by sub-areas and sub-sub-areas of ESP or by conditions or sub-conditions of sub-areas (see Figure 2).

8. Many equipment and supplies have joint- use across the major areas and sub-areas of ESP. PPC's cost estimate is not tuned to the appropriate apportionment of joint costs by areas and sub-areas of ESP. This makes working-out of average and marginal cost by sub-areas difficult. It is almost impossible to answer some important questions relating to the technical efficiency, allocative efficiency, and measurement of cost-effectiveness.

9. In terms of capital item and long term supplies it is insufficient to simply average the inputs over the period or use the year-1 disbursement pattern. A more accurate (but not that costly) approach would have been deployed to estimate the useful life or expected life or remaining life of each durable item and annualize (as discussed in section 1) before aggregating inputs.

10. According to the Health and Population Sector Strategy (HPSS), the services under HPSP should be responsive to clients' needs – especially those of children, women and the poor (GoB 1998a: 5). PPC's ESP costing is unable to provide information about relative share of public sector expenditure to those classes and segments (this is a deviation from equity consideration of public health benefits). In this connection, some sort of benefit incidence studies would be useful.

5.2 Costing ESP: HEU's exercise

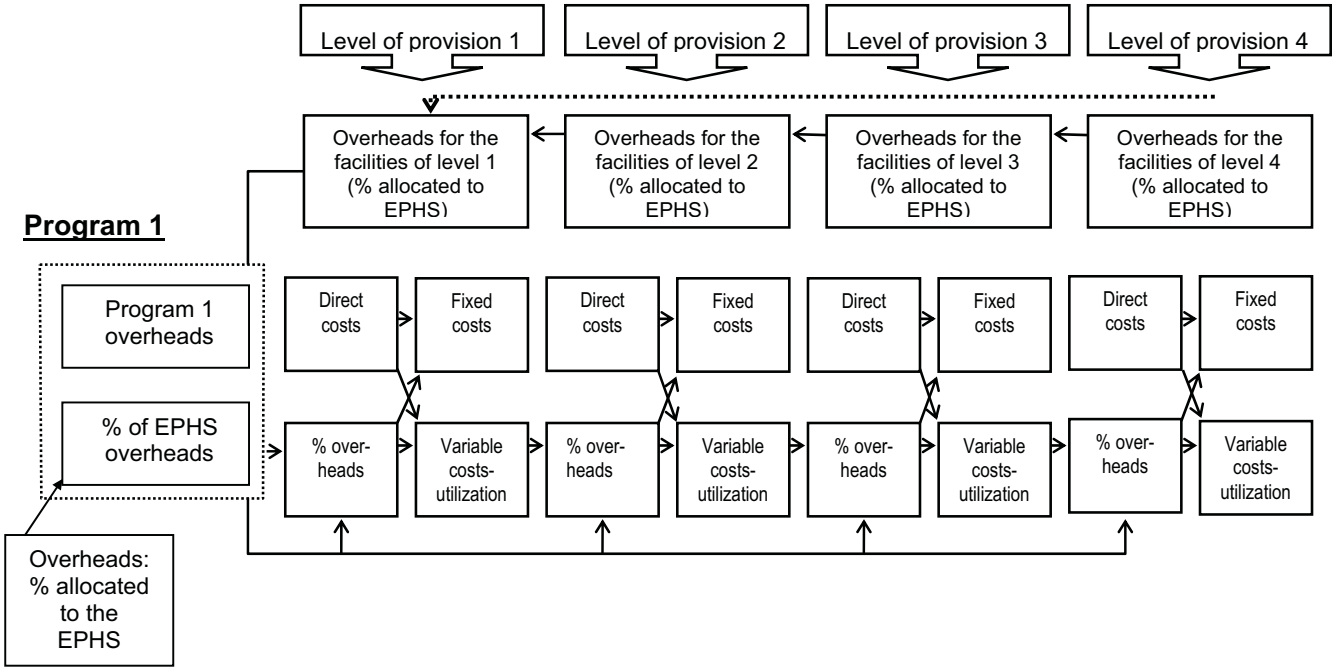
Health Economics Unit conducted a major ESP costing exercise in 1997 titled "Development of a simulation model for the costing of the essential package of services in Bangladesh". The main purpose of HEU's ESP Cost study was to estimate a model and conduct simulation exercises using data on costs of ESP components and seek answers to the relevant questions pertaining to the effects and efficiency of reorganization and integration of the health sector. Since the aim was to work out a simulation model in which the total cost of the package is calculated as function of a set of assumptions regarding gains in efficiency, rates of utilization – a disaggregated data set on the cost of each ESP component was needed. Review of methodological issues pertaining to this study was done by Ensor (1999) and Howlader (1998). The salient points of the ESP Costing exercise conducted by HEU in line with the purpose of this issue paper are presented below.

Methodologically, the HEU study identified the following steps in costing ESP**:**

- Estimate cost of the existing delivery system,
- Work out the need for additional costs (for each program) for the next five years,
- Estimate the proportion of the existing delivery costs which can be allocated to the project under consideration,
- Estimate ESP cost of non-ESP components, and distribute the same among the different areas of ESP (RHC, CHC, CDC, LCC, BCC),
- Compute the proportion of overhead and super-overhead costs which should be allocated to each vertical program,
- Calculate variable costs based on existing utilization rates and the target population (also ascertain the degree of association between the rate of utilization and the target population),
- Ensure that the model allows changing in ESP cost estimates with the changes in assumptions in the future (e.g. changing efficiency gains, allocative re-priorities, etc).
- Refine cost estimates using the above steps based on some useful pertinent information obtained from secondary sources (e.g., costing study conducted by UNICEF in two thanas).

The above ESP costing methodology adopted by HEU is shown below schematically (reproduced from HEU document in a compressed form):

Figure 11: HEU's Model of Costing of the Essential Package of Health Services (EPHS)



HEU's ESP cost estimates were used in a simulation model to obtain answers to a series of questions related to possible integration, reorganization and other causal variables.

HEU's ESP costing exercise essentially followed a **top-down** procedure. As part of this exercise a questionnaire was circulated to all the Directors (of Health and Family Planning Directorates) to provide predicted budgets by line items (salary, supplies, training, etc.) for the five year period of HPSP. The estimate included both the government and donor sources. Thus, the base information were obtained from the **project proformas** (prepared by the project directors) of the individual projects. The costing in PPs was done using top-down procedure. The PPs basically allocate a pre-determined amount of fund for the prospective activities; and the targets of coverage by activity are also determined keeping in mind that the allocated fund is exhausted.

Due to the PP-based ESP costing, the estimates provided by HEU are likely to be partly expenditure and partly budget-cost figures. All budgets contain an element of historic expenditure particularly in relation to staffing. But, as mentioned by Ensor (1999), the figures would also have included early estimates of the costs of providing ESP. Since these are

entirely line expenditures rather than service based commodity expenditures (as in the case of PPC estimates), it is difficult to assess the extent to which service costs are reflected.

HEU's ESP Cost Model was designed to be dynamic. In this connection, HEU authors recognize lack of relevant data on local level delivery of ESP and staff work patterns as the major areas of knowledge-gap to be fulfilled in the future.

The HEU's ESP costing exercise was done to satisfy the purpose of formulation of a simulation model using which cost dimensions of changing situation could be estimated. The utility of HEU's simulation model is unquestionable. But, from the view point of its utility as ESP costing exercise there exist ample scope for improvement. Some of those are listed below**:**

1. Since, the top-down procedure followed was based on project proforma-based costing, the total ESP expenditure is likely to be upward biased. The upward bias is partly attributable to the "cushion effect" of high side estimates on commodity, contingency and unforeseen elements in the PP. Just as an example, costs of reproductive health care (RHC), according to HEU is Tk.5025 million and the same according to PPC is Tk.2574 million. PPC's estimate for RHC is less than HEU's because the share of ESP expenditure in the non-ESP components is not included in the PPC's estimate. The upward bias can be minimized by identifying the areas of bias and removing those using expert judgement and findings of available surveys.
2. Although the model was designed as a simulation one, utility would be limited since optimal input combinations or resource requirements for any output were not considered.
3. The fixed costs and super-fixed costs relating to the major areas and sub-areas of ESP are not appropriately apportioned. Such apportionment is needed to estimate unit cost which is essential for various useful purposes (discussed in section 5.1).
4. HEU did not consider the possible impact of pay scale implementation on costs. Impact of pay scale needs to be considered.
5. Costs by major sub-areas and conditions of ESP (shown in Figure 2) are not available. Appropriate measures need to be undertaken to disaggregate cost by major ESP areas (RHC, CHC, CDC, LCC, BCC) by sub-areas, sub-sub-areas, conditions and sub-conditions (as shown in Figure 2)

5.3. Costing of various dimensions and major areas of ESP: Survey-based studies

While the PPC (Section 5.1) and HEU studies (Section 5.2) were intended to provide estimates of comprehensive costing of ESP for the nation as a whole, many detailed and in-depth studies were undertaken mostly during 1995-1999 period to deal with the various specific dimensions and areas of ESP. The notable ones were conducted by D Balk et.al. (1988), B Janowitz et.al. (1996,a,b), B Rahman et.al. (1996), A Barkat et.al. (1996), K Streatfield et.al. (1997), A Barkat et.al. (1999), Rannan-Eliya and Somanathan (1999), and T Ensor (1999).

"An analysis of costs and cost-effectiveness of the family planning – health services project in Matlab, Bangladesh" conducted by Balk et.al. (1988) is one of the initial studies that took place in Bangladesh. The basic methodology of the costing exercise to identify the key costs of service delivery and to estimate the full cost is interesting. Balk et.al. (1988) have illustrated the costing scheme as a service of **concentric rings** divided into two broad rings – core service

ring and outer rings (Balk et.al., 1988: 60). All components have been divided into five groups based on components proximity to service delivery – (1) Service delivery (*per se*), (2) supervision and administration, (3) data management, (4) research and international technical assistance, and (5) overhead.

Based on the detailed analysis, Balk et.al.(1988) have suggested the following thought provoking issues which still appear valid:

(1) attention should be given to issues of marginal cost such as, what is the marginal cost of adding health services to family planning package,

(2) attempts should be made to cost the elements in the government program so that there could be more information on the extent to which particular health or family planning interventions are resource constrained, and

(3) simulation exercises should be undertaken to identify the least costly approach to delivery services in rural Bangladesh.

Studies conducted by Janowitz et.al. (1996a,b) and Rahman et.al. (1996) under the auspices of Population, Development and Evaluation Unit (PDEU, IMED, Ministry of Planning) purported to provide information to the government to enable it to improve the efficiency with which family planning services are provided in the government and NGO programs. The domains of the studies are limited to various dimensions of family planning only. These studies provide useful information on work pattern and service delivery costs in family planning which could be gainfully utilized in understanding unit cost and work efficiency in family planning. Janowitz and Rahman's studies provide the following information: home service delivery costs, clinic service costs, program costs for permanent FP methods, costs of contraception per CYP, and cost impact of different services.

Among various findings, those having high policy implications (in terms of work pattern and costing) were as follows:

- If field workers were to increase the number of days and hours worked, that the costs of the program would remain fairly constant over the next ten years ... It is not unreasonable to expect field workers to work additional hours and days (Janowitz, et.al. (1996 a: 92).

- If additional attention is paid to non-users, new users, and users having side-effects and other problems – the contraceptive use and continuation rates would increase; and such changes would therefore decrease cost per CYP (Janowitz et.al, 1996a:93).

Barkat et.al.(1996) have conducted a detailed family planning cost study through participatory planning process for the MOHFW (see Barkat et.al., 1996). In order to attain the national demographic expectation, two strategies were worked out – Intender Projection and the Quality Projection with all the programmatic implications and necessary action steps for implementation. Methodological utility of the study lies in the following: projection of national family planning costs, estimation of annual total and marginal costs of all projections, calculation of average cost per birth averted, conduction of cost-benefit analysis, etc. The whole costing exercise conducted for the family planning program (which is a sub-area under the major areas of ESP) was done for sub-sub-areas (visit, follow-up, FP method-wise activities), conditions (e.g. side effects, continuation) etc. Thus, the methodology applied in the study could be of use in costing

other major areas of ESP (e.g. Child health care, Communicable disease control) as well as the sub-areas of ESP (e.g. unsafe abortion, safe motherhood, neonatal care, etc.).

Streatfield et.al. (1997) have conducted a focussed study "Increasing Financial Sustainability of Family Planning Services in Bangladesh". The main thrust was that if the family planning program was to approach sustainability in the future, in addition to increasing funding, there must be increases in cost recovery and improvements in cost containment. The study observed that the current reliance on a home visit program was an expensive way to deliver oral pills and condoms. The main study question was: *how can pricing of contraceptive supplies be used to encourage couples to go out of their homes to seek family planning services?* The overall conclusion of the study was that the Government without negative consequences could impose some form of differential pricing for the FP Program; and appropriate pricing policies can be used by both the GoB and the NGOs to encourage clients to be more active in seeking family planning services, contributing to the programs sustainability in the long run (Streatfield et.al. 1997).

A detailed cost analysis study of major areas of ESP – family planning, maternal health, child health, control of communicable disease and limited curative care – based on comprehensive analysis of work pattern by categories of staff has been conducted by Barkat. et.al.(1999). The study initially intended to cover FP-MCH only; however due to the coincidence of timing of the study with that of preparation of HPSP, the component-wise ESP coverage was extended. This study provides work pattern and cost related information for thana level (facility) and below. The sample size was restricted to 4 unions in 4 thanas. The study provides interesting insights into the way staff (different categories) use their time at the primary care level. The pattern of time use has been analysed by service delivery mechanism (home visit, clinic), by type of activities, and by ESP components. Using basically a bottom-up approach (although some elements of top-down allocation were used), annual local level cost of delivering all the health and family planning services and disaggregated cost (total and average) by ESP components have been estimated. In addition, the estimates of costs have been shown for all RIBEC input categories and by the type of budget and of cost components. Besides, the estimates of fixed costs and average costs have also been obtained (Barkat et.al. 1999). The relative high utility of the methodology and findings of the study is evident in Ensor's costing exercise using existing data (Ensor 1999).

The most recent relevant study on relative unit cost differences for a sample of Thana, District and Medical College Hospitals is the study conducted by Rannan-Eliya and Somanathan (November 1999) for the Health Economics Unit, MOHFW. The study provides many useful methodological constructs. One of the major findings reported in the study was that the unit costs, in terms of costs per in-patient admission and outpatient visit, of Thana Health Complex is considerably higher than at the District Hospital despite a less complex case mix. In addition, the survey findings contain useful data on recurrent and capital expenditure of THCs, which can be used for the analysis of ESP costing by facility levels.

6. ESP Costing Review Issues: Outcome of One-to-one Discussions

In order to arrive at a better methodology for ESP costing, the present assignment involved among others, one-to-one discussions with relevant people. These people were from different organizations of the government of Bangladesh, donor-agencies and researchers. In all 35 people from these organizations were approached by the research team with a topic guide to capture their opinions, suggestions and observations. The following is the summary of all those deliberations between the research team and others. In order to present the outcome of the discussions in a systematic fashion all the issues discussed have been categorized under eight major issues of concern and, for each, all possible views, concerns and suggestions have been delineated below:

Issues of Concern	Responses
1. Why a review on ESP Costing has been undertaken at this point of time?	Very few respondents, with whom the study team interacted, raised this question, and during discussion with almost all respondents/discussants the position was cleared. It was established that – a) Review will lead to methodological improvement in overall ESP costing and cost-calculations of ESP components, b) Strengthen the planning-process, both physical and financial and that annual operational plan(s) will be more realistic; c) Methodological improvement will bear upon sectoral performance and greater efficiency. The apprehension that methodological changes in costing ESP will open-up "pandora box" was not well founded. It was a consensus that – there is scope for improvement, particularly now, when the HPSP interventions is in its third year. The best of anything is yet to come!
2. Top-down and bottom-up approach – happy match, or a mismatch.	Some respondents were of the view that uncertainties prevail in resource allocation for ESP component financing; the top-down approach is somewhat rigid and often not negotiable – the resource envelope is hardly decided through mutual consultations; on the other hand, bottom-up approach is flexible, open to discussion and more open for adjustment. Basically, top-down approach largely depends on resource availability and national priority etc, but can hardly be firmly predicted well-ahead of time. The bottom-up approach is based more on needs and discussions amongst stakeholders with the risk of costing projected on the high side. Some respondents opined that a happy match between the two approaches is hardly possible, either way to be followed to avoid uncertainties in costing/budgeting. Moreover, merging of two approaches will be time consuming and might lead to more dissonance than consensus. However, most respondents disagreed with this disposition and observed that timely interaction with high policy-level personnel about resource needs based on **sound field survey data** about the program components, the top-down approach would bear fruit and the bottom-up approach would get more credence than expected. There is need to formulate ways and means towards happy matchmaking of the two approaches. The most important, rather critical point is how to generate sufficiently accurate (quality) data and make them available to the concerned people for specific decision making.
3. Priority in resource allocation for HPSP, prioritization within ESP components, and quality issues.	a) Priority in resource allocation by the government and development partners was re-emphasized. The point was well articulated time and again, but **priority** for resources as per requirement did not materialize. Again, some respondents felt that there should, in the face of resource constraints, be **prioritization** within ESP components for resource allocation and utilization. This needs careful consideration by stakeholders. **Stakeholders choices** and decision-making may warrant several short-term **pilot studies** at the field level. Data generated from the field would guide the decision-making process for the **stake-holders**.

Issues of Concern	Responses
	b) Some respondents thought that itemized estimated cost (unit cost) was in many instances, on the **higher side** and in some cases on **lower side**. More rationalization of expenditure was necessary. It was strongly advocated that instead of urging for **increased allocation, greater efficiency in utilization of available resource** should be ensured. c) Some respondents categorically said that `equity' declaration in HPSP is not reflected in the ESP costing. Suggestions put forward to provide information about ESP expenditure by poverty status, women, etc in the future. d) Some respondents suggested that appropriate expenditure monitoring system by ESP areas and conditions needs to be designed and implemented.
4. Disease pattern, prevalence, mortality, morbidity incidences, population size, characteristics should have bearing on ESP Costing.	The respondents recognized that ESP costing should consider factors like population size, characteristics and disease pattern, prevalence, incidence by duration, and mortality and morbidity trend. In other words, geo-demographic and health status of the clients should be considered to have bearing upon cost-planning of ESP. It was admitted that while costing ESP components in HPSP, the assumption was – **each thana would be performing the same way** and that costing was based on **given facilities, not on needs.** Perhaps, during the initial stages of HPSP, alternate options as noted above though more scientific but complex, were not feasible for planning purpose. Most respondents were of the opinion that, as such, methodology for estimating unit-cost followed during the beginning of HPSP was suitable and feasible. There is no scope for **reversing**, or nullifying the methodological framework of estimating ESP Costing. Most respondents maintained that this could be strengthened, provided complexity does not disturb the on-going momentum of HPSP implementation.
5. Work-pattern analysis, time-cost/ opportunity cost, geographical advantages/ dis-advantages, quality care, equity of access – their costs; lack of work-audit, etc.	It was recognized that lack of thorough cost-analysis is the greatest weakness; lack of knowledge of **unit cost of commodity, cost of loss of time** (absence from duty, negligence to duty, slow speed, etc), by personnel engaged, in other words, **poor management** were identified as weak points. It was emphasized that work-pattern analysis and calculation of unit-cost of commodities should be given gradually **due weightage,** otherwise the **creeping inefficiency** would be a permanent norm of **service delivery** which will make the program costly and inefficient. Some maintained that **work-audit** environment should be induced in HPSP implementation strategy. It was also firmly held by some respondents that ESP costing be liberally viewed with, and any rigid attitude would harm the maiden efforts of the government for greater public benefit. A liberal hand for allocating fund by the development partners was also advocated, but this should not give any signal for inefficient/extravagant use of scarce resources meant for alleviating poverty and advancing development of the country. Some of the above mentioned issues have been further elaborated as follows by respondents - Unit cost data is a fundamental input into economic evaluation which helps planned interventions to make existing resource use more effective. Unit cost has some advantages. For example, if we know the unit cost of a disease then resource can be allocated according to the burden of disease. Another one is: using a different mix of inputs, ESP package can be delivered in a cheaper way. Some referred Rannan-Eliya and Somanathan, (1999) for relative unit cost differences between a sample of thana, district and medical college hospitals. Regarding full cost/true cost, some argued that if the normative principles are based on sound and current methodologies for calculating activity based resource needs, then full cost/true cost can be closer to final figures. In the HPSP, expenditure may not fully record expenses incurred, only payments made. For example, here, monthly salaries or a bill for equipment which is delayed until the next financial year

Issues of Concern	Responses
	is not recorded; this makes expenditure lower than actual. These unpaid debts, according to the expert must be included in the full cost. Some experts argued that to calculate financial sustainability, full cost (economic cost) is essential. Conduction of special surveys is proposed by some respondents.
6. Annualization	In the HPSP, life cycle of all ESP equipment is assumed to be 5 years. One suggested approach is to estimate the useful life of each durable item and annualize before aggregating inputs. Another expert opined that proper annualization helps to minimize gap between budget and actual expenditure.
7. Commodity costing/ pricing	The bottom-up commodity costs shows that many of the supplies are disease specific, some of the supplies and a lot of the equipment have common use across sub-components of the ESP. Regarding relation between commodity utilization and work-pattern, it was argued that in the HPSP, with more commodities sub-optimal patterns of work is not guaranteed to change sufficiently to proper utilization of these commodities.
8. Full cost calculation, quality service delivery (particularly ESP delivery), Annual lapses in achieving targets (physical and financial)	Some respondents were critical about the concept of full costing of ESP as they think full costing would be cumbersome, complex and not often needed from the point of financing from public exchequer. Unforeseen costs involvement including social costs, costs for preparatory work (such as workshops, meetings, retreat etc.) need not be highlighted to calculate the full costs of ESP. A few other respondents thought that delineation of non-ESP costs from ESP costs (unit cost) is not easy, rather difficult. In cost calculations, assumptions and the principle of rule of thumb were convenient and close to reality. However, most of the respondents agreed that full costs calculation of ESP components (unit-wise) is a necessity at pre-appraisal/appraisal stage; the full knowledge must be there about full costs, so that options and choices in terms of opportunity costs (economic costs) can be judiciously exercised. Then a very few respondents raised the question of value of ESP costing in view of penalty of fund and delayed release/availability of fund causing serious set-back to achieving the targets as laid down in the Annual Operational Plan (AOP). They think, once you mis the Bus you can hardly reach the destination, no matter how efficient a Line Director might be. He is helpless, and for no fault of his own he is struck up in the system, and a desirable change in the system would be time consuming because attitudinal and behavioral change cannot be accomplished in quick steps.
9. Followup-action and followup-mechanism of innumerable studies and workshops in Health and Family Welfare Sector.	Some respondents during one-to-one discussion raised the issue of systematic action for follow-up of activities generated from innumerable workshops and seminars for which crores of taka are spent annually from the public exchequer. Respondents were of the view that not only large amount of hard cash is spent but "time" of a huge number of personnel are spent which is never costed, though opportunity cost of Taka spent could even be larger than the "hard cash". Workshop resolutions, seminar recommendations remain in paper and are forgotten, except in few cases where sporadic efforts are seen. It was strongly felt that follow-up action in a systematic way should be sustained and a follow-up mechanism, not simply a "committee" mechanism, be instituted, and if necessary capable, dependable outside agencies may be engaged for facilitating follow-up action stage-by-stage. A few respondents said that while the review process for methodological improvement in ESP costing should continue, and if necessary, pilot projects undertaken, the existing estimates of costing ESP need not to be overruled, rather fund should be made available to meet the estimated needs of ESP service delivery.

7. Key Findings

Based on the indepth analysis of the relevant studies, brainstorming sessions and one-to-one discussion with the relevant persons, the following key issues are in order so as to improve upon the ESP Costing framework in the future**:**

1. Both the top down and bottom-up procedures generate useful information. However, appropriate combination (matching) of top-down (allocation) and bottom-up (accounting) procedures is needed to arrive at a closer-to-reality costing estimate.

2. The level of accuracy and utility of top-down estimation of salary and operating expenditure can be enhanced through thorough work pattern analysis. This needs to be done in the future to get rid of the assumption that existing staff, skill mix, work efficiency and working routines are adequate. Available information on work pattern analysis can be gainfully utilized in the process. A detailed study involving various dimensions of work pattern analysis is warranted.

3. Information about full cost of ESP by components should be made available and be applied to meet the requirements of technical efficiency, allocative efficiency and dimensions of financial sustainability.

4. Information about non-ESP in ESP and ESP in non-ESP should be available. Wide use of 'notions' and 'guesses', and 'rule of thumb' should be gradually replaced by apportionment exercises to the extent feasible. These exercises are needed also for capital and joint cost allocations.

5. Input-coefficients need to be estimated. This is necessary to work out optimal input combinations and measurement of cost-efficiency.

6. Unit costs by major areas of ESP upto certain level of details are needed. Unit cost by services by type of facilities needs to be worked out. Appropriate apportionment exercises are needed to estimate unit cost by components.

7. ESP costs' share to the poor, women and poor men and women need to be estimated to have clearer idea about the equity consideration of public health benefits. Studies on user-profile and benefit-incidence may appear useful.

8. Appropriate means and ways need to be devised to ensure that the consensus reached are followed-up.

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