No.

Ministry of Healthcare and Nurtrition
Democratic Socialist Republic of Sri Lanka (MOH)
Japan International Cooperation Agency (JICA)

The Development Study on
Evidence-Based Management for the Health System in Sri Lanka

Resource book I

Cost Accounting

Final Report
Volume 2

September 2007
Global Link Management, Inc.

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Message From Japan International Cooperation Agency

In response to a request from the Democratic Socialist Republic of Sri Lanka, the Government of Japan decided to conduct "The Study on Evidence-Based Management for Health System" and entrusted to the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched the study team headed by Ms. Akiko Shimooka of Global Link Management Co., LTD. from October, 2005 to September, 2007.

This report was developed from enormous efforts between the study team and the officials concerned of the Government of Sri Lanka after a series of field surveys and pilot studies. Upon returning to Japan, the team conducted further studies and prepared this final report.

I believe that this report will contribute to the promotion of Sri Lanka's effort in this field and to the enhancement of friendly relationship between two countries.

Finally, I wish to express my sincere appreciation to all the persons concerned for their close cooperation extended to the study.

September 2007

Yoshihisa Ueda,
Vice President
Japan International Cooperation Agency

September 2007

Mr. Yoshihisa Ueda,
Deputy Vice President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

Dear Sir,

We are pleased to forward herewith the Final Report for "The Development Study on Evidence-based Management for the Health System in Sri Lanka."

This report compiles the results of the study which was conducted from October 2005 through September 2007 by the Study Team organized by Global Link Management Inc. under a contractual agreement with the Japan International Cooperation Agency (JICA).

The Final Report consists of four separate volumes: one Main Report and three Resource Books. The Main Report titled "Roadmap for Implementation" presents the action plans and proposals of the Ministry of Health, Sri Lanka for the next 2 to 5 years, covering the three strategic programme areas identified in the Sri Lanka Health Master Plan. The Resource Books present the results of the technical surveys and case studies together with the survey tools and analysis. They contain the evidence based upon which the action plans were developed. The Resource Books will help stakeholders in Sri Lanka as well as interested parties in Japan in planning and programming future activities.

We would like to express our sincere gratitude and appreciation to the officials of your agency and the JICA Advisory Committee for guidance and advice provided during the execution of the study. Our appreciation would also go to the people in Sri Lanka who tirelessly worked with us, guided us and supported us for the last two years.

We are confident that the results of the Study, including the intangible knowledge and skills shared with our Sri Lankan counterparts, as well as the acknowledged change in mindset the study enabled will make a significant contribution to the Sri Lankan Health System in its future development.

Sincerely Yours,

Akiko Shimooka
Team Leader
The Development Study on Evidence-based Management
for the Health System in Sri Lanka
Global Link Management, Inc.

Preface

The Government of Sri Lanka and the JICA agreed to jointly undertake the development study on "Evidence-Based Management (EBM) for the Health System in Sri Lanka". The Study, referred to as "the EBM Study", commenced in October 2005. The EBM Study consists of three components. Overall, they contributed to meet the new challenges faced by the Sri Lankan health system: transition in epidemiological pattern; increased public expectations of healthcare services; and increasing demand for efficient use of health finances. The three programme areas of Quality Assurance, Health Sector Financial Information Management, and NCD Prevention and Management directly correspond to these three challenges.

The overall aim of the EBM Study was to initiate a pilot process that will give valuable feedback on standard good practices in managing change. It also helped identify the conditions that need to be in place for effective implementation. The conditions identified included policies, regulations, resource requirements as well as mechanisms and methodologies that need to be in place both at the ground level and at the regional and central level.

1. Structure of the Final Reports

The results of the EBM Study are presented in the “Main Report” and in three separate “Resource Books”.

Composition of the Final Reports	Title
Main Report	Roadmap for Implementation
Resource Book I	Resource Book I: Cost Accounting
Resource Book II	Resource Book II: 5S-TQM
Resource Book III	Resource Book III: NCD

A. Main Report

This document acts as the roadmap for the implementation of three key programme areas that were prioritised in the Health Master Plan (HMP): 1) Quality Assurance; 2) Health Sector Financial Information Management; and 3) NCD Prevention and Management. It discusses the intent and commitment of the Ministry of Healthcare and Nutrition (MoH) for the next 2 to 5 years.

The action plans and proposals contained in the Main Report were developed to support, refine, expand or update the project profiles that were originally drafted in 2005 as part of the HMP. They outline an implementation framework that was formulated based on evidences from past practices and from the EBM Study.

The Main Report, titled ‘Roadmap for Implementation’, is the lead document to three other documents entitled “Resource Book I: Cost Accounting”, “Resource Book II: 5S-TQM”, and “Resource Book III: NCD”.

The Main Report consists of 6 chapters:

Chapter 1 *Introduction*	Chapter 1 presents an overview of the health sector and its challenges, together with a brief introduction to the scope and contents of this report.
Chapter 2 *Costing for Hospital Management* **Chapter 3** *Hospital Quality & Safety* **Chapter 4** *Chronic NCD* **Chapter 5** *Trauma*	These four chapters set out the action plans and proposals for three key programme areas of the Health Master Plan. They also explain the basis upon which the action plans and proposals were developed. The chapters contain five sections: 1) Challenges; 2) Local Initiatives; 3) Pilot Interventions; 4) The Roadmap; and 5) Policy Considerations. The action plans or proposals are described in Section 4 of each chapter, and is titled `The Roadmap`.
Chapter 6 *Operationalising the Action Plans*	This chapter discusses key considerations for actual operationalisation of the intent and commitment as they are reflected in the action plans and proposals.
Annexure *Action Plans*	Action plans and proposals are presented in a template format, which summarises project profile, strategic framework and plan of actions.

Each chapter starts with a set of key messages in bullets. Each message gives concise descriptions of main issues, challenges, concepts, activities and the main results. In combination, they convey a snap-shot of the proposed programme areas.

B. Resource Books

The Resource Books served as the platform upon which the action plans and proposals were formulated. They also contain substantial evidence and management tools related to the three key programme areas. In contrast to the summary of information presented in the Main Report, the information carried in the Resource Books is more technical and detailed, giving both statistical data and descriptive information on the results of situational analysis, survey instruments, training manuals, case studies, etc.

The intended users of these books include stakeholders in the target areas of the action plans and proposals presented in the Main Report, potential planners and implementers of the similar projects, researchers and students who are interested in the subject areas, and the like.

B.1 Costing

Chapter 1 Key Issues & Challenges	The first chapter illustrates costing as an essential activity in the context of the current budgetary problems in Sri Lanka while highlighting the present status of inefficient costing information available at the institutional level. The chapter also provides the concepts of accounting.
Chapter 2 Overview of The Component	This chapter presents the study plan in detail, including listing the objectives, activities and planned outputs relating to improvement of hospital management through cost accounting.
Chapter 3 Literature Review & Case Studies	The third chapter focuses on the basis on which the costing exercises were carried out. The topics include: the literature survey (involving both hospital based and disease management-based studies); the management needs survey that highlights the shortcomings of the current reporting systems and the lack of skills in costing and financial management among hospital management; and the studies of the supply of pharmaceuticals and hospital costing in the private sector in Sri Lanka.
Chapter 4 Methodology Development	The costing system at Sri Jayawardenepura General Hospital (SJGH) was studied in detail in this Chapter. The methodology involved in the step-down cost accounting is presented, drawing on its operationalisation at SJGH and the results derived. Section 4.3 then uses the step down unit costs of the two pilot hospitals in Kurunegala district along with time studies carried out at the Colombo North Teaching Hospital, to derive disease management cost estimates for five selected conditions/treatment procedures.
Chapter 5 Pilot Implementation: Hospital-Based Costing	Chapter 5 presents the results of step-down cost accounting in the two pilot hospitals followed by comparisons of unit costs across medical specialities and units/wards.
Chapter 6 Way Forward	The final chapter summarises outcomes of the pilot implementation at two hospitals, and discusses policy concerns in the context of adopting managerial cost accounting in Sri Lanka.

B.2 5S-TQM

Chapter 1 Key Issues & Challenges	This chapter introduces key issues and challenges that the public hospitals in Sri Lanka face. It also summarises key concepts related to quality in particular in the context of the health sector. Finally the chapter provides an overview of principles that constitute hospital quality.
Chapter 2 Component Overview	This chapter provides an overview of this component, describing the study aim, objectives, strategies and outputs. It also briefs the North Western Province and five hospitals selected for pilot interventions. Working arrangements and implementation schedule were also presented in the end of this chapter.
Chapter 3 Situational Analysis	This chapter is devoted to describe local situations on the target province as well as profile of five pilot hospitals and their baseline information. Results of the studies on clinical pathway, patient/staff satisfaction, and best practices in the selected hospitals are also presented together with the stakeholder analysis.
Chapter 4 Methodology & Strategies	The chapter describes approaches and strategies to enhance hospital quality. The 5S technique is described as a basis for the total quality management and its operations are detailed in phases.
Chapter 5 Implementation & Assessment	Preliminary and final results of the pilot implementation at five selected hospitals are given. The chapter also documents the process and results of the final assessment of 5S implementation done by using two tools: KAP study and 5S audit. Analysis provides some common factors that contributed to the successful implementation of 5S at the selected hospitals. The chapter ends with a brief summary of activities carried out at the central level: development of 5S implementation guidelines and M&E quality tools.
Chapter 6 Way Forward	The last chapter describes the process and main features of the recently drafted national policy on Quality and Safety in Hospitals. It also summarises the challenges for sustaining the 5S-TQM programmes at the hospital levels.

B.3 NCD

- Part 1

  This part encompasses the concepts of Non-communicable Diseases, the government and other parties that are involved in the management of Non-communicable Diseases, the challenges they face, and the activities and outputs of the EBM Study.

Chapter 1 Conceptual Framework	This chapter describes why prevention and management of NCD was selected for EBM Study. It gives an overview of factors contributing to chronic NCDs as well as Trauma. Finally it describes strategies or approaches to prevent and control chronic NCD and Trauma.
Chapter 2 Stakeholders	Chapter 2 focuses on government stakeholders and other partners like professional organisations, unions, non-governmental organisations, research and academic institutions and media. It discusses the survey done to identify the roles of stakeholders in the management of non-communicable diseases in Sri Lanka and to explore the limitations for progress in their activities.
Chapter 3 Key Issues & Challenges	This chapter defines some of the key challenges the health system in Sri Lanka is facing. The discussion is mainly focused on issues that pertain to chronic NCD and trauma.
Chapter 4 EBM Study On NCD	This chapter presents the purpose and output of NCD component. Outputs are described by areas of interest. It also focused on activities to deliver the outputs by each subcomponent like evidence base, trauma system, healthy life system and information system.

- Part 2

  Part 2 is on chronic NCD and consists of 6 chapters. This part discusses extensively the chronic non- communicable diseases and the burden they impose on the world as well as Sri Lanka. It considers the actions that can be taken to address the chronic NCD burden, including what can be done about the early life factors. This part also describes the pilot implementations that were done in Kurunegala and Polonnaruwa.

Chapter 5 Chronic NCD Burden	This chapter focuses on the burden of chronic NCD. It describes the trend in morbidity and mortality of main chronic NCDs. It also gives an overview of biological risk factors, behavioural risk factors and other risk factors of chronic NCD.
Chapter 6 Chronic NCD Strategies & Programmes	The second chapter is about the strategies and programmes for the prevention and control of NCD. It describes the WHO global strategies and the recommendations to address the main risk factors for Chronic NCD as well as the interventions, programmes, projects started by the EBM Study to address these issues.
Chapter 7 Early Life Factors	This chapter is on the study undertaken to find out the relationship between early life factors and non-communicable diseases.
Chapter 8 Behavioural Risk Factors In Kurunegala	The fourth chapter describes the behavioural risk factors found in the Kurunegala district. Unhealthy diet, physical inactivity, tobacco and alcohol use and inability to cope with persistently high levels of stress have been identified as risk factors to develop chronic NCD. Options to address each of these risk factors, communication messages and finally the indicators to assess the progress is described in this chapter.
Chapter 9 Chronic NCD Prevention In Kurunegala	Chapter 5 is a detailed account of the pilot implementation of the Healthy Lifestyles Programme in Kurunegala. Advocacy and building a broad base of supporters, assessment of baseline status in 4 settings, training of trainers and finally review of t Healthy Lifestyle programme in Kurunegala are discussed.
Chapter 10 Chronic NCD Surveillance In Polonnaruwa	The final chapter presents the pilot implementation of the chronic NCD surveillance system in Polonnaruwa. It gives an overview of the disease surveillance activities in Sri Lanka and activities conducted in Polonnaruwa in relation to surveillance. Formulation of a minimum data set for chronic NCD, development of a surveillance system and training programmes for implementation of chronic NCD surveillance system are described.

- Part 3

  Part 3 is on Trauma and it has 6 chapters. This includes an insight into the actual burden of trauma in Sri Lanka, the actions that can be taken and that are already taken to address this burden, and the final conclusions including the new policies and plans derived from the pilot implementations.

Chapter 11 Trauma Burden	The first chapter presents the burden of trauma on the health system and economy of Sri Lanka. It describes the morbidity, mortality and the cost of trauma in Sri Lanka.
Chapter 12 Trauma-Strategies & Programmes	Strategies and programmes for prevention of trauma have been discussed in this chapter. It is explained in certain levels such as safety promotion, pre-hospital care, in-hospital care and rehabilitation.
Chapter 13 Development of a Coordinated and Sustainable Trauma System	The third chapter discusses the development of a coordinated and sustainable trauma system, establishment of the Trauma Secretariat, organisation of the Trauma System Development Committee and proposals to expand them.
Chapter 14 Safety Promotion: An Initial Step	This chapter discusses safety promotion. The activities undertaken in relation to the UN Road Safety Week including exhibitions, media seminars, video presentations, street dramas and school education programmes are described in this chapter in great detail.
Chapter 15 Trauma Surveillance In Pilot Hospitals	The fifth chapter describes the trauma surveillance in 4 pilot hospitals, namely Teaching Hospital Kalubowila, General Hospital Kalutara, Base Hospital Horana and Base Hospital Panadura. Under this study Trauma, a surveillance record was developed to collect data and software was designed to enter the collected data.
Chapter 16 Emergency Treatment Units: An Exploratory Review	The studies on Emergency Treatment Units and Primary Care Units are discussed in the sixth chapter.

2. Profile of the EBM Study

A. Study Objectives

A key aim of the EBM study was to set in motion of change that would act as a catalyst for future developments in the key programme areas identified by the Health Master Plan by initiating a first step in implementing some core aspects of the HMP on a pilot basis.

B. The Principle Approach

The principle approach adopted in this study was to develop an evidence-based management system for the healthcare sector in Sri Lanka. Evidence-based health care takes place when decisions that affect the care of patients are taken with due weight accorded to all valid and relevant information. The need for an evidence-based healthcare system for Sri Lanka was also highlighted in the HMP. While the evidence-based approach has already been practiced in clinical medicine, its application to healthcare management, particularly hospital management had been slow. Therefore, the approach of this study was relatively novel.

A system based on evidence is also transparent, and has numerous benefits. At the macro level, it helps in the identification of strategic priorities, as well as fund and other resource allocations. At the micro level, it helps in planning and prioritising activities. An evidence-based system also helps the donor community in formulating their assistance strategies. For this approach to work, managers need to have the necessary information to make decisions as well as possess the tools and techniques necessary to generate this information.

The EBM study consisted of 3 main components and the study attempted to adhere to this overall principle in undertaking each of the three components.

C. The Three Components

Component 1 dealt with improving healthcare service quality in public hospitals by reorienting the staff to implement a continuous quality improvement process. This process would ultimately lead to the establishment of Total Quality Management in public hospitals. As a first step, the EBM study, implemented the Japanese 5S quality improvement method on a pilot basis at 5 hospitals in the North Western province. This approach was not totally novel to Sri Lanka. The Castle Street Hospital for Women in Colombo has been well recognized for its successful implementation of the 5S approach and for transforming not only hospital operations, but also the mindset of workers. This bottom-up approach would lead to both increased employee satisfaction as well as patient satisfaction. This would then work in a self-reinforcing cycle resulting in the provision of improved healthcare services. With a view to sustain the 5S implementation and to proceed to Total Quality Management (TQM), the EBM Study introduced a continuous learning cycle (collaborative improvement approach).

Component 2 dealt with the provision of rationalized financial information for the management of the healthcare system in Sri Lanka. As a first step, Component 2 developed a detailed cost accounting methodology for public hospitals. It initially focused on the design of a data collection methodology based on cost centres, which formed the basis for cost accounting. This methodology drew upon the step-down methodology in general, and the Japanese experience in integrating clinical and financial costing systems in particular. Based on the data collection methodology, pilot implementation of the new costing system undertook at 2 hospitals in the North Western province. Furthermore, the department level costing system (based on cost centres) also formed the basis for further analysis of costs based on disease type. Component 2 also undertook this additional analysis at the same two pilot hospitals, as well as at the Colombo North Teaching Hospital at Ragama. These programmes could be replicated at other locations as well. Once the cost accounting methodologies are adopted at all hospitals, it would form the basis for a rationalized database of financial information for the healthcare sector.

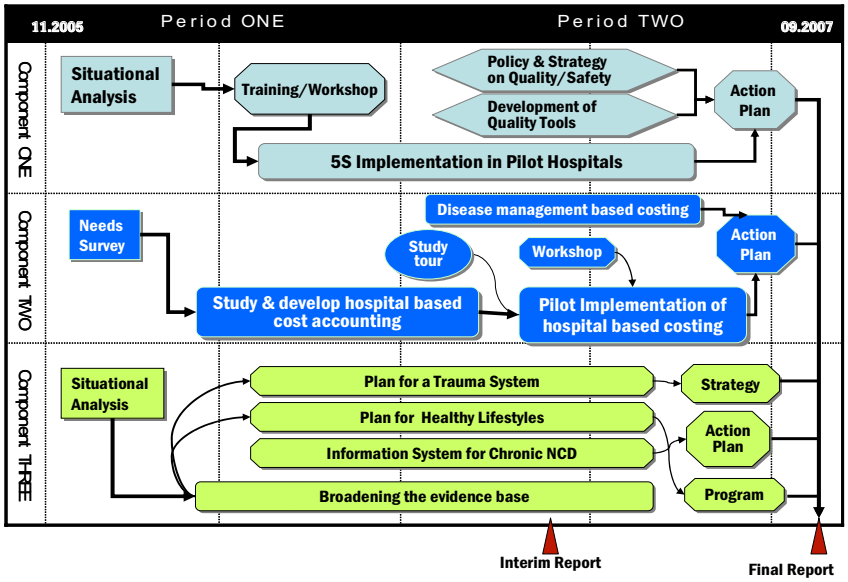
Component 3 dealt with strengthening the capacity of the health sector and communities in the prevention and management of non-communicable diseases (NCDs), both chronic and acute, throughout the course of life. It was designed to complement or supplement the existing programmes of the government as well as to support the implementation of existing policies or the formulation of new ones. This component undertook a number of activities aimed at broadening the evidence base required for the prevention and management of NCDs. It used this broadened evidence base to plan and implement lifestyle change programmes, including social marketing campaigns and behavioural change communications, aimed at targeted groups. Specifically, its four-pronged strategy consisted of the following:

- Broadening the evidence base through the following means: 1) Case studies and forums that highlight good practices in reducing the risk factors and underlying determinants; 2) Research on the influence of early life factors; 3) Focus group discussions on the knowledge, attitudes and practices of selected target groups (in the Kurunegala district); 4) Advisory groups in building consensus on technical issues; and 5) A symposiums on ensuring the effectiveness of policy processes and policies.
- Planning for safe communities and initial implementation of a trauma system, including an injury surveillance system in the Colombo South General Hospital (Teaching) Kalubowila, General Hospital Nagoda, Kalutara, and 2 base hospitals at Panadura and Horana.

- Pilot testing interventions to promote healthy lifestyles in Kuliyapitiya division, specifically in 5 hospitals, 10 schools, 18 workplaces and in a village with 483 residents.
- Strengthening the information system in Polonnaruwa district so that it can generate, manage and use information on priority chronic conditions.

D. Work Flow

Figure 1 illustrates the work schedule for the EBM study. It shows the major activities/ tasks undertaken as part of the EBM study.



Each component started with a situational analysis, which included discussions with key stakeholders, and was aimed at gaining a comprehensive understanding of the ground situation, and identified the immediate focus for the study. Once this was done, the study moved to the target hospitals and populations for pilot implementation. The final stage of the study consisted of formulating strategies and action plans for future expansion.

Map of Sri Lanka

Key Messages

Key Issues & Challenges

- Sri Lanka has an implicit health policy of equitable and fair distribution of resources among its citizens; however resource scarcities, imbalances in regional economic growth and inequalities in central government allocations to provinces hamper the operationalization of this objective in its entirety.
- Performance based budgeting is being gradually adopted but at present the budgeting practices still remain rather ad hoc, being based on incremental budgeting. Financial constraints also result in ad hoc pruning of estimates by the Treasury. Such unsystematic responses contribute to poor efficiency and welfare loss.
- While checks and balances are incorporated into the financial system to prevent misappropriation of funds, similar attention has not been paid by the system to preventing misallocation and waste.
- Financial accounting is implemented for reporting and disclosing a hospital's financial situation and past management achievements to an external party; on the contrary, managerial accounting is implemented for providing managers within a hospital with information to facilitate management decision-making.

Overview of the Component

- Hospitals in Sri Lanka practice financial accounting but not cost accounting and so are in no position to guide hospital managers and policy makers regarding the efficient allocation of resources. The JICA-EBM study is an attempt to fill this lacuna.
- The objective of Component 2 was to strengthen hospital managerial functions through the development of a managerial cost accounting system. This involved designing the step down cost accounting framework, developing data collection instruments, piloting the costing process at two hospitals and the analysis and dissemination of the per unit per patient day costs derived for different wards and units.

Literature Review & Case Studies

- The review of costing studies relating to hospital and disease based costing revealed that significant gaps existed in the available costing data. This suggested that the creation of a systematic costing process that could be adapted and adopted for different levels of hospitals and diseases would be of importance in improving macro and micro level economic efficiency in the health sector.
- The survey of management needs revealed that the carrying out of regular budgeting and planning exercises depended on the existence of a specific unit to carry out such activities. Likewise though hospital management meetings were held, such discussions were not based on evidence. Systematising management cost accounting would be useful in both cotexts.
- The study of the pharmaceutical sector revealed that there were cost-related problems in the entire process ranging from the estimation of drug needs to the disbursement of such drugs to patients. Better technical procedures in estimating drug needs, systematic record keeping processes and greater interest in stock

management were all identified as means of improving efficiency and achieving cost containment.

- The study on the private sector concluded that there was great interest in costing, financial and economic issues in private sector institutions. Greater involvement between health institution managers, clinicians and accounts was considered desirable in achieving accurate cost estimates, which could then form the basis of a rational pricing strategy in the private sector.

Methodology Development

- Step down cost accounting involves the channelling of cost information: direct costs to the appropriate overhead, intermediate or cost centre; then from the overhead cost centres to the intermediate and final cost centres; and then from the intermediate cost centres to the final cost centres, until total costs are entirely distributed to the very units and wards that directly serve the patient.
- Many factors, such as utilization, sophistication of equipment, complexity of procedures, staff involvement, and even patient expectations affect total costs, but the primary interest in cost accounting lies in identifying the degree to which cost is affected by efficiency in service provision.
- Disease based costing incorporating step down cost accounting to gain costs for hospital stay and cost of investigations/procedures, patient specific treatment data on drugs and types of investigations/treatment procedures and time studies to assess staff costs of treatment processes, is an important strategy complementary to hospital based costing.

Pilot Implementation: Hospital Based Costing

- Studies in the two pilot hospitals: Teaching Hospital Kurunegala and Base Hospital Kuliyapitiya illustrated the versatility of the step down cost accounting methodology in allowing costs to be compared across hospitals and within hospitals both from an input perspective, and from a speciality/ward angle.
- Calculating unit costs, per patient day costs in particular are a crucial means of identifying the achievement of efficiency within the hospital. Utilization is a crucial element in bringing down unit costs.
- Sustainability of the costing process depends primarily on interest in such an activity among the management and staff. It also needs sufficient trained personnel, computer facilities and even an adequacy of stationary. Provincial and National Level support and incentives are then essential for ensuring continuous and sustained efforts in managerial cost accounting.

Way Forward

- Experience gained by piloting the managerial cost accounting system, calculating per patient day costs by speciality, and devising means of disseminating and utilizing such information, have been summarised in a Sinhala manual, to support and encourage the continuous costing work at these two pilot hospitals and to assist in introducing it to others.
- It is important to make use of the existing financial accounting system fully for purposes of managerial cost accounting; in the case of clinical information, as well in order to minimize the data

collection workload, wherever possible existing data collection procedures should be adopted with minimal adjustments.

- The purpose of hospital department-based cost accounting is not merely the gaining of final unit cost results but the fact the implementation of a systematic accounting process itself results in improved efficiency.
- Institutionalizing the data collection process; utilizing cost information for budgeting and planning; and encouraging the use of costing information as the basis for evidence based managerial decision making are all crucial for improving the efficiency and financial viability of the health system.

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Abbreviations

A	
A&E	Accident & Emergency
AA	Assistant Accountant
ADB	Asian Development Bank
ADIC	Alcohol and Drug Information Centre
AHF	Ageing and Health Programme
AMRO	Assistant Medical Record Officer
AOS	Accident and Orthopaedic Service
AOTS	Association for Overseas Technical Scholarship
ATLS	Advance Traumatic Life Support
B	
BCC	Behaviour Change Communication
BH	Base Hospital
BHK	Base Hospital Kuliyapitiya
BHT	Bed Head Ticket
BMI	Body Mass Index
C	
CAP	Cycle Action Plan
CD	Central Dispensory
CIDAS	Computerised, Integrated and Decentralised Accounting System
CIGAS	Computerized Integrated Government Accounting System
CMC	Colombo Municipal Council
CNTH	Colombo North Teaching Hospital
CPR	Cardio Pulmonary Resuscitation
CQI	Continuous Quality Improvement
CSHW	Castle Street Hospital for Women
CSTH	Colombo South Teaching Hospital
CSSD	Central Sterile and Supplies Division
CVD	Cardio-Vascular Diseases
D	
DALY	Daily Adjusted life Years
DDG	Deputy Director General
DDGMS	Deputy Director General Medical Services
DGH	District General Hospital
DH	District Hospital
DIG	Deputy Inspector General
DMO	District Medical Officer
DPC	Diagnosis Procedure Combination
DPDHS	Deputy Provincial Director of Health Services
E	
EBM	Evidence-Based Management
ECG	Electro Cardiograph
EEG	Electro Encephalography
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EPSC	Expanded Productivity Steering Committee
ER	Emergency Room
ET	Endo Tracheal
ETU	Emergency Treatment Unit

F	
FBS	Fasting Blood Sugar
FCTC	Framework Convention on Tobacco Control
FGD	Focus Group Discussion
FHP	Foundation for Health Promotion
G	
GDP	Gross Domestic Product
GH	General Hospital
GPS	Government Payroll System
GYN	Gynaecology
H	
HMP	Health Master Plan
HLS	Healthy Lifestyle
HR	Human Resources
HSDP	Health Sector Development Project
I	
ICU	Intensive Care Unit
IDD	In Door Dispensary
IMMR	Impatient Morbidity and Mortality Registry
IMR	Infant Mortality Rate
INGO	International Non-Governmental Organisation
INIH	Italian National Institute of Health
IPAQ	International Physical Activity Questionnaire
ISO	International Organisation for Standardisation
IUGR	Intra Uterine Growth Retardation
IV	Intra Venous
J	
JASTECA	Japan Sri Lanka Technical & Cultural Association
JDC	Jewish Joint Distribution Committee
JICA	Japan International Cooperation Agency
JIT	Just in Time
K	
KAP	Knowledge, Attitude, Practice
L	
LBW	Low Birth Weight
LCA	Life Course Approach
LKR	Lanka Rupee
LRH	Lady Ridgeway Hospital
LSCS	Lower Segment Caesarean Section
LSRD	Lifestyle Related Diseases
M	
MBNQA	Malcolm Baldridge National Quality Award
MCD	Ministry of Child Development
MDPU	Management Development and Planning Unit
MDS	Minimum Data Set
MH	Maternity Home
MO	Medical Officer
MoH	Ministry of Healthcare and Nutrition
MOH	Medical Officer of Health
MRA	Medical Research Assistant
MRI	Medical Research Institute
MRO	Medical Record Officer
MS	Medical Superintendent

MSD	Medical Supplies Division
N	
NCCP	National Cancer Control Programme
NCD	Non-Communicable Disease
NCPI	National Committee for the Prevention of Injuries
NDDA	National Dangerous Drugs Authority
NG	Naso Gastric
NGO	Non-Governmental Organisation
NHP	National Health Policy
NHSL	National Hospital of Sri Lanka
NNP	National Nutritional Policy
NPS	National Productivity Secretariat
NWP	North Western Province
O	
OBS	Obstetric
OD	Organizational Development
ODD	Out Door Dispensary
OPD	Out-Patient Department
P	
PATH	Partnership Action on Tobacco and Health
PCU	Primary Care Unit
PDCA	Plan-Do-Check-Act
PDHS	Provincial Director of Health Services
PHI	Public Health Inspector
PHNS	Public Health Nursing Sister
PHM	Public Health Midwife
PO	Plan of Operations
PSDG	Provincial Specific Development Grant
PSU	Productivity Steering Committee
PU	Peripheral Unit
Q	
QA	Quality Assurance
QC	Quality Circle
QMP	Quality Management Programme
QMT	Quality Management Team
QMU	Quality Management Unit
QMP	Quality Management Programme
QS	Quality Secretariat
R	
RDHS	Reginal Director of Health Services
RG	Registrar General
RH	Rural Hospital
RMSD	Regional Medical Supplies Division
RTA	Road Traffic Accident
RTI	Road Traffic Injuries
RTIRN	Road Traffic Injuries Research Network
S	
SCU	Stock Control Unit
SJGH	Sri Jayawardenapura General Hospital
SLANA	Sri Lanka Anti-Narcotic Association
SLIDA	Sri Lanka Institute of Development of Administration
SLSI	Sri Lanka Standard Institute
SLT	Sri Lanka Telecom
SPC	State Pharmaceutical Corporation

SPHI	Supervising Public Health Inspector
SPHM	Supervising Public Health Midwives
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections
SWOT	Strength, Weakness, Opportunity, Threat
T	
TH	Teaching Hospital
THK	Teaching Hospital Kurunegala
TOT	Training of Trainers
THP	Teaching Hospital Peradeniya
TQM	Total Quality Management
TSDC	Trauma System Development Committee
TS	Trauma Secretariat
U	
UN	United Nations
W	
WB	World Bank
WHA	World Health Assembly
WHO	World Health Organisation
WIT	Work Improvement Team
5S	Five Ss; Sorting, Set in Order, Shining, Standardisation, Self discipline

Chapter 1

KEY ISSUES & CHALLENGES

Key Messages

- Sri Lanka has an implicit health policy of equitable and fair distribution of resources among its citizens; however resource scarcities, imbalances in regional economic growth and inequalities in central government allocations to provinces hamper the operationalization of this objective in its entirety.
- Performance based budgeting is being gradually adopted but at present the budgeting practices still remain rather ad hoc, being based on incremental budgeting. Financial constraints also result in ad hoc pruning of estimates by the Treasury. Such unsystematic responses contribute to poor efficiency and welfare loss.
- While checks and balances are incorporated into the financial system to prevent misappropriation of funds, similar attention has not been paid by the system to preventing misallocation and waste.
- Financial accounting is implemented for reporting and disclosing a hospital's financial situation and past management achievements to an external party; on the contrary, managerial accounting is implemented for providing managers within a hospital with information to facilitate management decision-making.

1.1 NATIONAL POLICIES ON RESOURCE ALLOCATION AND HOSPITAL FINANCING

The government of Sri Lanka is committed to provide a comprehensive health service free of direct costs to the people. Though Sri Lanka's health financing policies are not explicit, in principle, Sri Lanka has attempted to adopt a resource mobilization strategy that would distribute the resources in an equitable and fair manner.

In 1987, the 13th Amendment to the Constitution saw the delegation of certain powers and functions of the central government to the Provincial Councils. In the case of curative health services, all the peripheral medical institutions other than the teaching hospitals and some other large hospitals came under the authority of the Provincial Ministries of Health.

The Financial Commission established in April 1998 is responsible for allocating the annual budget to the provinces. The Commission recommends to the government the principles on which funds are apportioned between the provinces. It should allocate adequate funds from the national budget to the respective provinces for meeting the needs of the provinces (Article 154R of the Constitution) to achieve balanced regional development. However, even the present system, since it involves a highly centralized resource allocation process, makes it difficult to adhere to the above policy. Thus, inequities in allocation of resources are evident.

Key issues surrounding national policies on resource allocation and hospital financing are discussed in the following sections.

1.1.1 RESOURCE ALLOCATION AND BUDGETING

While all Teaching Hospitals, and those General and Base Hospitals under the Ministry of Healthcare and Nutrition (MoH), function as decentralized units with clearly defined budgets, hospitals under the Provincial Ministries of Health do not have separately assigned budgets and have almost no managerial autonomy. See sections A) and B) below for details.

A. CENTRAL MINISTRY

The MOH adopts a program based budgeting system. Estimates are prepared for each program as a budgetary unit that is classified as General Administration (01), General Health Services (70), Hospital Services (71), Public Health Services (72), and Research and Development (74). The programs are divided into functional units called projects that are further divided into line items of expenditure with line item codes. In the presentation of estimates, these line item codes and standard programs have been changed recently to bring them in line with the international classification.

Teaching Hospitals for example are classified under Programme 71 Project 01: Hospital Services and Teaching Hospitals. Project 02 under the same programme covers General and Base Hospitals under the MOH.

Expenditure is categorized into two components namely recurrent and capital. Preparation of estimates, allocation of resources and monitoring of actual expenditure are carried out according to this classification at all levels both in the central and the provincial set up. Each Hospital has the line items of recurrent expenditure listed as Personnel Emoluments, Travelling Expenses, Supplies, Repairs and Maintenance, Contractual Services and Others. Capital expenditure is listed as Rehabilitation and Improvement of Capital Assets, Acquisition of Capital Assets, Capital Transfers, Capital Grants, Other Capital Expenditures and Donor Funded Projects. Budgetary provisions for salaries are computed on the actual number of employees at the end of June the previous year.

Recurrent expenditure is estimated based on health needs. Adjustments to these estimates are however made by the Treasury in line with government financial constraints. In order to direct resources towards the achievement of sectoral policy priorities, certain sectoral expenditure ceilings on recurrent and capital expenditures have been established.

B. PROVINCIAL MINISTRIES

In the budget preparation in the provinces, the recurrent needs are identified by the heads of institutions along with new capital projects and necessary cadre expansions. These are submitted to the Regional Director of Health Services (RDHS). The consolidation of budget estimates from the districts is done by the Provincial Director.

Resources generated by the provinces are extremely limited. The major share of funds for the provinces is allocated by the central government in the form of grants. These include block grants to meet the major part of recurrent expenditure, matching grants as incentives for revenue efforts and criteria based grants to support activities needed to reduce socio-economic disparities among the provinces. The Finance Commission follows a system of benchmarking with regard to this final process. The medium term investment project grants are capital grants and have now been renamed Province Specific Development Grants (PSDG). These latter funds are now channelled directly from the Treasury to the Provincial Councils while the other grants are channelled through the line ministries. The provinces depend heavily on the centre for meeting their expenditure needs.

The annual estimates prepared by provincial hospitals reflect only the expenditure side with funds being allocated based on their

estimates. Recurrent expenditures are incurred in line with the budgetary provisions provided under different categories classified as lines of expenditure. Hospitals are allocated petty cash imprests with limits according to the category of institution for the purchase of urgent items. They are also allowed discretionary expenditures within limits set by the government tender procedures.

The financial data presently compiled at institutional level is insufficient and inadequately disaggregated to support the detailed hospital level financial analysis that would be useful for decision-making purposes. There is therefore an urgent need to establish a proper data collection, cost accounting and control system in provincial level health institutions including at district and provincial office levels.

c. BUDGET ESTIMATION AT NATIONAL LEVEL

Every financial year, a process termed estimate preparation is undertaken within the MOH on the directive of the General Treasury, for the forthcoming financial year. The MOH informs all heads of institutions of the line ministry in writing in early March to send their annual estimates according to the formats given. Following which the institutional head would prepare the estimates and send them to the Ministry. This information should be received by the MOH no later than April.

When the estimates from all the institutions have been received, the finance division compiles a set of estimates called the total estimates. The total budget of the MOH is prepared in two sections. The recurrent budget is prepared by the Finance Division. The capital budget is prepared by the Management, Development and Planning Unit (MDPU). A consolidated budget is submitted to the Treasury by May. The responsibility of preparing the recurrent estimates comes under the Deputy Director General/Finance. The MDPU submits the capital budget to the National Planning Department of the General Treasury with a copy to the Finance Division. After reviewing the capital budget, the National Planning Department submits the budget with their recommendations to the Budget Department of the General Treasury.

The Treasury at present works on a system of preparing budgets for each institution called *zero based budgeting* (allied to Performance Based Budgeting). This basically does not take into account the allocations of the previous years but considers each institution as a new spending agency. The approach of zero budgeting requires that all the activities of an organization should be re-evaluated at periodic intervals. If the Treasury decides that an institution does not need any allocation, it is treated as a zero budget. The main advantage of the approach of zero based budgeting is that unlike the input based incremental budgeting, it

does not assume that the current allocation of resources is still necessarily appropriate.

Even though the MOH prepares estimates for its institutions, the Treasury finally goes by the ceiling prepared by the Department of National Budget. These estimates are taken as the cut-off by the Treasury. Therefore, taking into account this cut-off, the Treasury reports its allocation to the Ministry usually in the middle of the year. When this figure is received, the Ministry officials have to reallocate their budget to the institutions according to the budget ceiling given by the Treasury. This exercise usually has to be completed within a short period of time and the final reallocated estimates have to be sent back to the Treasury to be included in the government budget. The Treasury then makes an amalgamated summary of all expected expenditure and expected income for the following year and this is submitted to the parliament in the form of an appropriation act. Once the government budget is passed by the parliament, a circular is issued by the Department of National Budget called Authorization of Expenditure. This circular is sent to all Secretaries of ministries, Chief Secretaries of Provincial Councils, heads of departments, and chairmen of corporations and statutory boards. It is only after this circular is received that the money could be spent by the relevant Ministry.

1.1.2 MONITORING EXPENDITURE

Monthly financial information is collected by decentralized units through heads of institutions who are the accounting officers. They are accountable to the Secretary of Health or Provincial Chief Secretary as the case may be, who are the Chief Accounting Officers for National Hospitals and Provincial Hospitals respectively. The following reports are prepared monthly by the DDG Finance/Chief Accountant and sent to the Treasury. They are monthly cash flow requirements (Flash Report), monthly summary of accounts (actual expenditures) and monthly revenue collection report (collections by items of revenue). The Treasury prepares a consolidated report every month making use of this information.

Monitoring the use of the allocated budgetary provisions by different health institutions is done by the MDPU of the MOH. At the beginning of each year, it draws up an action plan for the year. This action plan is in two parts: one for the monitoring of the financial targets; and the other for the monitoring of physical targets. Continuous monitoring includes overseeing whether specifications are listed and tenders have been called for etc.

All hospitals have to abide by the government tender procedures. Heads of decentralized units have the authority to incur expenditure between Rs. 20,000/= to Rs. 2,000,000/= through the local tender

board, which consists of the Director of the hospital and the Administrative Officer or Accountant. For specific major expenses such as major improvements to buildings and purchasing of equipment, the limit is Rs. 2,000,000 if the approval of the Technical Evaluation Committee is obtained. If the requirement exceeds Rs.5,000,000, approval from the Cabinet is necessary.

1.1.3 AUDITING

The Auditor General is empowered by the constitution to audit the accounts of the Ministries and Departments covering all decentralized units. Accordingly, branches of the Auditor General's Department have been established in the MOH and at the National Hospital. The auditors submit their report to the Auditor General and the Parliament. The Parliament also appoints a Committee on Public Accounts with a chairman and members from both the government party as well as the opposition. This implies that the Parliament through its representative body examines critically all cases of financial irregularities or unauthorized excess on the financial provision allowed by parliament in the Budget Estimates.

The Internal Audit Unit is set up to assist the chief accounting officers in accordance with financial regulations 133 and134. A typical internal Audit Unit is headed by a senior accountant. The internal audit monitors whether proper rules, regulations, systems and procedures that are laid down in the various codes and manuals are being followed. Basically it seeks to ensure correctness in account keeping and ensures that efficiency is maintained in the financial operations of the organization.

1.1.4 ACCOUNTING INFORMATION SYSTEM

A. COMPUTERIZED INTEGRATED GOVERNMENT ACCOUNTING SYSTEM (CIGAS)

The Ministry has adopted a computerized accounting information system termed as the Computerized Integrated Government Accounting System (CIGAS), which enables different units both central and decentralized to send accounting information to the Chief Accountant of the MOH. It facilitates activities related to bank reconciliation, writing of cheques and payroll activities. It enables the Accounting Unit to provide monthly accounts and to send a master summary to the Treasury without delay.

B. GOVERNMENT PAY ROLL SYSTEM (GPS)

The government has also adopted a computerized system for the payment of salaries. In this system each employee has an employee number and each month once the payments are done

the computer balances the accounts. New measure such as CIGAS and GPS have increased the efficiency of the accounting system.

1.1.5 GAPS IDENTIFIED IN POLICIES AND PROCEDURES

Even though estimates are meant to represent the needs of each operational unit with subsequent adjustments at national level, the use of arbitrary cut-offs make the resource allocation exercise far from satisfactory. Cuts in estimates are needed due to resource limitations. These cuts are carried out not in a systematic manner in line with the needs and priorities of the various institutions but given predetermined criteria. For example, funds required for personnel emoluments are given priority. Allocation to hospitals is based on the budget estimates submitted by each of the institutions but the lack of any scientific and systematic basis in the preparation of these estimates make the final product unrealistic. There is a tendency to inflate the figures, to somewhat counteract the cuts in estimates expected at the Ministry level.

At the provincial level, there are discrepancies between the provincial estimates and the estimates put forward by the Financial Commission, which incorporates predetermined benchmarks for allocating resources. These benchmarks are not updated to capture the prevailing situation and such evidence cannot be elicited easily due to inadequate health and financial information systems. Capital programs reflect more a political demand. In case of capital projects, there is no planned assessment of impact of such projects on future resource needs such as manpower. More systematic and detailed analysis is essential if the benchmarking is to ensure greater equity in resource allocation and service provision in the provinces.

Further, a detailed methodology for the estimation process at operational level has not been formulated. The absence of a cost accounting system at institutional level is a severe drawback as it is not possible to capture unit costs that would provide supportive evidence for a realistic expenditure estimation system. There is bound to be a mismatch between resource needs and resource provision given the current accounting system. In order to narrow this gap, there is a need to cut down on waste, and institutions have to become more efficient. However, there is no way in which expenditure can be tested against service delivery outputs, except if data collection occurs on a regular basis. Thus, in the absence of preset expenditure norms and unit costs of service delivery, there will always be a big lacuna in accountability in the utilization of allocated funds.

The technical inputs in the preparation of estimates have been minimal. Better cooperation among technical and financial staff in such exercises is essential. The need for training of all personnel in financial management has to be emphasized.

Fiscal discipline needs to be improved across the board. This would involve the introduction of performance based budgeting (Requiring strategic planning regarding agency mission, goals and objectives, and a process that requests quantifiable data that provides meaningful information about program outcomes: Malkers and Willoughby, 1998) and an accrual accounting system (Effects of transactions and other events are recognized in financial statements when they occur and not when cash and cash equivalents are received or paid: CIMA official terminology, 2005). Reviewing the existing system based on performance indicators with a view to incorporating them into budgeting and financial reporting is crucial.

All the above points highlight the weakness in allocation efficiency in the Health Sector. Further study is required to identify the gaps and suggest corrective measures to improve allocation efficiency. Such a process however would first necessitate data collection on costs and utilization of health services. In this study research projects in the areas of cost accounting and improving efficiency and quality of service delivery by reducing wastage have been focused on in the context of a few pilot hospitals. The findings from these exercises would pave the way, not only for improving hospital management but also for the formulation of a better resource allocation process at a national level.

1.2 KEY ISSUES AND CHALLENGES FOR MANAGERIAL COST ACCOUNTING IN THE HEALTH SECTOR

1.2.1 INADEQUATE ATTENTION TO RISING SERVICE COSTS

Although there has been a growing demand for a budgetary increase in order to meet the rising costs of medical services, the budget which is actually allocated by the government has not been expanding in line with these demands due to the poor economic situation in the country. This gap has been widening year after year.

As the medical services provided by the hospitals become more advanced, management becomes more difficult due to the restrictions imposed by the budget. There are no proper cost accounting and control systems in hospitals although cost considerations are important in purchasing items, setting norms, and resource utilization. At present cost of hospital services are neither known to the patients nor to the management. Though the suggestion made by the present Minister of Health of issuing a bill to each patient with a breakdown of the costs, to make them aware of the amount being spent by the government on their behalf, remains unimplemented; nevertheless, there is an increasing interest in cost issues within the Ministry of Health.

1.2.2 INADEQUATE KNOWLEDGE AND SKILLS IN MANAGERIAL COST ACCOUNTING

Most heads of institutions, provincial and district managers in the health sector have little or no financial management skills. Their training in this area is inadequate. Courses and workshops for enhancing financial management skills are essential in overcoming this constraint. Similarly there is a shortage of professionals competent in cost accounting. Therefore, it is important that officers working in finance departments and units be trained in cost accounting.

1.2.3 INADEQUATE ANALYSIS OF HOSPITAL COSTS DUE TO LACK OF INFORMATION

The budget at public hospitals is prepared based on the performance of the previous year. This system does not take into account changes in patient attendance, treatment procedures or epidemiological changes. Clinical information is not combined meaningfully with financial information so as to gain analytical information on hospital costs. This results in the budget being allocated between hospitals without any cost analysis.

The increasing demand for new health and medical services due to changes in the disease structure, and the resultant burden on health financing have been worsening every year. Lack of cost information precludes the identification of the budget shortfall along budget lines, so that necessary services cannot be provided to patients in a systematic manner, and the quality of services is likely to deteriorate, though this cannot be evaluated systematically either. As there is no routine analytical data on costs, it is difficult for hospital managers to undertake a realistic analysis of hospital performance.

If a breakdown of costs for the provision of health and medical services could be identified, this would become useful basic information for the standardization of medical services and efficient hospital management. Lack of unit cost information also makes it difficult to generate any awareness on cost matters amongst hospital employees.

Further, cost information is not available for hospital management to assess how much is spent and on what. Thus, the development of a simple cost accounting system and training of managers in the use of this system would be a step forward in the improvement of hospital management.

1.2.4 LACK OF CORRELATION BETWEEN CLINICAL AND COSTING INFORMATION

Organization charts show in a graphical form the way work is distributed in an organization. The direct supervisor-subordinate reporting relationships are shown clearly and intuitively. Reviewing the organizational structures of some selected hospitals in Sri Lanka enable us to understand the relationships between employees and their job ranking. However it is not similarly possible to understand work flows between and within individual departments because no attempt has been made to measure and evaluate the time cost contributions of individual workers. Developing a new costing methodology for hospitals based on time studies is therefore of importance. It is also necessary to re-categorize and rearrange the relationships of management information between departments which will then be treated as individual cost centres. This study aims, in particular, at linking financial information with clinical information and developing an information system covering all cost centres.

1.2.5 NON-AVAILABILITY OF COST INFORMATION FOR POLICY MAKERS

The budgeting and accounting processes of the health institutions as well as allocations given to the health sector by the Treasury do not take into account new developments and new procedures practiced in the health sector, nor their impact on costs. This is due to the lack of

availability of cost information. It is also noted that when various health policies are drafted, they do not incorporate sufficient cost information such as estimates of projected costs to help in deciding between various policy options. Therefore, the lack of cost information is seen as a major gap in the policy making process.

1.3 CONCEPT OF COST ACCOUNTING

The present costing methods used in Sri Lankan hospitals do not provide sufficient information for hospital managers in planning and control of hospital services. Therefore, it is necessary to introduce a cost accounting system to collate the necessary cost information to be used as an analytical tool by hospital managers. Cost accounting systems determine, record, and report the resources consumed in providing services, in total and on a per unit basis when combined with utilization data.

The purpose of cost accounting from a management perspective is to provide good data on a timely basis that provides enough detail to answer important questions that arise in many decision-making situations. Good data provides the basis for sound decisions. Without good financial data, it is much more likely that a bad decision will be made that translates to wastage of time and money. Component 2 will introduce Cost Accounting from a managerial accounting perspective through elucidating the cost structure of hospital services.

1.3.1 FINANCIAL ACCOUNTING VS MANAGERIAL ACCOUNTING

Managerial accounting is different from financial accounting (see Figure 1-1). The aim of information from a financial accounting perspective is to respond to the demand for public information by preparing reports on income and expenditure such as the balance sheet etc. On the other hand, the aim of managerial accounting is to provide useful information to the managers inside the organization for decision-making, planning and control.

FIGURE 1- 1: FINANCIAL AND MANAGERIAL ACCOUNTING

Institutional cost accounting refers to a computational system where costing calculations are continuously conducted by automatically linking them with financial accounting mechanisms. The role of managerial accounting is to swiftly and efficiently provide regular information to internal managers that can be utilized to make sound judgments. Cost accounting by departments can be implemented by adopting such a managerial accounting system, at hospital level. The significance of managerial accounting is explained below, by contrasting it with financial accounting.

As noted in **Table 1- 1**, financial accounting is implemented with the purpose of reporting and disclosing a hospital's financial situation and past management achievements to an external party in the form of financial statements. On the contrary, managerial accounting is implemented for providing managers within a hospital with useful information for management decision-making.

TABLE 1- 1: FINANCIAL & MANAGERIAL ACCOUNTING

	Financial accounting (External Report accounting)	**Managerial Accounting(Internal Report accounting)**
Information user	Interested external party	Internal managers
Purpose	Reports past achievements	Decision-making, control
Object of report	Past information	Past, present, future
Type of report	Financial statements	Comprehensive, detailed
Regulations	Financial regulations	None in particular
Information characteristics	Accuracy, legality	Usefulness, speediness
Unit of Measurement	Money	Money, Clinical information

In the case of 'cost accounting as financial accounting', there is an obligation to objectively report cost calculations to the party concerned, since financial regulations, formulated rationally and fairly, need to be strictly adhered to.

In the case of hospital accounting in Sri Lanka however, there are no particular regulated standards, as the practice of such costing is in its self still in the early stages. It is important then that 'cost accounting as managerial accounting' be implemented soon in the country, not only to help in the formulation and implementation of such financial regulations but also to provide the information needed for decision making and planning by hospital management. Although the purposes of financial accounting and managerial accounting are different, the accounting processes and calculation methods, etc. are naturally related, and most figures used in managerial accounting are obtained from financial accounting. In order to achieve highly-accurate managerial accounting, highly accurate financial accounting is required.

This study of managerial accounting at hospital level will therefore be based on stringent financial accounting processes as well, in formulating a multi-purpose and timely cost accounting system. It is also important to develop detailed medical service statistics for the disaggregation of expenses to each service category. For example the number of patients undergoing different types of tests in the diagnostic laboratory, the number of different types of X-rays done in the Radiology Department, the number of meals provided for patient and staff categories, etc. This latter task is in keeping with the

objective of formulating a 'managerial accounting system' rather than merely being restricted to a 'financial accounting system'.

1.3.2 TYPE OF MANAGERIAL COST ACCOUNTING IN THE HEALTH SECTOR

Cost accounting involves the introduction of procedures to tabulate and analyze categories of expenses such as personnel expenses and material costs that are required for the provision of medical care services. Cost accounting is the central tool for managerial accounting.

The main types of cost accounting are *"department-based cost accounting*" and *"disease-based cost accounting".* "Department-based cost accounting" is where actual expenses are tabulated and analysed per medical department or per hospital ward and is the first step in cost accounting for a hospital. The methodology that was adopted by the EBM Study is explained in detail in Chapter 4. Disease-based cost accounting involves adopting a standard cost accounting method for selected standardized treatment procedures (including a time study). The details are presented in Section 4.3 of the same Chapter.

Chapter 2

OVERVIEW OF THE COMPONENT

Key Messages

- Hospitals in Sri Lanka practice financial accounting but not cost accounting and so are in no position to guide hospital managers and policy makers regarding the efficient allocation of resources. The JICA-EBM study is an attempt to fill this lacuna.
- The objective of Component 2 was to strengthen hospital managerial functions through the development of a managerial cost accounting system. This involved designing the step down cost accounting framework, developing data collection instruments, piloting the costing process at two hospitals and the analysis and dissemination of the per unit per patient day costs derived for different wards and units.

2.1 APPROACH & STRATEGY OF COMPONENT 2

2.1.1 RATIONALE

Hospital management has to be attentive to, and act on, the constantly changing circumstances within a hospital. It faces pressure from changing health needs of people and other factors such as those arising from the introduction of new technologies. In order to face such evolving issues, and maintain good stewardship, hospital management must undertake planning of services and cost control in an effective manner through regular and systematic analyses of their hospital's performance.

The existing cost accounting system in the government hospitals in Sri Lanka is not oriented to provide useful and sufficient information to managers in evaluating their hospital's performance or for making managerial decisions. Managerial accounting could provide useful accounting information to managers to support their decision making and control functions. The practical use of such a cost accounting system in Sri Lanka would include:

Production of more realistic estimates for budget purposes;

- Availability of costs department-wise for comparison purposes;
- Provision of accurate data to assist with negotiating with health care purchasers;
- Identification of excess cost elements in the delivery of services; and
- Identification of areas where high wastage is observed.

Cost accounting would provide sound evidence on a timely basis that would help hospital managers to answer many important questions that arise in decision-making situations.

2.1.2 PURPOSE OF THE STUDY

This study attempted to develop a methodology for cost accounting across the hospital that measures and allows for estimation of costs associated with patient care. It provides a system where the needed cost information can be generated for managerial decision making. The establishment of a cost accounting system will be carried out based on the implementation of pilot studies in selected hospitals.

A. GENERAL OBJECTIVE

The overall objective of Component 2 was to strengthen hospital managerial functions through the development of a managerial cost accounting system.

B. EXPECTED OUTPUTS

Component 2 aimed to achieve the following outputs through a two year MOH-JICA collaboration project.

- To clarify the cost structure of hospital operations through case studies and surveys.
- To develop a standardized method for cost accounting by clinical departments.
- To develop a standardized cost accounting method for selected diseases.
- To prepare an operational manuals on hospital cost accounting.
- To develop a National Strategic Plan for strengthening hospital financial management by introducing a cost accounting model.

A National Strategic Plan with a medium/long timeframe outline will focus on the strategies to be adopted by the MOH for the development of a rationalised financial information system for hospital management.

While attempting to achieve the above-mentioned outputs, the following evidence will be generated through pilot activities. This information will be useful in formulating a National Strategic Plan for hospital policy making:

- Evidence relating to the development of new hospital managerial accounting systems such as appropriate demarcation of cost centres, cost allocation criteria.
- Evidence to link clinical information with managerial accounting information: classification of patients by cost centre, per day costs, cost per treatment procedure etc.
- Results of actual cost accounting by clinical department (retrospective cost accounting method) in the selected hospitals.
- Results of standard cost accounting by treatment procedures (scenario building cost accounting method) in the selected diseases/treatment procedures
- Guidelines for implementation of cost accounting (focus here will be on practical aspects of cost accounting, reporting structures, administration)
- Findings of the literature review.

2.2 IMPLEMENTATION ARRANGEMENTS

2.2.1 SELECTION OF PILOT HOSPITALS FOR EVIDENCE-BASED STUDIES

From the viewpoints of standardization and acceptability, the Ministry of Healthcare and Nutrition (MOH) suggested that the two pilot hospitals be selected from hospitals within the same Province. The selected hospitals are both situated in the Kurunegala District of the North Western Province, and they were the same sites used for the piloting of Component 1 as well. Selecting the same hospitals for piloting two different components had the advantage to the Study Team that the two components could be jointly worked on more conveniently while developing a better working relationship with the Provincial Ministry and RDHS office. In addition, each component could benefit from the outputs generated by the other: for example maintaining an orderly filing system through the 5S approach under Component 1 would support the formulation of a management information system under Component 2.

Since the work carried out on these pilot hospitals was to be the basis for formulating an Action Plan it was imperative that the pilot sites be selected to represent typical national and provincial hospitals in Sri Lanka. As such, the selection took into account criteria such as institutional set-up of the hospital, numbers of hospital beds, numbers of inpatients/outpatients and hospital employees, incidence of illnesses, etc. The willingness and interest of hospital managers to take part in the improvement of cost management in their hospitals was also taken into account.

The hospitals selected for the pilot were the Teaching Hospital Kurunegala (Line Ministry Hospital) and the Base Hospital Kuliyapitiya (Provincial Hospital). These hospitals come under the jurisdiction of the Director General of Health Services and the Provincial Director of Health Services respectively. They are administered under two different budgetary systems.

2.2.2 SEQUENCE OF STUDIES/SURVEYS

Multiple studies were carried out during the course of the EBM study. They were related to one another and so needed to be carried out in a sequence. *First*, the EBM Study sent questionnaires to management executives in the line ministry hospitals (hospital directors, directors of nursing services departments, accounting managers, administrative managers etc) to investigate their perceived need for improving hospital management, with special reference to the linkage of financial and clinical information systems. This survey had another aim: that of identifying the typical problems faced by hospital managers and the type of information systems that make

management effective. The survey results were also used for setting the selection criteria in choosing the pilot hospitals.

Next, the Study Team undertook a case study at Sri Jayawardenepura General Hospital (SJGH), a semi-autonomous tertiary hospital where cost accounting is partially in practice. This exercise helped the Study Team to learn about costing systems in Sri Lanka and about hospital service provision structures similar to those used in other Teaching and Provincial Hospitals under the Line Ministry.

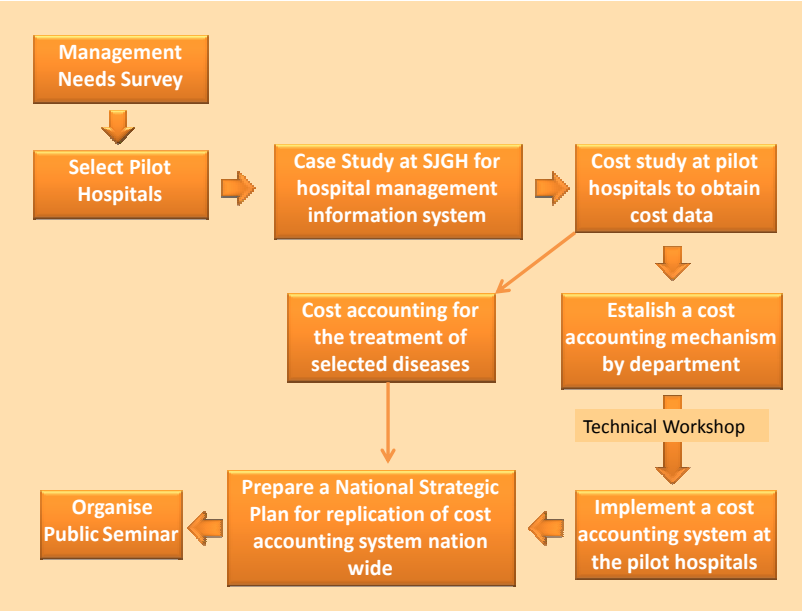


FIGURE 2- 1: SEQUENCE OF IMPLEMENTATION OF EBM STUDY

As the third step, the status quo of hospital information systems in the selected pilot hospitals was surveyed in order to understand their institutional arrangements, manpower allocation, clinical information, budget allocation, expenditure plans, etc. *Subsequently*, the results of these surveys were utilised for analysing departmental costs to establish a cost accounting system such as that introduced in the pilot hospitals. The same cost information was also used for analysing costs related to the treatment of selected diseases.

Prior to the introduction of a cost accounting system to the hospitals, a series of technical workshops were conducted to share the managerial survey results and explain the mechanism of cost accounting. Selected hospital staff was actively involved in implementing the costing exercise.

2.2.3 REPORTING SYSTEM

The key to a successful cost accounting program is the ability to produce reliable reports on a regular basis that provide useful information for management. Reliability stems from having confidence in the cost calculation process. When cost or profitability is challenged, the reports must be able to stand the scrutiny of critics

who might have reason to cast doubt on the credibility of the figures. Regularity means that reports are produced as a normal result of closing the books at the end of every month.

Hospital staff, with technical support from the EBM Study Team, developed information systems using software such as spreadsheets that allow for periodic updating of the information and summary presentations of data for reporting purposes.

2.2.4 STUDY TOUR FOR COUNTERPART MEMBERS

A 10-day study tour was organized to visit St. Mary`s Hospital, Fukuoka, Japan, for the MOH counterparts to obtain first-hand knowledge of how a cost accounting system is being operated in the hospital. This study tour was designed for top officials of the Ministry at both central and provincial levels who were in a decision making position in the field of finance, as well as management staff of the pilot hospitals in the Kurunegala district.

The participants were expected to provide feedback from this study tour towards the formation of a national action plan.

2.2.5 PREPARATION OF AN ACTION PLAN

The EBM Study team provided technical support to their counterparts in formulating a Provincial Action Plan that outlines a three-year framework of actions for strengthening financial management in hospitals in the North Western Province.

The preparation of this Action Plan took into account the feedback from the pilot studies. Based on the provincial implementation, an attempt would be made to standardize the financial management system and procedures at the national level in the future.

2.3 STUDY SCHEDULE

The Component 2 Study developed a systematic and detailed Cost Accounting System for hospitals through carrying out a case study at Sri Jayawardenapura General Hospital and pilot studies at two hospitals in the Kurunegala District. The team initiated their investigation in November 2005. Figure 2-2 illustrates the overall work flow of the Component 2 Study, and Table 2- 1 gives a summary of the activities and working schedule.

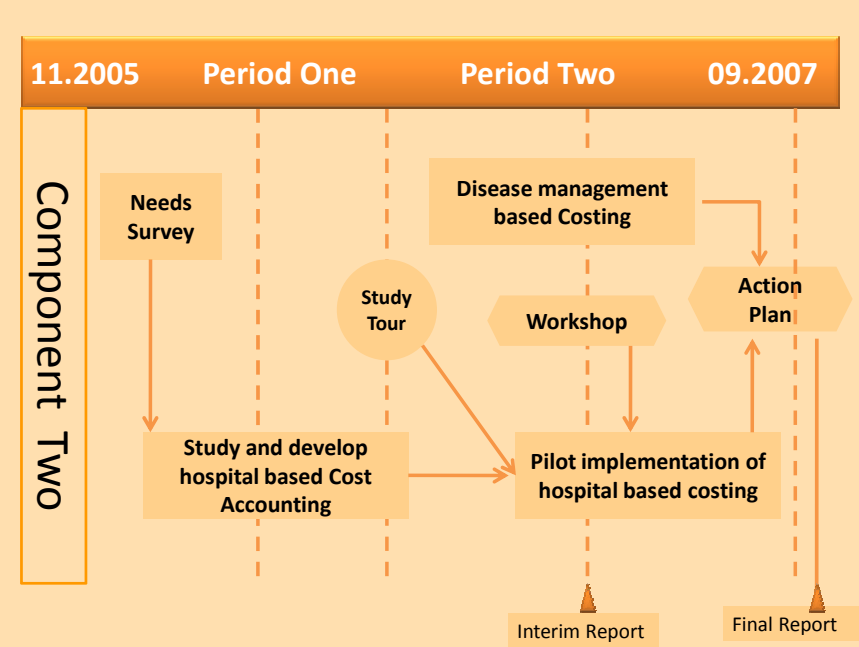
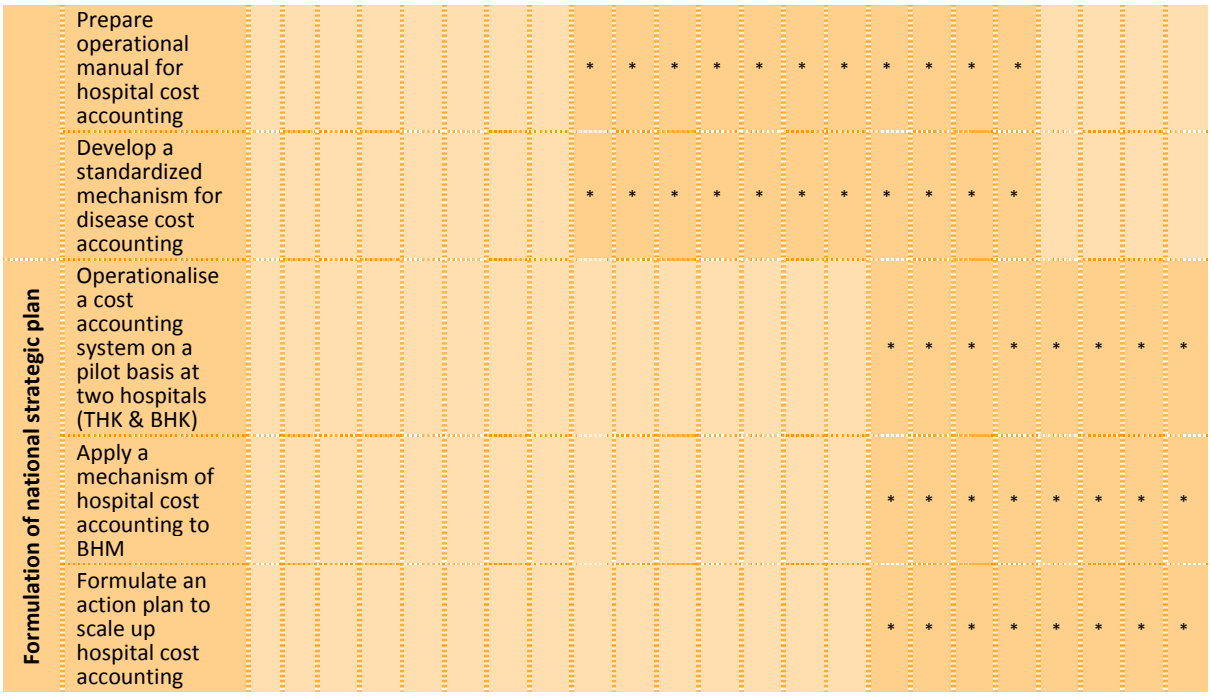


FIGURE 2- 2: OVERALL WORK FLOW

TABLE 2- 1: PLAN AND TIMING OF THREE KEY ACTIVITIES

	Activities	2005	2006	2007
Study of fundamental issues in the pilot hospitals	Clarify present status of cost accounting practices in the country	* * * * * * * * * * *		
	Clarify present hospital cost accounting system at SJGH	* * * * * * * * * * *		
	Clarify hospital information sysytem through implementation of actual cost accounting at pilot hospitals (THK &BHK)	* * * * * * * * * * *		
cost accounti ng	Develop a standardized mechanism for hospital cost accounting		* * * * * * * * * * * *	


Formulation of national strategic plan
Prepare operational manual for hospital cost accounting
Develop a standardized mechanism for disease cost accounting
Operationalise a cost accounting system on a pilot basis at two hospitals (THK & BHK)
Apply a mechanism of hospital cost accounting to BHM
Formulate an action plan to scale up hospital cost accounting