Health Master Plan

No.

MINISTRY OF HEALTH, NUTRITION & WELFARE,
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA (MOH)
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MASTER PLAN STUDY FOR STRENGTHENING HEALTH SYSTEM
IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

SUPPORTING DOCUMENT I

SITUATIONAL ANALYSIS

HEALTHY & SHINING ISLAND IN THE 21ST CENTURY

FINAL REPORT

NOVEMBER 2003
PACIFIC CONSULTANTS INTERNATIONAL

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The following foreign exchange rate is applied in the study:
US$ 1.00 = 95 Sri Lanka Rupees (as of November 2003)

Message from Vice President,
Japan International Cooperation Agency (JICA)

In response to a request from the Government of the Democratic Socialist Republic of Sri Lanka, the Government of Japan decided to provide technical cooperation for establishing of a health master plan which will be effective for the next decade for the improvement of the health system in Sri Lanka. JICA selected and dispatched the study team headed by Dr. Katsuhide Nagayama of Pacific Consultants International to Sri Lanka between March 2002 and November 2003.

I am pleased that the Health Master Plan, presented herewith by Ministry of Health, Nutrition and Welfare, was a fruit of close collaboration with the Study Team. I hope the Health Master Plan, whose ownership is assured by Ministry of Health, Nutrition and Welfare, will contribute to the promotion of the health system in Sri Lanka.

Finally, I wish to express my sincere appreciation to all the officials concerned of the Government of Sri Lanka for their enthusiastic effort exhibited in the process of formulating the Health Master Plan.

November 2003

Kazuhisa Matsuoka

Vice President

Japan International Cooperation Agency

November 2003

Mr. Kazuhisa MATSUOKA

Vice President

Japan International Cooperation Agency

Tokyo, Japan

Letter of Transmittal

Dear Sir,

We are pleased to formally submit herewith the Final Report of "The Master Plan Study for Strengthening Health System in the Democratic Socialist Republic of Sri Lanka."

This report compiles the results of the Study which was conducted from March 2002 through November 2003 by the Study Team organized by Pacific Consultants International under the contract with JICA.

The report compiles the Sri Lanka Health Master Plan covering both reform and development of the health sector in Sri Lanka. The plan consists of 1) vision, goals and objectives; 2) overall basic strategies; 3) frameworks for health sector reform and development; and 4) priority programmes.

We would like to express our sincere gratitude and appreciation to the officials of your agency and the JICA advisory Committee. We also would like to send our great appreciation to all those who extended their kind assistance and cooperation to the Study Team, in particular to the Ministry of Health, Nutrition & Welfare and provincial/district health officials concerned.

We hope that the Master Plan will be able to contribute significantly to the improvement of the health sector and development in Sri Lanka.

Very truly yours,

Katsuhide NAGAYAMA, Ph.D

Team Leader,

Master Plan Study for Strengthening Health System in the Democratic Socialist Republic of Sri Lanka

PREFACE

The outcomes of the Sri Lanka Health Master Plan Study, for which efforts were made from November 2001 through September 2003, are complied in six volumes of reports prepared by the JICA Study Team in close collaboration with Ministry of Health, Nutrition and Welfare.

The Health Master Plan addresses government polices and strategies based on such a long-term vision that the health service delivery system shall be improved for all people in Sri Lanka, regardless of sex, age, ethnicity and economic class. Necessary actions are delineated to achieve the vision in forms of programs and projects in the next decade time horizon. The Master Plan espouses the slogan *"Healthy & Shining Island in the 21st Century"*. This implies a hope that Sri Lanka will become a healthier, more secure and more liveable nation where all people can enjoy their vividly shining lives, overcoming latent constraints and difficulties lying on the currently transitional health situation in terms of demography and epidemiology. To this end, the Master Plan underlines an innovative challenge required by not only the government sector but also each community and individual.

This section provides with a general insight into the basic structure of the Master Plan, explaining:

- Structure of the Final Report;
- Synopsis of the Strategic Framework; and
- Profile of the Health Master Plan Study.

A. STRUCTURE OF THE FINAL REPORT

Health Master Plan (HMP). The HMP is composed of three volumes and three supporting documents (Table A.1).

Table A.1 Six Documents of the Health Master Plan

Volume Number	Title
I	HMP Summary
II	HMP Analysis, Strategies, and Programmes
III	HMP Project Profiles
Supporting Document I	HMP Situational Analysis
Supporting Document II	HMP Surveys and Study Datasets
Supporting Document III	HMP Maps

Volume I

This volume contains the main message of the Health Master plan (2004-2015). It summarizes the analytical framework of the health sector, the identified issues based on the analysis of the situation, the planning framework, the strategic objectives and approaches, and the policy recommendation for the implementation of the Health Master Plan.

Volume II

This volume presents the direction of the health sector of Sri Lanka by the strategic framework and describes the strategies and programmes/projects to achieve the strategic objectives of the health sector in the next 11 years. The aim of this particular discussion is to serve as a guide to future health development efforts.

The Basic Frame of the HMP Volume II;

Introduction:	**Key Principles in the Institutional Reform and in the Service Delivery Reform,**
Part 1:	**Situation Analysis and Identified Institutional Challenges, Future Perspective of Health Needs and Demands, and**
Part 2:	**Strategic Framework and Programs, and**
Part 3:	**Principles towards Implementation.**

Introduction: Key Principles in the Institutional Reform and in the Service Delivery Reform, discusses the future direction of the health sector in this country based on the global trends and experiences and lessons learned in other countries. The analyses lay out the scientific evidence of health transition along with the demographic, social and economic transition happening in this country, and also points out the fact that Sri Lanka is now at the turning point of low-cost service demands to high-cost service demands at the turn of the 21st century. The country's health services will soon face enormous financial gaps and their manipulation by any self-coping mechanisms would inevitably fail.

Part 1: Situation Analysis and Future Perspective of Health Needs and Demand, shows the evidences to prove the conclusion of the first part.

Part 2: Strategic Framework, discusses the strategic objectives of the health sector in the next 11 years and shows the strategic approaches to achieve these objectives by coming up with Strategic Programs. The Strategic Programs are divided into five areas, namely: Health Service Delivery, Community Empowerment and Client Satisfaction, Human Resource Development, Financing, Resource Allocation & Utilisation, and Stewardship & Management of the Health Sector. In each area, comprehensive programs are formed to achieve each sub-sector objectives.

Part 3: Principles Toward Implementation, lays out the steps towards implementation after drawing up the HMP. The steps are Platform Building for Political Endorsement of Policy Recommendations, Institutionalisation for the Master Plan, Social Mobilisation/Sensitisation, Formulation of Action Plan for Priority Programs/Area, Political Decision-making for the Implementation, Capacity Building for Program Management, Resource Mobilisation, Program Implementation, Monitoring/Supervision of the Implementation, and Evaluation. In Chapter 14, the policy recommendations as a base of implementation are spelled out in detail.

The HMP is a rolling plan and a midterm review will be necessary to evaluate the output of activities and make corrections on the plan according to the evaluation. Priority Projects are identified in the first five-year timeframe to achieve the five-year objectives in the long-term perspective of 10 years. The first mid-term review is expected to take place in 2006.

Volume III

The priority projects mentioned in Vol. II above are the subject of this volume. The profile for each project provided herein contains a Project Summary and the following items:

1) Project Title
2) Project Number
3) Project Priority
4) Focal Point
5) Implementing Agencies
6) Starting Fiscal Year
7) Project Duration
8) Target Areas and Beneficiaries
9) Justification
10) Important Assumptions/Risks/Conditions
11) Project Objective – including indicators and means of verification
12) Project Output/product – including indicators and means of verification
13) Related Projects – including ongoing projects and projects under the Health Master Plan
14) Relevant Agencies to be Coordinated
15) Monitoring and Evaluation
16) Major Activities – including expected results and process indicators

Supporting Document I

Supporting Document I, Situational Analysis, contains the review and analysis of present conditions of health sector in Sri Lanka. The structure of the volume is as follows.

1) Situation Analysis: Its Framework

   This chapter describes "research issues" which lead to the discussion of the following chapters.

2) The External Environment and its Effects on Health and Health System

   This chapter analyses various external environments and their effects on health in this country. These external environments are geography, socio-cultural environment, politics, policies and government, economics, and various marginalised groups.

3) Health system Activities

   This chapter analyses the existing activities of the public allopathic sector and indigenous systems of medicine and private sectors. It encompasses the broad spectrum of activities - preventive, promotive, curative, rehabilitative and social services.

4) Management of Resources for Health

   This chapter examines the management of the following resources: Human Resources, Drug, Medical Equipment, Physical Facility, Funds, and Foreign Aid.

5) Stewardship of the Health Sector

This chapter deals with the stewardship function of the MoH. These functions are policy formulation, planning, priority-setting and resource allocation, regulation, legislation, accountability, M&E, coordination, public/private partnership, information generation, dissemination and use, and resource and research management.

6) North and East Provinces

This chapter looks into the situation of health in N&E Provinces. The existing issues and the transitional strategies are identified.

7) Assessment of the Health System

This chapter analyses and assesses the health sector from the various dimensions of health outcome, responsiveness and patient satisfaction, fairness in financing and equity, quality and safety, and efficiency.

8) Health Transition and Future Health Needs and Demands

The chapter discusses the demographic transition and health transition in Sri Lanka and their implication on the service demands. In addition, the future health expenditures are projected by macro and micro approach for the next 10 years.

9) Opportunities for Consensus Building

This chapter discusses the consensus building within and without the health sector which is a key element in the implementation phase of the master plan. In order to do this, the planners need to consider the following: 1) Lessons learned from previous health sector program, 2) the stakeholders' involvement, and 3) public opinion.

10) Conclusions

This chapter provides answers to the "Research Issues" described in Chapter 1.

Supporting Document II

Supporting Document II: Surveys and Study Datasets, contains the activity records and outputs of surveys/review works/consultation meetings with stakeholders.

Twenty-five (25) surveys were carried out during the first phase of the study and the survey results are summarized in this volume.

Supporting Document III

Supporting Document III, HMP Maps, compiles Maps of GIS (Geographic Information System) database on health facilities and health indices, and the Dataset.

B. SYNOPSIS OF THE STRATEGIC FRAMEWORK

The major planning issues are:

1) Incomplete decentralization of the health sector
2) Lack of Monitoring & Evaluation mechanism
3) Insufficient management capacity at all levels
4) Compartmentalized functions at the central MoH
5) Weak intersectoral coordination on some important health issues
6) Weak coordination mechanism with other health sectors such as private sector and Indigenous Medicine sector
7) Weak coordination mechanism of Human Resource Development Functions at the central MoH level
8) No integration of curative and preventive services at any levels
9) No mechanism for people to participate for monitoring of services
10) Financial constraints in preventive services and primary level health care services.

The Vision, Mission and Goal of the Master Plan are:

VISION:

A healthier nation that contributes to its economic, social, mental and spiritual development

MISSION:

To achieve the highest attainable health status by responding to people's needs, working in partnership, to ensure access to comprehensive, high quality, equitable, cost-effective and sustainable health services

GOAL:

A strengthened health system that strives for excellence to improve the health outcomes of the people in Sri Lanka

The vision of improving the health status of the people will be achieved through addressing the following strategic objectives:

1. To improve comprehensive health services delivery and health actions, which reduce the disease burden and promote health;

2. To empower community towards more active participation in maintaining and promoting their health;

3. To improve the management of human resources for health;

4. To improve health finance mobilisation, allocation and utilisation; and

5. To strengthen stewardship and management functions of the health system.

Figures B.1 and B.2 are diagrammatic representations of the dynamic relationships among the Strategic Objectives.

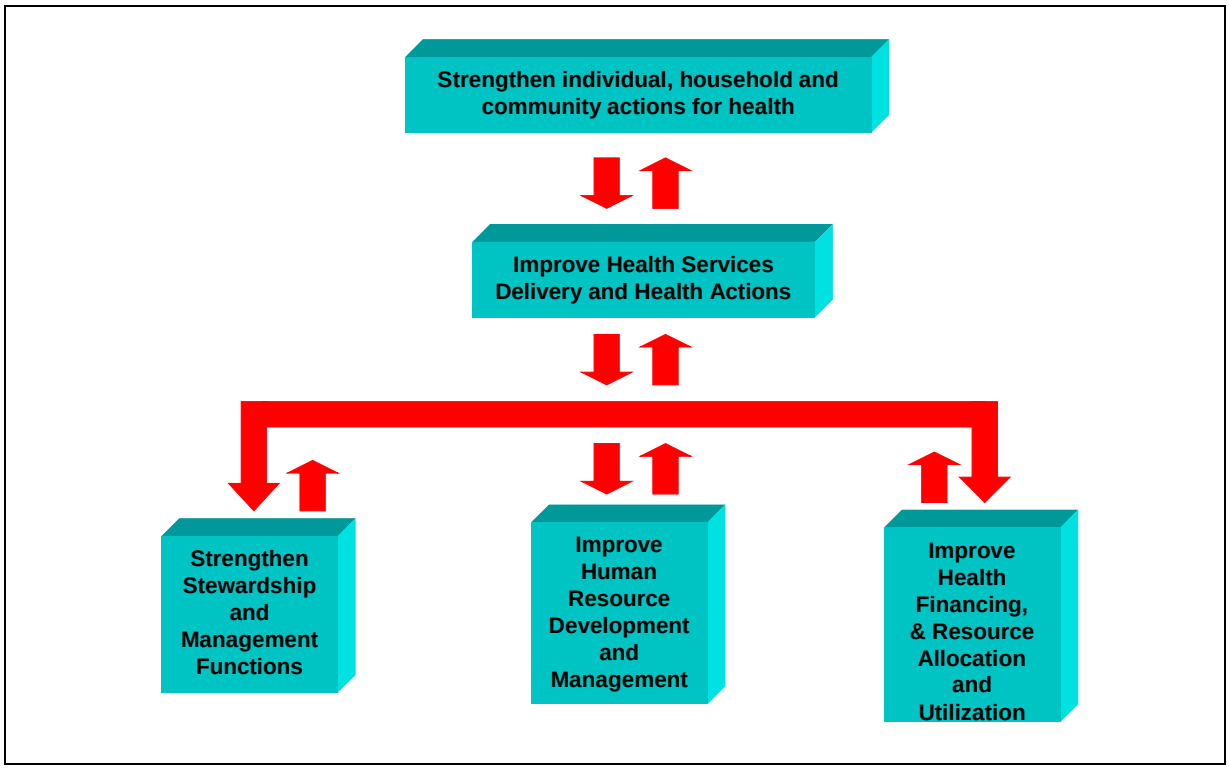

Figure B.1 Inter-relationships among the Five Strategic Objectives

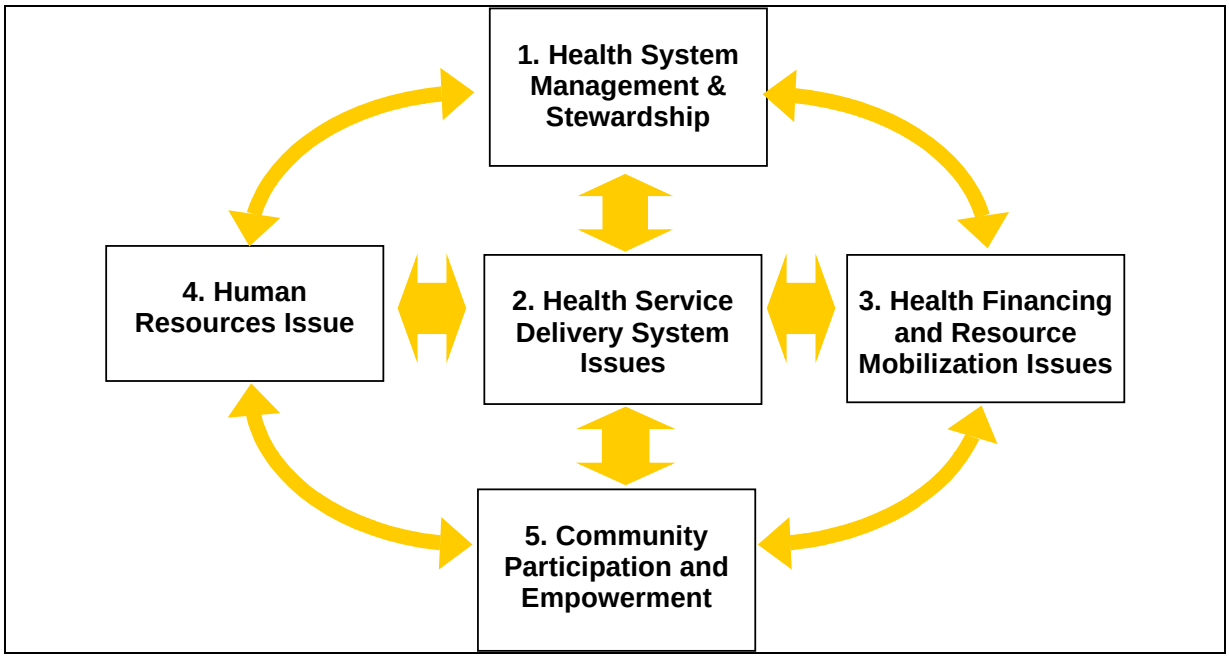

Figure B.2 Inter-relationships among the Five Strategic Objectives

C. PROFILE OF THE HEALTH MASTER PLAN STUDY

(1) Background

In response to the request of the Government of Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "GOSL"), the Government of Japan (hereinafter referred to as "GOJ") decided to finance a "Master Plan Study for Strengthening of the Health System in the Democratic Socialist Republic of Sri Lanka" (hereinafter referred to as "the Study").

The Japan International Cooperation Agency (hereinafter referred to as "JICA") is the official agency responsible for the implementation of technical cooperation programs of the GOJ. On November 9, 2001, it undertook the Study in close cooperation with GOSL authorities based on the Scope of Work agreed upon between the JICA Preparatory Study Team and the GOSL, represented by the Ministry of Health, Indigenous Medicine and Social Services. According to the official regulations on consultant procurements, JICA selected Pacific Consultants International for the Study Team, headed by Dr. Katsuhide Nagayama, and dispatched the Study Team to Sri Lanka.

The Ministry of Health, Nutrition & Welfare (hereinafter referred to as "MoH") acts as the Counterpart Agency for the Study Team on behalf of the GOSL. The MoH is responsible for coordinating the implementation of the Study with other related government agencies, international donor agencies and international non-governmental organizations.

In the past, while the government of Sri Lanka pursued a policy of economic growth, equity has been emphasised as one of the primary concerns together with self-reliance. Even under the new economic policy the political commitment to equity remains.

The public health sector has provided not only basic but also higher-level health services and has built up an extensive network of health facilities. At the same time, private health providers have increased and flourished by attracting relatively affluent people residing in the greater Colombo area. As a result, Sri Lanka has achieved better health indicators than other comparable lower-middle income countries with relatively few resources.

However, it has become increasingly difficult to maintain this high performance with growing financial constraints and escalating prices for goods and services. The good performance contributed to the epidemiological transition; statistics show that more and more people are suffering from chronic diseases. With continuously declining mortality rates in association with lowered fertility, the national average life expectancy is expected to be at the level of the industrial countries by 2020. The rapid increase of the ageing population will necessitate public health policy change

In light of these trends past health policies must be reviewed and new policies issued to facilitate the country's continued progress in health in the opening decades of the 21st century.

(2) Study Objective

The objective of the Study is to formulate a Master Plan for strengthening and improving the health system in Sri Lanka, by 2015.

(3) Study Approaches

The Master plan Study has used four main approaches, to develop its work.

Locally-Initiated and Owned

The formulation of master plan was initiated by the Government of Sri Lanka asking the Government of Japan to give technical support in the process. The major steps to be taken to formulate the master plan were discussed and decided between MoH coordinators and JICA Study Team members. The question of fostering ownership has been discussed from the beginning of the study in order to ensure the Master Plan is adopted, advocated and implemented. This approach has been adopted throughout the planning work and promotes active participation of the MoH in the study. In conclusion, MoH and JICA have agreed to give authorship of the Master Plan to the Sri Lankans to increase the ownership and hopefully implementation of the plan.

Sector-Wide and Participatory

The planning process adopted a sector wide and participatory approach in order to solicit various stakeholders' opinions and ideas. The Study Team held various meetings and workshops to involve all health sector stakeholders from the beginning of the study. These stakeholders represent not only the national level MoH, but also different levels of sub-national health officials, private sector medical practitioners, traditional medicine sector, researchers and professional groups, other Ministries such as Ministry of Finance, other donor agencies, NGOs and communities. The issues existing in the health sector were widely discussed among stakeholders; the process of discussion was organized in a systematic way to improve the efficiency of the study process

Building on Achievements and Lessons Learned

In the 1990's, there were several health policy formulation exercises. Several different levels of plans were formulated, however, none of them have been implemented with any degree of consistency.

Lessons learned from the previous policies and plans are many. First, it is essential to involve key stakeholders in health sector in the planning process. Key stakeholders in health not involved in the planning would not be interested to implement the plans.

Second, previous experiences have taught that discussion and a participatory process are the best ways to address any significant policy changes. Again the discussions among key stakeholders are important because each stakeholder has different interests and information. There is a need to identify these differences in opinion and information and build consensus through further discussion. Without deep and serious discussion to minimize the conflict over policy issues, naturally it will not be easy to implement plans.

Third, it is necessary to have a proper monitoring system to ensure implementation. Measurable indicators of performance should be developed during the planning stage. The monitoring unit should be close to the planning unit and their activities need to be connected through a common flow of information

Evidence-Based Strategic Planning

The Study team collected most of the existing secondary data and literature. The Study team also conducted over 20 surveys and studies of various health sector issues. The situation of the health sector was analysed by looking at the physical reality, by analysing existing data and information, and by analysing data that came out of extensive field surveys. The plan has been designed based on scientific evidence and data

The Study team found out that some concerns are not covered by any data collection or have poor quality data in the existing MOH information system. These findings are important as they identify aspects that need to be strengthened in the existing information system so that ongoing evidence-based decision-making becomes possible.

(4) Phases of the Study

The Study for formulating the Health Master Plan was divided into three phases, namely:

Phase I: Review and Baseline Surveys of the Health Sector
(April, 2002-September, 2002, 6 months)

Phase II & III: Formulation of a Master Plan
(October 2002-August 2003, 10 months)

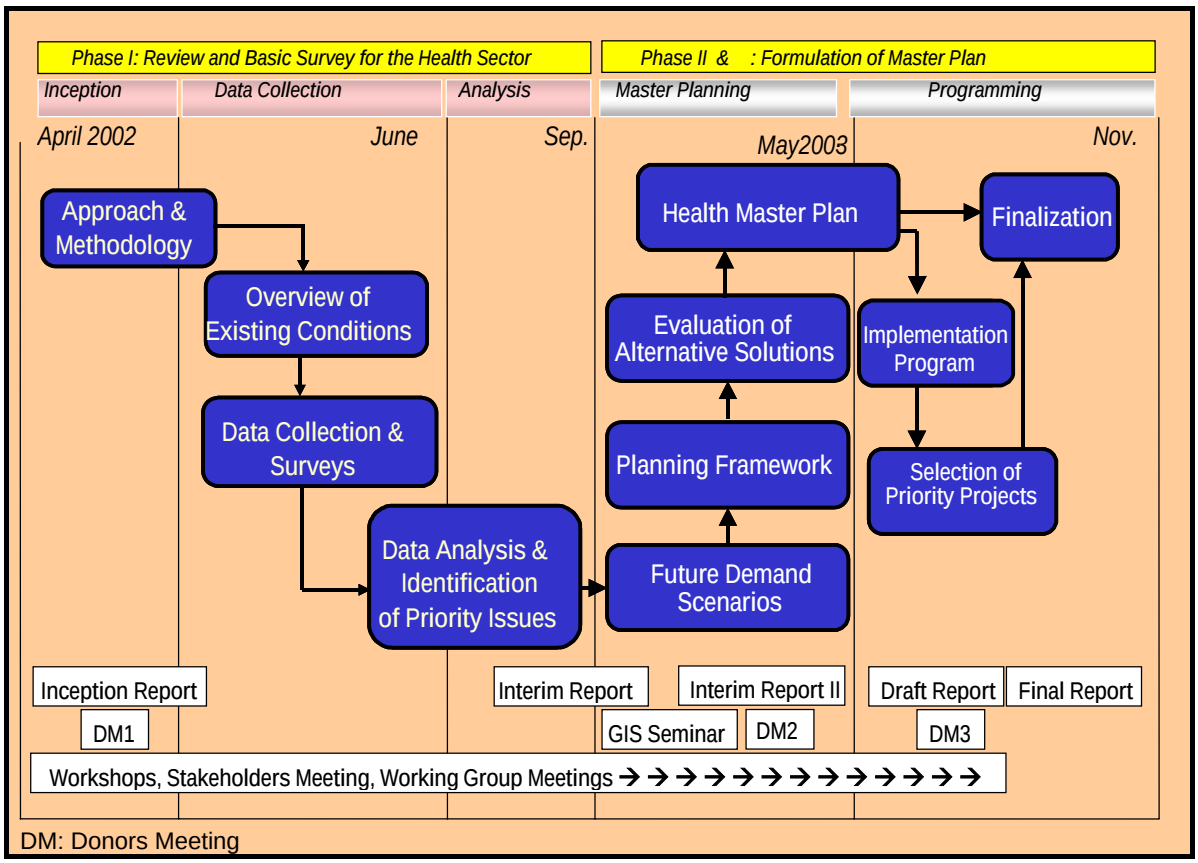

Figure C.1 Phases of the Study

Map of Sri Lanka

ABBREVIATION AND ACRONYM

ACCDC	All Ceylon Community Development Council
ACD	Ayurvedic Classification of Diseases
ADB	Asian Development Bank
AHPB	Ayuveda Health Promotion Bureau
AHPO	Ayurvedic Health Promotion Officer
AIDS	Acquired Immune Deficiency Syndrome
ALOS	Average Length Of Stay
AMO	Assistant Medical Officer
AMP	Assistant Medical Practitioner
ANC	Ante Natal Care
ARF	Ayurveda Research Fund
ARI	Acute Respiratory Infections
ARTI	Acute Respiratory tract infection
BAMS	Bachelor of Ayurvedic Medical Science
BC	Before Christ
BES	Bio-Medical Engineering Services or BMES
BH	Base Hospital
BMARI	Bandaranayakie Memorial Ayurveda Research Center
BMES	Bio-Medical Engineering Services or BES
BOI	Board of Investment
BS	Birth Spacing
BSMS	Bachelor of Siddha Medical Science
BUMS	Bachelor of Unani Medical Science
CADR	Cardiographer
CBO	Community Benefit Organization
CBO	Community Based Organization
CBR	Crude Birth Rate
CC	Conciliation Committee
CD	Compact Disc
CD	Central Dispensary
CD & MH	Central Dispensary and Maternity Home
CDD	Control of Diarrhoeal Diseases
CDDA	Cosmetics, Devices and Drugs Act
CDR	Crude Death Rate
CEA	Central Environmental Authority
CFR	Case Fatality Rate
CFS	Consumer Finance Survey
CHDR	Child Health Development Record
CIC	Ceylinco Insurance Co, Ltd.
CIC-E	CIC Eagle Insurance Co. Ltd.
CIGAS	Computerised Integrated Government Accounting System
CME	Continuous Medical Education
CMR	Child Mortality Rate

COHRD	Council on Health Research for Development
CPC	Committee for Planning and Cooperation
CPD	Continuous Professional Development
CWC	Ceylon Workers Congress
D/MTS	Director Medical Technology and Supplies
DALY	Disability Adjusted Life Year
DDHS	Divisional Director of Health Services
DDT	Dichlorodiphenyltrichloroethane
DGHS	Director General of Health Services
DH	District Hospital
DHO	District Health Office
DM	Diabetes Mellitus
DMO	District Medical Officer
DoA	Department of Ayurveda
DP	Divisional Pharmacist
DPMU	Drug Processing and Manufacturing Unit
DQAL	Drug Quality Assurance Laboratory
DRA	Drugs Regulatory Authority
DS	Dental Surgeon
DS	Divisional Secretariat
D-SNO	Staff Nursing Officer working in District Hospitals
DTRU	Demography, Demographic Training and Research Unit, University of Colombo
ECCD	Early Childhood Care and Development
EmOC	Emergency Obstetric Care
ENHR	Essential National Health Research
EPDP	Eelam People's Democratic Party
EPF	Employees Provident Fund
EPI	Expanded Programme of Immunization
EPR	Emergency Preparedness & Response
ETU	Emergency Treatment Unit
EU	European Union
FA	Field Assistant
FAO	Food and Agricultural Organization of the United Nations
FHB	Family Health Bureau
FP	Family Planning
F-PHM	Field Public Health Midwife
GAHR	Government Ayurvedic Health Resort
GAP	Good Agricultural Practices
GDCF	Gross Domestic Capital Formation
GDP	Gross Domestic Product
GFCP	Good Field Collection Practices
GFR	Gross Fertility Rate
GH	General Hospital
GMOA	Government Medical Officers Association
GMP	Good Manufacturing Practices
GNP	Gross National Product
GOSL	Government of Sri Lanka
GP	General Practitioner

G-SNO	Staff Nursing Officer working in General Hospitals & Base Hospitals
GST	General Sales Tax
GTZ	German Technical Cooperation Agency
GWAI	Gampaha Wickramarachchi Ayurveda Institute
HC	Health Centre
HCW	Health Care Worker
HDR	Human Development Report
HEB	Health Education Bureau
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HRD	Human Resource Development
HSPI	Health Service Providing Institute
HSR	Health Systems Research
HVC	Health Vigilance Committee
IA	Impact Assessment
ICSL	Insurance Corporation of Sri Lanka
ICU	Intensive Care Unit
IDRC	International Development Research Center (Head Office locates in Ottawa, Canada)
IEC	Information, Education and Communication
InEC	Institutional Equipment Committee
IHD	Ischaemic Heart Disease
IIM	Institute of Indigenous Medicine
IK	Indigenous Knowledge
IMMR	Indoor Morbidity, Mortality Return
IMPA	Independent Medical Practitioners Association
IMR	Infant Mortality Rate
IP	Industrial Package
IPD	In Patient Department
I-PHM	Public Health Midwives working in hospitals
IPR	Intellectual Property Rights
IPS	Institute of Policy Studies
IPS HPP	IPS Health Policy Programme
ISM	Indigenous System of Medicine
JE	Japanese Encephalitis
JEDB	Janatha Estate Development Board
JICA	Japan International Cooperation Agency
JMO	Jurisdictional Medical Officer
JOCV	Japan Overseas Cooperation Volunteers
JVP	Janata Vimukti Peramuna
KAP	Knowledge, Attitudes and Practices
LAN	Local Area Network
LMP	Licensed Medical Practitioner
LSSP	Lanka Sama Samaja Party
LTTE	Liberation Tigers of Tamil Eelam
MC	Municipal Council
MCH	Maternal and Child Health
MCHC	Maternal and Child Health Centre

MDPU	Management Development and Planning Unit of MoH
MICR	Microscopist
MIM	Ministry of Indigenous Medicine
MIS	Management Information System
MLT	Medical Laboratory Technologist
MO/ MCH	Medical Offer, Maternal and Child Health
MoF	Ministry of Finance
MOH	Medical Officer of Health
MoH	Ministry of Health
MOHIM	Ministry of Health and Indigenous Medicine
MOMCH	Medical Officer for Maternal and Child Health
MoU	Memorandum of Understanding
MP	Medicinal Plants
MPCA	Medicinal Plant Conservation Area
MSD	Medical Supplies Division
MSF	Medicins Sans Frontieres
MSU	Medical Statistical Unit
MTIP	Medium Term Investment Programme
NA	Needs Assessment
NADCDA	National Ayurvedic Drugs, Cosmetics and Devices Authority
NAHF	National Ayurvedic Hospital Formulary
NEM	New Economic Mechanism
NEP	North and East Province(s)
NGO	Non Governmental Organization, (= NGOO)
NHA	National Health Accounts
NHC	National Health Council
NHE	National Health Expenditures
NHSL	National Hospital of Sri Lanka (formerly known as Colombo General Hospital)
NIC	National Insurance Corporation
NID	National Immunization Day
NIE	National Institute of Education
NIHS	National Institute of Health Science
NISD	National Institute of Social Development
NITM	National Institute of Traditional Medicine
NMR	Neonatal Mortality Rate
NNP	National Nutrition Programme
NO	Nursing Officer
NQAL	National Quality Assurance Laboratory
NSC	National Statistical Centre
NTRB	National Traditional Resource Bureau
OLS	Ordinary Least Square
OPD	Outpatient Department
ORS	Oral Rehydration Salt
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PA	People's Alliance
PAEHS	Planters Association Estates Health Scheme
PBN	The Post-Basic School of Nursing

PC	Provincial Council
PDHS	Provincial Director of Health Services
PEM	Protein Energy Malnutrition
PERC	Provincial Equipment Review Committee
PG	Post Graduate
PH	Provincial Hospital
PHA	Provincial Health Authority
PHAR	Pharmacist
PHC	Primary Health Care
PHCU	Primary Health Care Unit
PHI	Public Health Inspector
PHM	Public Health Midwife
PHNO	Public Health Nursing Officer
PHNS	Public Health Nursing Sister
PHO	Provincial Health Office
PHYS	Physiothetrapist
PIP	Public Investment Programme
PMEU	Planning Monitoring and Evaluation Unit
PMS	Performance Management System
PMU	Project Management Unit
PNC	Post Natal Clinic
PPO	Programme Planning Officer
PR	Proportional Representation
PR	Progress Review
PTC	Provincial Training Center
PTF	Presidential Task Force
PTF1	1992 Presidential Task Force on National Health Policy
PTF2	1997 Presidential Task Force on National Health Policy
QCS	Quality Control Specifications
RADI	Radiographer
RCS	Rehabilitative Care Services
RDF	Revolving Drug Fund
RE	Regional Epidemiologist
RH	Reproductive Health
RMO	Registered Medical Officer
RMSD	Regional Medical Supplies Division
RTC	Regional Training Center
SCFA	Save the Children Fund Australia
SHS	Superintendent of Health Service
SIDA	Swedish International Development Agency
SJGH	Sri Jayawardanapura General Hospital
SLAAS	Sri Lanka Association for Advanced Science
SLADC	Sri Lanka Ayurvedic Drugs Corporation
SLAMA	Sri Lanka Ayurveda Medical Association
SLFP	Sri Lanka Freedom Party
SLIC	Sri Lanka Insurance Corporation Ltd.
SLMA	Sri Lanka Medical Association
SLMC	Sri Lanka Muslim Congress

SLNHA	Sri Lanka National Health Accounts
SLSPC	Sri Lanka State Plantations Corporation
SNO	Staff Nursing Officer
SOP	Standard Operating Procedures
SPC	State Pharmaceutical Corporation
SPMC	State Pharmaceutical Manufacturer Corporation
SPHM	Supervising Public Health Midwife
SSO	Survey Statistical Officer
STD	Sexually Transmitted Disease
STDs	Sexually Transmitted Diseases
TAC	Technical Advisory Committee
Tb	Treasury bills
TB	Tuberculosis
TBA	Traditional Birth Attendant
TF	Task Force
TFR	Total Fertility Rate
TK	Traditional Knowledge
TM	Traditional Medicine
ToR	Terms of Reference
ToT	Training of Trainers
TP	Traditional Practitioners
TR	Traditional Resources
TULF	Tamil United Liberation Front
U5MR	Under-Five Mortality Rate
UAL	Union Assurance Ltd.
UG	Under Graduate
UGC	University Grant Commission
UN	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNP	United National Party
USAID	United States Agency for International Development
VAD	Vitamin A Deficiency
VHV	Village Health Volunteer
VMA	Value for Money Audit
WB	World Bank
WAN	Wider Area Network
WBC	Well Baby Clinic
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization

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CHAPTER 1

SITUATIONAL ANALYSIS: ITS FRAMEWORK

1 SITUATIONAL ANALYSIS: ITS FRAMEWORK

1.1 THE HEALTH SYSTEM CONCEPTUAL FRAMEWORK

The health system is commonly defined as the set of interconnected "actors, institutions and resources that undertake health actions – where a health action is one where the primary intent is to improve health"[1].

The situational analysis of the health system in Sri Lanka was grounded on a conceptual framework with five major components (Figure 1.1.1): health outcomes; behaviour of individuals and households; performance of health system; external environment; and health care system. These components are interlinked such that the health system is an organic whole.

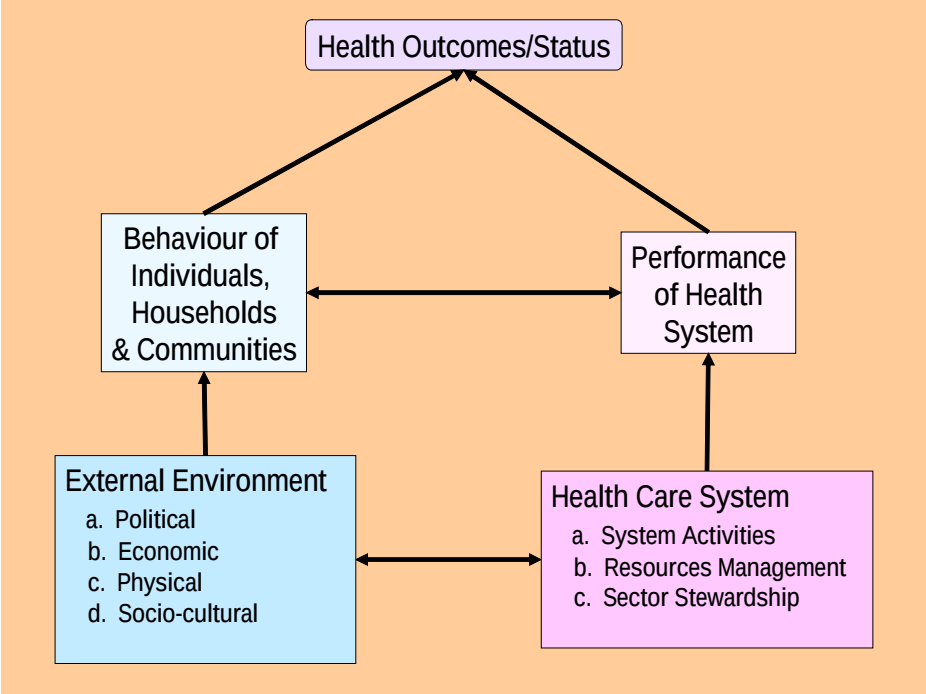


Figure 1.1 Health System Conceptual Framework

Note: Adapted from World Bank

The defining goal of any health system is to improve **health outcomes**[2] in the fields of morbidity, mortality, disability, nutritional status, and fertility. The WHR 2000 has argued for two other intrinsic goals: "to be responsive to the population they serve … and to ensure that the financial burden of paying for health is fairly distributed across households".

One of the two primary determinants of health outcomes is the **health system performance**, assessment of which may include clinical effectiveness, accessibility and equity, quality and consumer satisfaction, and economic efficiency.

[1] World Health Report 2000.

[2] Section 1.2 Volume II of the Health Master Plan elaborated the concept about the three groups of health problems during the phase of health in transition.

The **health care system** includes stakeholders in the government, private-for-profit and private-not-for-profit (e.g. civil society, non-governmental organizations, missions) sectors coming from allopathic and indigenous systems of medicine. To carry out its service provision functions, the health care system engages in activities that may be generally classified into preventive and promotive, curative and rehabilitative, social services, and inter-sectoral. Not all these activities are performed by stakeholders; some tend to specialize.

Critical to the health system performance is the management of its human resources, drugs and other medical supplies, medical equipment, physical facility, and funds in various settings (e.g. hospitals, central office, offices of the PDHS, DPDHS, DDHS, MOH). The management cycle of resources includes the stages of mobilization, allocation and utilization. Financing function is primarily mobilization and partly allocation of funds.

Another vital function of a health system is the stewardship or governance of the sector. It includes the following: formulation of policies; planning; regulation; legislation; fostering accountability; monitoring and evaluation; coordination with other government agencies; promoting public-private partnerships; information generation, dissemination and utilisation; research and research management. Stewardship is indispensable because it provides leadership and guidance to the throngs of stakeholders, who at times may have conflicting interests and are bound to promote their own above those of the others. Stewardship is imperative to protect the public because health services, goods and technology are not always innocuous even if they appear to be.

Health care system is essential but not sufficient to improve health outcomes. Corollary, good health outcomes cannot be solely attributed to good performance of the system. The converse, meaning, bad outcomes, holds water as well.

If good performance is not enough, what else can explain or improve health outcomes? **Behaviour of individuals, households and communities** does. The onset, progress and prognosis of both communicable and non-communicable diseases are in more ways than one influence by lifestyles and health care-seeking behaviours. Hence, *good health lies in the hands of the people, too.*

Behaviour is often interpreted as a reflection of preference and, more importantly, a product of choice. Nonetheless, it is in reality not isolated from influences that may come from the health care system (e.g. information, services or lack thereof) and the external environment of the individuals, households and communities. Often, behaviour results from the interplay among three factors: internal motivations of the individuals/households, performance of health system and combined effect of the external environment.

The **external environment** is a compound and complex component of the conceptual framework. It subsumes the political, economic, physical, and socio-cultural elements. Sometimes, it interacts with the health care system and behaviours with dynamism such that changes in the environment (e.g. change of ruling political party, open-market economics, flash flood, popularity of junk food) may directly, though at times not immediately, trigger reforms on either the health care system or behaviour.

Like any other conceptual framework, Figure 1.1 is a simplification of reality. It does not include heredity as one of the primary determinants of health outcome. With the many ongoing improvements in the health system, shouldn't reforming[3] the health sector be included as a major function of the health care system in general or as part of its overall stewardship function? As a tool to analyse the Sri Lankan health situation and to provide coherence in this Supporting Document I, the MoH-JICA Health System Conceptual Framework (Figure 1.1) serves its purpose well.

[3] Refer to Section 1.3 Volume II of the Health Master Plan for a discussion on some key health sector reform issues

1.2 THE SUPPORTING DOCUMENT I

Objectives

Master planning requires a thorough understanding of the situation, an inkling of the future at the very least and a strategy for realizing the plan. With these in mind, the Supporting Document I was developed with the following objectives:

1) to describe and discuss the major components of the health care system;
2) to define future health needs and their implications on the health care system; and
3) to identify opportunities for building consensus around the Health Master Plan and its successful implementation.

Ordinary planning exercises require only situational analysis. If the plans have longer time frames, though, changes in the population traits, epidemiological trends and even macro-economic environment have to be accounted. This is the rationale for the second objective.

The importance of the third objective requires elaboration. Experiences of Sri Lanka and many other countries reveal an important lesson in planning – having a plan as an output is not a guarantee for its implementation. Regardless of the technical merit of the document as a whole or its specific recommendations, a plan sometimes is shelved to gather dust. As an output, it becomes an endpoint.

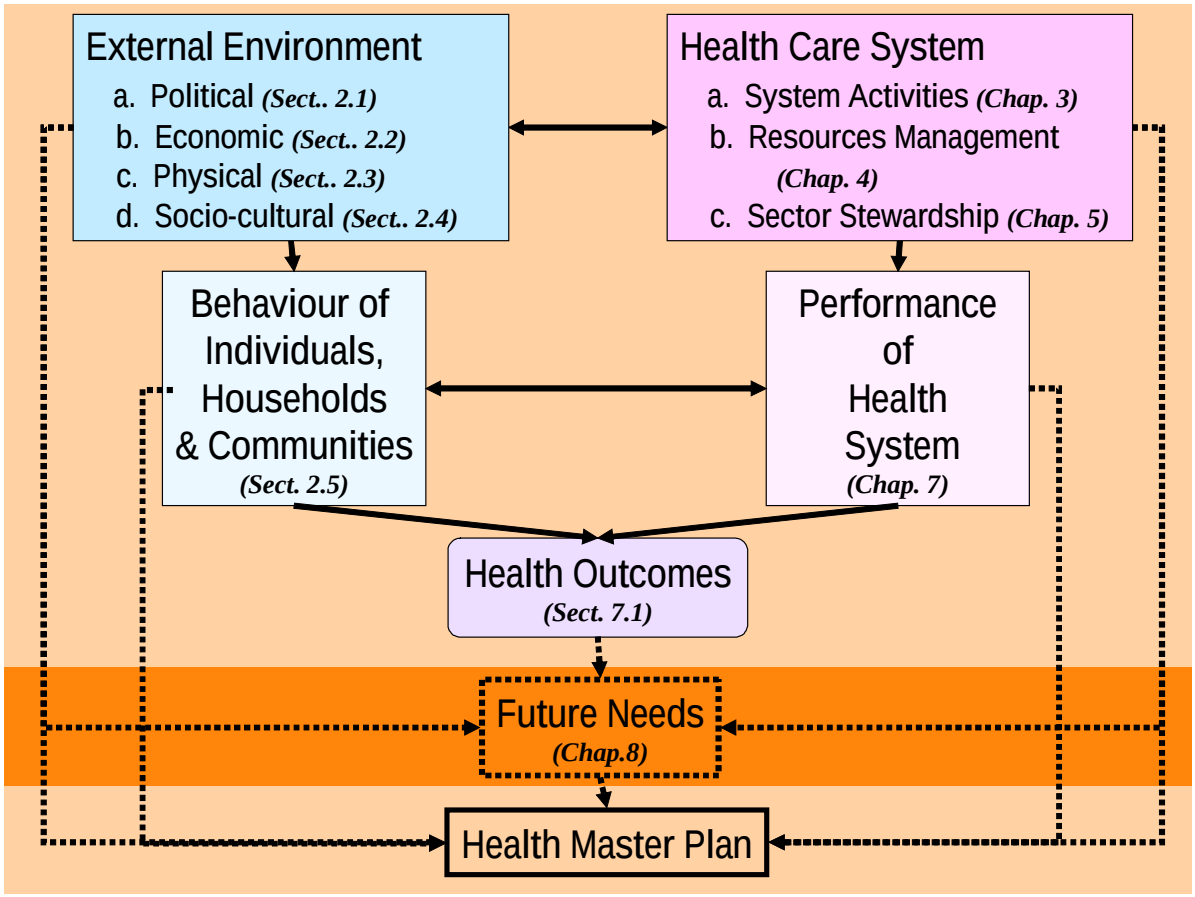
Hence, to ensure that it becomes an input to various efforts at strengthening the health system, the Health Master Plan must lay down basic principles toward its implementation and identify policy recommendations as basis for implementation. Part III of Volume II of the Health Master Plan contains these.

An equally essential strategy in realizing a plan is identification of its potential supporters, cynics, detractors and opponents. In the real world, even official policies are not enforced and plans not carried out because of resistance from those who are to be negatively affected. In the outside world, even traditionally successful programmes and projects become big failures when their implementers sit on them. In a democratic country, in a system with numerous stakeholders and in a sector with competing interests, building bridges and, hopefully, building consensus among key players become imperative.

Structure

The Supporting Document I can be divided into three parts, each one corresponding to the aforementioned objectives. Its contents and interface (represented by broken arrows) with the Health Master Plan are diagrammatically represented in Figure 1.2.

Figure 1.2 The Health Master Plan and Supporting Document I



The first part is devoted to an analysis essentially of the external environment and behaviour (Chapter 2), health system activities (Chapter 3), management of resources (Chapter 4), stewardship of the sector (Chapter 5), and performance of the health system (Chapter 7). Chapter 6 is on the health of North and East provinces.

The second part highlights the findings on demographic projections, epidemiological trends, their implications on service provision, and estimates of future health expenditure.

Though not shown in Figure 1.2, the third part is equally important as the previous ones. It is a dissection of opportunities for building consensus around the Health Master Plan. It includes a description of previous national plans for health and lessons learned from those initiatives, a listing of stakeholders with an analysis of some of their perspectives on health sector reform, and review of studies aimed at understanding public opinion.

CHAPTER 2

THE EXTERNAL ENVIRONMENT: ITS INFLUENCE ON HEALTH AND THE HEALTH SYSTEM

2 THE EXTERNAL ENVIRONMENT: ITS INFLUENCE ON HEALTH AND HEALTH SYSTEM

The "environment" refers to the external factors that influence people's health either directly or indirectly through its interactions with the health sector as a whole. It has political, economic, socio-cultural, and physical dimensions (Figure 2.1). It encompasses people's perceptions and behaviours. The admirable performance of the health sector in improving people's health status is partly due to the activities of the MoH but partly also to many factors external to the health sector. For one, Sri Lanka is fortunate to have a government with a firm political commitment to ensuring equity in health care. And compared to its neighbours, it is economically better off and with higher literacy rate. Moreover, because it is an island-state and not disaster-prone, it is easier to build, operate and maintain road, transportation and communication networks. The different census zones have also very different rainfall and ecologies. These do strongly influence economic levels and disease patterns. The primary aim of this chapter is to discuss the actual or potential influence or contributions of the external environment to health. It is not an exposition about the external environment per se.

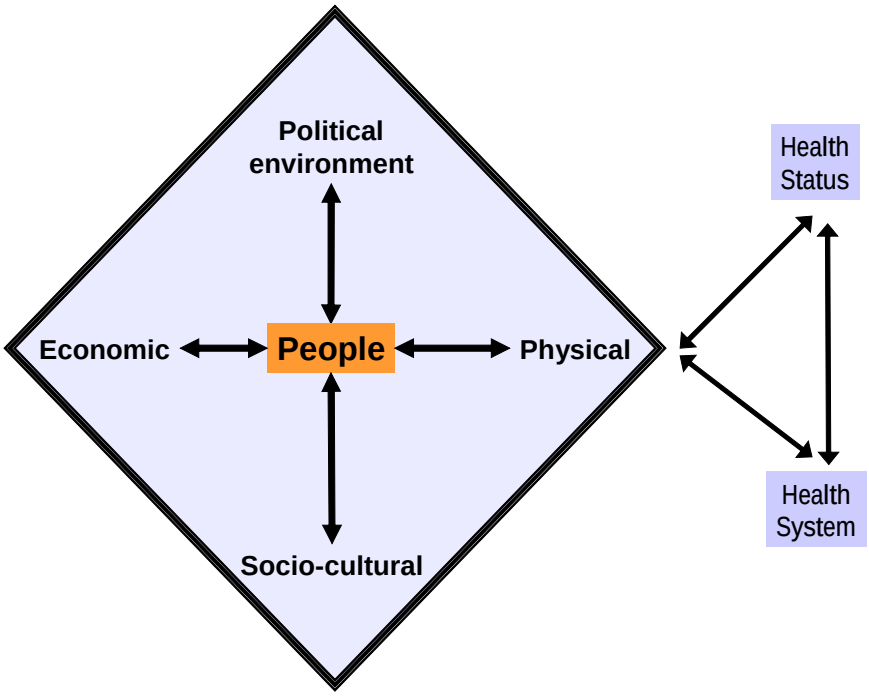


Figure 2.1 The External Environment, People's Health and Health System: Dynamic Interactions

2.1 POLITICS, GOVERNMENT AND POLICY

(1) HEALTH AS A RESPONSIBILITY OF THE KING AND STATE

During the pre-colonial period, the monarchies had four fundamental responsibilities, namely, attending to their people's spiritual growth, providing water, ensuring security, and responding to their health needs. In fact, the strength of a king was measured by his ability to fulfil these four obligations.

Through the colonial and post-colonial period, succeeding governments took upon themselves the responsibility for providing for the health needs of their people. The Independence Constitution guarantees the right to health.

Through the decades, several legislations have been promulgated with the view of promoting and protecting the health of the people (refer to Section 5.4). During the recent decades, there have been attempts at providing overarching policy directions for the health sector (refer to Section 9.1). In December 2002, the government of Sri Lanka declared the provision of comprehensive health services that are of high quality for the entire nation as one of its strategies for accelerated development.[1] All of these are manifestations of the unfaltering government commitment.

(2) HEALTH PLATFORM OF POLITICAL PARTIES

For historical and cultural reasons, no matter which party is in power, health services seem to receive priority in Sri Lanka. Political parties seem to listen to electoral pressures when it comes to maintaining the policy of free services in government institutions. Aside from this, do they advance other agenda to promote and protect the health of the people in Sri Lanka in general or their constituents in particular? Based on the results of the 2001 Parliamentary General Election, the five major political parties are as follows: United National Party (UNP); People's Alliance (PA); Janatha Vimukthi Peramuna (JVP); Tamil United Liberation Front (TULF); and Eelam People's Democratic Party (EPDP).[2] What is the health platform of these major political parties? Below is the health platform of the UNP, PA and Sihala Urumaya (SU).

UNP

The health platform of the UNP is stated thus:

"We will seek an all-party consensus to formulate a national health policy that will be of benefit to all.

We are grateful to the doctors, nurses and other health workers who carry out their duties under tremendous pressures. We will see that a more positive working environment is created for all who are engaged in the health sector.

- We will introduce a national health insurance scheme.
- We will take immediate steps to rectify the current shortage of medical drugs.
- Estate hospitals will be fully equipped.
- We will institute a systematic and practical scheme to settle problems affecting the health sector; thereby eliminating any unnecessary confrontations with those engaged in the health services.
- We will set guidelines and standards for the private health sector.

[1] Government of Sri Lanka, *Regaining Sri Lanka: Vision and Strategy for Accelerated Development* (2002).
[2] Department of Census and Statistics, *Statistical Abstract 2001* (Colombo: Ministry of Interior, 2002).

- We will ensure that the indigenous health services are on par with western medical services. We will also promote the cultivation of herbal plants and research into local medications."

PA

In order to establish an efficient, countrywide network of hospitals and health services, steps have already been taken to set up a fully equipped and staffed hospital in every district. Following the PA's effort to have the private sector participate fully in the health sector, several new hospitals with modern facilities are already under construction.

The PA has taken steps to strengthen the immunisation programme as well as expand the training of nurses. In order to provide an improved health care service to children, it modernised Sri Lanka's only hospital for children. A ten-story building complex has been constructed at this hospital. This hospital with the most modern facilities is south Asia's best.

The facilities in rural hospitals have also been improved in order to provide a high level of health care to people living in remote areas.

The Sihala Urumaya

The social welfare and education agenda of the SU includes:

- Free education up to and including University level;
- Modern education system through countrywide teaching of English, Science and Computer Technology;
- Salary increase of 25% to government servants on conclusion of the Northern conflict;
- Free public transport and medical care for senior citizens and provision of special facilities for the disabled;
- Upgrade roads, railways, internal waterways and road and rail rolling stock; and
- Improvement and maintenance of medical services at acceptable levels.

Evidently, the political parties are committed to promoting and protecting health. In reality, however, their actions are at times perceived to be more of an unwelcome interference by the bureaucrats. Their so-called recommendations are unnecessary pressures that sometimes run counter to standard, reason and even to evidence. Worst, their decisions are reversed when another party take the reign of governance. Within this political reality, the health sector has to navigate. There is no other reality. Unfortunately, the health sector has not mastered the ways in dealing with the politicians. Aside from the occasional invitations extended to government officials, it has not organised systematically a programme to advocate, educate or, at the very least, inform the politicians on strategic health interventions that can make a difference on health as well as give them political mileage. Instead, the health sector attempts to keep a safe distance from someone who keeps on knocking on its door or even enters through the back door.

(3) THREE GOVERNMENT BRANCHES WORK FOR HEALTH

Although the Ministry of Health, Nutrition and Welfare is the lead government agency, responding to the needs and expectations of the public require a direct involvement, indirect support or, at least, agreement. In Sri Lanka, the government has three branches: Executive, Legislative and Judiciary.

The Executive Branch

The President heads the Executive branch and presides over a cabinet of ministers. To date, there are 33 regular ministries and 20 ministries without portfolio (Table 2.1.1). Coordination between the Ministry of Health, Nutrition and Welfare and the other agencies is discussed in Section 5.7.

The Parliament

The Speaker heads the parliament, which is responsible for all legislation in the country. It is the supreme body, which converts the democratic rights of the people into legislative action.

The Parliament has a Consultative Committee for Health. It is responsible for policy formation, formulation, policy implementation and policy review.

The Judiciary

The Judiciary branch is headed by the Chief Justice. It comprises the Supreme Court, Appeals Court, High Court, District Court and Magistrate Court. The common cases seen in front of the Judiciary come under the food act. But of late the number of cases coming under professional negligence has increased.

Most cases coming under the food act could be considered as those in favour of the general health of the public. These cases with regard to professional negligence have caused major difference of opinion between the legal and medical professions. The medical profession is claiming it should have the right to discipline its members while the legal profession claims they should consider the public interest first.

Table 2.1.1 Cabinet of Ministers

Ministers with Rank of Cabinet		Ministers of Non-Cabinet Rank
Ministry of Agriculture & Livestock, Samurdhi	Ministry of Housing &. Plantation Infrastructure	Ministry of Assisting Foreign Affairs
Ministry of Buddha Sasana	Ministry of Human Resources Development Education and Cultural Affairs	Ministry of Assisting Vanni Rehabilitation
Ministry of Central Region Development	Ministry of Interior	Ministry of Highways
Ministry of Commerce and Consumer Affairs	Ministry of Irrigation and Water Management	Ministry of Hindu Affairs
Ministry of Cooperatives	Ministry of Justice, Law Reform and National Integration	Ministry of Home Affairs, Local Government and Provincial Councils
Ministry of Defence	Ministry of Land	Ministry of Housing Development
Ministry of Port Development, Shipping, Eastern Development & Muslim Religious Affairs	Ministry of Mass Communication	Ministry of Industries
Ministry of Economic Reform, Science and Technology	Ministry of Plantation Industries	Ministry of Irrigation
Ministry of Employment and Labour	Ministry of Policy Development & Implementation	Ministry of North- West Region Development
Ministry of Enterprise Development, Industrial Policy and Investment Promotion, Constitutional Affairs	Ministry of Power & Energy	Ministry of Parliamentary Affair
Ministry of Environment and Natural Resources	Ministry of Public Administration, Management and Reforms	Ministry of Rehabilitation, Resettlement and Refugees
Ministry of Estate Infrastructure	Ministry of Rural Economy	Ministry of Samurdhi
Ministry of Finance	Ministry of Southern Region Development	Ministry of School Education
Ministry of Fisheries & Ocean Resources	Ministry of Tourism	Ministry of Small Holder Development
Ministry of Foreign Affairs	Ministry of Transport, Highways & Aviation	Minister of Social Welfare
Ministry of Health, Nutrition & Welfare	Ministry of Western Region Development	Ministry of State Transport
Ministry of Home Affairs, Provincial Council and Local Government	Ministry of Women's Affairs	Ministry of Tertiary Education and Training
		Ministry of Urban Public Utilities
		Ministry of Water Management
		Ministry of Youth Affairs and Sports

Source: Government of Sri Lanka, Web Site

Three Branches Working Together

The three branches are independent of each other but work in close collaboration and cooperation. For the health sector, they have advanced the following issues in unity. Again, the close example of all branches working in close collaboration is seen with the food act where the executive, legislation and judiciary branches worked closely to bring about amendments in the act in 1984.

On the contrary, the Executive and Legislative branches do not see eye-to-eye on some issues. Take for instance the issue of abortion. Though, the executive and judiciary branches see the need to bring about a change in the current abortion law, the legislative branch is dragging its feet due to pressure of public opinion.

Being independent from one another, differences in opinion are to be expected and respected. Achieving unity in direction and purpose among government agencies is the ideal objective. However, the more practical and fundamental issue is not in coordination per se but in the speed by which decisions or actions are taken.

What factors determine the speed by which policies are approved across government agencies? What can be done to influence these factors so that key policy decisions are not derailed or delayed? Should there be an office within the MoH that will be responsible for and, as such, trained on facilitating inter-agency processes?

(4) DECENTRALISATION POLICY AND HEALTH

The government has adopted several national level policies that affect the way health services are provided in Sri Lanka. While most of these policies are cited in the pertinent chapters, decentralisation policy is discussed in this section as it has broader and more fundamental effects on the health sector.

In general, decentralisation has been pursued in many countries for a variety of reasons: political, financial and technical. "Politically decentralisation usually seeks to increase local participation and autonomy, redistribute power, and reduce ethnic and/or regional tensions. Financially, decentralisation is invoked as a means of increasing cost/effectiveness and sharpened accountability. However it can be employed (overtly or covertly) to offload financial responsibility from resource poor central governments to regions; and/or local entities."[3] The technical reasons for decentralisation in health system reform are multiple. Primary Health Care (PHC) is one expression of the decentralisation of more responsibility for health promotion and timely health seeking behaviour towards the community and households. It brings closer to the people scientifically valid services for common diseases and ailments. District health system, with considerable service functions and management authority and responsibility, is another expression of technical decentralisation.

Decentralisation can take different forms. **Deconcentration** refers to the transfer of authority and responsibility from central agencies in the capital to field offices of the same agency. **Delegation** is the transfer of authority and responsibility to agencies not directly under the control of the central ministry (such as NGOs). On the other hand, **devolution** involves the transfer of authority and responsibility to lower level agency by statutory means. All administrative systems in the world have some of centralised elements and some decentralised and the mix needs to be judicious and clear to be workable.

Decentralisation in Sri Lanka was introduced in 1988 through the passage of the 13th Amendment to the Constitution and the Provincial Councils Act No. 42 of 1987. It was an attempt to find a peace accord in the civil strife. Although intended to be a solution to the North and East conflict, the establishment of the Provincial Councils was introduced throughout the country. It brought major changes in the political and administrative structure of the government system, as well as in the role and responsibilities of different administrative levels.

[3]Partners for Health Reform No. 1, Sept 2002.

Changes in Organisational Structure

Before 1988, aspects of administration were deconcentrated directly by the MoH to district field offices under Superintendents of Health Services (SHS). In 1988, a new provincial tier of government was created which led to decentralisation of the health sector also. Under this decentralisation, the Provincial Council has a Provincial Ministry of Health headed by Provincial Director of Health Service (PDHS). At the district level, the Deputy Provincial Director of Health Service (DPDHS) replaced the SHS and is then responsible for health service administration at this level.

The second decentralisation took place in 1992. More government administrative powers were transferred from the Government Agent at the district level to the Divisional level. In the MoH, the position of Divisional Director of Health Services (DDHS) was created. Most of the health functions that were devolved to the Provinces in 1988 were further deconcentrated to the divisional level. DDHS are now officially responsible for the administration, supervision and coordination of curative and preventive services at this level.

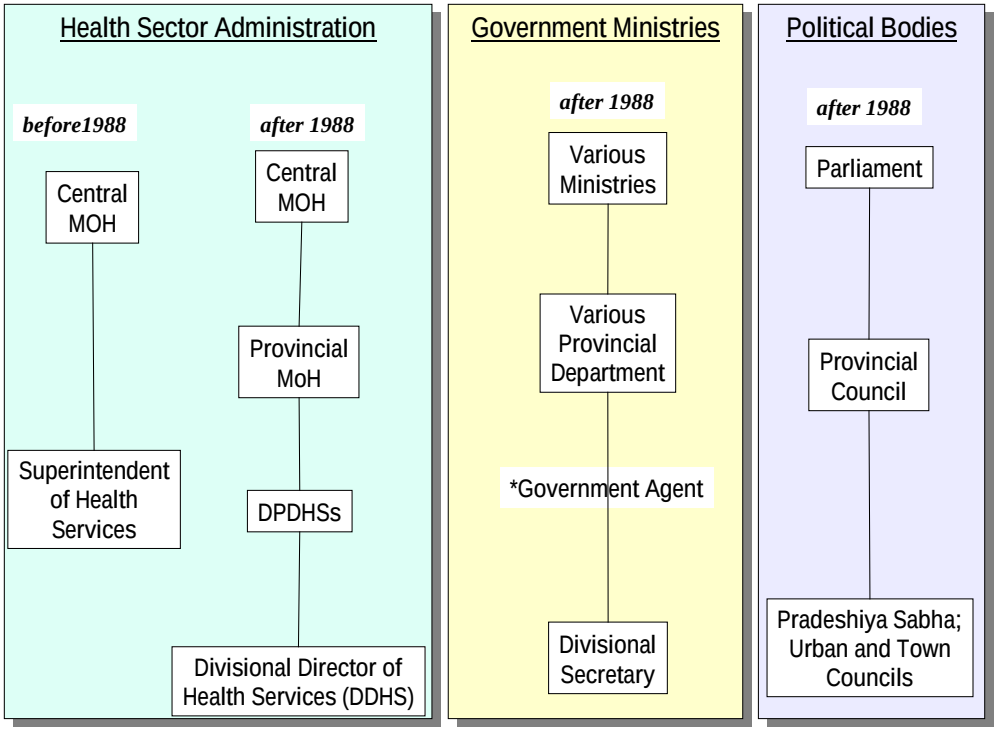


Figure 2.1.1 The Organisational Arrangement Before and After Decentralisation of MoH, Government Ministries, and Political Bodies

Note: *Government Agent: administrative position of office abolished after 1988 or 1992.

Source: Russell, *Does the Government have the Capacity?* (1997).

Roles and Responsibilities; Ideal vs. Actual

Under the 13th Amendment to the Constitution, the Central Government retains exclusive responsibility only for national (health) policy (under List II or the Reserved List) and for management of Teaching Hospitals and Hospitals established for special purposes (not included under List I or the Provincial Council List). List III, or the Concurrent List, provides for the Central Government to share responsibility with the Provincial Councils for such health administration activities as schools for training of auxiliary medical personnel; supervision of private medical care; population control and family planning. The rest of the entire healthcare system is devolved to the Provincial Councils.

The main functions of the national and provincial level health organisations are summarised in Table 2.1.2.

Table 2.1.2 Main functions of Health Organisations: National vs. Provincial levels

National level	Provincial level
• Translating policy into operational guidelines including technical, administrative and financial specifications for buildings, equipment, drugs, human resources, etc.	• Formulation and implementation of health development plans and the annual health plan for the province.
• Formulation of the master plan for national health development.	• Establishment and maintenance of hospitals and dispensaries other than teaching and specialist hospitals.
• Monitoring and evaluation of the implementation of policies, programs, services, etc.	• Provision of public health service, health education, nutrition, family health, maternal and child health services, food and food sanitation, and environmental health.
• Technical support for management of services.	• Provision of supplies, except procurement of drugs, for all medical facilities managed by the PCs.
• Legislative matters.	• Awarding postgraduate scholarships to the personnel attached to the medical facilities under the PCs. These personnel would be employed within the country.
• Professional education, basic and in-service training of health personnel.	
• Medical and health systems research.	
• Coordination with the other government sectors, private sector, major development projects, etc,.	
• Procurement of drugs and equipment.	

Sources: Thirteenth Amendment to the Constitution, p. 20, 1987
Russell, 1997, Nimal Attanayake, 2001

One important fact is that most responsibility for indirect provision lies with the central MoH. Officially, the provinces also have some responsibility for key indirect roles such as planning and resource allocation, but in practice the centre has been reluctant to decentralise power to the provinces, and has retained control over important functions such as human resource management and allocation of capital resources.

Table 2.1.3 summarises the perceived actual degrees of decentralisation to different bodies according to the functions by key informants. Hospital administration remains dominantly still in the hands of the central MoH. The central government continues to control key functions such as capital expenditure, recruitment and allocation of doctors to provinces, divisions and facilities, and transfers, promotions and discipline. Provincial Councils have not been given any authority for capital budgeting but have been given some authority for carrying out the functions of annual planning and resource allocation, mid-term planning, and recurrent budgeting. At DDHS level, no authority is given for any of these functions except limited authority for annual planning and resource allocation.

District plans are based on routinely prepared requests made by DDHSs and the provincial plan normally takes the form of an aggregation of district plans. At the divisional level, DDHSs appear to lack the skills for annual planning together with lack of health information necessary for planning.

Table 2.1.3 Comparison of Ideal and Actual Authorities

Function	Level of Authority Given to			
	Devolved Provincial Department of Health		Deconcentrated Divisional Directorate of Health Services	
	Ideal type	In practice	Ideal type	In practice
Health policy development	++	0	0	0
Human resource management (power to hire and fire)	+++	+	+	0
Annual planning & resource allocation	+++	++	++	+
Mid-term planning	+++	++	+	0
Recurrent expenditure	+++	++	++	0
Capital expenditure	+++	0	+	0
Intersectoral collaboration	++++	++++	+++	++
Staff and facility supervision and monitoring	+++	+++	+++	+++

Note: Key: ++++ full authority; +++ extensive authority; ++ some authority; + limited authority; 0 no authority
Source: Russell, 1997.

Attanayake's study[4] of decentralisation pointed out that the lack of skilled staff at the divisional level forced PDHSs to return that responsibility to the Provincial Department of Health. This trend can be observed for tender procedures as well.

Officials' Perceptions about Decentralisation

In the provincial stakeholders meetings, a group for health sector management in each province mainly focused on the issue of devolution. The discussion with stakeholders gave the impression that the provincial level officials perceive the positive effects of devolution. They say that managerial autonomy has improved, decision-making is quicker, and accountability of the system to the community is enhanced; and the only problem perceived by them is that the Central government bypasses the provinces in implementation or the Centre intervenes unnecessarily.

Divisional level officials seemed to have different views on the devolution. For example, Divisional level officials feel that funds and human resources are not adequate, so that the people's expectations have not been fulfilled by the services provided. Another example is that the sectoral coordination is perceived as improved by the provincial level officials; however, the divisional level officials and people from other sectors feel very differently. The table below shows perceived collaboration with other sectors by divisional officials. This is qualitative statement; however, it shows the different view from the provincial officials who say the intersectoral collaboration improved since the devolution started.

Table 2.1.4 Perceived Collaboration with Other Sectors

Level	Organisation	Deficiency
Community	Village Health Committee	Not functioning properly
Division	Divisional Health Committee	Not functioning well
Provincial	MOH monthly conference	Poor participation from curative institutions
	Provincial Health Committee	Not functioning well
National	National Health Development Committee	Functioning well
	National Health Council	Not functioning well from 1998

Source: Provincial Stakeholders Meeting in Hambantota

[4]Attanayake (2001).

The divisional level perceive the system is not yet fully decentralised, the funds and human resources are not enough, and the provinces are unable to plan out their health delivery system due to unnecessary interference from the politicians.

Reflections

The "Provincial Councils System" that has been functioning for over a decade has passed through several rounds of elections, and constitutes a legal and administrative reality for managing public affairs and human development in the country. Even so, it is not yet complete as several provinces have not been given full statutory power and the financial decentralisation is everywhere very limited. One could see it more as a case of deconcentration to all provinces and devolution of some responsibilities but often without commensurate authority especially in the financial matters. In most provinces of Sri Lanka, there has been very little decentralisation to districts and even less to Divisions.

The Provincial Councils since 1992 have received the responsibility for all health facilities and health services in their territory except for teaching hospitals and some vertical services. They receive block grants from which they support the public services. So potentially, this can lead to very different levels of support for health from province to province. Devolution without capacity reinforcement is a curse, with capacity reinforcement it can be a blessing.

The Provincial Council that was constituted for the North East was dissolved in 1991 but the system continued to operate in the rest of the country. There has been much criticism of the "system" and its functioning, not the least, its justification as a form of governance in the local context, costs of maintenance, and benefits accruing to people. Serious concern has been expressed regarding its effect on the long-term territorial integrity of the country, impact upon the economy and not the least its efficacy in bringing about "genuine" devolution of power needed to address the fundamental issue it was meant to resolve. By contrast, the "provincial administrators" would seem to have viewed the system as another set of legal and administrative institutions concerned with the conduct of public affairs at the provincial level. They are of the view that Provincial Councils have failed to become effective institutions of devolved governance due to "legal and administrative" problems.[5]

(5) PEACE: TAPPING ITS POTENTIAL DIVIDEND FOR HEALTH

The first round of formal peace talks between the Government of Sri Lanka (GOSL) and the Liberation Tigers of Tamil Eelam (LTTE) was held in Sattahip, Thailand, between 16 and 18 September 2002. The parties agreed that, in their determination to bring the peace process forward, they are responding to the overwhelming call of the people of Sri Lanka to end the conflict, and create the conditions for lasting peace, prosperity, and respect for human rights.

Building on the achievements of the Ceasefire Agreement last February, the parties agreed to establish immediately a Joint Committee to deal with the issues relating to High Security Zones, with the aim of enabling the return of large numbers of displaced persons to their original areas, and facilitating the restoration of normality. This Joint Committee will consist of senior representatives of both sides, including military personnel.

The parties agreed to establish a Joint Task Force for Humanitarian and Reconstruction Activities to address the urgent needs both of resettlement and of war zone population. The Joint Task Force will constitute a partnership between the GOSL and the LTTE, and will have responsibility for the identification, financing and monitoring of urgent humanitarian and reconstruction activities. The two

[5] JICA / MoH Study No. 5.3.

priorities of the parties are stepping up de-mining action and accelerating resettlement and rehabilitation of internally displaced person. The parties urged donors to provide immediate funding for the humanitarian priorities.

The peace process, as of July 2003, is still trying to deal with the degree of political and financial decentralisation both central government and LTTE can live with at the provincial level. Internationally less known is that other Sri Lankan provincial authorities demand also more clear rules of decentralisation, especially with clearer decentralisation of authority.

So, for the Health Master Plan implementation it is not yet clear what the exact rules of political, administrative decentralisation will be, but it is important that this crucial policy be clearly defined and implemented for the success of the HMP. For most efficient implementation in the long term there would also need to be decentralisation to districts and divisions. It is understood that besides political will this will take capacity reinforcement. The Sri Lankan government currently is engaged in modernising the rules of financial reporting in state organisations, especially in those with a commercial role. The MoH has to fit with the nationwide decisions on political decentralisation and seek to be included early in administrative and financial capacity reinforcement. Even so, it needs to be realised that the health sector will need to pursue its own decentralisation for technical reasons primarily.

The HMP as written rests on the following objectives for decentralisation:

1) Increase service delivery effectiveness by reinforcing primary care and adapting it to local conditions and needs;
2) Increase cost consciousness and efficiency of service production through closer links between resource allocation in budget and utilization;
3) Increase health worker motivation through local supervision and involvement of service users in oversight, performance assessment, etc.;
4) Improve accountability, transparency and legitimacy by embedding health service delivery in local administrative systems;
5) Increase citizen participation in health service delivery by creating systems and procedures for involvement in planning, allocation, oversight and evaluation;
6) Increase equity of service delivery by enabling poor communities to access providers and to influence decisions on schedule of work, points of service delivery etc.;
7) Delegate health promotion activities to local community groups, to NGOs while assuring quality and scientific validity of messages; and
8) Potentially, separate government financing of health services from government provision of care and thus permit use of the preferred source of care (private or public) with equal subsidy. This will improve choice and hopefully quality, especially responsiveness of care.

Peace is not only desirable in and of itself. Its potential saving on military expenses can instead be channelled back to health and other sectors. Through the rehabilitation programmes, the social and economic infrastructure in the northern and eastern provinces will be rebuilt to an equitable level. The issue at this point is not whether peace will result to better health particularly to people affected by the conflict. **The fundamental issue is whether the military expenses will be reduced and whether the health sector will receive the financial dividend. Instead of raising these issues and waiting for answers, what should the health sector do? Should it act only when peace is finally achieved? Should it take a more pro-active role to ensure that there is peace dividend and that a part of it is used to invest in health?**

2.2 ECONOMIC ENVIRONMENT

The objectives of this section are the following:

1) To analyse whether economic growth is translated to better expenditure for health in Sri Lanka;
2) To discuss the capacity of the national government and provincial councils to generate resources; and
3) To examine the economic status of households and their capacity to provide for or access basic needs that directly or indirectly impact on health.

(1) THE ECONOMY AND HEALTH EXPENDITURE

Growth in the National Economy

Since the 1970s, economic growth has averaged 4.2% per year. The economic growth rate increased in the 1990s to about 5%, aided by the increase of exports, but both budget deficits and external debts have worsened. The economic structural reforms promoted private enterprises and reduced the public sector in size and employment. However, the results of the reforms are mixed as seen in widening income disparities,[6] weakened international competitiveness of local industries due to the removal of protection and controls, growing economic difficulties of small farmers caused by rising production costs and declines in international market prices, etc.

Sri Lanka's GNP per capita has been around US$700 on the average for the last decade or GDP in USPPP of 3,279. Over the last years, the GDP has had a healthy growth rate of about 6%. In the first quarter of 2002, GDP recorded a marginal growth of 0.1 % over the corresponding quarter of the previous year. The value increased in the first quarter in agriculture and services by 2.4% and 1.4%, respectively. However, the contraction in the industry sector by 4.2% offset most of the favourable performances of the above two sectors (Table 2.2.1). This may be a reflection of the worldwide slump in commerce and could act as a detrimental factor both by diminishing family's purchasing power and by making it harder to raise the governmental budget for health.

The labour force of Sri Lanka for 2000 is 6,828 thousand peoples and total employment is 6,310 thousand peoples (Table 2.2.2). More than one of three employed are in agriculture, livestock and fisheries sector. About one of six is involved in some forms of personal and community services while one of every eight is in the trade and hotel industries. Unemployment affects 517 thousand people and unemployment rate is 7.6%. In the past three years, unemployment rate has decreased yearly. Over 5% unemployment is considered intolerable in most developed economies but relatively moderate in developing countries.

[6] Government of Sri Lanka, *Poverty Reduction Strategy Paper* (2002), 132.

Table 2.2.1 Gross Domestic Product at 1996 Constant Factor Cost Prices

SECTOR	First Quarter (Rs. Mn)			% Change		Percentage Share of GDP		
	2000	2001(a)	2002(b)	01/00	02/01	2000	2001(a)	2002(b)
Agriculture	**47,066**	**45,597**	**46,671**	**-3.1%**	**2.4%**	**22.6%**	**21.4%**	**21.9%**
1. Agriculture, forestry & fishing	47,066	45,597	46,671	-3.1%	2.4%	22.6%	21.4%	21.9%
1.1 Agriculture	38,130	36,630	37,647	-3.9%	2.8%	18.3%	17.2%	17.7%
1.2 Forestry	3,746	3,798	3,912	1.4%	3.0%	1.8%	1.8%	1.8%
1.3 Fishing	5,190	5,169	5,112	-0.4%	-1.1%	2.5%	2.4%	2.4%
Industry	**56,421**	**58,675**	**56,206**	**4.0%**	**-4.2%**	**27.0%**	**27.6%**	**26.4%**
2. Mining & quarrying	4,117	4,687	4,138	13.8%	-11.7%	2.0%	2.2%	1.9%
3. Manufacturing	32,835	33,581	32,549	2.3%	-3.1%	15.7%	15.8%	15.3%
3.1 Processing of tea, rubber & coconut kernel product	4,165	4,206	3,923	1.0%	-6.7%	2.0%	2.0%	1.8%
3.2 Factory industry	26,229	26,885	26,186	2.5%	-2.6%	12.6%	12.6%	12.3%
3.3 Small industry	2,441	2,490	2,440	2.0%	-2.0%	1.2%	1.2%	1.1%
4. Construction	16,483	17,340	16,907	5.2%	-2.5%	7.9%	8.2%	7.9%
5. Electricity, water & gas	2,986	3,067	2,612	2.7%	-14.8%	1.4%	1.4%	1.2%
Services	**105,155**	**108,309**	**109,819**	**3.0%**	**1.4%**	**50.4%**	**50.9%**	**51.6%**
6. Transport, storage & communication	23,664	25,306	26,894	6.9%	6.3%	11.3%	11.9%	12.6%
7. Wholesale & retail trade	44,070	43,973	43,902	-0.2%	-0.2%	21.1%	20.7%	20.6%
7.1 Imports	19,431	19,380	19,632	-0.3%	1.3%	9.3%	9.1%	9.2%
7.2 Exports	4,809	4,940	4,332	2.7%	-12.3%	2.3%	2.3%	2.0%
7.3 Domestic	19,830	19,653	19,938	-0.9%	1.5%	9.5%	9.2%	9.4%
8. Banking, insurance & real estate	15,175	16,177	16,225	6.6%	0.3%	7.3%	7.6%	7.6%
9. Ownership of dwellings	3,760	3,813	3,866	1.4%	1.4%	1.8%	1.8%	1.8%
10. Public administration & defence	10,098	10,199	10,179	1.0%	-0.2%	4.8%	4.8%	4.8%
11. Services (n.e.s)	8,388	8,841	8,753	5.4%	-1.0%	4.0%	4.2%	4.1%
Gross Domestic Product	**208,642**	**212,581**	**212,696**	**1.9%**	**0.1%**	**100.0%**	**100.0%**	**100.0%**

Note: (a) Revised, (b) Provisional
Source: Central Bank of Sri Lanka

Table 2.2.2 Labour Force, Employment and Unemployment

Item	1998	1999	2000(a)
Labour Force, '000	**6,661**	**6,673**	**6,828**
Household Population (Aged 10 Years and above), %			
Male	67.3	67.7	67.0
Female	36.4	34.1	34.0
Total	51.7	50.7	50.0
Total Employed, '000	**6,049**	**6,083**	**6,310**
Employment By Sector, %			
Agriculture, Livestock and Fisheries	40.6	35.0	36.0
Mining and Quarrying	1.2	1.1	0.9
Manufacturing	14.3	15.6	16.6
Electricity, Gas and Water	0.6	0.5	0.4
Construction	4.9	5.5	5.6
Trade and Hotels	11.6	13.3	12.7
Transport and Communication	4.7	5.5	4.7
Finance, Insurance and Real Estate	1.9	2.0	2.1
Personal and Community Services	17.2	18.5	16.7
Not defined	3.0	4.5	4.2
Total Unemployed, '000	**629**	**591**	**517**
Unemployment Rate, % of Labour Force			
Male	6.5	6.7	5.8
Female	14.0	13.0	11.1
Total	9.2	8.9	7.6

Note: (a) Average for three quarters
Source: Compiled by JICA Study Team based on the Quarterly Labour Force Survey conducted by the Dept. of Census and Statistics

Does Health Expenditure Benefit from Economic Growth

In Sri Lanka, economic growth is not tantamount to better expenditure for the health sector. Figure 2.2.1 shows that the rapid expansion in GDP during the 90s was actually accompanied by a declining trend in nominal health expenditure as a share of the GDP. Why was this so? During the same period, it seems public funds for the social sector was diverted for purposes of the military (Figure 2.2.2). The study of Arunatilake showed how the buildup of military expenditures has changed the sectoral allocation of public funds over the 1984-1996 periods.[7]

Whether the forecast for the next five years is optimistic or pessimistic, the issue remains. Should the health sector take a more pro-active role to justify an increase in public allocation? Should it reinforce its capacity to advocate and negotiate for a fairer share of the national budget?

[7]N. Arunatilake, S. Jayasuriya, and S. Kelegama, *The Economic cost of the War in Sri Lanka* (Institute of Policy Studies, 2000).

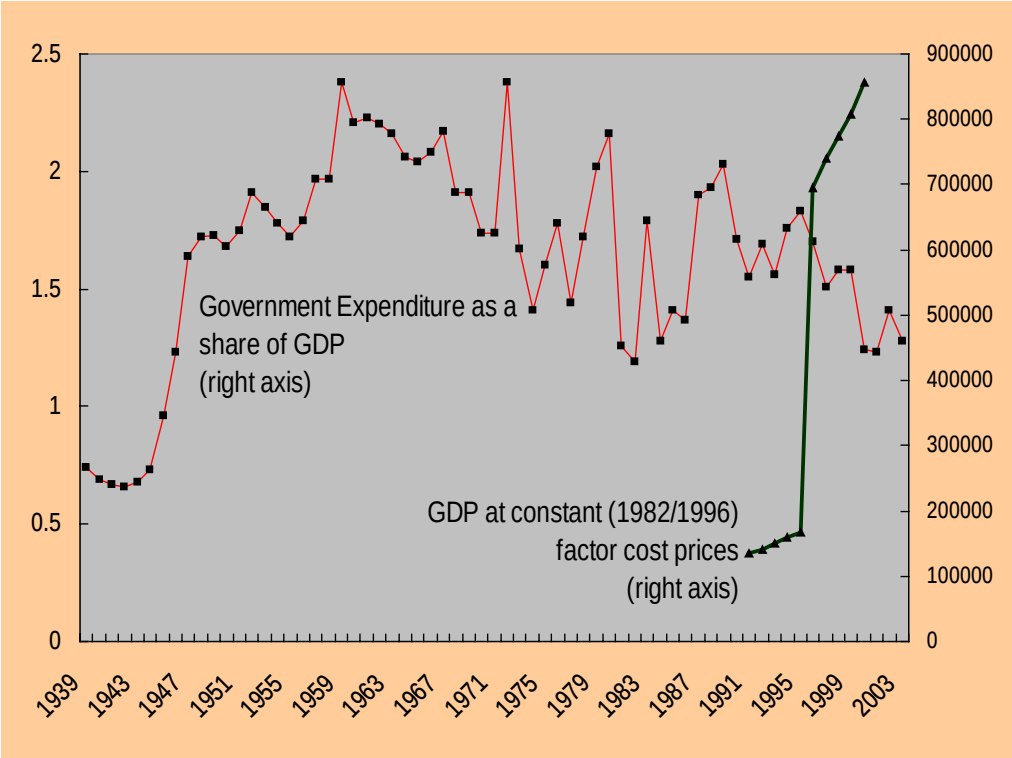


Figure 2.2.1 GDP (1990-2000) and Health Expenditure as a Share of the GDP (1939 to 2003)

Note: * MoH Health Expenditure combines Recurrent & Capital Expenditures; 2003 is based on estimates.

Sources: MoH, Central Bank of Sri Lanka

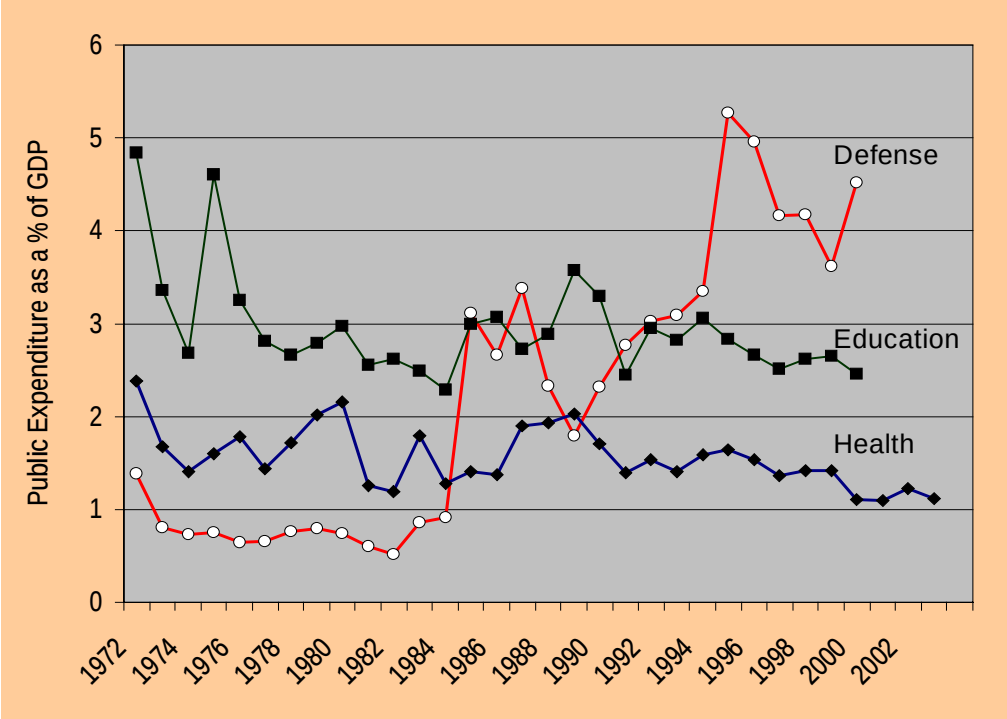


Figure 2.2.2 Trends in Government Expenditure for Health, Education and Defence as a Share of GDP, 1972-2003

Source: The Economic Cost of the War in Sri Lanka, IPS, 2000

(2) GOVERNMENT CAPACITY TO GENERATE REVENUES

Government Finance

From 1991 to 2000, the government budget deficit has increased three-fold (Figure 2.2.4). As a percentage of the GDP, its revenue has declined from 20.4% in 1991 to 16.8% in 2000.

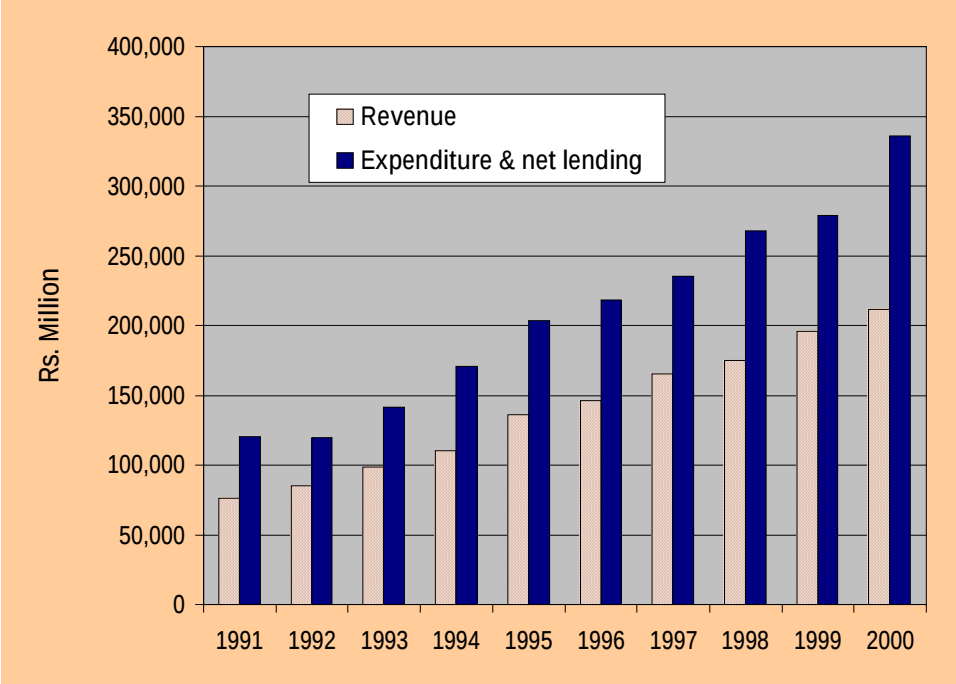


Figure 2.2.3 Government Revenue vs. Expenditure, 1991-2000
Source: Economic and Social Statistics of Sri Lanka, Central Bank of Sri Lanka, 2001

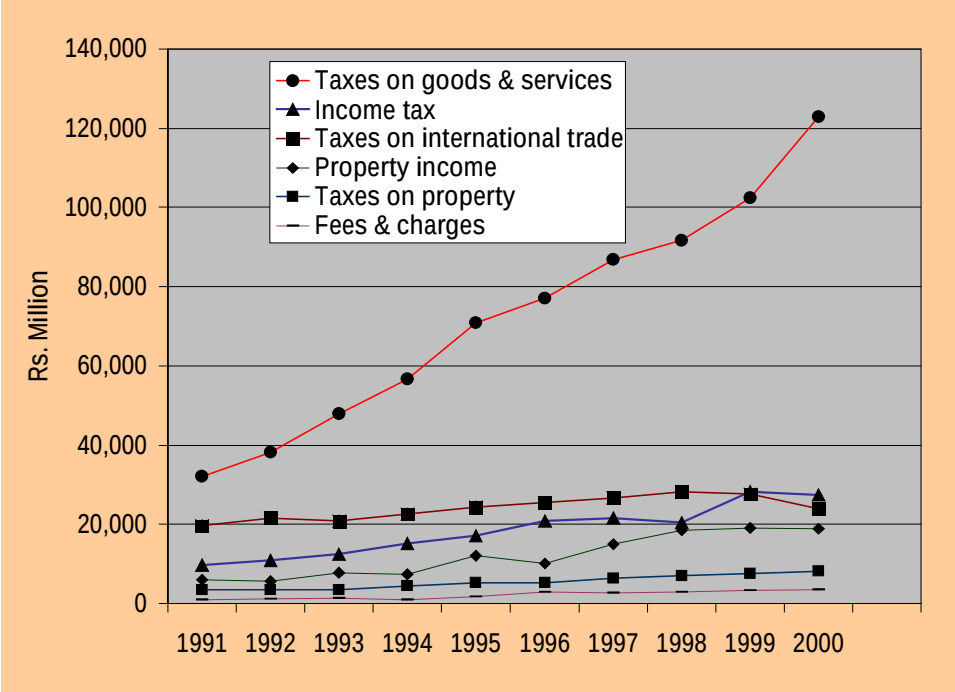


Figure 2.2.4 Sources of Government Revenues, 1991-2000
Source: Economic and Social Statistics of Sri Lanka, Central Bank of Sri Lanka, , 2001

The revenues come primarily from taxes on goods and services (60% in 2000). Income tax and taxes on international trade contributed a quarter of the 2000 revenues. However, government spent more than what it could generate.

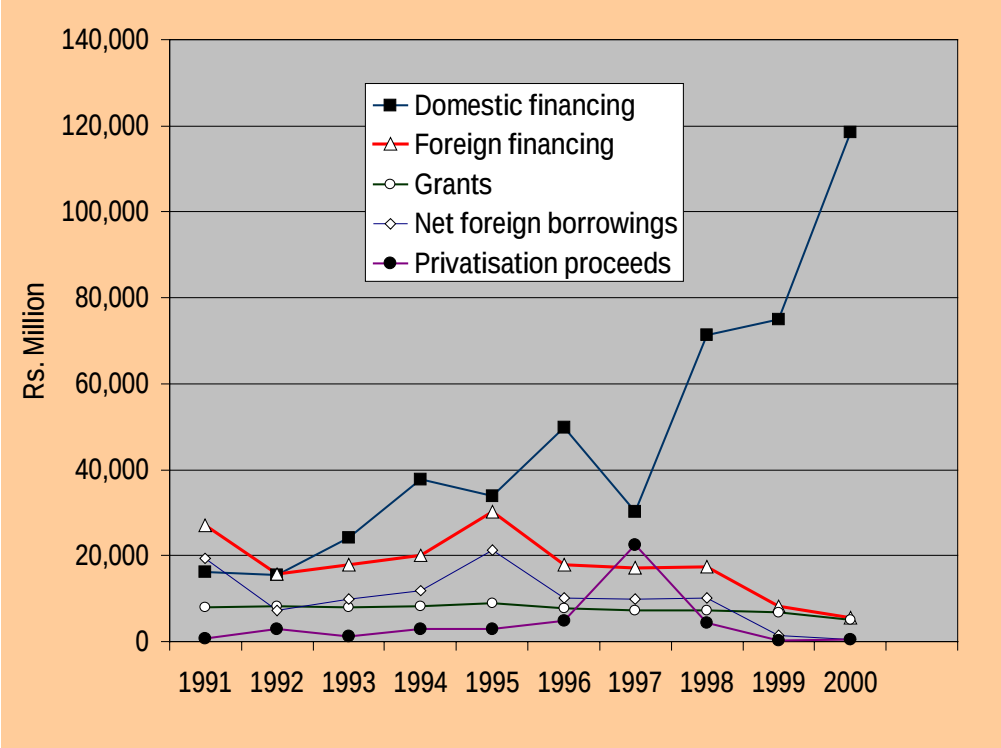


Figure 2.2.5 Financing of Budget Deficit, 1991-2000
Source: Economic and Social Statistics of Sri Lanka, Central Bank of Sri Lanka, 2001

To finance the budget deficit, the government has heavily relied on domestic borrowing from banks and other sources. Foreign financing and grants have been consistent source of supplementary fund. Privatisation activities peaked in 1997.

Considering the precarious fiscal condition of the government, what then should the health sector do? Should it continue to rely on the current system of financing health? Could it further optimise the allocation and use of available resources? Could it mobilise resources from non-traditional sources?

Provincial Councils

There is a wide disparity in the capacity of Provincial Councils to generate revenue (Figure 2.2.6). The Western Province dominates the other provinces in terms of economic indicators. Its revenue is thirty times more than that of North-Central or thirteen times more than the average of the other provinces. Its GDP is eight times more than Uva and five times more than the average of the other provinces.

The economic disparity across provinces is one of the hurdles that should be addressed when implementing decentralisation. As responsibilities are devolved, so should authorities. However, even if the Provincial Councils are authorised to mobilise resources, it seems some provinces can do so but only minimally compared to the Western Province. If left to its own, therefore, there will be inequity in the provision of health services.

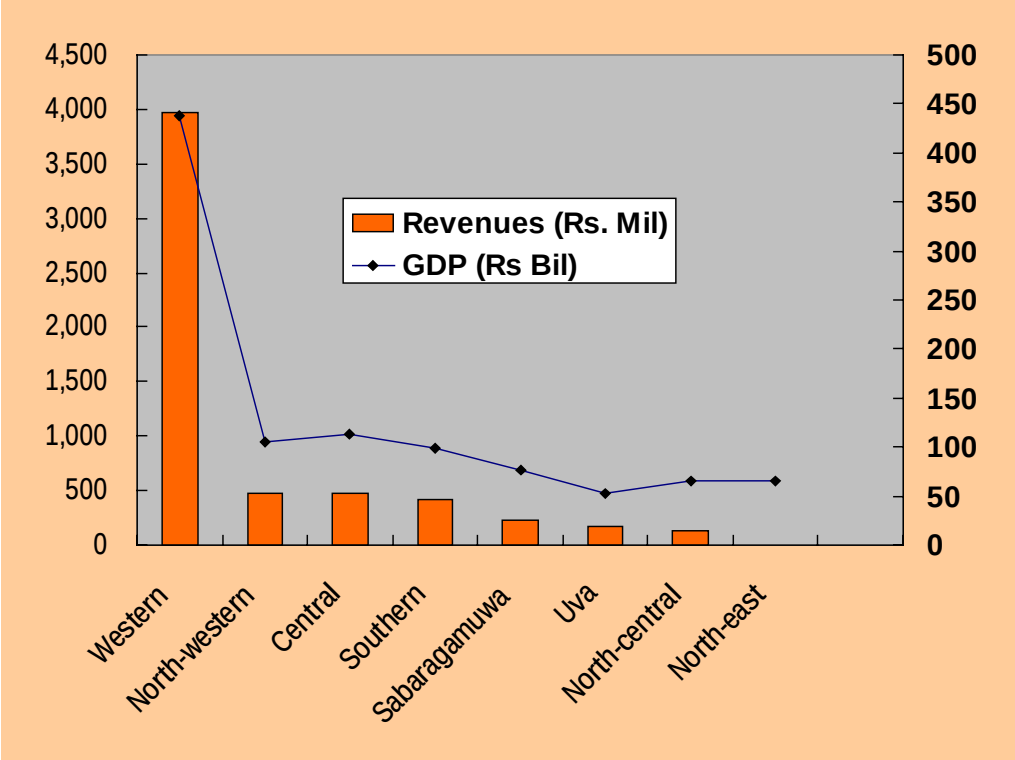


Figure 2.2.6 Province-wise Revenue Collection, 1998 (Rs. Million)
Source: Decentralisation and Provincial Finance in Sri Lanka, Colombo: Institute of Policy Studies, 2000

(3) HOUSEHOLD'S POVERTY AND LIMITED ACCESS TO BASIC SERVICES

It is known since centuries that poverty breeds ill health and ill health impoverishes. This vicious circle is hard to break as **poverty comes with difficult access to basic needs** such as clean air, safe water, sufficient and high quality food, hygiene and sanitation, decent housing, education even for life skills and vital information. Poverty usually comes with a culture of high risk taking to earn survival or to enjoy leisure. It comes often with a very low self-esteem that is reinforced by the social norms of interaction and an imprisoning feeling that there is precious little one can do to improve ones condition in life and often. When whole communities suffer a higher prevalence of poverty and at the same time live in remote areas, their access to social services including health is further hampered.

Percent of Poor is on the Decline but the Poorest has the Least Access

The percentage of people below the poverty line has been generally on the declining trend between 1985 and 1997 (Figure 2.2.7). It increased though in 1995/96. Unfortunately, there is no evidence whether it further improved or stayed stable after 1996/97.

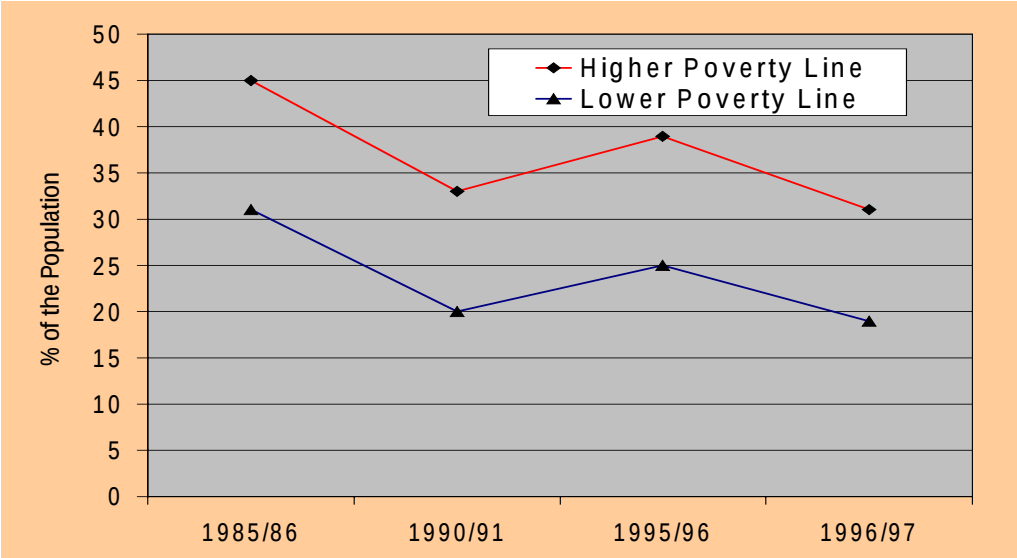


Figure 2.2.7 Incidence of Consumption Poverty 1985/86 – 1996/97

Note: The DCS used a lower poverty line of Rs.791 and a 20 percent higher poverty line of Rs.950 while the CB used a lower poverty line of Rs.860 and a 20 percent higher poverty line of Rs.1,032 per person per month, to estimate the incidence of consumption poverty.

Source: Household Income and Expenditure Survey 1990/91 and 1995/96, Department of Census and Statistics (DCS), Consumer Finances and Socio-Economic Survey 1996/97, Central Bank. Central Bank estimates are not strictly comparable with DCS estimates.

Table 2.2.3 Average Consumption and Access to Basic Infrastructure Services by Consumption Quintiles, 1999/2000

Consumption Quintile	Monthly average consumption per capita (SL Rupees)	Access to Safe Drinking Water %	Latrine %	Safe Sanitation %	Safe Cooking Fuel %	Electricity %
Poorest	821	61	84	55	2	38
Second	1,211	74	85	67	5	49
Third	1,537	78	89	75	8	60
Fourth	1,986	82	90	82	22	67
Richest	3,860	89	94	89	51	82

Note: A household has access to "safe drinking water" if it obtains its drinking water from protected well, public tap, tube well, tap within unit and tap outside unit. A household has access to "safe sanitation" if the type of latrine it uses is either water seal or flush toilet. A household has access to "safe cooking fuel" if it has either gas or electricity for cooking.

Source: World Bank, based on 1992/2000 Sri Lanka Survey

Table 2.2.3 gives a picture of about Sri Lankan poor and their access to basic needs. The steepest differentials are in overall consumption, safe cooking fuel, access to electricity, safe sanitation and safe drinking water and least in latrines.

Estate is the Worst Off

Poverty is overwhelmingly rural (Table 2.2.4) but the urban area has its share. Particular groups, the estate workers, are especially vulnerable as many of them are poor. Unfortunately, health services and environmental conditions are also weakest in rural and estate areas. Table 2.2.4 shows these disparities by region.

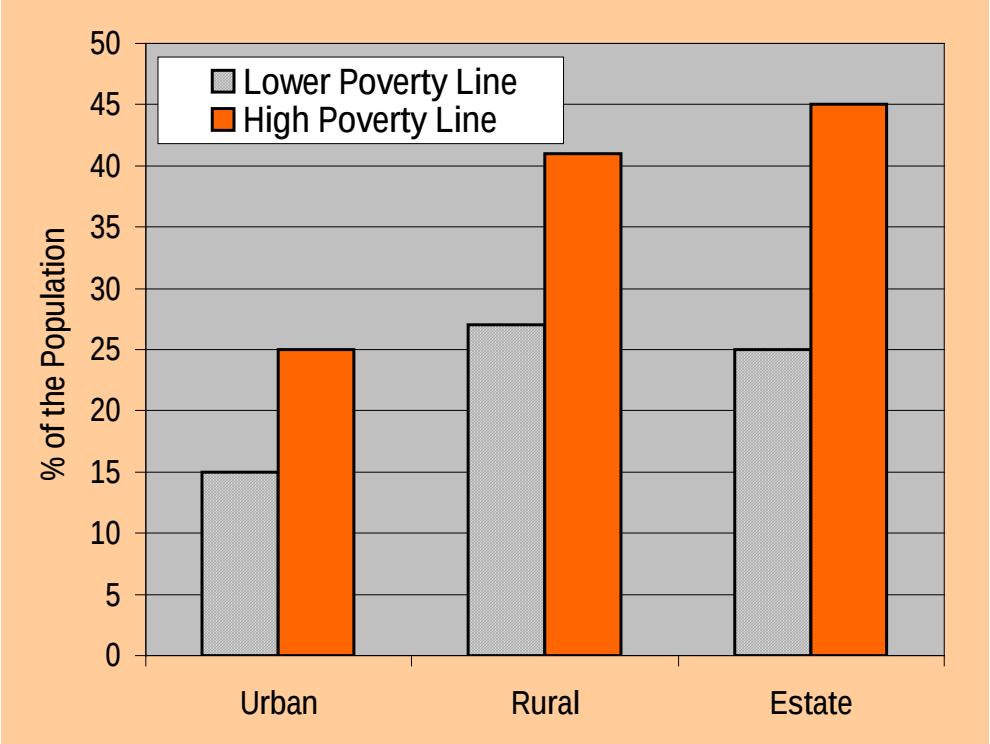


Figure 2.2.8 Incidence of Poverty by Sector, 1995/96
Source: Household and Income Expenditure Survey 1995/96, Department of Census and Statistics.

Table 2.2.4 Average Consumption and Access to Basic Infrastructure Services by Sector, 1999/2000

Sector	Monthly average consumption per capita (SL Rupees)	Access to Safe Drinking Water %	Latrine %	Safe Sanitation %	Safe Cooking Fuel %	Electricity %
Urban	2,809	97	94	91	51	84
Rural	1,816	74	88	72	14	57
Estate	1,449	72	76	60	3	43

Note: A household has access to "safe drinking water" if it obtains its drinking water from protected well, public tap, tube well, tap within unit and tap outside unit. A household has access to "safe sanitation" if the type of latrine it uses is either water seal or flush toilet. A household has access to "safe cooking fuel" if it has either gas or electricity for cooking.
Source: World Bank, based on 1992/2000 Sri Lanka Survey

Uva Province is the Worst Off[8]

The percentage of poor is very different from province to province (Figure 2.2.9). From having the most to the least proportion of their residents being poor, the provinces are Uva, North-Western, Sabaragmuwa, North-Central, Central, Southern, then Western. If the higher poverty line is used, then the percentage of poor people in Uva is two times more than in Western Province. If the lower poverty line is used, then the difference is even greater.

[8] The analysis is this section is constrained by absence of comparative data for the Northern and Eastern Provinces.

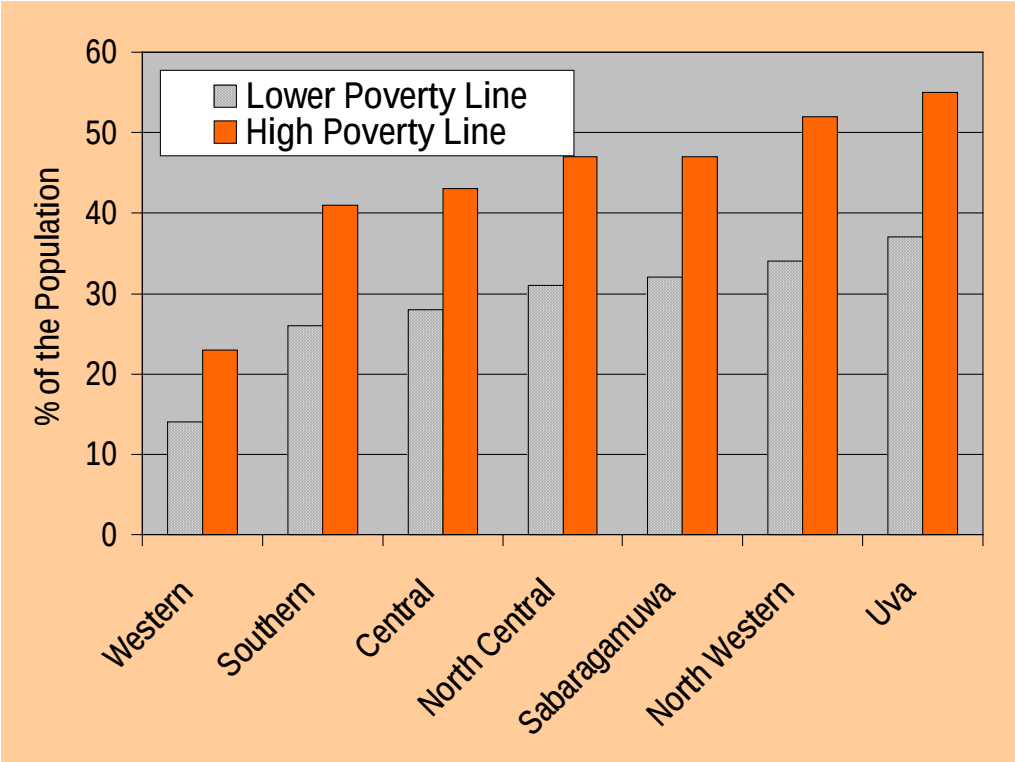


Figure 2.2.9 Incidence of Poverty by Province (No Data for North-East), 1995/96
Source: Household Income and Expenditure Survey 1995/96, Dept. Census and Statistics

A graphical analysis between incidence of income poverty and access to basic services (Figures 2.2.10 to 2.2.11)[9] revealed the disparity among provinces with the following being the three worst off: Uva (being the worst of all), Central and North-Central Provinces. Aside from having the highest percentage of poor people, Uva suffers the most when it comes to having no access to safe sanitation facilities, births not in institutions, and adult illiteracy. Central Province carries the burden of adult illiteracy, births not in institutions, and children not being fully immunised. On the other hand, North-Central Province endures from having no access to safe drinking water and has the highest proportion of people under the age of forty dying. Sabaragamuwa stands out as having the highest percentage of its population with no access to electricity. Although it has the best indicators related to income and access, the Western Province has the highest percentage of children who are not fully immunised. This is contrary to expectation.

[9] Saman Kelegama, *Poverty Situation and Policy in Sri Lanka* and *Poverty Reduction in Sri Lanka: Maximizing the Asian Development Bank's Contribution* (Asian development Bank, 2001),

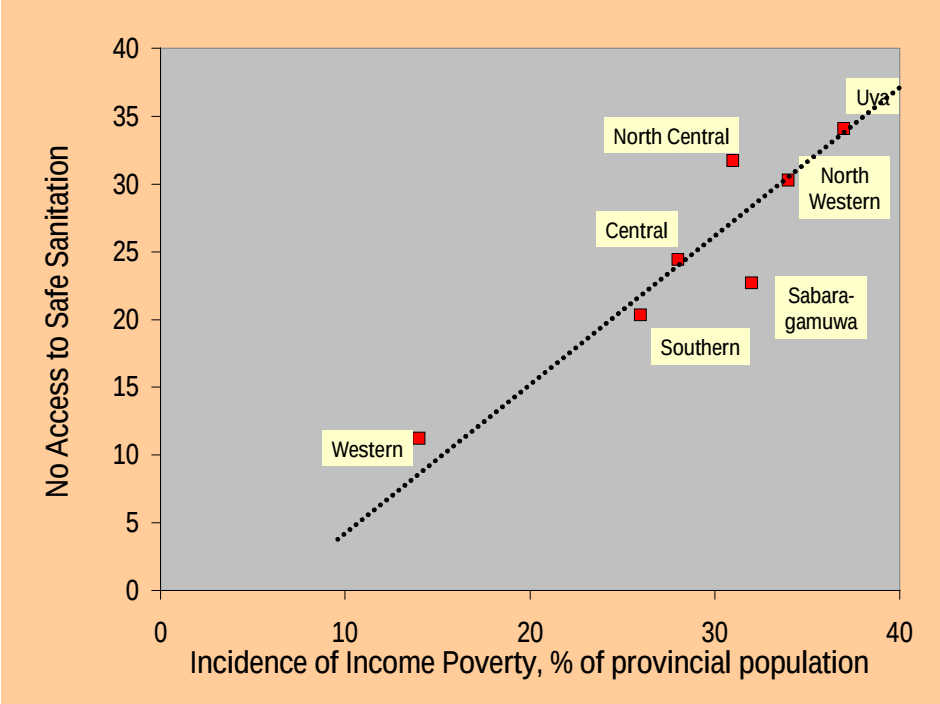


Figure 2.2.10 **Relationship between Percentage of Population who are Poor and who have No Access to Safe Sanitation, 1995/96**

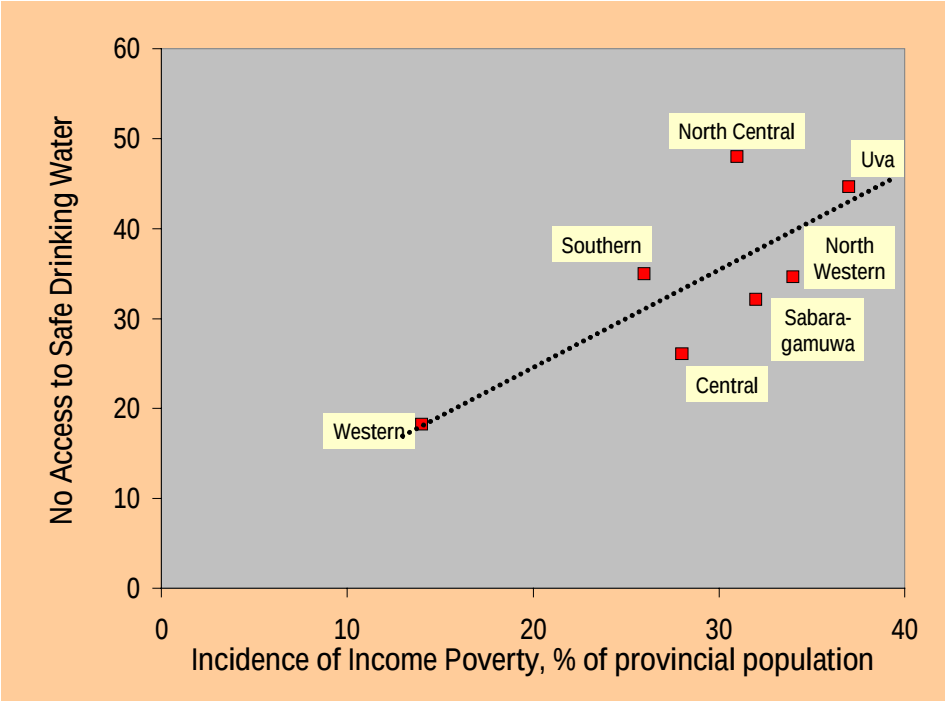


Figure 2.2.11 **Relationship between Percentage of Population who are Poor and who have no Access to Safe Drinking Water, 1995/96**

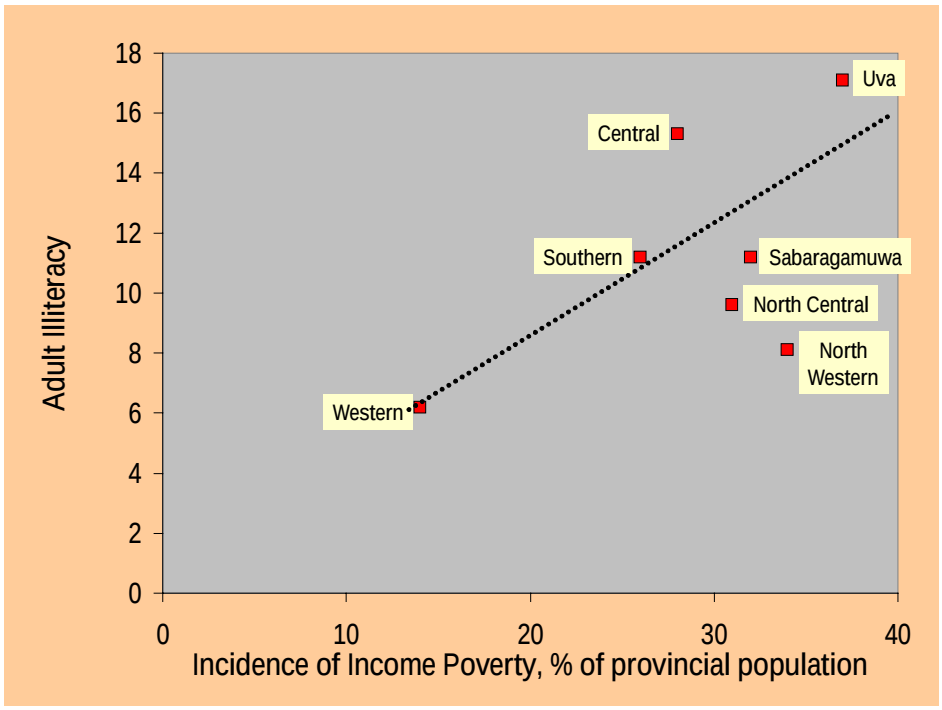


Figure 2.2.12 Relationship between Percentage of Population who are Poor and Percentage of Adult who are Illiterate, 1995/96

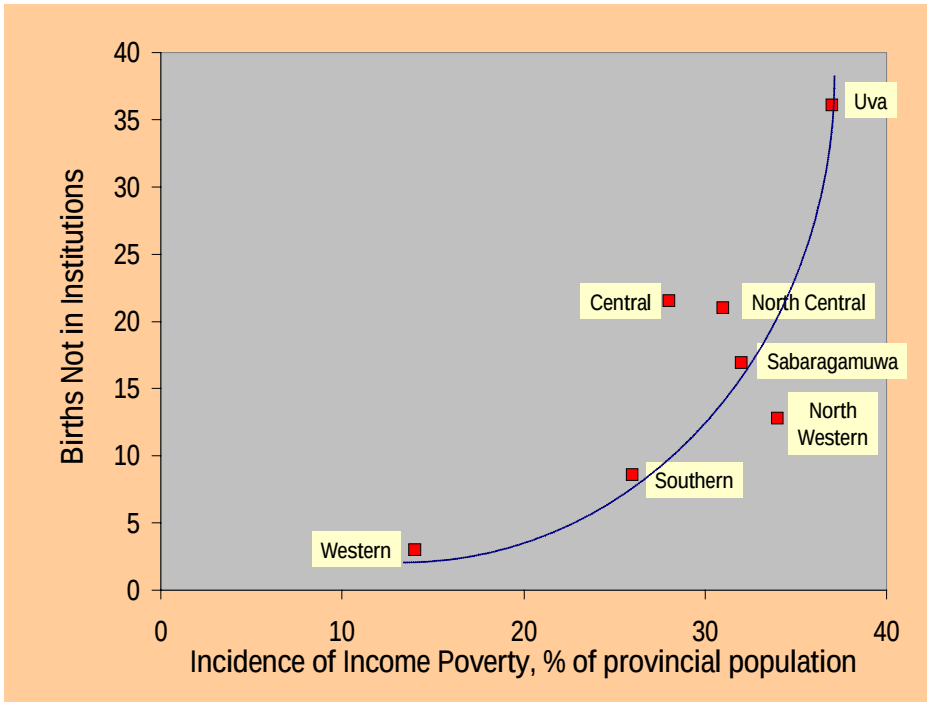


Figure 2.2.13 Relationship between Percentage of Population who are Poor and Percentage of Births not in Institutions, 1995/96

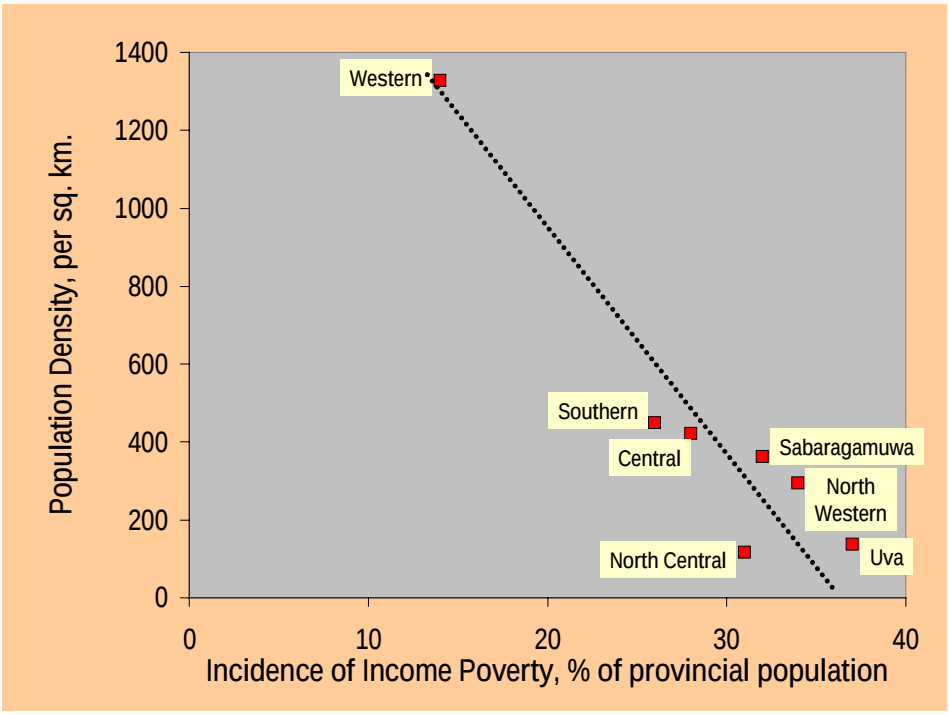


Figure 2.2.14 Relationship between Percentage of Population who are Poor and Population Density, 1995/96

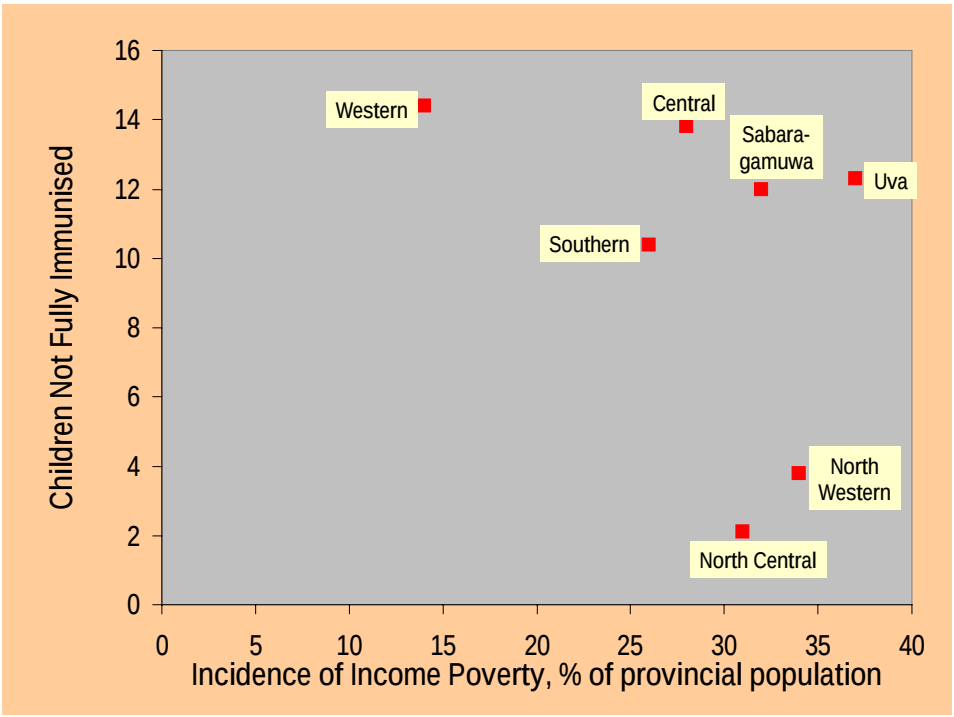


Figure 2.2.15 Relationship between Percentage of Population who are Poor and Percentage of Children not Fully Immunised, 1995/96

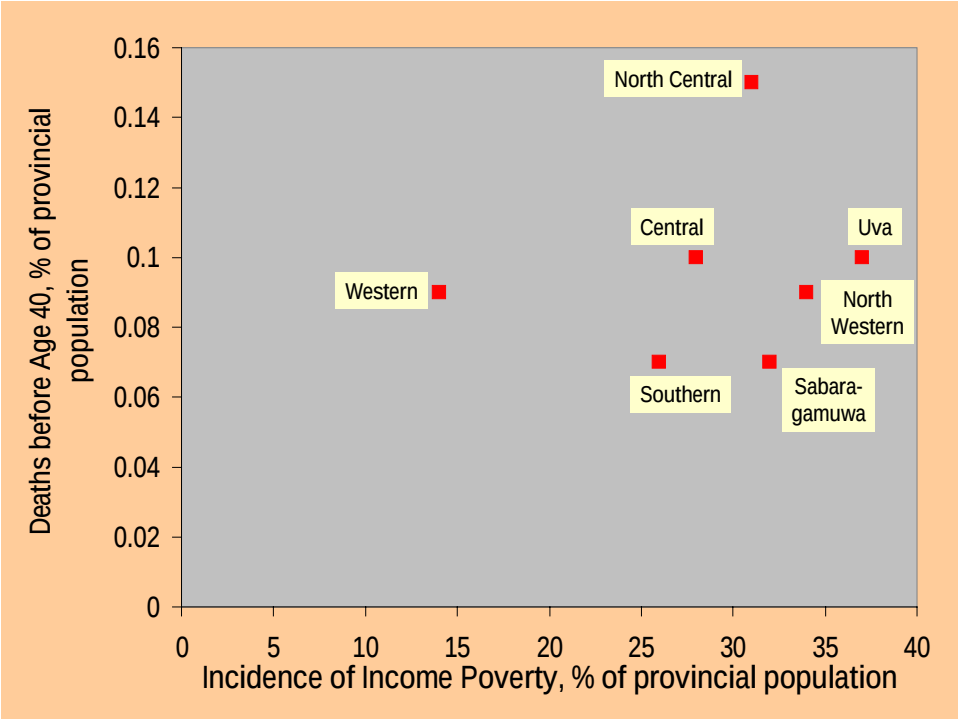


Figure 2.2.16 Relationship between Percentage of Population who are Poor and Deaths before the Age of Forty, 1995/96

Furthermore, the graphical analysis shows the close relationship between income poverty and having no access to safe sanitation, no access to safe drinking water, adult illiteracy, and births not being in institutions. It seems when the percentage of people reaches a certain level, beyond 20%, then the number of births at home and outside health institutions shoot up exponentially. These findings imply the phenomenon not of double jeopardy but multiple jeopardy. When one is poor, one has limited access to facilities or opportunities that foster better health.

Figure 2.2.14 clearly illustrates the indirect relationship between income poverty and population density. Although the graph does not show causality, the issue of which affects which variable can be similar to that of whether the chicken or egg comes first. One possible scenario is that, the more opportunities for employment in the Western Province the lower the incidence of incomepoverty, but at the same time, this serves to attract people from the other provinces. In the long run, concentration of people in an area brings with it other challenges for the delivery of health services.

There seems to be no clear pattern between the incidence of income poverty and two variables, namely, deaths before age 40 and percentage of children not being fully immunised. It could be that the immunisation coverage of the country has reached a level such that there is hardly any differentiation among provinces. Another reason that is more plausible is that the immunisation is not a factor of income or vice versa. Death is also a complex phenomenon that poverty alone cannot explain.

Monaragala District is the Worst Off[10]

Graphical analysis of consumption poverty against human[11] poverty points to Monaragala as the worst off having both variables being high. Among the seventeen districts, the next five worst off districts are Ratnapura, Badulla, Kurunegala, Matale, and Anuradhapura. Monaragala and Badulla are districts of the worst off province, Uva. The next group of five worst off districts are: Nuwara-Eliya, Puttalam,

[10] The analysis in this section is constrained by the absence of comparative data for the Northern and Eastern Provinces.
[11] Consumption poverty measures the inability to purchase, acquire or access a certain basket of goods and services. On the other hand, consumption poverty measures a broader concept of poverty that includes not only consumption poverty yardstick but also those of access to other basic needs such as education.

Polonnaruwa, Hambantota, and Kegalle. By identifying the worst off areas, policy-makers and politicians alike can then decide mechanisms on how to pursue their national agenda of equity for everyone in Sri Lanka.

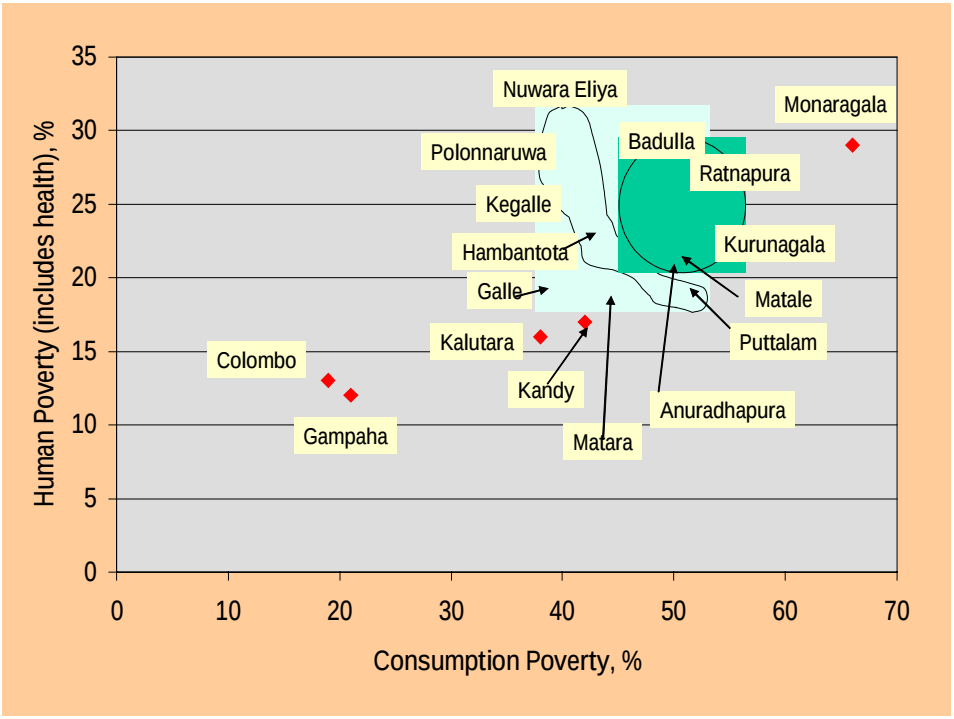


Figure 2.2.17 Consumption and Human Poverty Levels by District

Note: No data for Northern & Easter Provinces

Source: Household Income and Expenditure survey 1995/96, Department of Census and Statistics, Sri Lanka. National Human Development

Poverty Reduction Programme

The Poverty Reduction Programme (2002) adopted by Sri Lanka identifies that well targeted and comprehensive health services represent investment in people and may contribute to poverty reduction especially when other programmes help people to access more basic resources and there is an ongoing effort through schools and community to improve life skills.

The Macro-Economics Commission (2002-2003) in Sri Lanka has also looked at ways and means to break the vicious circle between poverty and ill health. Their recommendations seek to optimise the impact health services can have on poverty.

2.3 PHYSICAL ENVIRONMENT

(1) FAVOURABLE TO BETTER HEALTH

Sri Lanka's tropical climate with an average temperature of about 28 degrees Celsius has its plus points and minus points but in an overall sense it is favourable to the health of the people of Sri Lanka. The temperatures are cooler at higher altitudes, but generally, bright sunny warm days are the rule. Up until recently the monsoon seasons were typically predictable with the southwest monsoons bringing rain from May to July to the western, southern and central regions of the island, and the northeast monsoon occurring from December to January in the Northern and Eastern Regions. This predictability made it possible for farmers to work in their fields and obtain the harvests, mainly paddy, at their allocated times, resulting in adequate food supplies.

Free and widespread access to fresh water and a tradition of irrigation engineering has been associated with a culture encouraging cleanliness and frequent bathing. Also, the high rainfall and the rapid flow in the island's rivers have ensured that the island's water sources are free of most zoonosis and parasitic infestations, such as helminths and bilharzias.

Natural disasters such as hurricanes, earthquakes, and major earth slips are very rare in Sri Lanka in comparison with some other countries in the region such as Bangladesh, possibly due to its position in the ocean. The sea is generally safe for fisherman enabling daily seafaring by the fishing community. Sri Lanka being a predominant Buddhist country, most people do not consume meat or poultry and fish is the only way that most people get their animal proteins.

The first thing a visitor is struck by when visiting Sri Lanka for the first time is how green the entire environment seems to be. This is proof of the rich fertile soil that Sri Lanka enjoys. There is also a modern parable that illustrates this fact which is that once a foreigner who was walking with the aid of his walking stick forgot to take it back when he went back to his hotel room and the following morning when he went outside to collect it he saw that it had sprouted leaves. Most village folk grow their own vegetables and fruits and this enables them to have plenty of it even though their spending power is limited. In addition, the slight changes in the soil in the hill country, the sea areas and low country enable different types of plantations in these areas.

(2) HARMFUL TO HEALTH

Of the main disadvantages of the tropical climate is the disease malaria, which is rampant in certain parts of the country. Vulnerability to malaria also increases due to the effects of El Nino as the associated weather disturbances influence vector breeding sites, and hence the transmission potential of the disease. In Sri Lanka, it has been shown that the risk of malaria epidemic increases four-fold during an El Nino year.

Within the last couple of years certain other diseases such as Dengue and Dengue Haemorrhagic Fever, and Japanese Encephalitis also spread by mosquitoes, became major public health problems due to the scale of death and disabilities it caused. Contributing to these events was the continuous unplanned urbanisation resulting in disturbance of the ecosystem by successive governments through the years. This unplanned urbanisation also results in pollution of water sources that put the population at risk to Diarrhoeal and other Water-Borne Diseases.

The global effects of global warming, green house gases, depletion of ozone layers, etc. have also begun to have its effects in Sri Lanka. During the last couple of years, the monsoon rains have not been predictable as earlier and rainfall levels have been variable with sometimes not enough rain and at times

continuous rain that results in major floods. In May 2003, the country experienced major floods accompanied with landslides that caused many lives to be lost and resulted in the spread of many diseases in its aftermath.

The flood of new vehicles to the cities daily with no proper system of inspecting these as being road worthy or for emissions has resulted in a highly polluted environment in the cities specially due to the close proximity to the sea. The long-term impact of this has yet to be assessed but some studies done in the west show that long-term exposure to carbon monoxide that is emitted by diesel vehicles may result in lung cancer.

(3) PHYSICAL ACCESS TO HEALTH FACILITIES

The existence of a very dense network of roads and railway improves physical access to health facilities. To get to the capital, residents of the northernmost and easternmost districts would have to travel only about six hours by road. However, in a few worst cases, some residents would have to commute two to three hours to access the nearest facility that provides tertiary services within their districts. Recognising the other attraction of hospitals in Colombo such as having the specialists, medicines and laboratory tests, some patients may choose to take the extra three hours. Therefore, when rationalising the current distribution of health services, facilities and other resources, the planners may need to account for the influence of physical access on patients' health-seeking behaviours. Having achieved a good network of roads and railways, would establishing a formal referral system among different levels of health facilities be a way towards efficient utilisation of resources? The current thinking on the referral system is discussed in Section 3.7.

2.4 SOCIO-CULTURAL ENVIRONMENT

(1) EDUCATION

It is well known that education of women contributes to later age at marriage, to better maternal care and higher survival of children. It also contributes to willingness to practice birth spacing and family planning. This in turn contributes to lower maternal mortality. In Sri Lanka, the literacy rate is high (Table 2.4.1). However, Nuwaraeliya and Badulla have the least levels[12] with rates of less than 80% while Puttalam, Gampaha and Colombo have the highest with rates of more than 92%.

Table 2.4.1 Education Conditions in 1996/97

Items	1996/97
Literacy Rate (Aged 5 Years and Above),	91.8%
Male	94.3%
Female	89.4%
Educational Attainment	
No Schooling	8.6%
Primary	35.2%
Secondary	35.5%
Tertiary	20.7%

Source: Economic and Social Statistics of Sri Lanka 2000, Central Bank of Sri Lanka

(2) GENDER

In Sri Lanka, poverty is not feminised. In fact, female-headed households have a slightly better level of income than male-headed households do. Gender Development and Gender Empowerment indices give contradictory results. The GDI in Sri Lanka is better than the average of developing countries and the world average. The GEI is lower than the average of developing countries and far below the average for the world. This could be due to the fact that women get educated in Sri Lanka but do not participate much in politics and their opportunities for being appointed to senior ranks of government and the private sector are not as much (Table 2.4.2).

Table 2.4.2 Gender Development and Gender Empowerment Indices

	Gender Development Index (GDI) 1998	Gender Empowerment Measure (GEM) 1998
Sri Lanka	0.69	0.31
All Developing Countries	0.56	0.37
Industrial Countries	0.86	0.59
World	0.64	0.42

Source: Household Income and Expenditure Survey 1995/96, Dept. of Census & Statistics. National Human Development Report 1998, UNDP

In the health sector, so far, no literature, statistics or data are available on gender issues in Sri Lanka. Unfortunately, it is believed that the local ethos regarding STDs of leave women not receiving adequate care. There is very limited male contribution to the family planning. The Sri Lanka Demographic and Health Survey 2000, reveals that among the users of modern methods of contraception, the male

[12] Data not available for districts in the Northern and Eastern Provinces.

contribution (condom and male sterilization) is 0.1%, while female contribution (Pill, IUD, Injection, Diaphragm, Female Sterilization and Norplant) is 0.9%. One of the reasons for this would be the traditional perspective that reproductive health would be more the responsibility of women. The other reason would be that the promoters of family health programme and reproductive health, i.e., PHM and SPHM, are not aware of the importance of male participation, and do not target them as participants.

Further study is, therefore, recommended on: 1) utilisation rates by sex and age, and fatality rates for similar conditions by sex, should be investigated, in order to study existing gender issues on health; 2) the extent female providers are available for medical examinations; and 3) factors affecting poor male participation in family health programme.

(3) TRADITIONAL MEDICINE

Sri Lanka is considered a country where pluralistic health care system operated from the grassroots level and national health care delivery is exclusively dominated by western allopathic system of medicine. Therefore, Kleinman's model of a pluralistic health care system can be applied for operational framework of current health system in rural areas of this country. In these areas, there is a resource gap defined as the measurable distance between health demands/needs in a given population and the resources available to meet these needs. However, credibility gap between Western medicine and Ayurvedic medicine is very much based on culturally driven phenomenon, which reflects the cultural dichotomy in society as well as in cognitive perception.

Traditional Medicine

Traditional medicine is defined as all knowledge and practices, used in diagnosis, prevention and treatment of physical or social imbalance, which rely mainly on practical ancestral experience and observation, handed down verbally or in writing (WHO, 1978).[1] It has its own system of Epistemology and Ontology on nature and universe that is called the theory of Macrocosm and Microcosm in which the universe represents the human and the human represents the universe. It expands hypothetical correlation between cosmological form of human biology and anthropomorphism of nature. Traditional system of indigenous medicine is neither merely a system of medicine nor system of health care. It covers a broader area of life. Therefore, it can be called a system of living or a way of life. It is not confined only for diseases, ailments, illnesses, maladies, impairments, disorders and dysfunctions of the body or mind. It is dealing with religion, culture, rituals, environment, culinary, agriculture, customs, norms, values, ethics, morals, etc. This ranges from inner seed of soul to outer boundary of universe.

In Sri Lankan traditional medicine, health has five aspects: physical; mental; spiritual; cultural; and cosmic. Table 2.4.3 summarises the types of media and practitioners that deal with these five aspects.

Table 2.4.3 Holistic Approach of Indigenous Health Care System

Aspect	Medium	Profession	Source	Output	Interaction
Physical	Therapy	Physician *Veda Mahattaya*	Rational Therapy	Cure	Endo-personal
Mental	Rituals	Exorcist *Kattadi Mahattaya*	Psychological Intervention	Harmony	Interpersonal
Spiritual	Religion	Monk *Hamuduruwo*	Moral	Tranquility	Intrapersonal
Cultural	Ceremonies	Prayer *Kapu mahattaya*	Social	Blessings	Impersonal Exo-personal
Cosmic	Horoscope	Astrologer *Penakaraya*	Celestial	Predictions	Supra-personal

Source: Unpublished technical publication on Ethno-Botany Survey conducted in five medicinal plant conservation areas by World Bank.

Traditional Healers

Traditional medicine is practiced by traditional healers, a group of people who are recognised by the community in which they live as being competent to deal with health and health issues. All other members of the community are also actively involved in traditional medicine and these practices by laymen are generally referred to as folk medicine, which is a part of traditional medicine. In Sri Lanka, traditional healers can be grouped into six main categories according to their specialty areas:

1) **General healers**: these healers are generally involved in almost every simple case, which is viable with their knowledge.
2) **Unisectional healers**: special cases like snakebites, fractures & dislocations, eye diseases, boils & wounds, insanity, burns, children's diseases, women's diseases, neuromuscular disorders are treated by these healers according to their relevant section.
3) **Spiritual healers**: these healers deal with any physical or mental malevolence caused by evil spirits and they perform ritualistic therapies.
4) **Traditional Birth Attendants (TBA)**: these concentrate on pregnancy problems and they assist women deliveries. In childbirth, they are the Midwives responsible for delivering the child and for seeing to the health of the mother. After childbirth, they often advise on and treat the health problem of mother and child.
5) **Veterinary therapists**: these specialists treat domestic and husbandry animals.
6) **Unirecipe therapists**: these people are recognised by the society as capable therapists to treat only one ailment such as jaundice, asthma, indigestion, diarrhoea and epilepsy.

Indigenous knowledge related with traditional medicine is being depleted due to various socio-economic factors realistically rooted in current cultural context. In ancient society the informal knowledge base, which reflected the best practices, embedded on traditional wisdom was transcended through a passable channel.

Survey on Traditional Medicine

Traditional medicine has survived through centuries because of a combination of factors such as availability, acceptability, accessibility, accountability, affordability, applicability, and adaptability:

- Availability – its knowledge system is reputed and it appears within the community;
- Accessibility – sources are traditionally resided in community;
- Acceptability – it is well recognised and honoured as well as traditionally trusted;
- Accountability – relationship between client and professional is humanistic and mutual subscription is entertained;
- Affordability – naturally available resources used and economically sound;
- Applicability – any person can get help for any condition as there is no discrimination; and
- Adaptability – it is compatible with any kind of naturalized knowledge system.

A study funded by the World Bank attempted to assess the status of Traditional Medicine in four Medicinal Plant Conservation Areas (MPCA) in Sri Lanka, namely, Naula, Rajawaka, Kanneliya and Ritigala. The major findings are:

1) Availability of Ayurvedic and Western Medical Facilities within the MPCA

Table 2.4.4 shows that the residents of all the five MPCAs have some access, usually by bicycles, to western hospitals, mobile clinic or private practitioners. On the other hand, they have access to Ayurvedic services provided by neither hospital nor central dispensary but by mobile clinic, project clinic, or private practitioners.

Table 2.4.4 Availability of Ayurvedic and Western Health Facilities in MPCA

MPCA	Ayurvedic Medical Facilities					Western Medical Facilities			
	HS	CD	MC	PC	PP	HS	CD	MC	PP
Naula		🚌🚌🚌	🚲	🚲		🚲🚌🚌🚌🚌🚌			
Rajawaka		🚌🚌🚌🚌🚌	🚲	🚲		🚲🚌🚌			
Bibile	🚌	🚌	🚲	🚲		🚲🚌🚌🚌🚌🚌			
Kanneliya		🚌🚌		🚲	🚲	🚲🚌			
Ritigala	🚌	🚌🚌		🚲		🚌🚌🚌🚌		🚲	🚲

Note: HS – Hospital; CD –Central Dispensary; MC – Mobile Clinic; PC – Project Clinic; PP – Private Practitioners; (🚲) – Inside the MPCA; (🚌) - outside the MPCA

Source: Unpublished technical publication on Ethno-botany survey conducted in five medicinal plant conservation areas by World Bank.

2) Accessibility

When the average distance to health facilities were converted to accessibility rate (Table 2.4.5), it turned out that not all MPCAs have better access to Ayurvedic health facilities. In fact, Naula and Kanneliya areas have better access to western health service providers.

Table 2.4.5 Accessibility of Ayurvedic Medicine in MPCA

MPCA	Accessibility Rate km		
	Mean Health Service Providers	Ayurvedic Health Service Providers	Western Health Service Providers
Naula	**16.8**	18.4	15.3
Rajawaka	**14.6**	14.2	15
Bibile	**21.7**	19.6	23.8
Kanneliya	**6.9**	7.5	6.3
Ritigala	**11.8**	10.9	12.8

Note: Score scale: 🚲 HS – 3 🚲 CD – 2 🚲 MC – 1 🚲 PC – 2 🚲 PP – 1
🚌 HS – 2 🚌 CD – 1

Source: Unpublished technical publication on Ethno-botany survey conducted in five medicinal plant conservation areas by World Bank.

3) Acceptability

Although acceptability level of Ayurvedic medicine is generally higher among females (67.97%) than among males (63.55%), the difference may not be that significant. Males seemed to accept Ayurvedic medicine in two of the five MPCAs (Table 2.4.6).

Table 2.4.6 Acceptability of Ayurvedic Medicine between Genders

MPCA	Male	Female	Average
Rajawaka	64.1%	51.1%	57.6%
Bibile	71.1%	86.7%	78.9%
Kanneliya	63%	84.3%	73.25%
Ritigala	56%	49.8%	52.92%
Average	63.55%	67.97%	65.66%

Source: Unpublished technical publication on Ethno-botany survey conducted in five medicinal plant conservation areas by World Bank.

4) Source

It is clearly shown that the tendency for home as source of traditional medicine is above 50% in all MPCAs and dependence on outside source is reasonably low in almost every MPCA (Table 2.4.7). Relying on local source is around 25% in all MPCAs and it is a rather overt fact to verify the declination of clientele of traditional medical practitioners in villages.

Table 2.4.7 Source of Ayurvedic Medicine in MPCA

MPCA	Mean			Male			Female		
	Home	Local	Out	Home	Local	Out	Home	Local	Out
Rajawaka	60.6%	24.3%	15.0%	62.8%	32.7%	4.5%	58.5%	16.0%	25.5%
Bibile	72.1%	18.2%	9.7%	55.0%	30.0%	15.0%	89.2%	6.5%	4.3%
Kanneliya	63.6%	26.8%	9.5%	56.0%	32.6%	11.4%	71.3%	21.0%	7.7%
Ritigala	61.4%	20.5%	18.3%	60.8%	25.4%	13.8%	62.0%	15.7%	22.3%
Average	64.4%	22.4%	13.2%	58.6%	30.2%	11.2%	70.2%	14.8%	15.0%

Source: Unpublished technical publication on Ethno-botany survey conducted in five medicinal plant conservation areas by World Bank.

5) Positive Aspects of Ayurveda

The respondents expressed the following as positive aspects:

- Ayurvedic medicines are more effective for chronic diseases.
- Ayurvedic medicines give a permanent cure and lasting relief.
- Ayurvedic medicines do not have any side-effects / after effects / unwanted effects / adverse effects / complications.
- Ayurveda uses natural substances for its medicines.
- Ayurveda has a broader range of preparations.
- Most of Ayurvedic finished products can be bought over the counter.
- Ayurveda has unlimited resource base in nature.
- Ayurvedic physician or local healer understands patients' attitudes, socio-cultural background, dialects, etc.
- Professional gap is very low and practitioner usually spends sufficient time with the patient with positive rapport.
- Consultation fee is nil or marginal.
- Ayurveda is a traditional system of medicine endemic in this country.
- Ayurveda is reputed and esteemed as a national heritage.

6) Negative Aspects of Ayurveda

The negative points about Ayurveda are:

- Difficulty of finding raw materials for Ayurvedic medicines.
- Ayurveda takes a long time for curing a disease.
- Insufficient service providers for Ayurvedic treatment in rural areas.
- No Ayurvedic treatment available for an emergency or acute stage.
- Preparing Ayurvedic medicine is time consuming.

- Most of Government Ayurvedic dispensaries do not have sufficient facilities and commodities for the optimum service.
- Ayurvedic finished products are relatively expensive and unaffordable by local villagers.
- Knowledge on identification of medicinal herbs and preparations is not adequate.
- Restricted regime of food and daily routine is not customized in consumerist lifestyle.
- Negative impact of hegemonic health education propaganda of conventional system of healthcare.
- Professional discrimination in Western hospitals for patients referred by an Ayurvedic physician.
- Medical ill-treating persons visit to Western hospital after local traditional medical treatment.
- Declined credibility on finished products due to low quality.
- Ayurvedic medicines are usually unpalatable and non-attracting.
- Ayurvedic medicine is especially unpalatable for children.
- In some cases, graduated Ayurvedic Physicians practice Western Medicine.

When both systems provide effective treatment for same condition, attitudinal credibility and cultural identity influence on option. Commercialisations and co-modification of systems of medicine are very luxurious implications, which lead to medicalisation(??) of health against cost-effectiveness. Therefore, institutionalised health care systems provide service with limited resources allocated by the government and bureaucratic structure do not accommodate optimum capacity in health promotion. Alternative and complementary systems are also getting more trade-oriented and physician-centerd being diverged from their original notions. The outlook of these attitudes more or less reflects intensified monopolising health system, which creates discrepancies in health care delivery among localities and dilapidated best practices of traditional knowledge. This is a rationale to realise the gap between the mainstreamed development mechanisms and underutilised traditional resources.

2.5 PEOPLE'S NEEDS AND HEALTH-SEEKING BEHAVIOUR

According to the "Sri Lanka: A Framework for Poverty Reduction", "Poverty" is one of the most powerful determinants of "ill health". Likewise, "health" has a strong influence on human resource development, which is a key factor in overcoming "Poverty". In this way, poverty and ill health are closely interconnected; they worsen each other. On one hand, persisting poverty would constrain further improvements in health status. On the other hand, deterioration in health coverage would worsen poverty. Therefore, it is important to address the needs of the poor as one of the key planning issues in formulating a master plan for health sector in Sri Lanka.

Compared to the previous sections that dealt with the political, economic, physical and socio-cultural environment of the health system, this section zeroes in on the people. The people are actually part of the health system but, at the same time, also outside of that system. The people are the recipients of that system but can also be in the driver's seat. Their genetic make-up, for example, predisposes them to specific health conditions. Certainly, their lifestyles make them vulnerable to both communicable and non-communicable diseases. Their health-seeking behaviours determine whether they will get appropriate information, services or goods; consequently, these may influence the course of their ailments.

Because the needs of the general population is the main topic of this section, the first two sub-sections that follows focuses on vulnerable geographical and demographic groups, their health needs and access to health services. The third sub-section attempts to understand the health-seeking behaviour of Sri Lanka based on the Knowledge, Attitude and Practice (KAP) Survey carried out during the course of the Study.

(1) HEALTH NEEDS OF SPECIFIC GEOGRAPHICAL GROUPS

The six geographical groups are: 1) communities in urban slum areas; 2) village expansion colonies; 3) remote rural communities; 4) fishery communities in coastal areas; 5) estate communities; and 6) areas affected by conflicts.

Communities in Urban Slum Areas

It is estimated that 50% of the city population lives in low-income settlements; therefore, the approximate population living in low-income settlement in Colombo is 321,000 or 77,612 families. One-third of those families have difficult access to drinking water, and only a third have their own toilets. Only 12% have regular sources of employment, and 34% depend on self-employment activities.

One of the main characteristics of this group is that accessibility to health care services is better compared with other groups. However, the working hours of government hospitals pose a problem for the working poor who work long hours during the day. Malnutrition is among the most serious health problems in these communities. Children, elders and working adults are by and large consuming unbalanced diets since convenience foods are mostly consumed, and this leads to high fat consumption with little micronutrient content. Alcohol and drug addiction is high and difficult to tackle. Family violence and neighbourhood brawls are a serious problem.

Village Expansion Colonies

Since the late 1970s, because of large-scale irrigation schemes, enormous numbers of people migrated and settled in the dry land zone. They came from all parts of the country, most of which are rural areas, expecting to improve their economic situation. As a result, several village expansion colonies were

formed in the settlement area. The largest one is known as the Mahaweli Development Scheme. There are several other irrigation schemes such as the Victoria, Randenigala and the Kirindioya.

Generally, that second and third generation settlers face a serious problem of scarcity of land and water for cultivation. Most of them do not have regular source of employment and are forced to find other employment opportunities such as wage labourers. In general, the socio-economic conditions of illegal settlers around the irrigation schemes and people who were forced to relocate due to the construction of irrigation scheme are even more difficult.

The settlers now face multiple problems: 1) lack of accessibility to the health care services especially for specialized care; 2) the disease pattern is relatively similar to traditional remote rural villages where 80% of the health problems in the area are related to respiratory system disease; 3) the suicide rate is comparatively high; 4) the scarcity of water is a strong determinant of poverty and poor sanitation in the area; and 5) malnutrition is one of the most serious problems in the area.

The factors influencing malnutrition are inter-related. These factors include: scarcity of water, fewer varieties of food, as well as inadequate knowledge on nutrition and feeding. Due to poverty, parents cannot add variety to meals, causing children to lose interest in eating. Children are then forced to depend on breast milk and biscuits, which are insufficient for them to grow up healthy and only satisfy their appetite.

Remote Rural Communities

Weehankattuwa was studied as an example of a remote rural community. The village is situated in the Mahakkumbukkadawara DS division in Puttalam District. It consists of 79 households and 241 inhabitants (Baseline survey, UC-JICA Project in 1999). The village is quite isolated, with poor accessibility. The closest township is 16 km away from the village and people have to walk 7 km to get public transport. The only service centres in the village are a church and a primary school. No other public service institutions, such as a secondary level school, a cooperative shop, a post office, a police station or hospital, are available in the village.

Eighty-two per cent (82.3%) of households receive government cash subsidies under the poverty alleviation programme. About 94% of households do not have access to a source of drinking water within less than 5 km. More than half of the households do not have toilet facilities. Agriculture has been a part-time activity for the majority of the villagers (34.3%), and the majority of household income comes from other activities, such as seasonal fishing and animal husbandry. The literacy rate and level of education are relatively low. Seventy percent (70%) of the village is limited to primary and some secondary education. Only 46% have completed secondary education.

These communities have two major characteristics. One, the more remote a village is, the bigger the economic burden of health care because transportation costs and opportunity costs increase. In addition, if a patient is quite ill, one or more persons need to come along to assist in transport and care. Two, for the poor villagers in these remote rural areas, only the state health service is available and barely affordable in terms of specialized care and inpatient care.

Fishing Communities

The residents in the Egodawatta, Chilaw City, Puttalam District, started immigrating from Negombo in the1940s. The population is still expanding with new families settling in the area from nearby fishing communities. It is characteristic that they identify themselves as ethnically Sinhala, but speak Tamil as a common language. Although there is no accurate socio-economic data available, the majority are low-income families who are engaged in small-scale fisheries and fishery-related labour. They do not have a regular income source, but are dependent on the daily catch from the sea. Most of them are Catholic, while there are also a few Muslims. Although accurate data is not available, according to a PHI in the area, the majority of Egodawatta residents live in temporary houses and only 30% of homes have toilet facilities.

These communities have six common characteristics. One, the accessibility to health care institutions is very poor, since they have to travel 6 hours by boat to Kalpitiya Hospital for health care services. Two, the most common and serious health concerns are communicable diseases such as Diarrhoea and Dengue Fever, as well as alcohol-related diseases and violence. Three, community participation in health promotion is poor due to the lack of a common language between workers and community and the low education level of the community. Four, family planning acceptance is said to be low. Most couples are married as teenagers and have two or three children in their early twenties. Pills, IUD and injection are not popular among residents, since they often believe rumours about side effects of various methods. Five, seasonal migration for fishing interrupts continuous contact for health services, such as immunisation, antenatal care, family planning and nutrition programmes. Six, although there is no accurate data, observation indicates that the nutrition level of infants and children under five years of age does not appear to be as low as in rural and estate areas. The PHI working in the area mentioned that, in school health inspections, they found that the micronutrient problems, such as anaemia, are less in this area, than in agricultural areas in the same Division.

Estate Communities[13]

Although the Ministry of Health came out with a policy that health care services in the estate sector should be integrated with other state health care services in 2001, the speed of integration is still slow with the exception of some Estate Hospitals in the area that were taken over by the government. Most health care in the area is still managed by the individual plantation companies and the Plantation Housing and Welfare Trust. Health care staff is trained mainly by the Trust. They are not recognised as professionals by the government. Many of the workers are so called "Indian Tamils" whose ancestors came as either indentured labourers or seasonal migrant workers. The estates evolved as separate communities historically, almost of extra-territorial status, complicated by the struggle since 1948 whether the "Indian Tamils" could/should receive citizenship in Sri Lanka.

In the estates, plantation companies manage the dispensaries and maternity homes in the area. The reason for this is that the state so far has not provided qualified health staff to the area. Therefore, the state leaves the Trust to fulfil the estates minimum health care requirements as it used to do in colonial times. The workers and their families in major Estates tend to be dependent on the managers of the company for health care, due to the patron-client relationship developed in the colonial period. Care for emergencies tend to be delayed, because of the lengthy decision-making process, involving family, community and management. Usually, the manager of the company needs to agree that it is an emergency, and has to arrange transportation to the nearest health facility. Compared with the people living in large-scale plantations, the most neglected are the people living in small individual estates and in traditional villages. For them, quality health care services are not provided by the companies, while government health services are far away and difficult to reach. Poor housing conditions and poverty as well as poor water and sanitation are strong factors influencing the health of the people in the area.

Areas Affected by Conflicts

It is estimated that since 1983, over 1 million people have been displaced, and over 50,000 people have died due to the conflict. Many more have probably died as a result of malnutrition and disease caused by the social upheavals of the conflict and the difficulties in accessing basic health care as well as interruptions to food supplies.

The physical and psychological vulnerability of these displaced people is high; the psychological problems are less visible and more difficult to determine. In terms of indicators such as IMR and MMR, some of the areas most affected by the armed conflict, are grossly underreported and therefore have the lowest figures, whereas those of non-conflict areas with much more easy access to health facilities, such as Colombo, Kandy and Galle report higher figures. This indicates an underreporting of infant deaths and maternal deaths or an over estimation of the population in the conflict areas, or both.

[13] Health services in the plantation sector are further discussed in Section 3.1.

According to the Annual Health Bulletin 2000, immunisation coverage in the areas is not significantly lower compared with other districts. However, there could be insufficient reporting on it. After the cease-fire was declared in December 2001, the situation of supplies of drugs, fuels, and other medical equipment was improved by relaxation of transport regulations and military checking.

Due to the relaxation of limitations on transportation services, accessibility to health services for the people in the un-cleared (conflict) area has improved. They have easier access to the health facilities in the government-controlled areas, such as the Base Hospitals located in Anuradhapura and Polonnaruwa. However, the level of accessibility is still inadequate, due to the distance, poor public transportation service, and bad roads. In addition to that, the hospitals in the border areas do not have enough capacity to provide quality health service for the people coming from the un-cleared area.

(2) HEALTH NEEDS OF SPECIFIC DEMOGRAPHIC GROUPS

The three specific demographic groups discussed in this sub-section are: 1) infant and children; 2) learning age, youth and adolescence; and 3) elderly group. They all share increased biological vulnerability as well as social vulnerability due to economic dependence and social status.

Infants and Children

The most significant problem in infants and children is the nutritional status of this age bracket, in spite of the continuous economic growth of the country. It has not improved significantly in the past decade especially in 1-4 years age group. With respect to both height for age and weight for age, the nutritional status of children has improved between 1987 and 1993. However, weight for height shows slight deterioration. Everyone agrees that the current rates are unacceptably high. Among children under five years old, 23.7% are suffering from chronic malnutrition, 15.5% are acutely undernourished, and 37.6% are underweight (Annual Health Bulletin, 2000).

Learning Age, Youth and Adolescence

The only health strategies currently in place for children of learning age are the "school health inspection" and "school health programme". However, the recording, monitoring and evaluation of these programmes have not been pursued intensively. So far, there is no integrated data available; no monitoring and evaluation has been documented.

T. P. L. Abeykoon and P. Wilson define adolescents and youths as those in the age group 14-24.[14] In Sri Lanka, they constitute 29% of the total population. The growth rate for the 14-25 years old will be negative between 1995-2005, as well as 2005-2015. However, the total number of youth and adolescents will remain much higher than the number in 1971, when the growth rate of this group was at its highest.

Considering the high unemployment rate and few opportunities for higher education among youths and adolescents, a substantial number of them are considered to have a lot of leisure time. They have difficulty establishing themselves socially as well as financially, which creates a negative psychological effect. Suicide, alcoholism, substance abuse, depression, frustration, unwanted pregnancies, abortions, violence, drug abuse, STDs and HIV infections were identified as their major health problems. Malnutrition needs to be further investigated.

There are about 4.7 million unmarried adolescents and youths in Sri Lanka (year 1995). Improvement in educational level—advancement of economic situation—is one of the main reasons for expansion of

[14] However, according to the Director of the Youth, Elders, Disabled and Displaced in the Ministry of Health, the age of youth is defined as being between 15 and 24, and the age of adolescence is defined as being between 10 and 19. "Young person", therefore, are those between the ages of 10 and 24.

numbers in unmarried adolescents and youths, which in turn creates a need for greater attention to reproductive health issues. Data, mainly from hospitals in urban areas, indicate that women under age 20 accounted for approximately 60% of women with abortion-related complications.

Reproductive health is taught in school as one of the topics in the subject of "health and physical education"; however, it is not a compulsory subject. On the other hand, among the teaching staff and parents, there are still strong social objections to reproductive health education. They often express hesitation in actively participating in teaching reproductive health education, which they do not consider their responsibility. Also, adolescents often express unwillingness to learn the subject, being ignorant of its importance. The effort of the MoH to provide information on reproductive health "directly" to the youth was quite successful. The ministry published a book called "Youth in Blossom" a few years ago, based on the questions and comments given by students, which were collected anonymously after the lectures on reproductive health education in schools. They were widely provided for the students in the country and were well received. NGOs, such as the Sarvodaya Movement, are conducting reproductive health education at the community level, although the impact has not been studied.

The suicide rate among the youth is quite high in Sri Lanka but has been on the decline. The MoH has introduced a "Life Skills Programme" for youth in order to improve their skills for problem solving and decision-making. There is no specialist on adolescence in Sri Lanka, although the generation faces serious problems.

The Elderly

In Sri Lanka, persons over 60 are now categorized as elderly. Since 1995, Sri Lanka has the highest proportion (8.5%) of elderly the South Asian context, followed by India (7.3%). The proportion of the older population relative to the younger population has increased dramatically over the last four decades. This proportion is expected to keep on increasing and reach 22% by 2031.

Eighty-four per cent (84.2%) of the elderly population lives in rural areas. In a study, the popularity of traditional medicine among elders was identified. One-fourth (25%) of them selected traditional medicine as a source of medication, while the national average is only 9.2%. In a study, a third (32%) of the elderly mentioned that they needed more medical care. Among them, 90% identified "inability to afford the services" as the main reason, "too far to go" being the next important reason especially in those 80 years or more.

Cataracts are a very common condition in the elderly. However, according to the Director of Youth, Elders, Disabled and Displaced in the Ministry of Health,[15] there are 400,000 people on the waiting list for treatment, and each year 50,000 are added, since there are only about 30 eye specialists in Sri Lanka. Since most of the specialists are working in Colombo, the patients often have to travel from far away.

(3) PEOPLE'S HEALTH-SEEKING BEHAVIOUR

The analysis of health-seeking behaviours is based on the KAP Survey 2002, which utilised a structured questionnaire. The multistage random sampling yielded 2,745 households as respondents representing 11,644 individuals from three sectors of the country, namely, urban, rural and estate. Aside from the Survey, focus group discussions were conducted in the Northern and Eastern provinces, which were not covered by the household survey. They were also conducted for fishing communities, urban slums,

[15] The Director of Youth, Elders, Disabled and Displaces, MoH, has recently conducted detailed household survey on health of elderly. Health information concerning elderly is so far lacking such data as nutrition of elderly; home-based health and social services for elderly; and information on health care for elderly in institutions, such as homes for elderly. The data analysis has not been yet been completed to date but is supposed to fill these gaps.

rural communities and estate communities, with the objective of gaining an in-depth understanding of the behavioural patterns and attitudes of these under-privileged groups.

Bypassing of Nearest Government Health Institution

People expect quick relief and cure; if relief is not quickly forthcoming, most people will go to another physician often in another facility. Currently, the two expressions of health activism that suggest a level of dissatisfaction are the bypassing of nearby lower level facilities and the very number of visits made for one episode of disease in one month. The KAP Survey 2002 revealed bypassing as a common phenomenon. When people are in need of health services for the very first time, there is only a fifty percent probability that they will visit the nearest government health facility (Figure 2.5.1). For subsequent visits, the probability goes down to about 40%.

Among the different groups of respondents, the residents of urban communities seem to bypass most frequently the nearest government facility for their first visit, followed by those in rural , then lastly by those in estates. Interestingly, all the urbanites bypassed government institutions when they need a second or a third consultation.

On average, among the three sectors, 48.1% of patients with a chronic[16] illness have bypassed the closest public western medical institution for the first visit; this figure has moved up to 57.6% for the third visit. This modest increase is due to the not so strong practice of bypassing among those in the rural and estate sectors.

It is probable that patients in the urban sector can choose more easily and at lower cost to bypass. Why do urbanites bypass more for acute illness rather than chronic illness and the rural dwellers do the reverse? Might it be a judgment on the relative cost versus utility of the next facility?

[16] Among chronic illnesses, hypertension was the leading disease for all five visits. Arthritis, asthma and heart failure recorded relatively high shares of the patient load. For acute illness, influenza was the main reason accounting for 46.1% and 32.1% of the first and second visits, respectively.

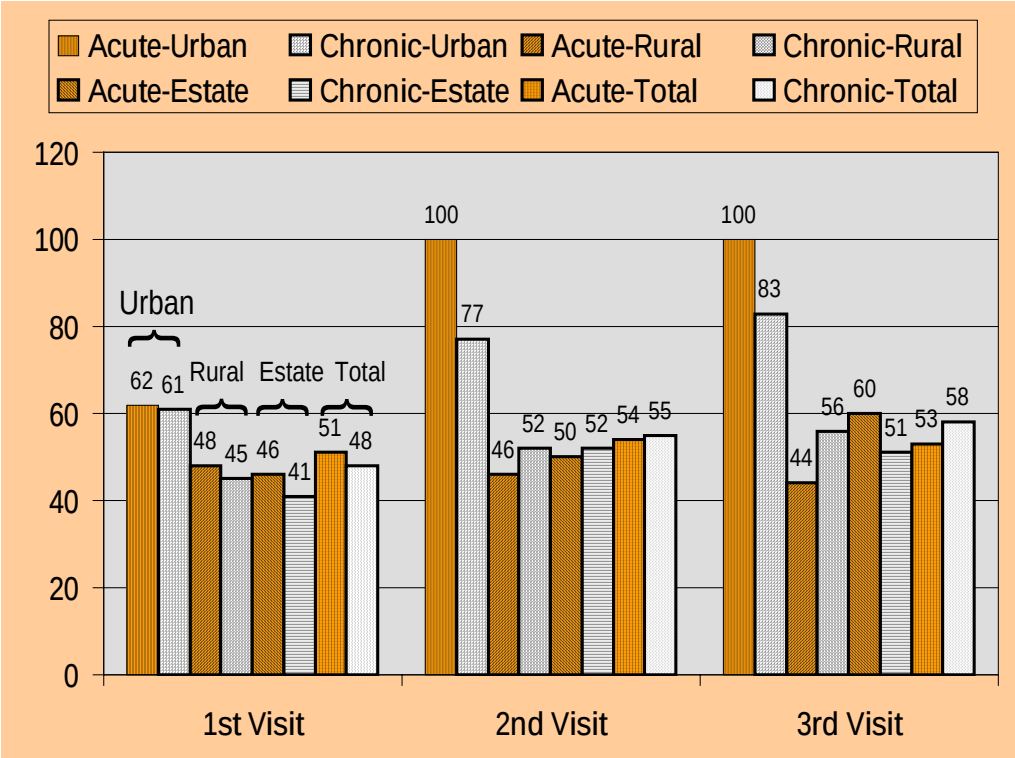


Figure 2.5.1 Bypassing the Closest Public Medical Institution for Chronic and Acute Illness by Sector

Source: MoH-JICA Study Team-MG-Consultants, 2002

For chronic illnesses, Figure 2.5.2 shows "unavailability of proper facilities" as the main reason for bypassing with 36.3% responses. For the urban, rural and estate sector this proportion stands at 29.7%, 37% and 51.1%, respectively. The estate sector not only gives this reason more often but clearly stated that the facilities at the estate hospitals and the closest primary level medical institutions are ill equipped to deal with chronic illness. Both "doctors give proper attention in private practice" and "crowded place" are more significant reasons in the urban sector with 24.1% and almost 19%, respectively.

For acute illnesses, the main reason for rural and estate dwellers is either getting better attention from private practice or not having the facilities. Only a few of them mind congestion in public facilities. On the contrary, this is the most common reason for urbanites to bypass government institutions. It could be surmised that their opportunity cost could be more valued than queuing for health services at the nearest facility.

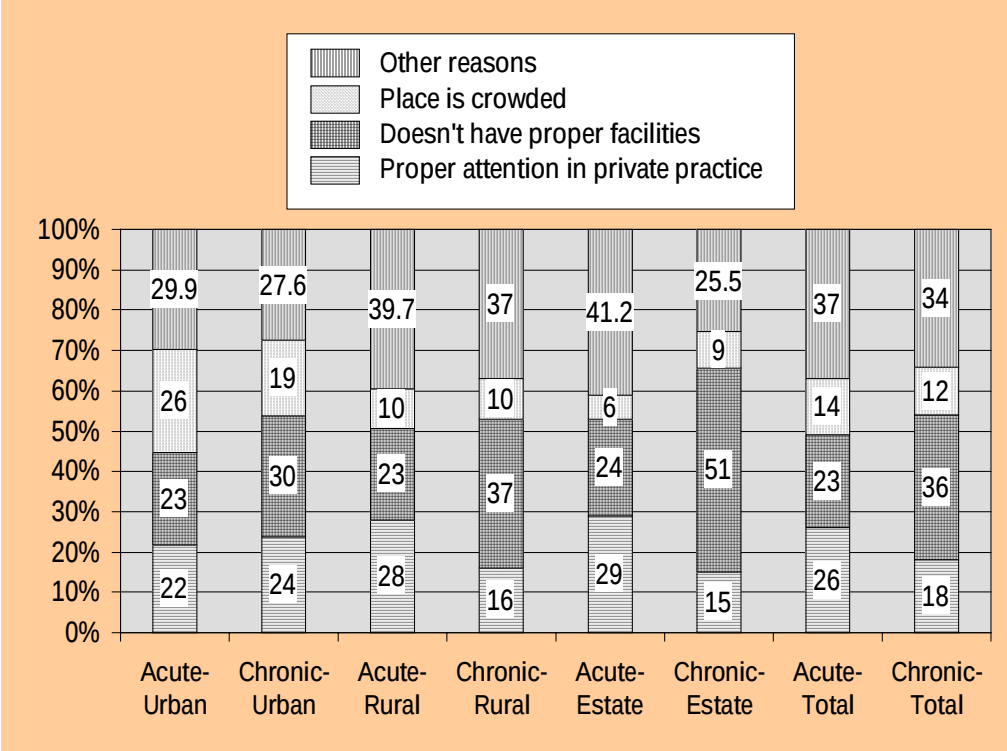


Figure 2.5.2 Reasons for Bypassing the Closest Public Medical Institution by Type of illness and Sector
Source: MoH-JICA Study Team, 2002

What is the Source of Treatment?[17]

KAP Survey shows that over 17% of people on average were ill in one month and took some kind of treatment. Three of 10 suffered from acute illness while the rest from chronic conditions. Not all of them sought formal treatment (Figure 2.5.3). Among those who had acute illness, about six of 10 opted for informal treatment that includes self-treatment (83%), ritual treatment (12%) and no treatment at all. Among those who self-medicated, 19% recovered, majority did not and so sought one of the forms of formal treatment while only a minority of 5% did not do anything at all even if their condition did not improve.

[17] The relationship between health-seeking behaviour and household income is described in Section 6.3.

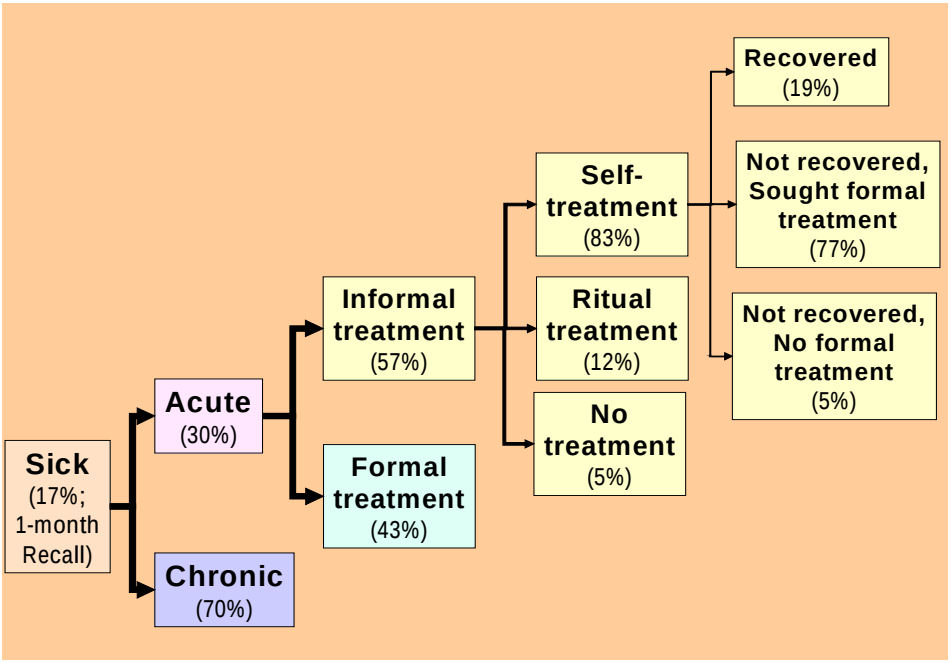


Figure 2.5.3 Types of Informal Treatment for Acute Illness
Source: MoH-JICA Study Team, 2002

The behaviour of those who suffered from chronic illness was slightly different. Unlike those who had acute illness, majority of them (7 of 10) first sought formal treatment. There were fewer who indulged in self-treatment and more who had to undergo ritual treatment. Because of the nature of their conditions, there were fewer who recovered when they self-treated. About nine of those who initially self-treated eventually ended up in a facility where formal health services were provided.

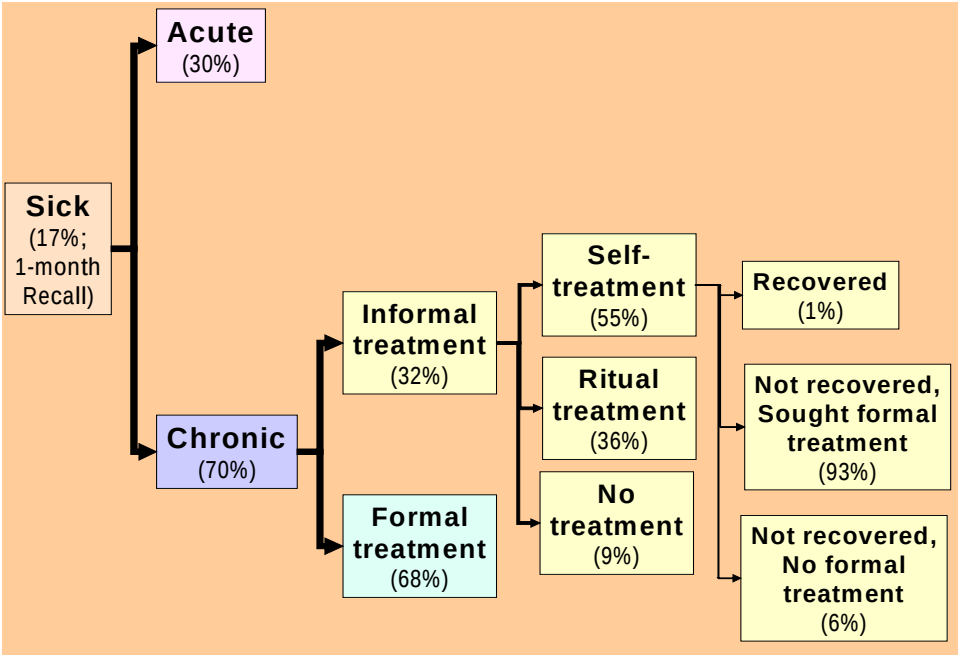


Figure 2.5.4 Types of Informal Treatment for Chronic Illness
Source: MoH-JICA Study Team, 2002

Among those who decided to go for formal treatment, 55% of those with acute and 64% of those with chronic condition availed of health services from government allopathic facilities (Figure 2.5.5 and

Figure 2.5.6). The next most popular sources of treatment are the private allopathic health providers. Regardless of their condition, only 5% preferred to visit Ayurvedic facilities first.

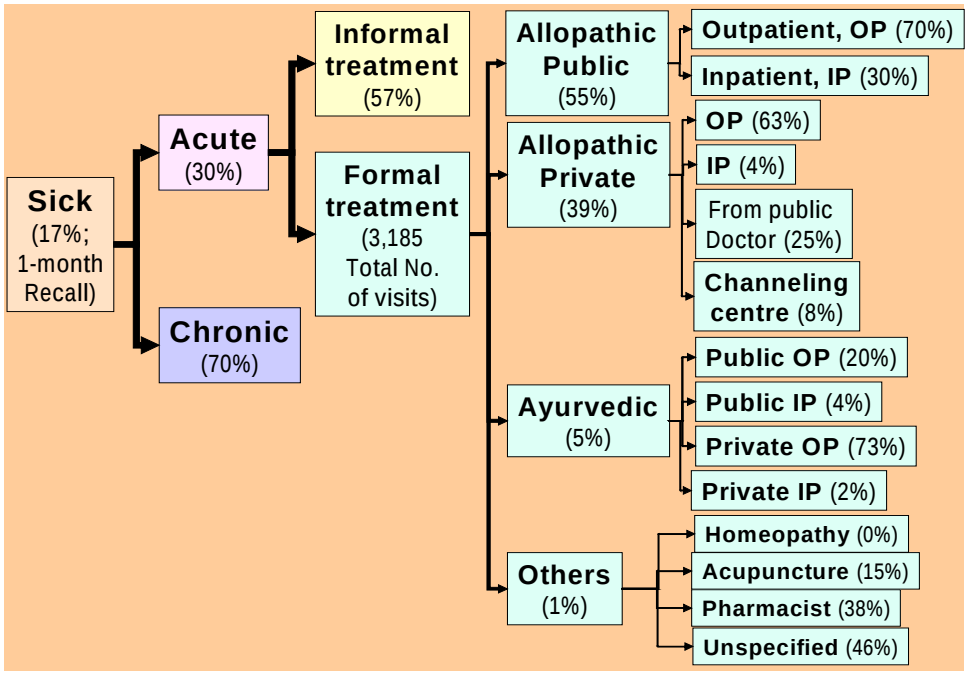


Figure 2.5.5 Types of Formal Treatment for Acute Illness
Source: MoH-JICA Study Team, 2002

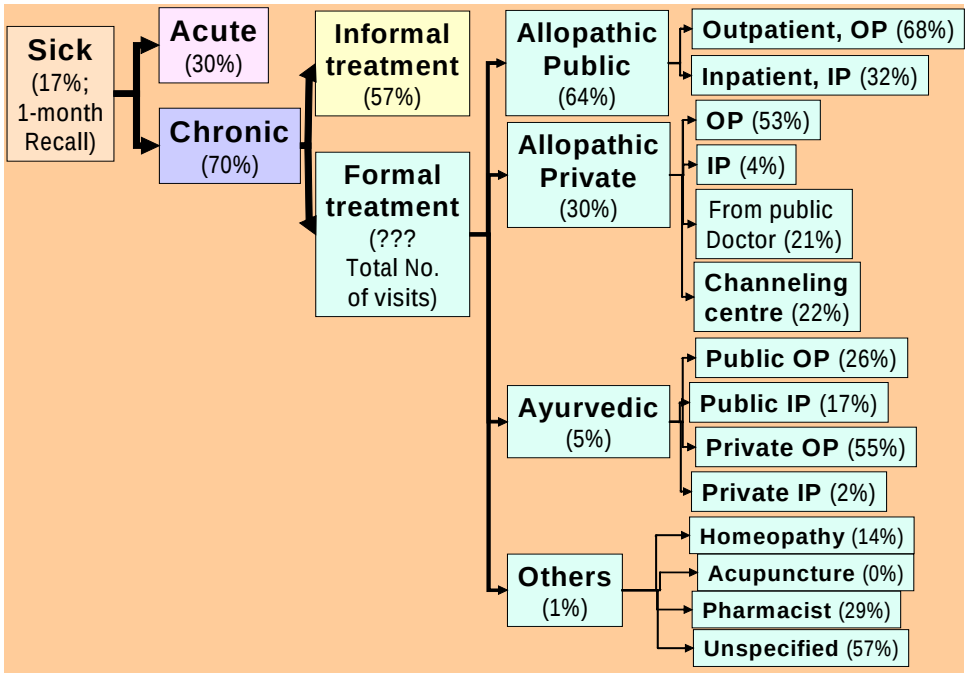


Figure 2.5.6 Types of Formal Treatment for Chronic Illness
Source: MoH-JICA Study Team, 2002

Previous studies of Central Bank have been conducted also to understand the health-seeking behaviours of patients in Sri Lanka. Figure 2.5.7 demonstrates at least three important trends. The popularity of government OPD providing allopathic services has been consistent. The shares of private sector and

Ayurvedic facilities as sources for OPD services are on the decline. The year 2002 saw the growing share of self-medication as the first option when people are sick.

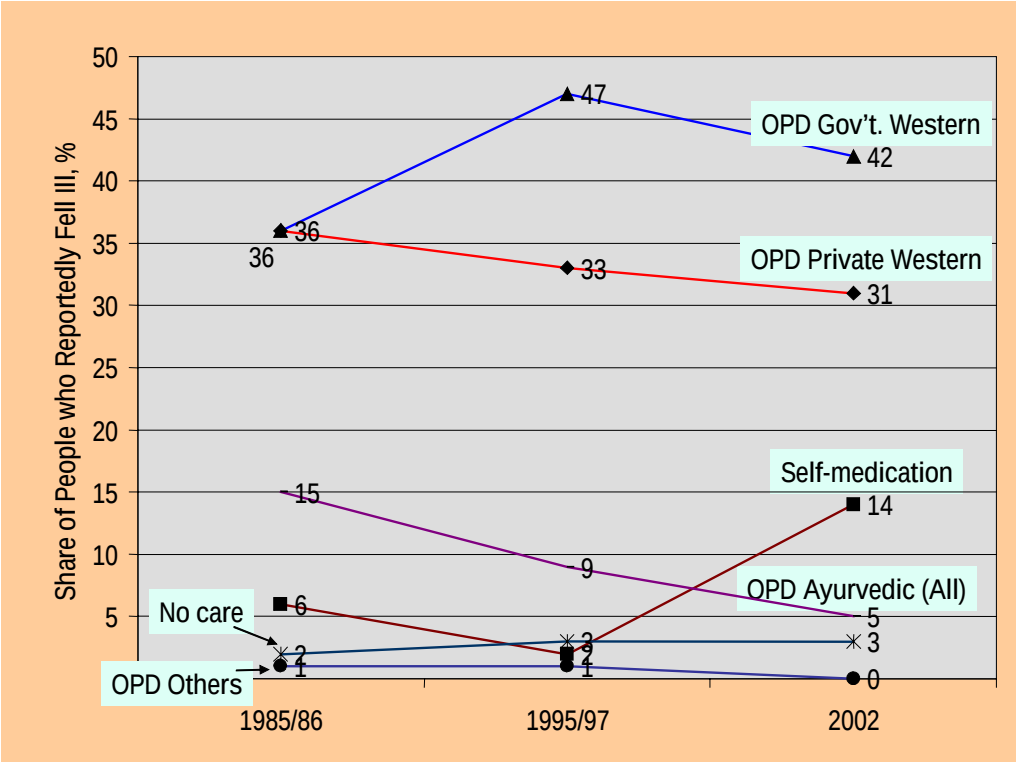


Figure 2.5.7 Three-Year Comparison of Sources of Treatment
Source: Central Bank of Sri Lanka, MoH-JICA Study KAP Survey

Source of Formal Treatment by Visit

The maximum number of visits made in one year by a patient is five. The tendency of patients is to move more and more toward public allopathic treatment when they do not get proper response from an earlier visit to other sources. The proportion of visits made to public allopathic care centres has increased 61.6% for the first visit to 67.9% for the fifth visit. This tendency is more apparent for outpatient care with 34.6% for the first visit to 66.1% for the fifth visit.

CHAPTER 3

HEALTH SYSTEM ACTIVITIES

3 HEALTH SYSTEM ACTIVITIES

This chapter analyses the existing activities of the public allopathic sector and indigenous systems of medicine and those of the private sectors. It encompasses a broad spectrum of activities – preventive, promotive, curative, rehabilitative, and social services. Due to logistical constraints, however, it does not attempt at describing in great length the activities, achievements and actors responsible for many programmes particularly of the Ministry of Health. It is the intention of this chapter to provide an overview of the system activities without being superficial in the analysis. In some sections, the approach was to look at the institutions that play critical roles. In others, the strengths and weaknesses were appraised; then the critical issues, or proposed strategies, for planning were identified.

3.1 PREVENTIVE AND PROMOTIVE ACTIVITIES

(1) INSTITUTIONS

MoH has a Division of Public Health Services, which has many units that together cover all the programmatic responsibilities for preventive care. There are two subdivisions: Community Health Services and Specialised Public Programmes, each of which is led by a Deputy Director-General. These subdivisions have units/bureaus. The units have different logical bases: some focus on a disease or group of diseases; some address a target group; some are based on a methodological approach.

Community Health Services

- Family Health Services
- Primary Care
- Health Education
- Nutrition
- Estate and Urban Health
- Environmental Health and Occupational Health

Specialised Public Health Programmes (also called Campaigns)

- Epidemiology Unit with EPI, ARI and CDD
- Vector-Borne Diseases Control
- Respiratory Disease Control
- Filariasis Control
- STD/AIDS Control
- Leprosy Control
- Public Health Veterinary Service
- Non-Communicable Diseases Control
- Cancer Control
- Poison Centre
- Quarantine Services
- Young, Elderly and Disabled Services

The actual preventive services each have different delivery approaches but most are done through the MOH clinics, the PHI and PHM. Such an organisation can optimise efficiency and effectiveness only through close coordination of policies and plans and integration in service delivery relating to one target group (i.e., children under 5, mothers, people over 50) at least in time and place, often also in the person delivering the service. Currently, the degree of integration or coordination relies on MOH local efforts.

Strengths

Strengths of preventive and promotive health care services can be summarised into two. One, Sri Lanka's Public Health Service has been recognised as a model for developing countries in terms of coverage reached and effectiveness of protection from infectious diseases of children, as well as safe motherhood and protection of high-risk infants from death. The latter seems to relate most closely to PHM contacts (David Peters, 2002, Social Medicine to be published) and curative contacts (Ravi, 1999). Two, the public service delivery is low cost per service contact (Hsiao, 1997).

General Weaknesses

There are a number of weaknesses of the services, which can and need to be addressed:

1) Lack of Coordination

At present, weakness of the preventive and promotive health care services are that programmes even within each subdivision are often very much uncoordinated in policy and macro-plans and whatever coordination or integration can still be achieved depends on the insight, motivation and management skills of the Medical Officers of Health at the district and divisional level. The execution is largely command-driven with monitoring principally used to check coverage, but only exceptionally to do quality control. Each unit has its vertical chain of command, its own cadre of workers, and its own budget that is often project- and donor-driven.

The areas that have suffered most from the lack of coordination and integration seem to be Nutrition, Non-communicable Diseases and Health Education. However, all programme areas would benefit from close coordination and striving for prevalence of workers in contact with the communities as well as monitoring and supervision of quality of process including responsiveness to community needs

Another problem area is rigid division of preventive and curative functions. Integration of functions is left up to PHIs/PHMs and often does not happen. Such fact contributes to a lack of a comprehensive family and patient centred primary health care

2) Weak Responsiveness to Emerging Health Problems

Responsiveness to emerging health problems of Non-Communicable Diseases is still weak. Programmes have lacked a strategy to incorporate health education, proactive detection or follow-up of cases and also lacked effective coverage of programmes for school health needs, for nutrition, for prevention of non-communicable diseases and for prevention of trauma. Currently, the extensive PHM network is not yet used to follow up patients with non-communicable chronic diseases and to carry focused messages in health education on questions of lifestyle, nutrition, use of alcohol and tobacco, and prevention of STD and other transmittable diseases.

(2) COMMUNITY HEALTH PROGRAMMES

In Community Health, the implementation is planned by District Health Units headed by Medical Officers of Health. The Divisional Directors of Health Services (DDHS) implement these services at the field level. Public Health Inspectors (PHI) are primarily responsible for environmental sanitation, school health and the control of communicable diseases. The PHM, PHI, PHN and MD of the divisional health services only deliver preventive family health care. Separate and uncoordinated with this preventive network is the primary care cadre that delivers primary curative care. Conversely, the PHM holds under five clinics for growth surveillance and occasional Triposha distribution. Immunisation is instead carried out in special sessions

Strengths

- The community health group is responsible for the principal elements of primary health care The Expanded Programme of Immunisation is managed by the epidemiological unit but executed by the family health network.
- The preventive family health network is extensive and reaches truly into the communities and could be an excellent vehicle for community-based IEC.
- Health-seeking behaviour of the community overcomes organisational barriers created by disaggregated execution of different programmes.

Weaknesses

- Insufficient coordination in policy, planning, partial integration of service delivery, total split between primary care and preventive programmes, also desegregation of several preventive programmes.
- Lack of responsiveness to the need for activities when community members are free (weekends, outside working hours).
- Not yet any promotive activities for the growing population over 40.

The following programmes under Community will be discussed in the subsequent sections: Family Health Services; Primary Care; Health Education; Nutrition; and Estate and Urban Health. However, Environmental Health and Occupational Health will be examined in sections 3.4, respectively.

Family Health

Within Community Health, the Public Health Nursing Sisters (PHNS) and Supervisory Public Health Midwives supervise the work of Public Health Midwives (PHMs) and the preventive care of preschool children, and women of reproductive age. School health is instead under the responsibility of the PHI as historically the stress was on sanitation and environment. The PHMs and Family Health Workers at the grassroots level provide services to mothers and infants, and maintain the link between the clinic and the community. On the average, they are supposed to cover a population of 3,000 for whom they run preventive clinics (ANC, PNC, FP, Under-5 growth surveillance during normal working hours and scheduled outreach visits in postnatal time; in some areas as part of a community-based DOTS of TB).

The PHM network was designed primarily as a family health delivery method more than 20 years ago. Currently, about 21% of the areas have been disturbed and rendered ineffective as either people moved out because of the conflict or rural migration or they moved into urban areas and the population is now much greater than 3,000 per midwife.

Women no longer seek assistance during delivery from PHM and prefer to go to hospitals. Moreover, the demography has changed because of declining fertility and increasing longevity. Mothers and children are no longer the major and only risk group; people over 50 are a high-risk group for hypertension, diabetes and their complications. This age group is bound to further grow in importance. They could benefit from affordable community-based services for detection, promotive and preventive measures.

Primary Care

The primary care unit is responsible for Central dispensaries, Maternity Home, Rural hospitals, Peripheral Units and District hospitals. These institutions are favoured neither by the communities nor by the personnel. They should be able to serve the greatest number of patients, but in fact are underutilised and are very often bypassed. The reasons are many:

- They suffer from underfunding more than secondary and tertiary care; more lack of supplies and drugs, channelled through provincial government;
- They are not open 24 hours a day, seven days a week (24/7); neither do they have good laboratory services. They often have none or too few nurses and technicians;
- They have too little responsiveness even in primary care range of conditions, also they do not offer easy referral if diagnosis or treatment demands it; and
- They do not receive counter-referral from secondary or tertiary institutions.

They may be less efficient and effective than most institutions of the health system. In addition, people find easy and cheap transport to the secondary level institution that is often almost adjacent. So, the choice of location has almost made the primary institutions numerous as in many places access to secondary care institutions is an assurance of more choice of drugs, diagnostic tests and quick referral to specialist care or IPD if need be.

Management of these primary care institutions often is ad hoc, as managers have no knowledge of their budget and little or no room for real planning except based on past performance.

From the above it is clear there are more weaknesses than strengths in these institutions as they are currently run. The primary care network will need a major overhaul.

Issues for Planning

- Improve coordination of primary care facilities both with the preventive care and the secondary and tertiary care institutions they relate to. Make sure they have access to each other's plans and departments for coordinated planning referral and counter-referral.
- If a primary institution is at less than 2 km from a secondary facility, close the primary and make the latter officially fulfil both roles.
- Increase staffing to provide enough nurses and technicians to fulfil the role of primary care institutions with clear community-based responsibilities on a 24/7 basis and proactive activities in coordination with the preventive network.
- Increase the funding for OPD care and rationalise patient flow for speedy services.
- Provide counselling and follow-up of chronic diseases both infectious and non-communicable in coordination with MOH clinics and PHM.

Health Education

The Health Education Bureau is responsible for the planning, implementation, maintenance and evaluation of the health education component of all health services, programmes and projects in Sri Lanka. Its goal is to promote health, prevent diseases and disability through advocacy and social mobilisation. Its main functions so far are:

- Hospital health education, i.e., training of hospital staff and providing audiovisual equipment;
- School Health Clubs established in 1,520 schools;
- Mass Media orientation, i.e., seminars for media personnel; and

- Health education on Non-Communicable Diseases stressing the health risks of smoking and alcohol use among school children (More details about this are in the School Health Section below).

Strengths

- School Health Clubs are an excellent beginning for the acquisition of life skills by all.
- Mass media could be used for the same purpose and should be targeted to priority conditions and life skills.

Weaknesses

The weaknesses identified by means of interview and discussion, and by observation of health education materials are:

- Insufficient coordination with other parts of community health or preventive or curative health care- Each section in the MOH, as well as donor agencies, including the United Nations (UN) are making their own educational materials, such as posters, mass media commercials and flipchart, among other things, independently without consultation and without documenting available materials;
- Insufficient quality control and pretesting of health education materials or educational methods;
- Shortage of human resources, especially highly skilled professionals on Information, Education and Communication (IEC) who could improve approaches to IEC in other programmes and improve the interpersonal communication in preventive and primary and secondary care institutions;
- Even materials published by the Health Education Bureau are mostly just informative without inviting a participative and interactive mode of education and exchange; and
- Community participation in health education campaigns, detailed activities for health promotion and health education for non-communicable diseases such as diabetes and hypertension seem not yet tackled.

Issues for Planning

- Health Education as Information through Mass media and audio visual presentations should be continued and should develop a clear agenda and set of messages on a yearly basis in close consultation and coordination with the other departments in the MoH.
- Real IEC capacity needs to be created in the health education department, so that participative IEC can be taught and spread first through the family health network and the campaigns but also through primary care institutions and secondary and tertiary care institutions.
- Capacity needs to be created to teach curative health providers patient centred communication, its importance in healing and the skills it demands.
- IEC needs annually to set priority themes, and behavioural changes aimed for, with evaluation of its performance.
- Health Education should see itself as a service department serving the whole of MoH and specialising in coordinating with non-health sectors to spread the IEC messages

Nutrition

1) Food and Nutrition Policies

Food and Nutrition policies have been a major concern of the Government of Sri Lanka since its independence. The Government of Sri Lanka has formulated several policies and plans variably,

first, by the Ministry of Plan Implementation in 1984 and then by the Ministry of Policy Planning and Implementation in 2003. The policy formulation involved also the Ministry of Agriculture, Ministry of Commerce, Ministry of Education and Ministry of Health.

a. Food Availability

The Food Balance Sheet data of the Dept of Census and Statistics show that since 1970 sheer average availability of calories has been improving even though slowly, coming from 2,127 Kcal and exceeding in 2000 on the average 2,654 Kcal.

b. Food Security

Since Sri Lanka became independent in 1948, its Food Security Strategy has been determined by three priorities:

- National self-sufficiency in basic food items;
- A public basic food distribution system through a multi-purpose Cooperative System and public institutions; and
- Welfare programmes that included either food subsidy/stamps or an income transfer component.

For paddy rice, the Mahaweli irrigation scheme helped to achieve higher acreage under paddy and higher yields per hectare (from 3,452 kg in 1990 to 3,957 kg in 2001). This assures a 90% national self-sufficiency for paddy. At the same time, consumption of rice per capita has decreased as bread has become more popular. For all items, the difference between local production and need has to be compensated by imports.

Whenever food availability and national food security are assured, disparities and deficiencies in nutritional intake are due to:

- Financial access to market or capacity for household production;
- Loss of food through spoilage;
- Market and distribution deficiencies; and
- Consumer preferences, cultural taboos and food habits.

The other important factors within the food and nutrition policy framework are emphasis placed on financial access to market spoilage, post harvest management and food preservation, marked distribution differences and consumer preferences versus nutrition education programmes.

c. Consumer Preferences versus Nutrition Education/Communication

The food preferences play a role in all age groups, but are most constraining for babies and toddlers and the pregnant mothers. Among children, the rates of anaemia and Vitamin A deficiencies are much higher than the poverty rates (Table 3.1.1). Moreover, there is no quantitative relation between the poverty rank and these micronutrient deficiencies. This might be explained by food preferences and taboos.

A Nutrition Education Policy was proposed in 1986 but never implemented as such. Still many governmental and non-governmental bodies have tried to respond to the obvious need for nutrition education on infant and child feeding. There is an obvious need for a clear policy on nutrition education as a matter of national urgency, to cover maternal, infant and child nutrition as well as lifelong prevention of non-communicable diseases. When a new Food and Nutrition

Policy would be declared, there is a need to include a food and nutrition surveillance system permitting to judge progress and needed to readjust delivery of services.

Table 3.1.1 Provincial Variation in Child Malnutrition (%)

Province	Poverty Rank worst to best	Anaemia among children <5 years	Vitamin A deficiency
Western	7	47	24
Southern	6	48	42
Central	5	36	22
North Central	4	55	57
Sabaragamuwa	3	43	51
North western	2	57	46
Uva	1	36	35
Sri Lanka		45	36

Source: (a) Mudalige, R and P. Nestel (1996), Prevalence of Anaemia in Sri Lanka, Ceylon Journal of Science.
(b) Nutrition and Health Status of Children. 1993, Nutritional and Poverty Policy Division, Ministry of Policy Planning and Implementation.
(c) Medical Research Institute, 1998. Vitamin A deficiency: Status of Children, Sri Lanka 1995.

Since March 2002, a Task Force has been organized to develop a Food and Nutrition Policy for Sri Lanka in the Ministry of Policy Planning working closely with the Nutrition Coordinating Directorate of MoH. A new policy is expected soon.

The nutritional status of Sri Lanka has been a much-debated subject as low levels of mortality have gone together with relatively high levels of malnutrition. It has been hypothesized that this may be due to timely use of medical care and to the virtual elimination of extreme forms of malnutrition. This paradox though should not lead to complacency, as even moderate malnutrition diminishes immunity and decreases mental functions temporarily or over longer term.

2) Nutritional Status and its Context

Sri Lanka has achieved a human development level that equals many developed nations, even though with its GDP of $ 860 it is only a middle-income country. Absolute poverty is limited in the population to catastrophic situations, war zones, and some special groups such as estates and fishing communities, and rural communities in areas suffering from drought. Consumer poverty has come down to about 25% from 31% as recently as 1996, human poverty (considering access to health and education) is at about 16%, but both vary tremendously by region with the district of Moneragala having the highest rate: 66% consumer poor and 29% human poor, and Colombo the lowest rate at 19% consumer poor and 13% human poor. Nationwide farmers and production workers account together for 78% of the poor; unemployed are only contributing 5% of the poor. There are ongoing programmes of poverty alleviation aiming both at the absolute poor and the human and consumer poor. In that context, food accessibility has been a state concern since the country's independence and remains so.

In the general population, a high rate (21.3% in 1992, 18 % in 2002) of low birth weight persists. Extreme malnutrition requiring hospitalisation has decreased in frequency considerably and is now at 7.3/100,000 coming from as high as 109/100,000 in 1985. At present, the extreme cases are concentrated under 1 year of age and over 70 years of age.

Breastfeeding is close to universal to 10 months of age (in Colombo and rural Sri Lanka but not in other urban centres) and the average duration of breastfeeding is 25.6 months and increasing. However, exclusive breastfeeding seems to be practiced by about 51% of mothers at 5 months, down from 75% exclusively breastfed at some point earlier on (DHS, 2000).

Nationwide malnutrition among preschool children is still high and stands at 29% (DHS, 2000, wt/age). It has been declining slowly, with about 14% wasted and about 13.5% stunted. Stunting and underweight has become less frequent but wasting has only improved slightly since the DHS of 1993.

Malnutrition is significantly more frequent in the geographic zones 3, 4, 5, 6, and 7, with low wt/age above 30% of preschool children, with low wt/ht between 13.8% and 19.5% and stunting between 12.6% and 19%. These zones have also shown slow improvement especially in stunting and wt/age, much less improvement on wasting.

In urban-rural comparison, urban areas have much better nutrition of preschoolers with only about 20% children with wt/age deficit compared to 30.8% for the general rural area and 44.1% for Estates, similarly stunting is about 8% in urban areas and 12.8% in rural areas and a high 33.8% in Estates. Stunting worsens with age; stunting at age 5 still stands at 19.1%, although this is an improvement over 1993 when it was 28.7% (DHS, 1993).

The incidence of hypertension, ischaemic heart disease and diabetes are frequent among people over 50 years old and with increase in social importance, as the proportion of people in this age group increases. As causes of hospitalisation, this group has 946/100,000 people hospitalised every year, making it almost rival infectious diseases in incidence of hospitalisation (1,245/100,000). Taking into account these are chronic conditions while the bulk of infectious diseases in Sri Lanka are still acute, it is easily seen why they should help determine primary and secondary preventive and curative priorities. As hypertension and diabetes are the result of genetics, low birth weight and nutritional and lifestyle choices, it is imperative to tackle these diseases.

3) Institutions

The current policy, planning and delivery system for nutritional services are dispersed in MoH. It includes in Community Health three units: the Nutrition Directorate, the Family Health Bureau, the Health Education Bureau as well as the Nutrition Coordination Bureau (transferred from the Ministry of Planning). The TOR of the different groups are not entirely clearly defined, but the FHB is implementing the current nutrition activities relating to mothers and children.

Strengths of the delivery system

- FHB has the PHM as its army of field workers, that see themselves as agents to execute growth monitoring and nutrition advice for children and mothers, but not yet for adults and seniors.
- The FHB oversees the execution of school health.
- Nutrition coordination with other sectors is legitimised.

Weaknesses of the delivery system

- The absence of clear TOR and lack of coordination between the four offices has led to programmatic confusion.

- The decision to delegate monitoring and feedback of growth surveillance and nutrition advice to MOH clinics with no clear upward reporting has led to very uneven implementation and command-driven performance.
- PHM seem not to understand either the importance of focussed nutrition advice to mothers and children and follow-up or at least consider it secondary to other tasks.
- No clear nutrition messages for mothers and children have been popularised. PHM themselves may not understand the importance of exclusive breast feeding in the first 6 months, they may not understand fully the importance of frequent small complementary meals during weaning, the importance of balanced frequent meals for the toddler and the school child.
- Most hospitals advise mothers about the care of low birth weight babies but few, if any, study the causal factors that might help to improve prenatal services or educate the mothers on the immediate and delayed dangers of low birth weight.
- Adults and seniors at risk of hypertension and or diabetes are currently not detected or advised by PHM, nor does the Health Education Bureau have a major effort targeting them, nor do the OPD or most specialist clinics organise information education and dialogue on the feasibility of changes in lifestyle and eating habits.

Issues for Planning

- Inform the public of the existing nutrition problems and the potential solutions through mass media and schools. Aim to increase general knowledge of principles of good nutrition and specific needs of different age groups.
- Use prenatal and under-5 clinics as major vehicles to give IEC on nutrition. Stress the need to intensify and focus on those with existing or incipient problems.
- Prepare health workers (PHMs, PHNs, doctors) to detect individual problems (using wt/age for children under 5, stunting and wasting for school children and adolescents and BMI for adults, weight gain for pregnant mothers). Prepare PHNs and PHMs to provide or arrange focussed education to change feeding behaviour as well as to monitor and to inform patients of progress or lack thereof. Study other non-dietary determinants of low birth weight and childhood malnutrition that can be influenced to diminish risk, such as birth spacing and family size.
- Similarly, study determinants (exercise, occupational risks) of diabetes and hypertension that might help to address the highest risk groups more intensively.
- Give special attention to communities that have a high rate of absolute or consumer poverty, where food security may be a problem hampering the provision of a balanced and sufficient diet to children and elderly (60+ years). Review food supplement distribution to be continuously available to handle collective or individual emergencies rather than as a tool of income redistribution. Try to coordinate closely with income generation and poverty alleviation activities as it is undesirable to create dependency on food supplements.
- Pilot in communities labour-saving feeding arrangements (neighbourhood kitchens or school canteens, etc.) that assure children and older people of easy access to cheap, balanced and sufficient food, especially in communities where many women are too busy to deal adequately with the provision of proper meals.

4) Estate and Urban Health: Health Care in the Plantation Sector[1]

a. Historical Background

The majority of the estate population was persons of South Indian Tamil origin introduced into the island by the British in the 19th century during the colonial rule. To date, the estate sector is

[1] Contributed by Dr. Nissanka Sumanaweera.

still manned by the descendents of this ethnic group. It is centred on the commercial cultivation and processing of tea, rubber and coconut products for the export market. Geographically, around 500 estates are spread over the Central, Uva, Sabaragamuwa, Western, and Southern provinces with a major concentration in the up-country of the island.

The estate population is over one million and the majority live in the estates in which they work. The majority of the estate families live in line-rooms. Recently some of these lines were converted to small houses. Poor housing conditions, lack of sanitary facilities, relatively low income, extreme weather, cumbersome terrain, are main factors affecting the health of this population. Literacy rate is low among the resident estate workers, especially amongst women, compared to the rest of the country. They have a unique socio-cultural background. Almost all of them are Hindus.

The health gains and indices of this population are poor compared to the national figures. Maternal Mortality, Infant Mortality, Child (under five) Mortality, Nutritional status, Contraceptive Prevalence, are some of the indices showing high rates compared to the country figures. Substance abuse in the form of illicit alcohol, betel-nut chewing and household violence are some of the recent health-related problems found in the estate population.

The health care service provision to the estate workers can be definitely divided into three periods. Firstly, the period of the colonial rule and up to the mid-1970s following the country's independence in 1948. In this period, the entire plantation industry had been owned by the Sterling Companies and individuals. Plantation workers on whom the colonial economy depended were given special consideration, including provision of hospitals. The Medical Ordinance No. 14 of 1872 provided provisions for establishing medical districts consisting of District Hospitals and appointment of a DMO. It was the responsibility of the District Committee of Planters, appointed by the colonial administration, to provide health care services to the estate workers. The services were elementary in nature and curative oriented. Later on, the administrators realised that the death rate among the immigrant plantation workers were high due to delay in transferring them to the hospitals from the estates. In the year 1892, the administrators recommended to open dispensaries within the estates.

The estate dispensaries were manned by Estate Medical Assistants and Dispensers who did not possess a good knowledge in health care. Later on, some of these were developed into estate hospitals with inpatient facilities. The management of the hospitals was the responsibility of the respective estates. Introduction of the Medical Wants Ordinance in 1912 resulted in a system of health care on estates that involved expansion of the hospital system and provision of basic curative care. There was a wide disparity in services, provided between the hospitals, and between individual estates. Preventive health activities were limited to mass hookworm treatment, immunisation against smallpox, and control of infectious disease outbreaks.

During the colonial era, the Health Department appointed Medical Officers, whose duty was to inspect and report on estate health activities. In 1942, the Planters Association Estates Health Scheme (PAEHS) was established. The aim of this establishment was to coordinate estate health amongst the member estates. Another function the association performed was to work on an advisory capacity on matters in relation to estate health. PAEHS was really the successor to the Planters Association Malaria Control Scheme that had been set-up in 1926 to deal with Malaria. This period showed very high morbidity and mortality in estates due to poor housing,

unsanitary and congested living conditions, low literacy and limited facilities of health care, which was predominantly curative in nature.

Secondly, the era of nationalisation of estate ownership and management began in the early 1970s. The Land Reform Law introduced in 1972 through 1975 led to total state ownership and management control of the estates. Most of the estates were placed under the management of two newly established Government corporations, namely, Sri Lanka State Plantations Corporation (SLSPC) and Janatha Estate Development Board (JEDB).

The Government policy at that time had been to provide better health care for all sectors of the nation. As a result, a wide range of health and welfare interventions was introduced with major emphasis on preventive and promotive health utilising a primary health care approach. These included Maternal and Child Health (MCH), Nutrition Programmes, Expanded Programme on Immunisation (EPI), Control of Diarrhoeal Diseases (CDD), Family Planning Services (FP), improved access to safe drinking water and sanitation.

In 1974, the Family Health Bureau of the Ministry of Health was given the responsibility of planning and implementation of MCH and other services with financial and technical assistance from UNFPA and UNICEF. A central coordinating and management structure was established at the FHB. Ten medical Officers were appointed to initiate a routine scheme of MCH care on the estates, through a network of clinics. These officers were under the direct supervision of the Ministry of Health.

In 1978, the two state corporations formed their own Social Development Divisions to support and coordinate health and social development activities in the estates. During this time foreign governments like the Netherlands and Norway, and the World Bank, Asian Development Bank, and CARE organisation provided project assistance to the two corporations to improve health and living conditions of the plantation workers. As the corporations employed their own doctors and the supporting staff, the ministry-appointed medical officers were gradually withdrawn.

The major developments in this period are listed below:

- Reorientation of estate management and health staff, on a broader concept of health, and cost effective health initiatives;
- Strengthening of health infrastructure and human resource development;
- Strengthening the organisation and management of health services;
- Promotion of dialogue between the Ministry of Health and Estate Health Personnel, with regard to implementation of national programmes; and
- Donor-assisted programmes to improve housing, provide safe drinking water, and better sanitation.

Thirdly, the government, in 1992, introduced a process of restructuring for the state-managed corporations. The principle was to privatise the management of estates. According to this process, 23 Government-owned Regional Plantation Companies were formed. These later handed over the management to private sector companies. Each private sector company managed 12 to 29 estates. The impact of this process on health services in the estates was enormous. The entire health system established, and institutionalised, by the two state corporations was completely dismantled.

In 1995, further changes were made in the management, and the management of the estates was given to the private companies for a lease period of 50 years, while the government retained the

ownership of the land. This made the provision of health care to the workers the sole responsibility of the owner companies.

To continue the social development activities conducted by the two agencies of the JEDB and SLSPC, a non-profit making, limited liability Company, the Plantation Housing and Social Welfare Trust (PHSWT), was established. The trust was approved by the Cabinet, established under the Companies Act No. 17 of 1992 and registered with the Registrar of Companies. The functions of the Trust are determined by the Memorandum and Articles of Association of the Trust, while the administrative matters are governed by the Shop and Office Act.

The Trust was formed in 1992 to facilitate and coordinate social development activities and social investments in the newly privatised environment. The trust virtually became the successor to the two Social Development Divisions of the two corporations. The Trust's head office was set-up in Colombo, and seven Regional Offices were located in Kandy, Nuwara Eliya, Hatton, Badulla, Ratnapura, Galle, and Kegalle. The Regional Plantation Companies meet the operating cost of the trust, while the members of the Trust benefit from the services and investments.

b. The Current Situation

The Trust, though its name is changed, continue to facilitate and coordinate social development activities in the plantation sector. The *vision of the Trust* as they describe is, "we are an organisation committed to ensure the integration and fulfilment of the social responsibilities of our constituent partners towards the plantation worker community. As such, we would continue to grow, develop into and sustain ourselves as an organisation that will enable our constituent partners to discharge their respective social responsibilities effectively in developing and building a vibrant community".

The mission is "to assist the plantation community in enhancing the quality of their lives and thereby contribute to the creation of an environment conducive for productivity improvement, and sustenance of the sector, which will be mutually beneficial for the sector as well as the community". The overall objectives for the workers in estate lands and related industries and services as well as the dependents of such workers and retired workers are as follows: improvement of health and welfare; alleviation of poverty; facilitation of housing and residential quarters; advancement of education and knowledge; enhancement of the quality of life and the betterment of the living standards.

The ongoing activities of the Trust are as follows:

- Promotion of the participation of the plantation community in the development process, giving equal opportunities to both men and women;
- Development and implementation of self-help housing options;
- Provision of immediate relief for short-term strategies on housing;
- Formation and mobilisation of grassroots level organisations to empower the worker communities in participatory activities;
- Provision of water facilities with participation of workers;
- Ensuring sanitation coverage through promotion of self-help;
- Identification and provision of health and childcare needs;
- Human resource development coordination and monitoring of national programmes and in the plantation sector;
- Assistance in and conduct of specific health programmes;

- Development of IEC material and training material;
- Encouragement of saving through active participation of women;
- Creation of health awareness among residents to improve the health of the community;
- Encouragement of NGOs and other institutions to participate in estate sector programmes;
- Fostering cooperation between plantation management and the community;
- Assistance to vulnerable segments in the estate community; and
- Establishment of linkages between relevant regional and national agencies.

The funds are provided by different donor programmes and other agencies. The recurrent cost of the Trust is provided by the plantation companies. Foreign governments, UN agencies and other agencies assist in the activities of the Trust.

c. Specific Programmes

The social welfare programme was funded by the governments of Netherlands and Norway from 1993 to 1998.

Plantation Reform Project for the estate sector has been implemented by estate trust funded by UNICEF since 1997 until 2001 and 2002 to 2006.

UNFPA programmes have also been implemented since 1997 until 2001, and 2002 to 2007.

Plantation Development Support Programme has been implemented funded by 65% from the government of Netherlands and 35% from the government of Norway since 1998 until 2005.

d. The Government Policy

The report of the Presidential Task Force on formulation of "A National Health Policy for Sri Lanka" stated several policy measures on estate population. One, the quality assurance of the services provided will be monitored by Divisional Directors of Health Services of the area but the responsibility of service provision should rest with the management. The estate health services will be linked to the nearest divisional health institution with a referral system. Two, detailed health information including epidemiological data of the services and health problems will be made available to the DDHS regularly by the AMP. Three, the Assistant Medical Practitioners or Medical Officers when available will be appointed to the estate dispensaries to ensure better quality of care.

The Health Policy statement of 1996 states that, "The Health Policy of the Government will be directed at consolidating the earlier gains as well as adopting new policies to raise the health status of the people". The Presidential Task Force proposals for health reforms in 1997 identified Estate health as a priority area and made specific recommendations. The report further states that:

Formal links shall be established with the management and health authorities at all levels;
Contraceptive use and the antenatal care shall be improved; immunisation coverage shall be further improved;
Appropriate action will be taken to minimise mortality and morbidity due to acute respiratory illnesses;
Health and nutrition programmes will be implemented specifically targeting adolescent girls;
Selected District Hospitals are to be upgraded to provide better obstetric and child care services; and
Government is to take over selected Estate Hospitals for improvement of services.

A draft Plantation Health Policy drawn in 2001 states, in relation to the National Health Policy, that "The government's commitment towards raising the health status of the people on an equitable basis, as reflected in the national health policy, encompass the plantation community." The plantation industry has several unique features such as remote location, difficult and inaccessible terrain, a large and predominantly female workforce, significant resident population, scattered housing units, accompanying social infrastructure. Its health system contributes to national health if it would stimulate promotive and preventive health in the plantation sector, ensure health care and prompt relief from illness, and meet the legal provisions with respect to sickness and occupational injuries and disease. Finally, the draft Plantation Health Policy stresses an integrated approach. It states the role of the government and the estate management in provision of services, management of information and monitoring.

(2) SPECIALISED PUBLIC HEALTH PROGRAMMES

These programs are mostly organised as vertical programs with their own cadres and logistics.

1) Epidemiological Unit, including EPI, ARI and CDD

The Epidemiology Unit had been established in 1959 with assistance from the WHO, which helped in 1987 to computerise disease surveillance data. The functions of the unit are:

- Forecasting disease epidemics and taking appropriate action for their prevention and control;
- Training medical officers and other health staff on epidemiology and control of diseases;
- Providing feedback to the Weekly Epidemiological Report and Quarterly Epidemiological Bulletin on selected communicable diseases; and
- Conducting research activities relevant to epidemiology.

Its specific objectives are:

- Strengthening of surveillance activities for communicable and non-communicable diseases;
- Forecasting of disease epidemics and taking appropriate action for prevention and control;
- Expanded Programme on Immunisation (EPI): For eradication of poliomyelitis, elimination of neonatal tetanus and reduction of mortality and morbidity due to childhood tuberculosis, measles, diphtheria, whooping cough and tetanus;
- Prevention of congenital rubella syndrome and rubella;
- Reduction in mortality due to diarrhoeal diseases and acute respiratory infections in children under 5 years of age;
- Reduction of morbidity and mortality due to Dengue Haemorrhagic Fever and Japanese Encephalitis;
- Prevention and control of new, emerging and re-emerging diseases; and
- Improvement of the epidemiological unit's capability to perform research on health-related issues beneficial to the public.

Strengths

The greatest strength of this unit is its excellent coverage (80% +) with vaccinations – control of childhood epidemics of immunisable diseases – with the exception of measles and viral hepatitis control.

Weaknesses

- The central cold storage (building) for vaccines needs to be renovated and equipped with reliable power-supply and stand-by generators. The current practice of storing vaccines in private cold rooms is costly. In this connection, the Epidemiology Unit had applied for a small-scale grant with JICA in 2001.
- Lack of specialised human resources, such as medical officers, consulting epidemiologists and supporting staff at the central/ provincial/ regional levels; many posts remain unfilled. This hampers effective surveillance and disease control activities. Most of the qualified medical officers in the field are not willing to accept these posts due to insufficient incentives and lack of other benefits.
- More resources are necessary for the development of new programs, such as the introduction of new vaccines like Hepatitis B; the measles control campaigns, dengue prevention and control programme, and the prevention and control of new emerging/ re-emerging diseases.
- Despite the decrepit condition of equipment, the cold chain system at the ward level is being adequately maintained by PHMs, but if daily vaccinations were to be tried, it might not be possible.
- Disease notification is slow, as the office has no fax or E-mail link to provinces, divisions or districts. It is also incomplete as OPD, private hospitals and clinics pay very little attention to these things.
- There are insufficient financial resources to hire additional staff necessary for the regular publication of the Epidemiological Bulletins and for maintenance of the equipment.
- The control of transmittable diseases that have no vaccination has not been entirely successful. Diseases associated with lack of sanitation or are arthropod-borne or airborne have still high incidence but mostly fairly low fatality. The most important were dysentery, enteric fever, food poisoning, leptospirosis and viral hepatitis, measles and tuberculosis, malaria and dengue hemorrhagic fever in urban areas.
- Table 3.1.2 shows the distribution of Notifiable Diseases in 2000. Currently, the notification (surveillance) system is concentrated only on communicable diseases. Even in the North and East of Sri Lanka, the notification system is functioning for some of the diseases. The preventive aspect of the service has not suffered any damages.

Table 3.1.2 Notifiable Diseases, 2000

	Cases	Death
Cholera	23	0
Whooping Cough	213	3
Tetanus	119	28
Measles	17,567	1
Tuberculosis	11,743	585
Viral Hepatitis	3,851	21
Typhoid Fever	8,552	14
Leptospirosis	3,320	144
Malaria	58,863	111
Viral Encephalitis	369	45
Food Poisoning	3,252	2
Rabies	162	91
Shigellosis	10,342	11
Dengue Haemorrhagic Fever	1,546	47
Rubella	95	3

Source: MoH

Due to the epidemiological transition of the society, surveillance should be extended to include non-communicable diseases such as hypertension and diabetes that are taking epidemic proportions.

2) Vector-Borne Diseases Control

Vector-Borne Diseases Control Programme aims to achieve better control of the four main vector-borne diseases: Malaria, Filariasis, Dengue & Japanese Encephalitis. The control activities will be planned and coordinated by the Vector-Borne Diseases Control Programme of the Centre of the Central MoH and implemented through the Provincial Ministries of Health.

The Anti-Malaria Campaign Authority is responsible for the malaria control programme. Malaria is a major public health problem killing millions of people in the world. In the past, Sri Lanka had a successful control program with DDT spraying launched in 1946, which reduced morbidity to only 17 cases per year in 1963. However, recurrent epidemics of malaria were reported in 1968 and 1982 due to resistant mosquitoes. Since then, the incidence has not declined.

In 1999, Sri Lanka started the Roll Back Malaria (RBM) Initiative with the WHO in five high prevalence areas: Jaffna, Kilinochchi, Mullaitivu, Anuradhapura and Moneragala.

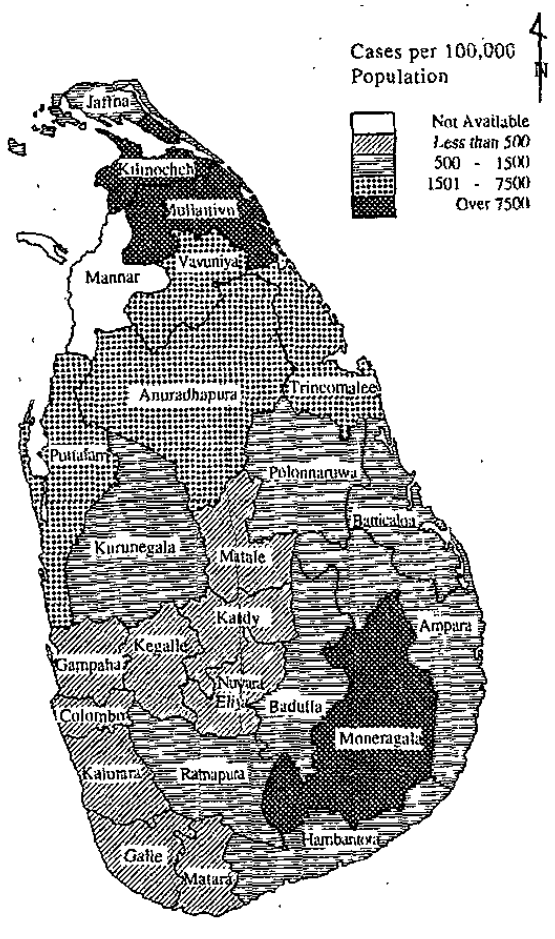


Figure 3.1.1 Morbidity and Mortality during the Last 6 Years

Source: Anti-Malaria Campaign, MoH, prepared by Dept. of Census and Statistics

This initiative utilizes six strategies:

Evidence-based decision;
Rapid diagnosis and treatment;
Multiple prevention;
Focused research to develop new tools;

Well-coordinated action for stronger health systems; and
Harmonized action.

The objectives of the program are:

To reduce the annual incidence to 10/1,000 in the areas at risk for malaria;
To minimise the proportion of P. Falciparum (in 1999, 72% vivax and 28% falciparum);
To eliminate mortality due to malaria;
To prevent malaria epidemics; and
To prevent malaria in pregnant mothers.

Several committees have been formed to initiate plans for this programme. In 2001, the Five-Year Strategic Plan for Roll Back Malaria in Sri Lanka has been developed and has the full support and commitment of the Government.

There are 4 components:

Early detection and prompt treatment;
Application of selective and sustainable control methods, including vector control;
Development of mechanism to forecast epidemics; and
Regular reassessment of the control program.

There seem difficulties in implementation. Funding of recurrent costs for supervision seems to hamper the program.

Strength

There is already a plan that is well constructed (Roll Back Malaria).

Weakness

- Lack of sufficient funding.
- Increasing incidence of malaria: There was an increase of more than 50% in the number of reported malaria cases in the North East provinces (Figure 3.1.1) due to interruptions in the vector control programme.
- Increasing fatalities in reported cases since 1995 (Table 3.1.3): In 2000, 76 deaths due to malaria were reported to the Anti-Malaria Campaign Authority. Of this number, 70 were from the North East provinces. This might be due to drug resistance or inappropriate treatment schedules. The higher case fatality dates back from 1997 onwards, and P. falciparum (chloroquine-resistant) has been gradually spreading.
- The high malaria prevalence in the North East provinces seems due to the civil war (practical difficulties in case detection and treatment of patients, exposure of combatants and displaced people to unprotected fields conditions, etc.).
- The RBM program has not been as active a control programme as wished due to the weak coordination among the concerned agencies, including the people in the community, the NGOs, etc.

Table 3.1.3 Morbidity and Mortality During the Last 6 Years

	Total No. of Patients	Reported Deaths
1995	142,294	5
1996	183,319	26
1997	218,550	62
1998	211,691	115
1999	264,549	102
2000	*	76

Source: MoH

Issues for Planning

- Mass health education, coordination and sanitation programme activities should be conducted in all endemic areas.
- RBM needs to be strengthened and more coordination, community participation and technical supervision are needed.
- All facilities providing curative care need simple diagnostic tools for malaria and clear guidelines on treatment and eventual resistance.
- Funding for this activity needs to be increased, potentially using local donations from charities, industries and other enterprises or scaled up Global Fund support.

3) Respiratory Disease Control (Tuberculosis)

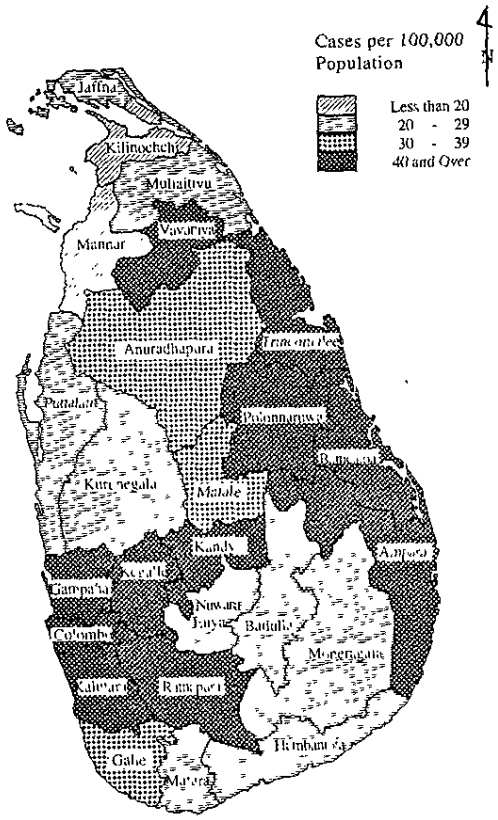


Figure 3.1.2 Distribution of New Cases of Tuberculosis by Health Region, 2000

Source: Respiratory Disease Control Programme, MoH, prepared by Dept. Of Census and Statistics

This program is being implemented by a decentralised unit. This unit functions through a network of 21 district Chest Clinics and 2 Chest Hospitals in close coordination with other general health institutions. During the year 2000, 8,801 new tuberculosis cases were found in Sri Lanka (Figure 3.1.2).

Worldwide the causes for the growing importance of TB globally are widely known. These include its association with HIV and the emergence of multi-drug resistance. As HIV infection is not (yet) very prevalent in Sri Lanka, multi-drug resistance is the most important problem for TB control in Sri Lanka.

The overall objectives of the National TB Control Programme are:

To reduce the mortality, morbidity and the transmission of TB in the community; and
To prevent the increase of multi-drug resistant TB.

Following are the strategies for the ongoing programme:

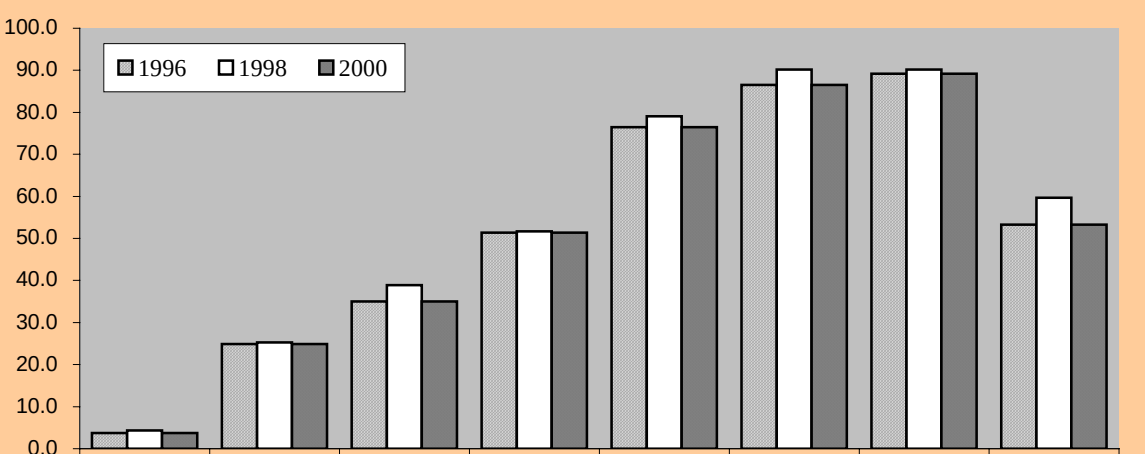
Passive case finding by sputum smear microscopy of symptomatic patients who attend any health facility;
Treatment of all diagnosed cases with short-course chemotherapy.
DOTS (Directly Observed Treatment Short course) by trained health personnel; and
Monitoring of the treatment follow-up and results of every patient registered through a standardised recording and reporting system and quarterly cohort analysis.

DOTS were started as a community-based programme in 1997 and the supervision of treatment is done by trained health personnel at the health institution closest to the patient's residence. In remote areas, the assistance of the PHM is obtained for the supervision of treatment. The community-based DOTS has now been extended to ten districts – Galle, Matara, Colombo, Gampaha, Kandy, Anuradhapura, Kurunegala, Ratnapura, Kalutara and Puttalam covering about 60% of the total population. There is a plan to further extend the ambulatory DOTS programme to cover the entire country, as soon as possible.

In districts where the community-based DOTS strategies are implemented, home visits are done by the chest clinic PHI to trace defaulters. However, default rate is high, especially in the urban areas, where there is a high percentage of floating population and it is high in areas affected by armed conflict. Defaulter tracing has become extremely difficult because the chest clinic PHIs have not been provided with motorcycles or other means of transport.

An important achievement during 2001 was the appointment of a Medical Officer (MO) adept at IEC and advocacy techniques. This MO has produced a documentary drama on TB & DOTS and several TV and radio programmes. Health education activities are also carried out aiming to remove any stigma associated with the disease. The World TB Day 2000 was conducted with great success. Several health education activities, poster competitions, street processions, three wheeler parades, and TV & radio programmes were carried out nationwide.

The age distribution of TB in Sri Lanka (Figure 3.1.3) shows an increasing incidence with age with a peak in the 60-69 years old group. This may reflect both natural immunity and living conditions more than acquired immunity through vaccination. The low rates in the under-5 age group may be more related to vaccination.



	0 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 +
1996	3.7	24.9	35.0	51.4	76.5	86.5	89.2	53.3
1998	4.3	25.3	38.9	51.7	79.1	90.2	90.2	59.7
2000	3.7	24.9	35.0	51.4	76.5	86.5	89.2	53.3

Figure 3.1.3 Tuberculosis Incidence Rate by Age Group, 1996-2000

Source: MoH

Table 3.1.4 shows that case finding is higher in urban areas: Colombo, Kandy and Gampaha. The number of cases in the Northeast provinces is relatively low. The number of TB patients is increasing in urban areas due to overcrowding in slum areas, the deterioration of living conditions and environmental changes. Low reporting of cases is observed in areas affected by civil war probably for lack of proper detection.

Table 3.1.4 Case Finding by District, 2001

District	Cases	District	Cases
Colombo	1591	Ampara	216
Gampaha	1170	Trincomalee	143
Kalutara	522	Kurunegala	428
Kandy	981	Puttalam	128
Matale	124	Anuradhapura	334
Galle	460	Polonnaruwa	134
Matara	188	Badulla	287
Hambantota	109	Nuwara Eliya	76
Jaffna	186	Ratnapura	446
Vavuniya	131	Kegalle	338
Batticaloa	246		

Source: MoH

Weaknesses

- Mass health education, coordination and sanitation programme activities should be conducted in all endemic areas.
- The high rate of defaulting in the urban areas where there is a high percentage of floating population and in areas affected by armed conflict.
- The government budget is not enough to carry out all aspects of the control programmes. The laboratory services have not always had all the supplies needed for regular checkups. However, in 2002, financial support of 6.8 million rupees from the Global Fund (fund that can be used for diseases of poverty TB, malaria and HIV/AIDS-related conditions) and Rs. 2 million from the World Bank were made available to the programme.
- A high default rate is observed due to associated stigma and lack of understanding about the need to continue beyond the period one feels ill with TB.
- There is insufficient coordination with the private sector, whose reporting system is not functioning well.
- Frequent supervision from the central level is not possible due to lack of supervisory staff at the Central Unit; better monitoring is not possible as long as reports are delayed.
- There is a lack of trained staff at the district chest clinics.
- Transfer out of the program of trained staff frequently occurs.
- The lack of availability of microscopy facilities in or to the peripheral units causes low case detection rate and delays in follow up.

Issues for Planning

- Use currently available resources for:
    - Urgent re-establishment of the control programme in the Northeast provinces, including confirmation of immunisation to children, through the Public Health Service;
    - Train specialised personnel and obtain guarantees from them and the civil service that they will be assigned at least for 3- 5 years to chest clinics.
- Seek new resources such as local donations and funds from the Global Fund, potentially through an integrated malaria, TB and HIV program, which would scale up the total program.
- Establish logistics for referral of sputum rather than patients, for diagnosis.
- Expand the coverage of the community-based DOTS programme to the whole country to lower the default rate.
- Conduct massive health education campaigns aiming to decrease stigma of TB and HIV and increase awareness of value of full treatment for TB and malaria and of safe sex for HIV.
- Strengthen coordination with the private sector for better detection, follow-up and notification of these three diseases.

4) Filariasis Control

This disease commonly known as Elephantiasis is spread by Culex quinquefasciatus mosquitoes. Filariasis is endemic in four provinces in the Southwestern and Southern coastal belt (Polgahawela, Kurunegala, Gampaha and Veyangoda), because the temperature and humidity in these areas are favourable to the breeding and spread of mosquitoes.

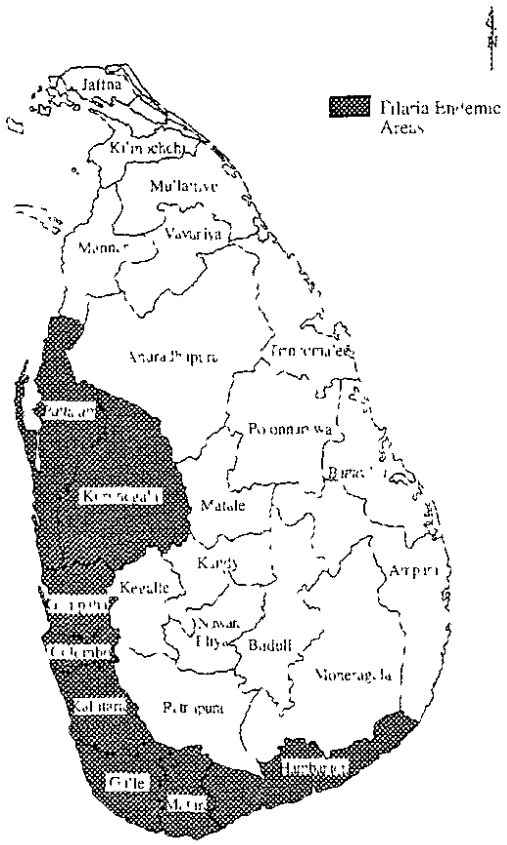


Figure 3.1.4 Filaria Endemic Areas by District, 2000

Source: Anti-Filaria Campaign, MoH, prepared by Dept. Of Census and Statistics

Table 3.1.5 New Cases of Filariasis

	1991	1994	1997	2000
New Cases	1,314	2,738	4,108	629

Table 3.1.5 shows new cases of Filariasis. Its prevalence has decreased tremendously in 2000 due to:

- Night blood screening and treatment of positives with DEC until free of parasites;
- Single dose mass treatment campaign started in 1999 (covering 5,373,019 or 72% of the total population in endemic areas) to stop transmission;
- Entomological investigations and Vector control;
- Successful massive health promotion programs; and
- Treatment of the disfiguring lymphoedema.

However, the eradication of Filariasis still depends on the overall control of the mosquito vectors.

Strengths

- People are aware of the dangers and collaborate with screening and early detection.
- There is decreasing incidence of infection and degree of infection.

Weaknesses

- Living conditions of the poor or newly migrated people make it hard to eliminate breeding sites.
- There is a need to further explore ways of improving the performance of this program.

5) STD/AIDS Control

National STD/AIDS Control Team is responsible for the implementation and coordination of the STD/AIDS Programme at central and regional levels.

HIV/AIDS is a pandemic problem that started about 1983. In Sri Lanka, the first HIV/AIDS infection was detected in 1986. Since then, a cumulative number of 405 patients have been detected, as of April 2002. Despite the relatively low prevalence of HIV/AIDS detected in Sri Lanka, the National STD/AIDS Control Programme has estimated that there are about 8,500 people living with HIV/AIDS at end of year 2000. Sri Lanka recognises the risk of HIV/AIDS and undertook short-term and long-term interventions for its prevention and control.

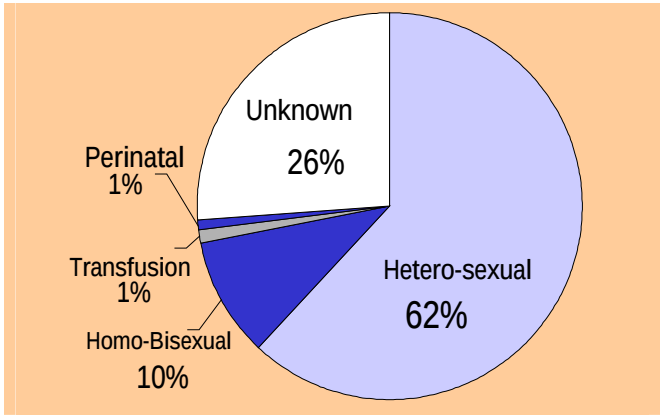
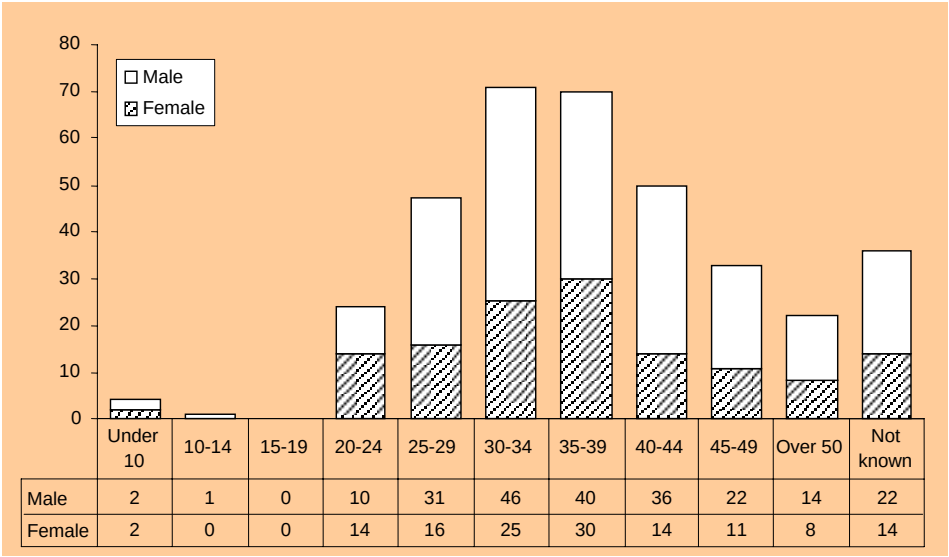


Figure 3.1.5 Reported HIV Positives During 1987-2000 by Mode of Transmission
Source: MoH



	Under 10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Over 50	Not known
Male	2	1	0	10	31	46	40	36	22	14	22
Female	2	0	0	14	16	25	30	14	11	8	14

Figure 3.1.6 Age and Sex Distribution of HIV Positive Reported During 1987-2000
Source: MoH

Under the National STD/AIDS Control Programme, a Strategic Plan was formulated to prevent HIV transmission and to reduce the personal and social impact of HIV on the infected persons, their families and society.

There are five major activities/strategies, namely:

1) Prevention of sexual transmission: Case detection, contact tracing, counselling on safe sex, registration and control of sex workers;
2) Prevention of transmission through blood;
3) Prevention of mother to child transmission;
4) Care and support of persons with HIV; and
5) Reduction of social and economic impact of HIV.

There is a need to further explore the strengths and weaknesses as well as the strategies to face future challenges.

Strengths

HIV/AIDS prevalence is low at this point.

Weaknesses

These will have to be looked into by the concerned authorities:

- Conservative clergy is uncomfortable with explicit public education on safe sex.
- STD patients are not small in number They are potential HIV/AIDS patients due to their sexual behaviour.
- Migrant workers going to Arab countries need to have physical check up before leaving and upon returning. STD and HIV in particular are a risk of migration as sex partners often get separated and may each engage in risk behaviour. Moreover, most have no health insurance while abroad and, therefore, no easy access to care.
- Lack of adequate interventions, such as outreach activities and peer education, by public health workers for persons with high risk behaviours, including commercial sex workers, drug users, returnees from abroad, and male homosexuals.
- Delays in initiating treatment of STDs because of patient's embarrassment and health worker's reluctance to ask questions and undergo appropriate examination and tests
- The sizeable number of STD patients that seek care from the private sector. This affects reporting and implementation of national treatment guidelines.
- Delays in the training of staff working in hospitals for STD detection and patient care.
- Absence of quality control in HIV testing laboratories, including blood banks.
- KAP studies show very uneven knowledge on HIV and the prevention of its transmission. Many people are still uninformed about the dangers of HIV transmission. Even fewer understand how to prevent. In the Estates only about 40% of women have ever heard of HIV/AIDS. Moreover, no KAP study on HIV/AIDS has been done in the Northern and Eastern provinces.
- There is a low usage of condoms among married and unmarried individuals.
- Stigma on condoms and on HIV persists due to insufficient health education.

Issues for Planning

Possible within existing resources:

- Health education to STD patients about the use of condoms for protection of partners and against re-infection.

- Need to expand curative STD care to include proper contact tracing and counselling to patients and with their permission their sex partners.
- Counselling of all HIV+ persons and with their permission their families and sexual partners.
- Establishment of an appropriate STD reporting system that includes the private sector but assures confidentiality of results of tests.

The following need new resources:

- Reinforcement of quality control in HIV testing laboratories, including blood banks and hospitals performing transfusion.
- Conduct of KAP survey in Northern and Eastern provinces as soon as possible.
- Conduct of massive health education for the public as well as for school children.
- Establishment of a system for community-based care and home-based care for AIDS as part of the future control programme. (But this is very hard when numbers are still small and people are scattered!).

6) Anti-Leprosy Campaign[2]

From ancient times until the recent past, leprosy was considered both highly contagious and impossible to cure. Of all the diseases that continue to plague humanity, leprosy has the most notorious history as the cause of deformity, disability, loathing and fear. All these myths and misconceptions have been dispelled with the new findings during last two decades. Today, leprosy is regarded as a mildly communicable disease, which does not need isolation of patients.

With the introduction of effective, short-term therapy by the WHO in 1983, isolation of the patients in asylums has become a thing of the past. Leprosy hospitals are being closed and patients live normal life while taking treatment. In 1991, the WHO set an elimination target of leprosy to endemic countries to be reached in 2000. By 2000, all endemic countries except 12 reached the elimination target. Leprosy programmes in the endemic countries, which were implemented through vertical components, have been integrated into general health service since 2000.

Leprosy control activities in Sri Lanka are being implemented through a vertical programme, Anti-Leprosy Campaign, of the Ministry of Health. Sri Lanka became the first country in the Southeast Asian region to achieve 100% coverage with MDT in 1983 and one of the first countries in the region to reach the elimination target in 1995, 5 years before the targeted year.

A technical committee started preparing for the integration of the activities of ALC into the General Health Service (GHS) in 1999 with the preparation of a blueprint. In preparing the blueprint, ideas expressed by the stakeholders during the focus group discussions and workshops held with stakeholders in General Health Service were taken into consideration.

Infrastructure for integration into general health service was strengthened by activities identified in the blueprint in the latter part of 2000. These activities included; training of medical officers, pharmacists and other stakeholders of the GHS; making available MDT in all health units; introducing simple registers and forms to collect essential data for monitoring purposes and launching a public awareness campaign to inform the public about the availability of drugs in all health units and also early signs of leprosy. Integration of leprosy elimination activities into the GHS was launched on World Leprosy Day – last Sunday of January – in 2001.

[2] Contributed by D/ALC.

With integration of leprosy services to the GHS, new case detection increased by 30%. However, re-registration and recycling of patients were observed in various districts. There is a possibility of over-diagnosis by MOs.

At the end of year 2001 – first year after integration – 2,302 new cases have been detected. Prevalence of leprosy increased from 0.6/10,000 (2000) to 0.8/10,000 (2001). Percentage of multi-bacillary patients remained same as the previous year. Both child and deformity rates have come down indicating that transmission is disrupted and patients are detected in the early stages, respectively.

The two provinces, Western and Eastern, have the prevalence higher than the elimination target (Figure 3.1.7). Colombo and Batticaloa have prevalence of almost 2/10,000. Five districts have prevalence slightly higher than the elimination.

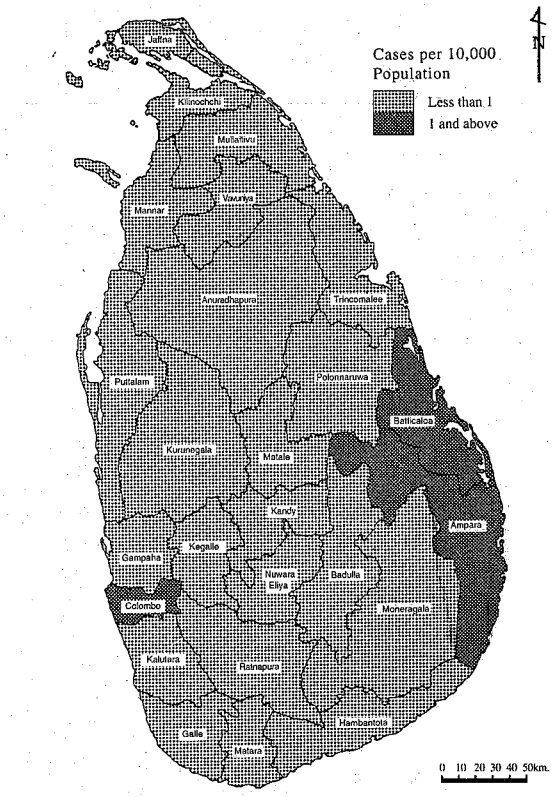


Figure 3.1.7 Distribution of Active Leprosy Cases (prevalence) by District, 2000

Source: Anti-Leprosy Campaign, MoH, prepared by Dept. Of Census and Statistics

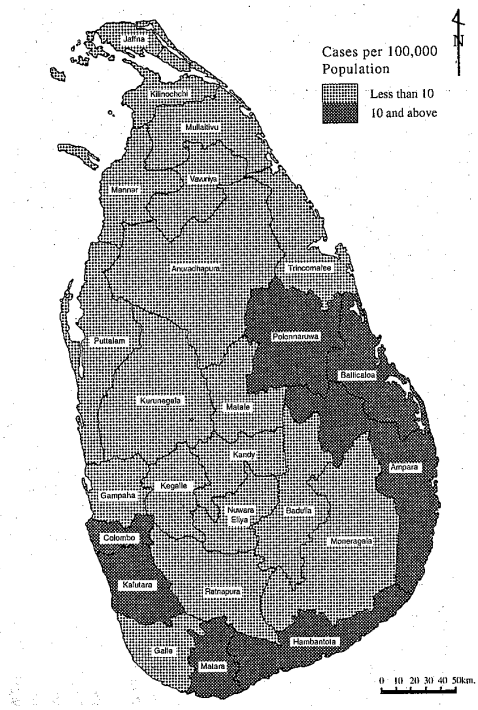


Figure 3.1.8 Distribution of New Leprosy Cases (incidence) by District, 2000

Source: Anti Leprosy Campaign, MoH prepared by Dep. Of Census and Statistics

Increase of case detection is observed in all districts except in Jaffna partly due to the intensive health education through the mass media that helped make this control programme very successful and famous around the country. The use of attractive TV spots, featuring a famous actress, has increased the people's awareness of the disease as well as preventive measures that need to be taken. People have become familiar with the signs/symptoms of leprosy.

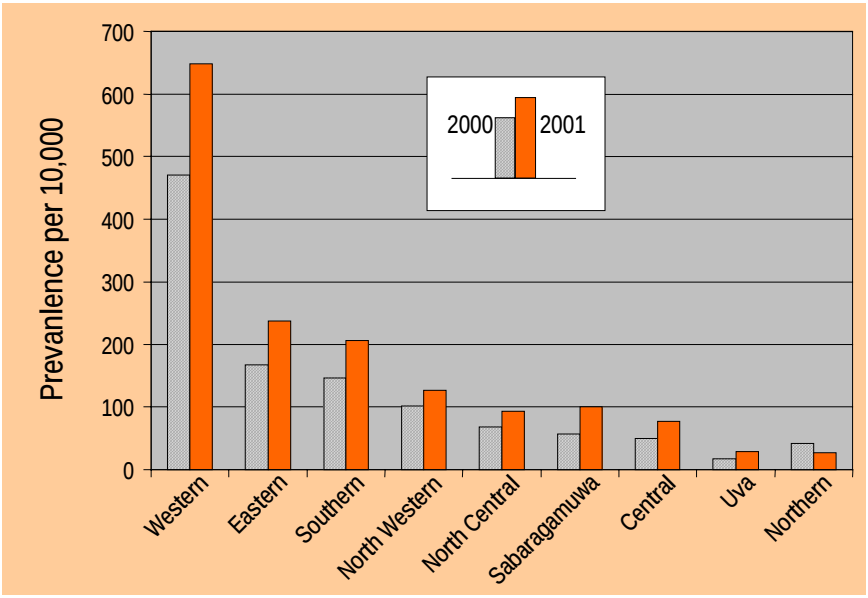


Figure 3.1.9 Prevalence of Leprosy by Province, 2000 & 2001

Source: MoH

Strengths

- Ownership of the programme is being shifted to regional health authorities and programme is functioning smoothly in most of the districts.
- Availability of Regional epidemiologist to implement the programme at district level.
- Willingness of stakeholders of (GHS MOs/RMOs, pharmacists and dispensers, etc.) in executing the new roles as instructed in the circulars on integration.
- Availability of simplified forms and registers, user friendly software on leprosy management information system at district level.
- Availability of Drugs (MDT) in all health units.
- Continued support from the two NGOs, Swiss Emmaus and Novartis Foundation for Sustainable Development, which provide MDT and assist in training programmes, logistics, health education activities (Social Marketing Campaign) and monitoring of the entire field programme of ALC. Services of two local consultants are provided through NFSD to improve the quality of programme and also to ensure the smooth transition of activities into GHS-
- Willingness of Dermatologists to train MOs at district level, to manage complications and to examine referred doubtful cases from the other hospitals in the district.

Weaknesses

- Non-availability of resources (Regional Epidemiologists) and other facilities, such as accessibility to the only computer available in some districts.
- Island-wide distribution of MDT is still carried out by the vertical component. However, action has been taken to integrate drug distribution into the GHS.
- Need for regular training programmes for newly recruited Medical officers.
- Non-availability of MOs from the centre to assist supervision and monitoring at field level.
- Extra allocation to the ALC in the event of two funding agency leaving the programme: This would be needed for training, monitoring and IEC activities.

Issues for Planning

- Capacity building of regional health workers: Continue the training programmes at district level; diagnosis and management (MOs of curative health units), epidemiological assessment and monitoring (MOHs and DDHSs).
- Monitoring of MDT distribution to be totally integrated.
- Decision has to be taken with regard to the two hospitals, which has limited number of old cured patients.
- Repealing of the leper's ordinance and outdated clauses in the establishment code.
- Request for additional allocation to carry out training programmes, other educational activities and also to maintain the surveillance in the event of funding agencies leaving the programme.

7) Public Health Veterinary Service (Rabies)

The Public Health Veterinary Service is the authorized agency for the control programme for rabies. Rabies is usually fatal in humans. Three hundred seventy-seven (377) cases of human rabies were reported in 1973. This figure was gradually reduced to 83 in 2001 due to massive health education and the control of dog rabies.

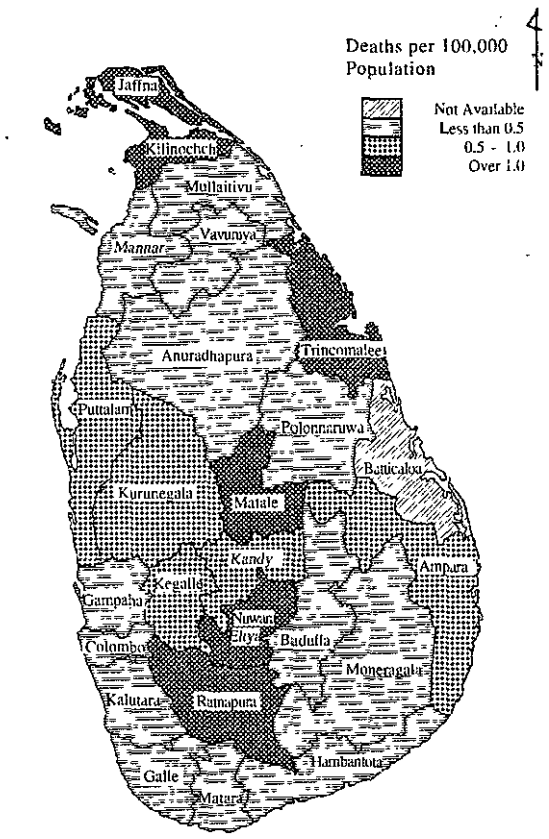


Figure 3.1.10 Distribution of Rabies Deaths by Health Region, 2000

Source: Medical Statistical Unit prepared by Dept. Of Census and Statistics

Several activities have led to this achievement, namely:

1) Provision of effective post-exposure rabies treatment to dog bite patients.
2) Regular implementation of mass dog vaccination.
3) Elimination of stray dogs and those suspected of being infected with the help of local authorities.
4) Massive health education on need to vaccinate dogs, and vaccinate people after being bitten. (?)
   The National Rabies Control Programme Statistical Bulletin (Public Health Veterinary Service, 2001) mentioned that the highest incidence of human rabies occurred in the Western provinces. The programme accomplished a total of 770,375 dog vaccinations and 119,761 cases of dog elimination. There was a dog ecology study conducted in 1997 that could be a good basis to develop universal vaccination strategies.
5) Ongoing development programs with issues identified by concerned authority.
   The Public Health Veterinary Services estimated the present cost of treatment (vaccine) for human rabies among dog bite patients. This amount will exceed Rs. 500 million due to an increase in the price of vaccine in the global market. The dog rabies control would be much more economical. However, so far the insufficiency of funds is still a major constraint to the conduct of a massive dog vaccine programme.

Strengths

Human mortality from Rabies has declined steeply between 1977 and 1985, but have since seemingly responded less to present strategies.

Weaknesses

- Coverage of the control programme in the Northern and Eastern provinces is low.
- There is a dog registration system under the responsibility of local authorities to determine how many dogs are under the supervision of owners. However, this is not functioning properly.
- There is a rise in the number of stray dogs due to cultural reasons. (People dump waste food on the road rather than bury them inthe soil).
- Preventive activities (dog vaccination and dog elimination or spaying) are more economical than curative (vaccine and dog bite patient treatment) activities, but are not given priority.

Issues for Planning

- Coverage of the control programme in the Northern and Eastern provinces should be increased.
- Preventive activities (family and temple dog vaccination) should be intensified and activities, such as the dog registration and spaying system should be strengthened.
- A system for proper dumping of left over food should be established through a massive health education campaign.

8) Non-Communicable Diseases Control[3]

In Sri Lanka, the number of people suffering from non-communicable diseases (NCD) has increased significantly. Collectively, NCD has overtaken communicable diseases as cause of deaths reported to the Registrar General (Figure 8.2.4). Many of the top causes of deaths in government hospitals are non-communicable disease, too (Figure 8.2.5 and Figure 8.2.6)

Moreover, recent researches suggest a link between poor nutrition before birth and in infancy and higher rates of ischaemic heart diseases and diabetes later in adult life. If incomes were to rise substantially as projected in Sri Lanka in the coming decades and rates of malnutrition were to decrease as well, then the outlook would be bright for the country. However, if malnutrition rates were to increase instead, then the situation would pose a big problem.

The further increase in NCD is also anticipated because the risk factors (Figure 3.1.11) are known to be almost constantly present in Sri Lankan life, starting from foetal life, infancy, childhood, adolescence, and up to adulthood. All the foetal, early childhood and adolescent risk factors are being tackled more or less systematically through MCH and School health, even if some staff are largely unaware of their importance as risk factors for NCD. So where low birth weight is still reported at 17%, it has been coming down slowly; the same goes for stunting and wasting (see nutritional status).

[3] The Director of NCD contributed some materials used in this section.

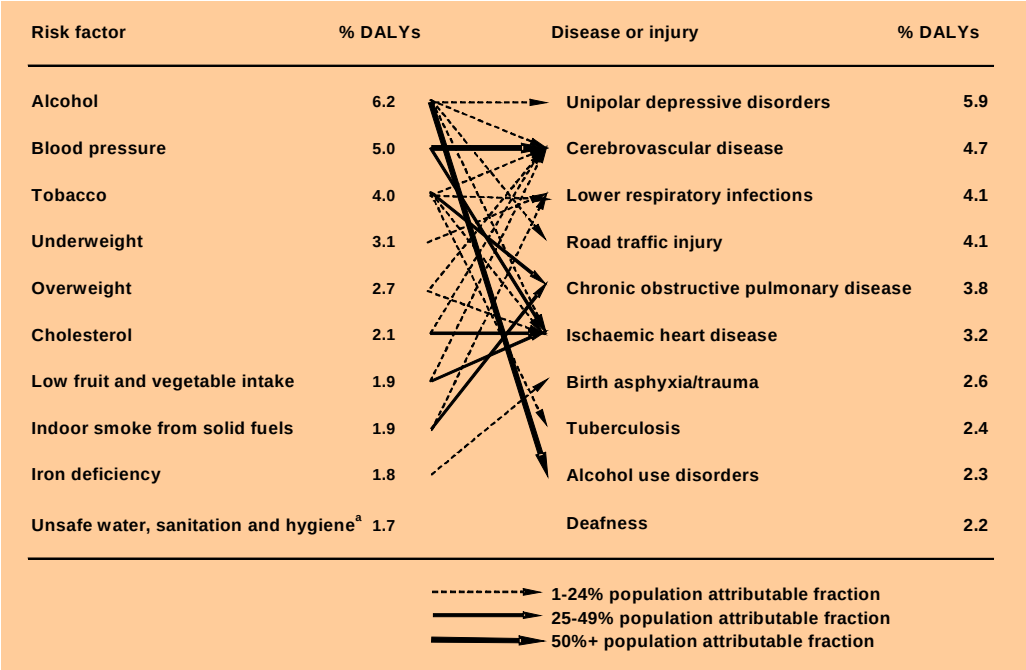


Figure 3.1.11 Ten Major Burden of Disease for Developing Countries with Low Child and Low Adult Mortality (AMR-B, EMR-B, SEAR-B, WPR-B)

Note: DALY is disability adjusted life years and can be thought of as one lost year of healthy life and the burden of disease as a measurement of the gap between current situation and the ideal where everyone lives to old age in full health.

[a)]Unsafe water, sanitation, and hygiene disease burden ? cause diarrhoeal diseases. The selected risk factors cause diseases in addition to those relationships illustrated, and additional risk factors are also important in the aetiology of the diseases illustrated.

Source: World Health Report 2002, WHO

The burden of NCD is greater than the communicable diseases because the medical and surgical treatment of conditions such as cardiovascular diseases, diabetes mellitus or cancer is extremely expensive. If the current rapid increase of NCD is left unchecked, it will have significant social, economic and health consequences. The most cost-effective way to combat the NCD epidemic is to devote our resources towards primary prevention.

The Ministry of Health, recognising the importance of the problem of NCD, has taken necessary steps to create a separate directorate in order to launch a comprehensive NCD programme throughout the country.

The Directorate of NCD identified the five major issues for planning:

a. It is of utmost importance to plan for primary prevention activities. Emphasis should be given to promotion of a healthy lifestyle throughout one's whole life. Specific school health programmes and programmes for youth have to be considered as long-term effective measures to prevent major NCDs. Primary prevention, moreover, could be directed first to patient families that are more at risk and their change will also help the patients. More aggressive preventive measures need to be implemented for other diseases/conditions, such as diabetes, accidents and suicides.

b. There should be provisions for basic screening at the primary health care level and followed by a proper referral across the different levels of care and basic health care package appropriate at each level of health care institute. NCD primary, secondary and

tertiary prevention through MoH curative facilities has still to be started in a systematic way.

c. In order to manage the considerable caseload, Sri Lanka should be prepared to provide better treatment facilities to major NCD as well. As there is a plan already to have more organised health care at different levels, screening and treatment of NCD could be incorporated into the proposed health care facility plan, too.

d. Being the focal point, the NCD unit of the Ministry of Health currently implements the national programme through the provincial set-up in which, coordination is being done by Regional Epidemiologists and Provincial MO/ Planning, at present. Establishment of a focal point (MO/NCD) at each provincial level, or preferably at the district level, will enable delivering a comprehensive NCD programme throughout the country. The focal point can liaise with civil society as there is a need to support widespread movement for lifestyle change.

e. The NCD operates with minimum resources. It conducts programmes using the existing health infrastructure so that these activities will be sustainable and have long-term effects. However, it needs more resources and expansion. It is vital to devote additional resources to primary preventions of NCD, which is the most cost-effective way to combat the increasing prevalence.

9) Cancer Control

National Cancer Control Programme has been established in 1980 based on the recommendations made by a WHO team to the Ministry of Health after a detailed study on mortality and morbidity in Sri Lanka.

Cancers have become the second biggest killer in the developed countries and in the developing countries, too. At present, out of all deaths above the age of 35 years, cancer has become the 5th commonest cause of morbidity and mortality.

The aim of the Cancer Control Programme is to reduce the incidence of cancer and its morbidity and mortality. This could be accomplished with due attention to both the relevant knowledge about cancer and to socio-economic factors and by the introduction of legislative measures.

Cancer Control Programme strategy comprises seven main approaches:

Primary Prevention
Secondary Prevention
Treatment of Patients
Management of Terminal Cases
Maintenance of Cancer registry
Rehabilitation of Cancer patients
Cancer Research

As a part of National Cancer Control Programme, five major projects funded by the WHO have been implemented, i.e.: 1. Awareness Programme for Primary Health Care Workers; 2. Community-based oral cancer awareness and screening pilot project; 3. Awareness programme on hazards of tobacco for trainee teachers; 4. Mobile exhibition; and 5. Mobile Cancer Screening Clinics.

National Cancer Control Programme has been conducting oral cancer awareness and screening programme in the estate sector since 1997, with the aid of Plantation housing and social welfare trust.

The Programme has implemented the data collection and analysis of cancer registry in every 5 years but because of lack of staff, data collection tends to be delayed.

Table 3.1.6 Staff of National Cancer Control Programme

Category of Staff	As of 31/12/2002
Administrative Grade MO (Director)	01
Dental Surgeon	01
Grade Medical Officer	02
PHI	01
PHNS	01
Clerk	03
Typist	
Data Entry Operator	01
Driver	02
Labour	04
Temporary Data Entry Operator	01

Source : MoH

10) Poison Control[4]

Figures 3.1.12 and 3.1.13 spell out the problem of poisoning through the deaths it causes. Most poisoning deaths are declared as suicides. While accidents have decreased in all age groups in the last 20 years, the young seem to have benefited most from the effort at educating people about the dangers, in fact in the last 10 years accidents among those who are over 65 years old have re-become more frequent. This might be due to a misclassification of suicides as accidents. Suicides have not decreased and in fact have become more frequent in the last decade.

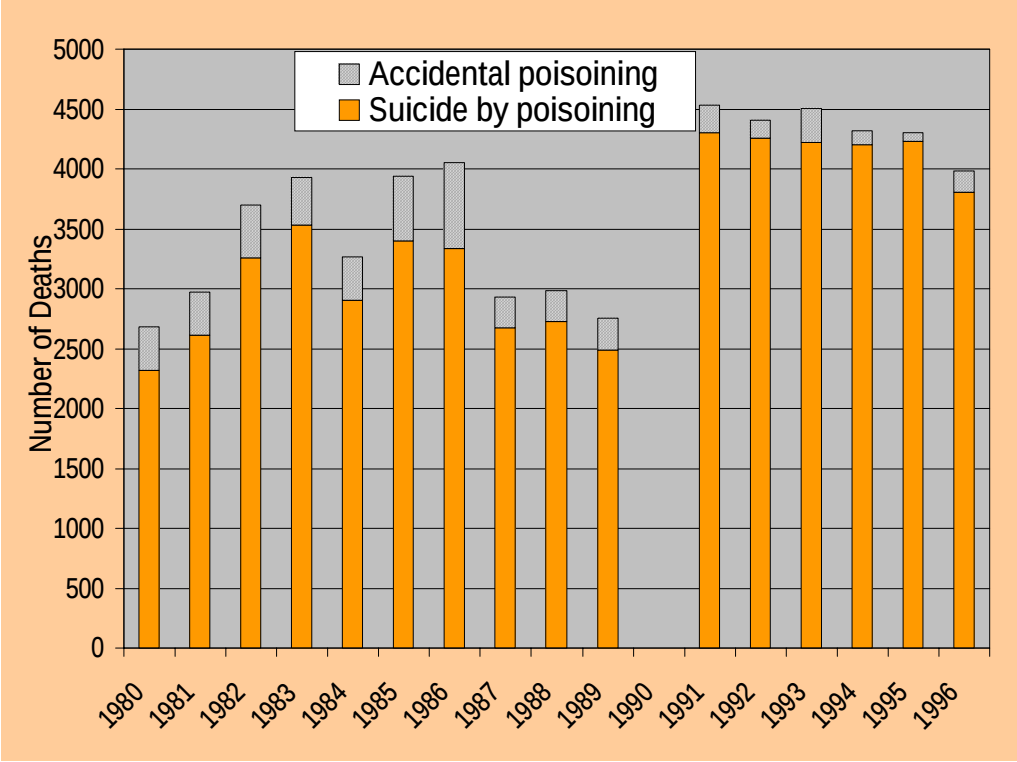


Figure 3.1.12 The Number of Deaths: Accidental Poisoning and Suicide by Poisoning, 1980-96

Source: Registrar General, 1980-96

[4] Contributed by the NPIC.

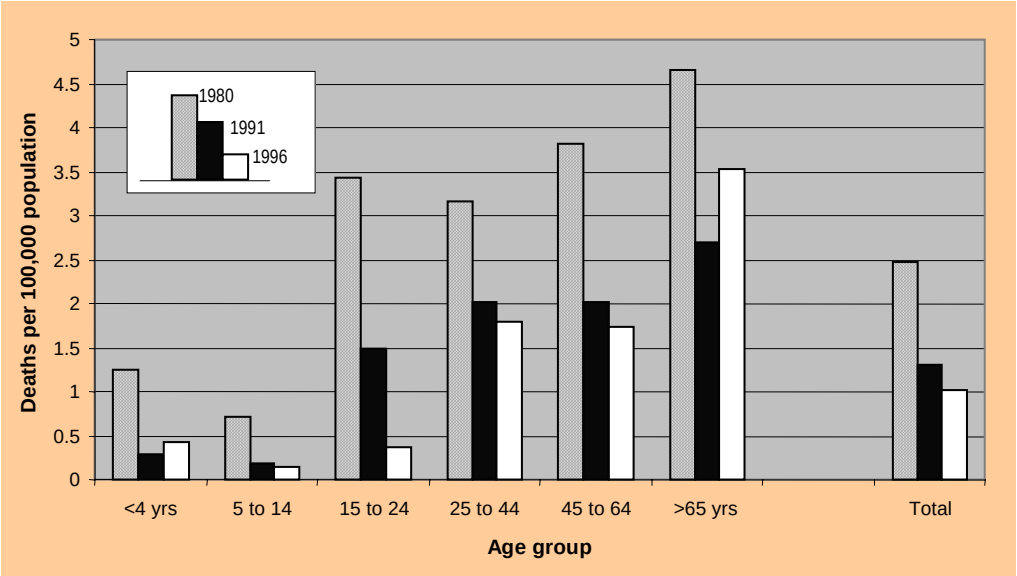


Figure 3.1.13 Deaths Caused by Accidental Poisoning by Age Group, 1980, '91, and '96

Source: Registrar General, 1980, 1991, and 1996

Poisoning control so far has followed four approaches:

1) Control of pesticides and insecticides and their packaging (necessary but insufficient for accident control);
2) Public education on the dangers (helpful for accidents, may be counterproductive for suicides);
3) Hotline (9-4 pm) on first aid and antidotes - it is used by care providers but not sufficiently known by the general public; and
4) ICU care in tertiary hospitals and a few secondary hospitals.

As one can see from Figure 3.1.12, these actions have had a favourable but insufficient effect; all need strengthening. The hotline needs to be open on 24-hour basis everyday of the week. There is also a need to inform the public on where to take patients and what to do before and during transport. Mental health counselling needs to take importance in case of suicide. Moreover, there is a need for education on first aid for poisoning. Last, but not least, there is a need to do mental health research and find out why so many young and old kill themselves. Social break down and economic stress have provoked suicide epidemics in India [5](potato growers, April 2003). Sri Lanka's very high suicide rate (7th highest in the world, highest for Asia) might be an expression of a much larger stress and suffering in rural populations due to strained economic situations.

Following consideration of the higher number of deaths occurring from poisoning in Sri Lanka, the National Poisons Information Centre was established in the year 1988 at the then Colombo General Hospital under the Ministry of Health Services, with the aim of providing patient management advice to all Health Personnel, in order to minimise the number of deaths. The International Development Research Centre, Canada, had granted funds under a three-year project to establish the National Poisons Information Centre (NPIC). NPIC is a full member of the International Programme on Chemical Safety of the World Health Organisation. It was formerly in the Outpatient Department near the Emergency Treatment Unit (ETU). Now it is adjoining the Medical Intensive Care Unit (MICU).

The functions of the NPIC are as follows:

[5] Chander Prakash, "Traders syndicate exploits farmers," *Tribune*, 3 Apr 03.

1) Presently, the Centre provides all the information relevant to any chemical substance, their nature and the management procedures to all doctors throughout the island.
2) Any other person if requested, will be provided with the information relevant to the substance.
3) Awareness programmes on prevention of poisoning, first aid and safe use of chemical, e.g. pesticides, etc.: This includes seminars, small group discussions, exhibitions, etc.
4) Articles published in journals.
5) Management of Poisoning, a book written by Prof. Ravindra Fernando on acute management of poisoning.
6) A handbook on First-aid measures in poisoning and prevention of poisoning will be published soon.
7) Posters and leaflets on Venomous snakes of Sri Lanka, toxic plants of Sri Lanka and preventing food toxicity, will be published soon.

In 2001, pesticides and pharmaceuticals accounted for 31% and 23% of the enquiries, respectively (Table 3.1.7). About six out of every 10 cases were suicides (Table 3.1.8).

Table 3.1.7 Distribution of Patients by Agent, 2001

Agent	Number of enquiries	%
Pesticides	154	30.8
Pharmaceuticals	116	23.2
Household/Leisure products	70	14
Industrial/Commercial products	67	13.4
Plants	37	7.4
Miscellaneous	14	2.8
Cosmetics/Personal Hygiene Products	11	2.2
Agrochemicals	9	1.8
More than one agent	7	1.4
Unknown	7	1.4
Veterinary products	3	0.6
Snake venom	3	0.6
Other animals (bites, stings)	1	0.2
Food and Beverages	1	0.2
TOTAL	500	100

Source: National Poisons Information Centre, Annual Report 2001.

Table 3.1.8 Distribution of Patients by Circumstances, 2001

Circumstances	Number of enquiries	%
Suicidal	307	61.4
Accidental	167	33.4
Other	21	4.2
Unknown	3	0.6
Homicidal	1	0.2
Occupational	1	0.2
TOTAL	500	100.0

Source: National Poisons Information Centre, Annual Report 2001.

Strengths

The strengths of the NPIC are:

- The Centre has Internet and E-mail access;
- It has reference materials on Toxicology;

- Its staff includes international consultant as the director, a medical doctor, 3 research officers and 2 other members.

Weaknesses

- Human resources - The permanent cadre is inadequate. Presently only 3 Research officers are in the cadre. To implement a 24-hour service by NPIC itself, the Centre needs more staff. The cadre should include medical doctors, research officers, nursing officers, librarian, data entry operators, and other paramedics.
- Infrastructure – The NPIC is accommodated in a very small space and it is hardly enough to carry out the functions smoothly. There is a need for a permanent facility. A permanent location with adequate space has to be provided to include all facilities (e.g., Treatment unit, Library, Research unit, Analytical Laboratory, Seminar hall).
- Finance - An annual grant is not allocated by the Department of Health Services or by the National Hospital of Sri Lanka, Colombo, to the NPIC in a separate vote.
- Communication facilities - have to be increased with more Direct telephone lines, fax etc.
- Services - Since no facilities are available in the NPIC at present for treatment, analysis, research, etc., all the aspects have to be considered in the development process of the NPIC. Presently, antidote monitoring and distribution are not done through the NPIC. There should be an arrangement to supply antidote through the NPIC to all the hospitals in Sri Lanka.
- Networking - Due to the poor networking with other hospitals, the NPIC does not get first hand information on all incidence of poisoning in Sri Lanka. A Central Data Bank has to be formed in the NPIC to obtain all Data with regard to incidence of poisoning occurring in Sri Lanka. A link should be introduced to relay Data from all the hospitals in Sri Lanka to NPIC. Also NPIC has to be linked with the Health Information Unit of the Ministry of Health.

Issues for Planning

The 1992 and 1997 Presidential Task Force recommendations are still applicable to date to reduce the rising incidence of morbidity and mortality from poisoning:

- For the NPIC to provide an efficient 24-hour service for health care professionals and doctors;
- For the NPIC to provide laboratory back-up services to analyse blood, urine and stomach contents to assist doctors in the management of poisoned patients; and
- For the NPIC to have the facility to supply antidotes to hospitals.

For the sustainability of the NPIC, an additional grant has to be allocated either directly or through the Ministry of Health.

11) Quarantine Services[6]

a. Organisation and Activities

Port Health Office comes under the Department of Health Services and carries out Quarantine activities of the Government under the International Health Regulations. In Sri Lanka, these activities are governed by the provisions of the Quarantine and Prevention of Diseases Ordinance.

[6] Information was contributed by Dr. H. D. B. Herath, Port Health Officer.

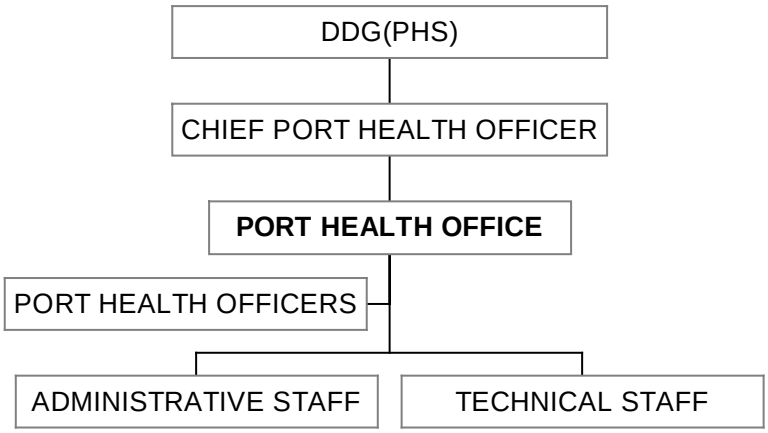


Figure 3.1.14 Organisational Structure of Port Health Office

The objectives of the Quarantine Services are:

- Prevention of entry of persons having communicable diseases into the country through its seaports and airports with special emphasis on yellow fever and plague;
- Prevention of entry of infected vectors and rodents into the country through these ports;
- Prevention of establishment of disease reservoirs in and around the ports; and
- Provision of necessary services and carrying out activities to achieve the above mentioned activities.

The major activities include inspections and granting of "Pratique" or health clearance for vessels and aircrafts arriving from foreign ports and airports; rodent control activities; and immunisation particularly against yellow fever and meningococcal meningitis for all persons destined to countries proclaimed by the WHO as endemic; and vector surveillance activities. The other activities include monitoring the quality of water provided to ships by the Sri Lanka Ports Authority; provision of "Radio Medical Services" to ships; food sanitation & control activities; training activities; release of dead bodies brought into the island; and implementation of other provisions of Quarantine Ordinance and International Health Regulations.

Table 3.1.9 Summary of the Activities at the Port Health Office, New Jetty, Colombo, 1997 to 2002

Year	Inspection and granting of Pratique to arriving ships	No. of De-ratting Exemption Certificates Issued	No. of Yellow Fever Vaccinations given	No. of Cholera Vaccinations given
1997	3,456	183	894	2,741
1998	3,693	183	692	2,159
1999	3,847	189	273	1,800
2000	3,711	189	259	139*
2001	3,484	166	325	-
2002	3,761	174	194	-

Note : *Production of Cholera Vaccine by the Medical Research Institute, Colombo, was discontinued in 1999 and is no longer provided at the Port Health Office.

Source: Port Health Office

All the activities at the Port Health Office are carried out exclusively with the use of government funds. No foreign funds are available at present. Income generated through vaccination and issue of De-ratting Exemption Certificates are credited to the consolidated fund.

b. Areas for Improvement

The Port Health Office at the port of Colombo is one of the oldest institutions in the Department of Health Services. Since its inception more than a century ago, it has played a very important role in preventing the entry of exotic communicable diseases into the country. In the early 20th Century, it was a major department of the colonial government. There were branch offices in many coastal towns. There was mass migration of people from India and in the absence of effective treatment methods, the Port Health Officer had immense powers to restrict, inspect and isolate passengers, crew and cargo coming into the island.

With the advent of modern preventive measures and resulted change of epidemiological patterns of the world together with the effects of globalisation the importance of the traditional role played by the Port Health Offices all over the world gradually diminished. However, the existence of port health services was not threatened by these developments in other countries. In addition to their traditional duties, Port Health Offices in many countries were given new functions such as food control activities, epidemiological surveillance, and environmental sanitation that are becoming increasingly important at present. Unfortunately, no such adaptations are observed in Port Health Services in Sri Lanka.

Technical staff consists of Medical Officers and Public Health Inspectors. Posts of Fumigation Officers remain vacant for the last 10 years or so and most of the activities that should be carried out by the staff of the Port Health Office are now carried out by other state agencies such as the Medical Research Institute and private sector agencies.

The Port Health Officer is supposed to go on board of every ship arriving at Colombo port from foreign ports before all others and he should inspect the ship for evidence of communicable diseases based on the information provided by the master of the ship. In the absence of such evidence, he should issue a clearance certificate called “Pratique”.

Granting Pratique is an important and legally empowered activity under the International Health Regulations. It is necessary to continue this activity, at least as a skeletal service, even in the absence of apparent threat of communicable diseases as it could be intensified as and when required. Nevertheless, there is no scientifically sound mechanism to decide on the intensity and the thoroughness of inspection. It is supported neither by a comprehensive database nor by an information system.

At present, only the Weekly Epidemiological Report (WER) of the WHO coming through ordinary post is the only way to find out the epidemiological situation in neighbouring countries. Port Health Office does not have e-mail facilities to receive this information electronically as done by similar institutions in other countries.

Information on the arrival of ships at the port is received over the telephone and it is a very unreliable way of communication as it is extremely difficult to prove the sending or the receiving of a message. In most of the occasions, arrival of ships is not informed in time especially, during the night. Provision of a fax machine to the office would have improved this situation to a great extent.

Vehicle provided to the Port Health Office is old and dilapidated. Frequent breakdown and time consuming repair process has compelled medical officers to use their own vehicles to go to the terminals where ships berthed.

Even though the Port Health Officer is an authorized officer empowered to access into any part of the port to carry out his duties, he has to get permission from the Sri Lanka Ports Authority to enter the port. Moreover, he is not allowed to bring into the port any persons he may think necessary to carry out his duties. Even the present group of PGIM trainees had to wait at the entrance of the port more than an hour to get permission to enter the port. This piteous state of affairs needs to be rectified immediately.

General environment and the appearance of the Port Health Office are also in deplorable condition. As a place where interactions take place with the international community, this office should have been maintained in a better condition to project the image of the country.

c. Issues for Planning

Long existing vacancy of the post of Chief Port Health Officer should be filled as early as possible. Port Health Office should be assigned with new functions that need to be carried out to cover the emerging issues such as food and environmental sanitation at the port. Arrangements should be made to preserve the authority of the Port Health Officer by issuing him with an identity card depicting his authority and functions and to inform the employees of the Sri Lanka Port Authority, especially the Security, not to interfere with the duties of the Port Health Officer.

Regulations related to the activities of the Port Health Office have not been updated for the last four decades or so and need urgent replacement with new regulations applicable to present day requirements.

Vacancies at the fumigation office should be filled immediately as the knowledge and experience of the older generation of technical officer will not pass to a new generation once the former is retired.

The office needs a face-lift, at least to be on par with the other government offices situated in the same building. Unwanted documents and condemned stores items should be disposed off as early as possible while adequately preserving the valuable old documents so far neglected. A computer of a reasonable standard should be provided to the office as it could be used as a word processor for the office, to create and maintain relevant databases, and to improve communication facilities such as e-mail. A fax machine and e-mail facility with separate telephone lines should be provided to improve the communication capabilities.

3.2 CURATIVE AND REHABILITATIVE ACTIVITIES

Technically, health services can be provided in different settings. Preventive and promotive services may be provided in hospitals whereas curative and rehabilitative services may be based in communities. In Sri Lanka, there is a clear dichotomy. As discussed in the previous section, units within the MoH formulate policies and plans, provide technical assistance to lower levels, and mobilise resources for preventive and promotive services. The Medical officers of Health, PHN, PHM, and PHI are the implementers of these programmes in the field. When it comes to curative and rehabilitative services, the heads of teaching hospitals report directly to the central MoH whereas those of other levels of hospitals report to the respective PDHS.

This section is divided into three parts:

Standards of Services;
Trends in Provision/Utilisation of Outpatient Services; and
Trends in Provision/Utilisation of Inpatient Services.

Discussions on the number of hospitals, bed strengths and maintenance of buildings are covered in Section 4.4, Physical Facility, whereas the issue of quality is addressed in Section 7.4.

(1) STANDARDS OF SERVICES

The Standards

For purposes of defining the standards of services, the ten major services that are provided in health facilities are as follows: outpatient; clinics; radiology; laboratory; inpatient; catering; intensive care; operation; ambulance; and health education. The health facilities in Sri Lanka can be categorised into the following:

NHSL;
Tertiary hospital;
Teaching hospital;
Provincial hospital;
Base hospital;
District hospital;
Peripheral units
Rural hospitals;
Prison hospitals;
Specialised hospitals;
Other hospitals;
Central dispensaries and maternity homes;
Maternity homes;
Central dispensaries;
Estate hospitals; and
Private hospitals.

Table 3.2.1[7] Existing Standards of Services for Different Types of Health Facilities

Serial No.	Types of Services	Types of Health Facilities										
		NHSL	Teaching	Tertiary	Provincial	Base	District	Peripheral	Rural	CD & MH	MH	CD
1.	OPD	+	+	+	+	+	+	+	+	+	+	+
2.	Health education	+	+	+	+	+	+	+	+	+	+	+
3.	Inpatient facility	+	+	+	+	+	+	+	+	+	+	
4.	Catering service	+	+	+	+	+	+	+	+	+	+	
5.	Ambulance Services	+	+	+	+	+	+	+	+	+	+	
6.	Surgical theatre	+	+	+	+	+						
7.	Intensive care	+	+	+	+	*+						
8.	Radiology											
8.1	X-ray	+	+	+	+	+						
8.2	US scanning	+	+	+	+	+						
8.3	CT scanning	+	+									
8.4	MRI scanning	+										
9.	Laboratory Services											
9.1	Biochemistry	+	+	+	+	+						
9.2	Haematology	+	+	+	+	+						
9.3	Histopathology	+	+	+	+							
9.4	Microbiology	+	+	+	+							
10.	CLINICS											
10.1	Child welfare		+	+	+	+	+	+	+	+	+	+
10.2	Family planning		+	+	+	+	+	+	+	+	+	+
10.3	Obstetric		+	+	+	+	+	+	+	+	+	+
10.4	Medical	+	+	+	+	+						
10.5	Surgical	+	+	+	+	+						
10.6	Paediatric		+	+	+	+						
10.7	Gynaecology		+	+	+	+						
10.8	ENT	+	+	+	+	*+						
10.9	Eye		+	+	+	*+						
10.10	Psychaitric		+	+	+	*+						
10.11	Orthopaedic	+	+	+	+							
10.12	Rheumatology	+	+	+	+							
10.13	Dermatology	+	+	+	+							
10.14	Oncology	+	+	+	+							
10.15	Onco-surgery	+	+	+	+							
10.16	Nephrology	+	+	+								
10.17	Cardiology	+	+	+								
10.18	Cardio-thoracic surgery	+	+									
10.19	Neurology	+	+									
10.20	Neuro-surgery	+	+									

Note: "+" available in all institutions while "*+" not available in all institutions. There are small laboratories in some District s and lower hospitals that provide negligible service.

Source: MoH

Table 3.2.1 shows the general types of health services that are recommended for different types of health facilities. As a standard, the list sets the goal for planning on one hand and is evolutionary on the other hand. Evolutionary because, as new technologies are adopted, they are added in the list as

[7] Because of their unique nature, special hospitals, prison hospitals, other hospitals, estate hospitals and private hospitals are excluded in the analysis.

well. However, the list has not been designed as a regulatory tool; therefore, it has not and could not serve that purpose.

The 11 health facilities in Table 3.2.1 could be classified into seven depending on the types of services they are expected to provide.

Category 1:	Central Dispensaries
Category 2:	District Hospital, Peripheral Unit, Rural Hospital, Central Dispensary and Maternity Homes, and Maternity Homes These facilities are categorised as one because they are all supposed to provide similar package of services even if there are variations in levels and specifics of care.
Category 3:	Base Hospital
Category 4:	Provincial Hospital
Category 5:	Tertiary Hospital
Category 6:	Teaching Hospital
Category 7:	NHSL

All types of facilities are expected to provide outpatient and health education services. Except for central dispensaries, all the facilities should provide inpatient, catering and ambulance services. Except for the NHSL, all the facilities should provide child welfare, family planning and obstetric services.[8] Expected to be available only in base and other higher level hospitals are the clinics (medical, surgical, paediatrics, gynaecology) as well as the following complicated procedures: surgeries requiring operation theatre; X-ray and ultra-sonography; biochemistry and haematology. Intensive care, ENT, eye, psychiatry, orthopaedics, rheumatology, dermatology, oncology, onco-surgery, histopathology & microbiology are standards for provincial, teaching, tertiary hospitals and NHSL. What makes NHSL, tertiary and teaching hospitals unique? The three are expected to provide specialists services in cardiology and nephrology. Only the NHSL and selected teaching hospitals, though, can provide services in the areas of cardio-thoracic surgery, neurology, neuro-surgery, and computerised tomography scanning. Magnetic Resonance Imaging is available only in NHSL.

Standard-Actual Gap

Analysis of the actual availability of services (Table 3.2.2) based on interview of key informants revealed 10 major findings:

1) Among the standard services, there is none that is never available or provided by any type of facility;
2) No standard service is consistently available in all facilities belonging to categories 1 and 2;
3) Facilities belonging to categories 3 to 6 always have OPD and major specialty clinics (i.e., medical, surgical, paediatrics, gynaecology, obstetrics);
4) X-ray and ultrasound scanning facilities are always available in all categories 4 to 6;
5) The other services that are consistently available in categories 6 and 7 are inpatient, catering, ambulance, intensive care, surgical theatre, and health education;
6) All category 6 facilities are reported to have ENT, eye and psychiatric clinics;
7) Only Category 7 meets all the standards of services;
8) Some higher level facilities (categories 3 to 6) provide services that are beyond the standards (e.g., MRI in teaching and tertiary hospitals and CT scan in tertiary hospitals) but this does not happen among lower-level facilities;
9) The probability that standard services are available in all facilities is greater among higher level facilities; and

[8] Aside from these three services, NHSL is also not expected to have clinics for paediatrics, gynaecology, ophthalmology, and psychiatry.

10) Conversely, the probability that standard services are available in some facilities is lower among higher level facilities.

Table 3.2.2 Actual Services Available in Different Types of Health Facilities

Serial No.	Types of Services	Types of Health Facilities										
		NHSL	Teaching	Tertiary	Provincial	Base	District	Peripheral	Rural	CD & MH	MH	CD
1.	OPD	2	2	2	2	2	1	1	1	1	1	1
2.	Health education	2	2	2	1	1	1	1	1	1	1	1
3.	Inpatient facility	2	2	2	1	1	1	1	1	1	1	
4.	Catering service	2	2	2	1	1	1	1	1	1	1	
5.	Ambulance Services	2	2	2	1	1	1	1	1	1	1	
6.	Surgical theatre	2	2	2	1	1						
7.	Intensive care	2	2	2	1	1						
8.	Radiology											
8.1	X-ray	2	2	2	2	1						
8.2	US scanning	2	2	2	2	1						
8.3	CT scanning	2	1									
8.4	MRI scanning	2										
9.	Laboratory Services											
9.1	Biochemistry	2	1	1	1	1						
9.2	Haematology	2	1	1	1	1						
9.3	Histopathology	2	1	1	1							
9.4	Microbiology	2	1	1	1							
10.	CLINICS											
10.1	Child welfare		1	1	1	1	1	1	1	1	1	1
10.2	Family planning		1	1	1	1	1	1	1	1	1	1
10.3	Obstetric		2	2	2	2	1	1	1	1	1	1
10.4	Medical	2	2	2	2	2						
10.5	Surgical	2	2	2	2	2						
10.6	Paediatric		2	2	2	2						
10.7	Gynaecology		2	2	2	2						
10.8	ENT	2	2	1	1	1						
10.9	Eye		2	1	1	1						
10.10	Psychaitric		2	1	1	1						
10.11	Orthopaedic	2	1	1	1							
10.12	Rheumatology	2	1	1	1							
10.13	Dermatology	2	1	1	1							
10.14	Oncology	2	1	1	1							
10.15	Onco-surgery	2	1	1	1							
10.16	Nephrology	2	1	1								
10.17	Cardiology	2	1	1								
10.18	Cardio-thoracic surgery	2	1									
10.19	Neurology	2	1									
10.20	Neuro-surgery	2	1									
	No. of Standard Services	28	34	44	36	27	8	8	8	8	8	5
	% of services never available	0	0	0	0	0	0	0	0	0	0	0
	% available in all facilities	100	50	32	22	22	0	0	0	0	0	0
	% available in some facilities	0	50	68	78	78	100	100	100	100	100	100

Note: "2" always available in all institutions while "1" available in some institutions

Source: MoH

As previously mentioned, all facilities are expected to provide outpatient services. Unfortunately, there is no formal differentiation in the levels of care of OPD for each level of hospital. There are no clinical guidelines and no clear definition of what different providers should do, although there is more of a customary limitation on nurses and paramedics on what they cannot do, even though technically they would be capable to learn and do safely.

There is yet a need to develop clinical norms for OPD or IPD that seek coherence, cost/ effectiveness, quality and responsiveness to needs and expectations. For example: in all OPD vital signs should be taken by nurses systematically; they should be taken upon entry to permit to screen emergencies out of the waiting line and should start a full diagnostic work-up. With clear clinical guidelines, nurses could order lab tests even before the doctor does a physical examination. Again, norms need to define whether doctor, nurse, or either should do a history based on clinical guidelines. Norms need to define that physical examination should be performed on all patients and what the minimum is depending on leading symptom. In terms of lab tests, this needs to be defined by leading symptom for each patient and conversely each hospital should do all the testing relating to the diseases it should care for. For example, glycaemia testing should be provided in all facilities where there are internal medicine clinics and in the primary care units to which they counter refer for follow up.

Health information could and should be collected from OPD with the same degree of precision and specificity as IPD health information. This would form a much better epidemiological basis for monitoring services and their quality and for planning.

Hospital Re-Categorisation

Comparison of the proposed re-categorisation of hospitals and the existing hospitals leaves one without a clear guidance on functional rationalisation and improved quality. The re-categorisation seems to recommend a big expansion of district level services without giving guidance on functional rationalisation and improved quality. This might mean then that there will be more government hospitals with bigger capacity to receive patients but with services that will be even more inadequate because personnel and supplies would be even more stretched. By raising the bar of standard of volume of service, quality would not only improve automatically but might tacitly be lowered by raising the volume of IPD inequity in the provision of curative services might worsen.

Relationship among Hospitals

In Sri Lanka, the facilities are independently managed by their institutional directors or heads. Networking among facilities does not exist in a formal manner. There are no formal relationships between facilities either of same or different levels. Sri Lanka has a collection of facilities that have MoH as policy maker and alternatively MoH or Provincial Council (with central subsidy) as fund sources, and so far no one is monitoring.

As discussed in Section 3.7, there is really no well-established referral system in the country. Nonetheless, patients move from one hospital to another mostly on their own decision. When they are referred, they are usually not referred back for follow-up management and so far supplies and staffing have not be done taking possible back referral into account.

(2) TRENDS IN PROVISION OF OUTPATIENT SERVICES

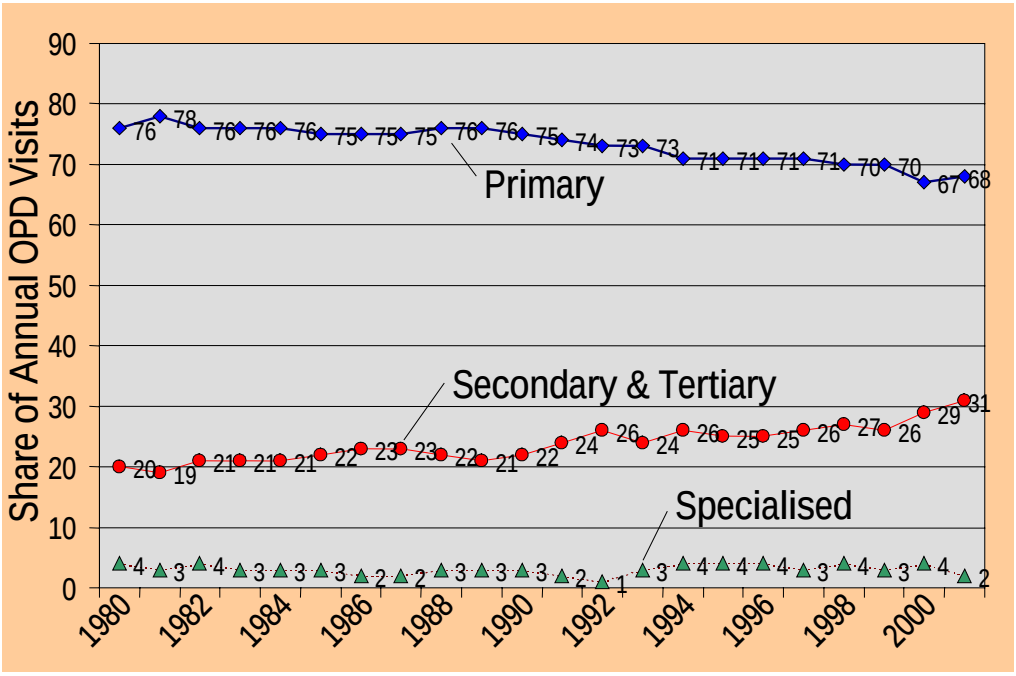


Figure 3.2.1 Share of Annual OPD Visits at Sri Lanka Government Health Facilities, 1980-2001

Source: Annual Health Bulletin

Figure 3.2.1 represents the activities at the outpatient departments of all government health facilities in Sri Lanka. It may reflect the provision of services or their utilisation. Whatever the case may be, the share of OPD visits at primary care institutions has been on the decline. Within a 20-year period from 1980, it has reduced by 8 percentage points. Where have the patients been going? It seems they have shifted to secondary and tertiary facilities such that they have contributed to the jump in the share of annual OPD visits from 20% to 31% and/or a few patients might prefer to utilise private[9] facilities since the 90s.

(3) TRENDS IN PROVISION OF INPATIENT SERVICES

Admissions

The year 1993 seems to be a milestone in the history of inpatient services. That year saw the shift in the share of annual admissions. Previously, primary care facilities had the biggest share. In that year, the number of admissions in secondary and tertiary overtook those in primary care facilities. While the number of admissions in specialised hospitals seems to be stable as a share of the total, the gap in the number of admissions between the other types of facilities seems to widen through the years. While six out of every 10 patients were admitted in primary facilities in 1980, the same number was admitted in secondary and tertiary facilities twenty years later.

[9] Figure 2.5.7 shows a downward trend in the visits to private western providers.

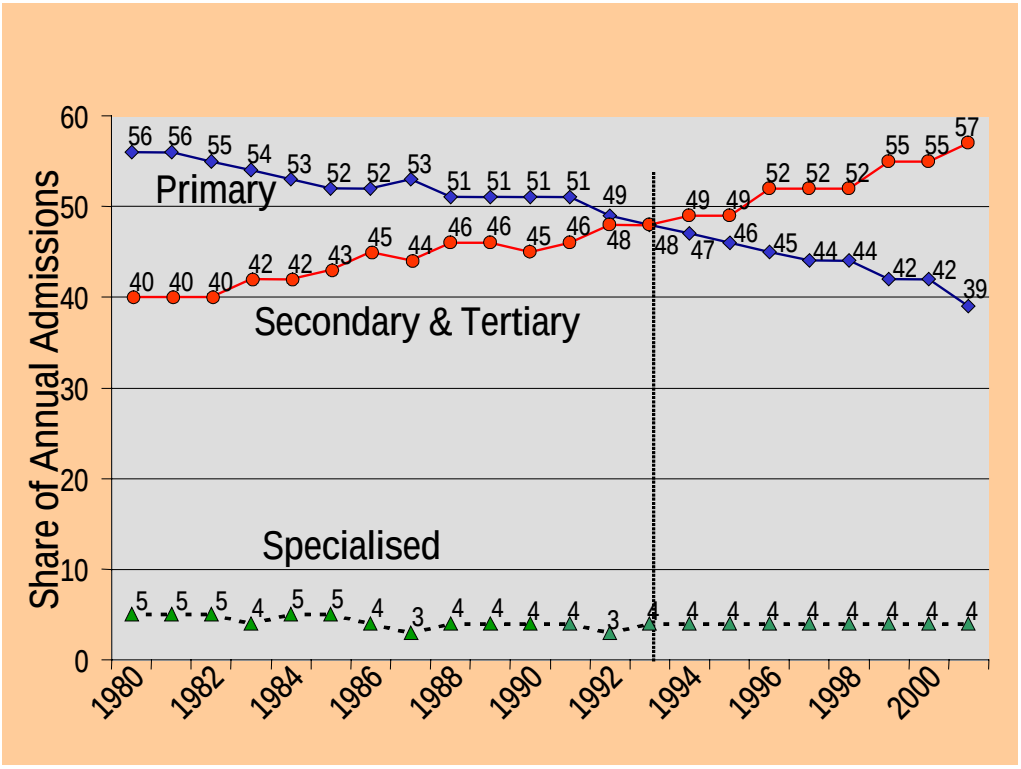


Figure 3.2.2 Share of Annual Admissions at Sri Lanka Government Health Facilities, 1980-2001

Source: Annual Health Bulletin

What is happening?

This phenomenon seems almost wholly due to a shift in financing. The most plausible hypothesis is that there are factors that drive patients away from primary care facilities. They are all related to lack of tests, drug supplies and even personnel.

Considering that the number of admissions at private hospitals increased by 10% between 1999 and 2000 (Table 3.2.2), could the taste of the public be changing? Probably that is a less powerful but plausible explanation also for the shift from primary to higher level facilities be a reflection of patients' changing preferences. The increase in private OPD may be mostly driven by the convenience of their opening hours and their lower opportunity cost. Lastly, improvement of transport has improved accessibility of some of the higher level institutions, which may combine to drive people to go where they hope to find all the package of services.

Could it be driven by concrete physical improvements in secondary and tertiary facilities?

At this point this is unlikely but it is a factor to remember for the future. Improvement of primary care should come first, not only because it will lead to lesser cost to the nation and better equity but also because people need to relearn their usefulness.

The financial implications of the trend are ominous as secondary and tertiary institutions are much less cost/effective for common illnesses and so a lot is spent without benefiting anyone. Moreover, as spending gets thinner, service packages become more and more incomplete (none or few diagnostics, no counselling) and inequity widespread, as the poor cannot afford to pay for all missing tests or drugs.

How can we reverse the trends?

IPD admissions are in a high percentage, inappropriate and wasteful as indicated by a high frequency and a low duration. No special study has been done on this but one can venture that better than 50%

are inappropriate (all those below the median value of duration 3.8 days). Clinic visits similarly are often inappropriate and cursory (less than 2 min) and could profitably be done at primary care institutions once the diagnosis and treatment schedule is known. This might by itself reduce the clinic loads to about 15% of current loads (based on 2 productive clinic visits a year per chronically ill person versus 10 follow up visits) and leave time for a better quality and a more complete package of care. This implies that the primary facilities need to be improved in quality and convenience to be more attractive and in particular their OPDS should become high quality. This will increase cost/effectiveness as well as reduce total cost of care to the nation (patient and government)

Planning for rational hospital development

The needed reallocation of resources to primary facilities should be for personnel, training, supplies and some basic equipment and should avoid capital expenditures except for facility renovation for safety and hygiene.

Developments in higher level facilities must be focussed on increased functional rationalisation and delivery of care responsive to people's needs and Sri Lanka might consider a careful technological and financial assessment of tertiary care needs a priority. Until such assessment is accomplished, capital investment in tertiary care might be slowed down or even stopped. These are some of the issues for planning hospital services.

Average Length of Stay

The average length of stay at all levels of government facilities is on the downward trend (Figure 3.2.3). For primary facilities, it declined from four in 1980 to three days in 2000. During the same period, it was reduced from seven to four days for secondary and tertiary facilities. The narrowing in the gap between the length of stay at primary facilities on one hand and secondary and tertiary facilities on the other hand seem to hint at the types of patients that are being admitted in the latter (not very sick) and the type of services provided (no complex work-ups, simple drug treatment).

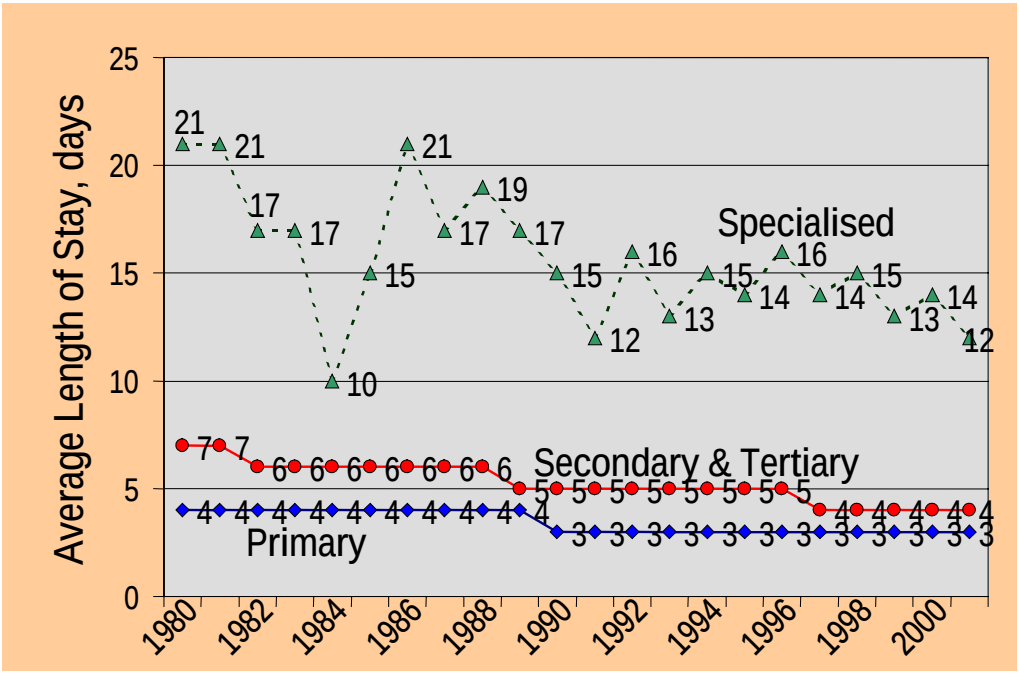


Figure 3.2.3 Share of Annual Average Length of Stays at Sri Lanka Government Health Facilities, 1980-2001

Source: Annual Health Bulletins

As such, should there be a review of admission practices? Should there be a formal policy to guide admissions that will protect the interests of the patients, admitting officers and health institutions? Should there be longer consultation hours, so that a patient can be receiving services without needing to be admitted? Alternatively, can there be two types of admissions, one for those unable or unwilling to go home and needing a roof, and another for those needing close supervision and real services?

There is another way of interpreting the declining trend in the average length of stay. As there are more inpatients sharing limited resources, could it be that no one is getting a full service anymore?

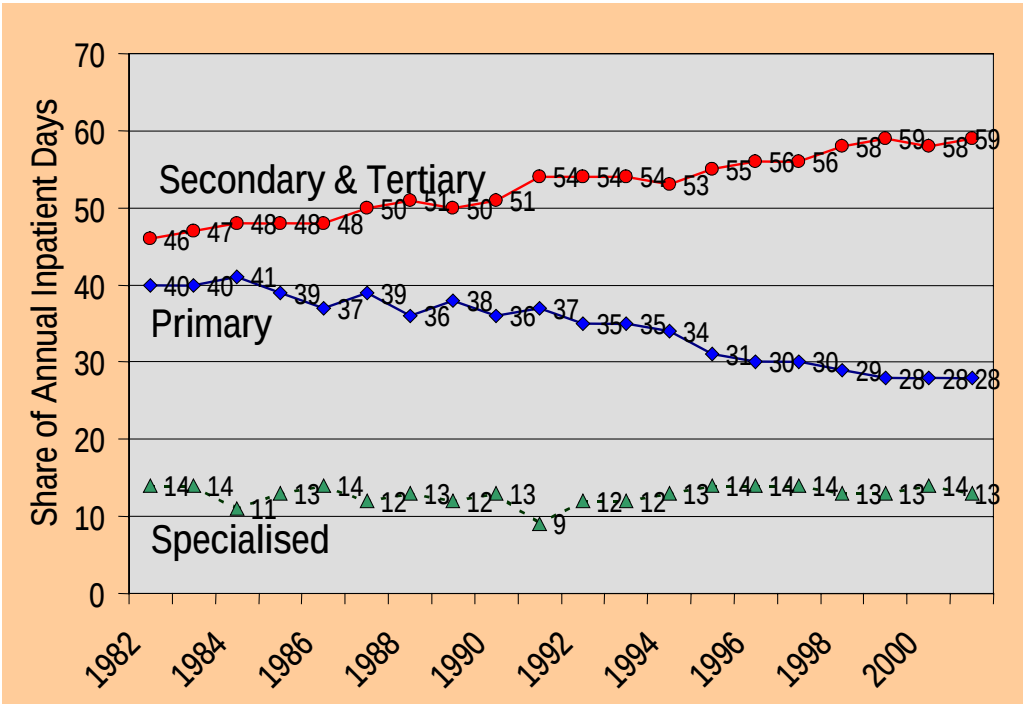


Figure 3.2.4 Share of Annual Inpatient Days at Sri Lanka Government Health Facilities, 1980-2001
Source: Annual Health Bulletin

The inpatient days echo the trends in admissions and length of stay. During the initial years, the gap can be explained by the longer duration of admissions in secondary and tertiary hospitals. However, as the gap in share of admissions widened, so did the gap in inpatient days (Figure 3.2.4), probably as primary care admissions became more trivial and perceptibly providing a roof but little or no care.

The sharp decline in inpatient days explains the very low bed occupancy rates from district downwards. The decision to upgrade range of services and quality of services would help to decongest higher level IPD, and make more efficient use of existing beds at the lower level.

If this upgrading of range and quality is not done, efficiency would be served by reducing the number of beds to current needs, which is about 30% of existing bed strength at district and below.

In other words re-categorisation as proposed in 2003 needs upgrading of quality and range of services, otherwise, the further increase in beds available at district level and below will be wasted.

3.3 SOCIAL SERVICES

(1) SITUATION

Traditionally, Sri Lanka's governmental health services had been provided to the people more or less as a welfare facility since the consumer has not had to make any direct payments to obtain services. Even though this has been an enormous strength within the health sector enabling Sri Lanka's health indices to be superior to many of it's neighbours in the region and making it on par with some of the more developed countries, the time has come now to re- evaluate the system.

Like many countries in the West, Sri Lanka too is fast becoming a nation with a majority of ageing people. The proportion of the population aged 30-59 years has increased, from 29% in 1981 to 35.3% in 1994. It is expected to increase up to 37% in 2021 and up to 44% in 2042. The population over 60 in 2000 is projected to increase from 10% in 2000 to 15% in 2015, and to more than 20% in 2030.

These factors indicate that the health service needs of the future would be very different to the needs of the present. Health services would have to cater to the many physical, psychological and rehabilitative health needs of the increased greying population. This would mean establishment of new services and expanding some of the existing services.

At present, the services offer no special privileges for elders other than having separate queues in the OPD and in the pharmacy when collecting the prescribed drugs. There are no personnel in this country specialised in geriatric medicine. Separate institutions that cater very specially to the health needs of the elderly alone are also virtually non-existent.

(2) RECOMMENDATIONS

Since there is no social security system in Sri Lanka providing unemployed elders with a governmental allowance and those who would be drawing governmental pensions would be minimal, there should be a health welfare system for the elderly in the future.

With the increase in the numbers in the future one could expect hospital wards to be filled with old people either due to acute conditions such as fractures and accidents and acute chronic illnesses arising from the increase in non-communicable diseases such as diabetes and hypertension. However, the treatment that the hospitals will be able to offer will be limited and the time stayed in the wards will have to be minimised to prevent overcrowding. Nevertheless, what would be the alternative once the patient is discharged? Would the home and community be able to care for the person until he is fully rehabilitated? If not, is it time to think of some sort of a half way home where the patient is completely rehabilitated?

At present, there are a few day care centres for the aged that are administered by NGOs such as HELPAGE. These could be equipped with medical facilities as well cater to the health needs of the elderly.

Strengthening community care for the elderly and creating a post of a community nurse for the elderly who are looked after at home could also be another suggestion.

3.4 INTERSECTORAL ACTIVITIES

(1) SCHOOL HEALTH

The number of students in Sri Lanka is 4.3 million or about 25% of the total population. There are 9,972 government schools with a current enrolment rate of 92% for children at the age of five. Fifty-three percent (53%) of schools have more than 200 students. The School Health Programme is being implemented jointly by the Health Education and the Family Health Bureaus. Its goals are:

1) To ensure that children are healthy,
2) To ensure that the children are capable of promoting their own health as well as the health of their family and community, and
3) To ensure that the children are able to optimally benefit from educational opportunities available to them.

Three main institutions contribute to SHP, namely:

1) Health Education Bureau for "School Health Clubs"
   About 1,500 out of 9,900 schools have been carrying out this activity. This approach is similar to the "Child to Child Programme". The concept is very interesting; however, one weakness is that the leadership in the clubs has been taken over by teachers. Moreover, there are very little or no recreational or fun activities included in the programme.
2) Family Health Bureau
3) School Medical Inspections (SMI)
   This refers to the students' physical check-up conducted by the Public Heath Inspector. During the SMI, the PHI checks for wt, ht, visual acuity and hearing as well as gross orthopaedic problems. This examination is done for students of grades 1, 4, and 7 in schools that have more than 200 students, and for students of all grade levels in schools that have less than 200 students. No national report has been made available on the School Medical Inspection for more than 10 years now. The SMI report is a potential good source of information on the school children's nutritional condition using the growth monitoring chart as basis. However, since the objectives of this check up seem to be quite unclear to workers. It is not clear how well individual problems are followed up with teachers and or parents and how effective referrals are. Moreover, there may be some sloppiness in data collecting and recording and therefore concern about data accuracy and reliability.
   The first report on school medical inspections that would describe the national situation will be available in September 2002.

<u>Maintenance of a Healthy School Environment</u>

In each school every year, the PHI conducts "A School Sanitation Survey" that collects the following data:

1) Background information of school
2) Information on school building
3) Furniture
4) Staff rooms
5) Dental clinic
6) Sanitation facilities (latrines, water supply, situation of water source, storage of water)
7) Waste disposal
8) School environment
9) School gardening

10) School canteen
11) School health clubs
12) Pest control
13) Other health-related activities in school (counselling sessions, health-related debates, special health-related programs, special nutrition activities, health seminars)
14) School development society
15) Hostel facilities for boarders

Table 3.4.1 shows, in some selected districts, the distribution of schools with basic amenities such as, toilets, urinals and safe water in the year 2000. It is clear that not all schools have basic sanitation facilities. Among schools that do have basic sanitation facilities, there is no clear information on the number of students per toilet ratio, the condition of these toilets and the condition of safe water facilities.

Table 3.4.1 Number of Schools with Basic Amenities such as Toilets, Urinals and Safe Water in 2000

District	No. of Schools	With toilet and Safe Water
Colombo (Urban)	15	11
Matara (South, rural)	15	12
Ratnapura (Urban)	15	14
Badulla (Rural)	15	12
Nuwara Eliya (estate)	14	2
Polonnaruwa (East coast)	11	8
Total	85	59

Source: "Study on the School Health Programme" (Policy Planning Studies of the Ministry of Health and Indigenous Medicine)

School Community Participation for Health Promotion

School health is considered as a broad range of school-based and community-based activities. School children are the agents of communication and motivation for the parents and the community. The programme coordinates with health care, educational, social, sports and youth service institutions in carrying out its activities. Hence, the programme assists children, families and the community in preventing disease, and protecting and promoting health.

Ministry of Education - "Health Subject in the Regular Curriculum"

The commitment of the headmaster is essential to the success of the SHP. Then the school urges the active participation of students, teachers and parents. However, in most places even the strongly committed seem to acquiesce in very much theoretical teaching of health subjects, not oriented to practical knowledge, skills or practices. In the absence of the headmaster's support, the school programme will just be minimal. The educational system in Sri Lanka puts a lot of emphasis on the "results of exams". Therefore, teachers and students spend very little time to spend on health.

Programme Currently being Developed

From June 2002 to March 2003, the Family Health Bureau and UNICEF will implement as part of the programme to control iron deficient anaemia among school children, a pilot study on "Improving Health & Nutrition through Schools" in five districts covering 1,762 schools. All students in grades 7 and 10 will each be given one tablet of Mebendazole (500 mg), one tablet of Ferrous Folate (60 mg of elemental iron and 0.4 mg of Folic Acid) and one tablet of Vitamin C (50 mg) once a week for a period of six months. If successful, this might be scaled up.

Strengths

Most of the necessary activities have been undertaken even if they have not always been very objective oriented

Weaknesses:

- The National Health Policy report reviewing the SHP clearly stated, "the services were highly unsatisfactory in terms of range of services actually provided, their quality and the coverage of school children. The coordination among institutions implementing the programme is far from satisfactory". The Policy review also recommended 12 points for SHP improvement. Each point showed very reasonable solutions as well. However, it is disappointing to note that none of these points was achieved in the last 10 years.
- The poor coordination among related institutions at the central level is the most serious issue.
- Sanitation facilities and amenities differ in each school.

Issues for Implementation

- Setting up of an SHP section/unit at the central MOH: This would enable the MOH to coordinate better with the Ministry of Education for planning the activities and for their execution. The future SHP unit should also coordinate closely with the people responsible for Nutrition activities, with reproductive health, STD program, and environmental health.
- Standardised facilities for safe drinking water and sanitary toilets should be imposed on all schools. The practical standard is one toilet per 60 students. Currently, the SHP guideline is one toilet per 100 students. (Supplementary funds from UNICEF or other interested parties should be sought, if central and/or local government funds are insufficient).
- The role of canteens in schools should be re-considered due to nutritional problems of school children. Junk food and soft drinks should not be sold in these shops.
- Careful re-planning and development of the SMI: The role and functions of the SMI should be redefined. Currently, in big schools, the PHI only serves grades 1, 4, and 7. This is not enough. All students should be covered at least yearly and for those found in trouble during the survey or by the teachers, there should be follow-up until a satisfactory solution is found. Malnourished kids wasted or stunted should get special attention and their parents should be contacted and counselled. Special attention should also go to children with sensory handicaps, motor handicaps and cardiovascular problems. They should be followed regularly and referred for specialist care.
- Primary schools should have a careful health education curriculum that teaches through demonstration and practice the basic life skills and information on nutrition, exercise, hygiene of the body and the environment; secondary schools should deepen out these subjects and add sex education and traffic education as well as first aid in case of trauma, drowning, diarrhoea. This subject should be a pass /fail subject, with pass required for obtaining diploma
- A carefully selected extra-curricular activity could enhance the prestige of the subject. An example of this is the holding of a nationwide/district-wide question and answer or even demonstration competition on health-related issues, etc.

Capacity for teaching these subjects needs to be built. In secondary schools, this could be done by creating a special health education cadre that specialises in just this subject or does related subjects like sports and or biology. In primary schools, the same approach could be followed; teachers from each school could be trained on the subject and its pedagogy by the specialised secondary school teachers during the summer break and the MOH SPH could provide regular supervision of the teaching.

(2) OCCUPATIONAL HEALTH

In Sri Lanka the information available on occupational diseases is very limited. The reason given for this is that there is no institutional mechanism to ensure accountability to make the surveillance system operational.

Under the Factories Ordinance No. 45 of 1942, which was further amended by acts No. 54 of 1961 & No.12 of 1976, there are twenty conditions that are notifiable as occupational diseases. These are anthrax, lead, mercury, phosphorus and arsenic poisoning, toxic jaundice, toxic anaemia, chrome ulceration, epitheliomatous ulceration, compressed air illness, silicosis, byssinosis, siderosis, asbestosis, dermatosis, and poisoning by aniline, benzene, or its homologues, carbon bisulphide, halogen derivatives of the aliphatic series, cadmium manganese, pesticides, weedicides and defoliators.

Apart from the above, occupational diseases and injuries are also considered under the following broad categories:

1) Industrial accidents/injuries. With changing technology, modern machines and processes are introduced replacing old technology with new. These are done sometimes without proper training of the workers and without proper protective gear.
2) Pesticide poisoning. This can be either deliberate or accidental. Rapid industrialization and agricultural development has resulted in many economic and social problems that lead to poisoning. Sri Lanka's suicide number is one of the highest in the world.
3) Occupational lung and skin diseases and cancers. Certain materials and processes that are the result of certain industries have not been adequately studied. Very little information is available on the many vegetable dusts, such as rice husk, coconut husk, chilli powder, and tea fluff that workers become exposed to.
4) Psychiatric problems. Occupations may sometimes act as a trigger factor in psychiatric problems. In the fast developing world of today coping with stress is a problem.
5) Allergies
6) Zoonosis
7) Snake bites. This is common among agricultural workers particularly in areas where jungles are cleared for agriculture.
8) Physical hazards. The body shape and the anthropometric measurements of Sri Lankans are different from that of people in countries from which machinery and equipment is imported into this country. As such equipment is designed for use by people with a different body structure, and the postures adopted to use these result in fatigue, backache, and other muscular and joint pains.

Under the factories ordinance, it is compulsory for all industries to maintain a general register (form 11) as prescribed in factories (No 01 –Regulations 1960) to record all accidents. The factories are requested to send in their returns every six months to the labour department. The factories are also requested to report all injuries & diseases caused to workers if the workers do not come to work for 3 days. But this mechanism is not effective as there is very little awareness among the employer and employees on occupational health and their consequences. According to law, if accidents are not reported to the Department of Labour the factory authorities could be prosecuted and a fine of Rs.5,000 has to be paid by the relevant authority. But enactment of these legislations is also poor.

The Ministry of Health has a directorate on Environment and Occupational health that works in conjunction with many other departments such as the Ministry / Department of Labour, Board of Investment, Central Environment Authority, the faculties of medicine, etc. The Department of Labour has a separate commissioner in occupational hygiene and safety.

Some issues that were raised during an inter-country consultation on Regional Strategies for Strengthening Occupational Health in SEARO countries in 2003 were the following:

- that the importance of occupational health, safety and welfare is not well recognised at the provincial level;
- poor coordination between relevant sectors;
- inadequate data collection and information mechanisms;
- inadequate awareness on occupational safety among employers and employees;
- lack of safety culture and safety consciousness among workers and lack of supervision at work places;
- that registration of factories is not mandatory;
- that legislative protection to workers is restricted to factories; and
- that the present legislation lacks standards in some areas and the inadequacy of institutions for enforcements.

Among the recommendations were to: a) develop health and safety standards and guidelines for specific industries; b) address the issues of training and research; c) explore the possibility of integrating the existing primary health care services of the Ministry of Health with the occupational health services of the Ministry of Labour; and d) train public health inspectors at divisional level and equip them with some basic knowledge and skills to complement the services of he Ministry of Labour.

(3) ENVIRONMENTAL HEALTH

Environment as a subject has been incorporated in the constitution of the Democratic Socialist Republic of Sri Lanka. Article 27 (14), chapter VI, of the constitution under "Directive Principles of State Policy and Fundamental Duties" specifies that: "The state shall protect, preserve and improve the environment for the benefit of the community". A separate cabinet ministry of environmental affairs was set up for the first time in 1990, namely, The Ministry of Environment and Parliamentary affairs. Subsequently, the name has been changed into The Ministry of Environment and Natural Resources.

The Ministry issued a policy draft paper for discussion in January 2002. The Vision of the Environment policy is stated as, "to achieve a healthy and pleasant environment sustaining nature for the well being of the people and the economy". This policy envisions that the national environmental policy will make a significant contribution to improve the quality of life of all citizens, particularly of disadvantaged groups through progress in reconciling economic development with sustainable use and protection and improvement of the environment for present and future generations.

As such, The National Environmental Policy Objective is given as "ecologically sustainable development through protecting the integrity of the nation's environment and natural resource base, with due recognition of the contribution of natural resources to economic development and to the quality of life".

There are many national level institutions dealing with different subjects relating to the environment. The Ministry of Health also has an Environmental & Occupational Health directorate that works in close collaboration with other departments/institutions, etc. other than the environmental activities handled by the public health staff of the ministry, which are sanitation, food safety and housing. These programs are implemented through the Medical Officer of Health Units by the Public Health Inspectors. These spheres of activities are well established and efficient.

The other activities carried out by the Environmental & Occupational health unit include the following: coordination of Health Care Waste Management Activities; coordination and follow up activities of the committee meetings convened by the Ministry of Environment & Natural Resources; carrying out a paper recycling programme in collaboration with the Ministry of Environment, paper Corporation & other non-governmental organisations; coordination and follow up activities of the committee meetings convened by the Central Environmental Authority(CEA) on chemical safety; follow up activities of the committee meetings convened by the National Water Supply & Drainage

Board; follow up activities of the committee meetings convened by the Meteorology Department on climate change; and follow up activities of the committee meetings convened by the Housing and Urban Development on waste management.

The unit also raises the awareness of the public on environmental health issues by printing of posters and other IEC material, and by giving public lectures, in response to public complaints on environmental health issues, coordination between PHI & MOH training programmes, and finalising of legislations to prevent mosquito-borne diseases.

3.5 ACTIVITIES AND OTHER ISSUES ON THE INDIGENOUS SYSTEMS OF MEDICINE

The term indigenous medicine does not necessarily refer to practice of medicine indigenous to Sri Lanka. To both official statutes and the perceptions of the hierarchy of practitioners, indigenous medicine refers to a variety of medical practices of foreign origin together with an array of truly local tradition practiced by Sinhala and Tamil speaking practitioners using locally available herbs and medicinal substances. This knowledge has been transmitted from generation to generation verbally and through recipes (*vattoru*) and written on *ola* leaves. The classical *Ayurveda* of India has influenced the thinking of medical practitioners in Sri Lanka. Its influence has been epochal commencing probably in the pre-Christian era facilitated through cultural interactions between the two countries that run through the entire history of Sri Lanka up to the present times. Such influence is evident in the medical texts of the great tradition written throughout the history of Sri Lanka and in present times with the governmental formalisation of *Ayurveda* in 1958 as sector, when the practitioners were sent to Indian institutions for training.

In Sri Lanka, what is commonly referred to as indigenous medicine is therefore practices of *Ayurveda*, Traditional Practices (*paramparika*) *Siddha*, *Unani*, Homeopathy and acupuncture. In other countries, it might go under the name of alternative medicine. In the meantime, there are attempts to ethnicise *Siddha* to Tamils of the North, *Unani* to Muslims of the East and *Paramparika Ayurveda* Practices to the Sinhalese of the South, but ethnographic information on users and practitioners is grossly lacking to support such claims. Systematic Ayurvedisation of the *paramparika* practices by the governmental sponsored programmes and the biomedicalisation of *Ayurveda* by the training institutions are ongoing processes to reckon with. Changes within the practices of *Siddha*, *Unani* and Homeopathy may be taking place but they are not known publicly.

(1) UTILISATION OF SERVICES

As a percentage of biomedical public services the utilisation of public indigenous medicine is 10% for outpatients and 0.75% for Inpatients.

Table 3.5.1 Utilisation of Services of Indigenous Medicine, 1999

Year 1999	Line Ministry	Provincial Government	Local Government	Overall Total For 1999
Institutions	03	46+121=167	230	
Out patients	176,139 (Avg:4892/M/Ins)	2,111,239 (Avg:1,053/M /Ins)	1,784,221 (Avgas: 646/m/Ins)	4,071,599
In patients	3,236	25,621		28,857

Source: Ministry of Indigenous Medicine & Disaster Relief

The data on *Siddha*, *Unani*, Homeopathy, *Ayurveda* and *Paramparika* are not available. Information or even indicators as to the utilisation in the private sector are lacking. Similarly, client perceptions regarding the sector are scanty and have been elicited through medical, sociological and health services research studies on health-seeking behaviour.

There is also much confusion regarding the claims of practitioners of the indigenous medicine sector to what degree indigenous medicine is complementary, competitive or alternative to biomedicine. No data are available on whether people use indigenous medicine as complementary or alternative medicine. Very little is documented in Sri Lanka on therapeutic outcomes of indigenous treatment. Little information is available on the socio-economic background of the users.

(2) STRENGTHS

The strengths of the Indigenous Systems of Medicine in Sri Lanka include the following:

- A philosophy that supports particular lifestyles promoting health of persons of various age groups and communities stressing the food, dietary habits, morality, social interactions and the interactions with the environment, thus transcending beyond the health of the individual and the physical reality associated with it.
- Approximately 16,000 practitioners spread out in rural and remote areas.
- A large number of medicinal recipes for various types of ailments commonly found among Sri Lankans.
- Knowledge based on herbs and other medicinal products available in and unique to Sri Lanka.
- Intervention methods (e.g., massage and panchakarma) that are supposed to promote health in those people needing long-term care.
- Ability to incorporate yoga and meditation to promote healthy living and stress relief.
- Availability of approximately 6,500 specialists who claim success in using techniques and in treating special disorders.
- Political commitment to advance the practice.
- Public acceptance that "natural medicine" has little or no harmful effects.
- Existence of large numbers of practitioners who have self-sustained practices (private sector).
- A nascent pharmaceutical industry that produces for export and caters to private sector needs.

(3) CHALLENGES

The indigenous medicine sector, however, has to face many challenges. Some of these are ideological and conceptual in nature. They are scientific scrutiny, ayurvedisation, biomedicalisation, and model for health, commercialisation, and communication impasse.

Scientific Scrutiny

Although the underlying philosophy of *Ayurveda* is not empirical methodology, its disease categorisations and intervention methods are now under scientific scrutiny. This process may have both negative and positive effects on the theory and practice of indigenous medicine.

Ayurvedisation

Given that personnel in training and research institutes are those trained in classical *Ayurveda* principles, there is a tendency to ayurvedise the traditional knowledge and *parampika* practices which may have developed on different foundations. This process could destroy the specialist knowledge claimed by certain practitioners who have inherited such knowledge down family lines.

Biomedicalisation

This process may be taking place in training and research centres where biomedical knowledge is extensively used. Although this biomedical learning process may fulfil expectations of students and some academics that aspire for an image of a doctor similar to allopathics, it may have negative effects in terms of the practice and overall mindset of the indigenous medical services. However, the process of biomedicalisation may also help the indigenous medical practitioners to be reflective and overtime develop agendas for eventual research and good practice.

Model for Health

In the absence of the recognition of an articulated theoretical model for health that could compete or complement the biomedical model, indigenous medical services are under pressure to follow what exists, including the Western system of service delivery.

The attempts to expand and develop indigenous medicine in the public sector seem to have made little progress as they copy the administrative and practice patterns of the allopathic system leading to duplication of services and a lack of fit between the philosophy underlying users expectations, the nature of interventions and the actual delivery of services. This has left the indigenous medicine sector looking incoherent and with a lesser bargaining power for revenue and recognition. However, in *Ayurveda*, there is a holistic model for health, truly taking into account that health is not the absence of disease, but physical, mental, social and spiritual well-being. Ayurvedic interventions similarly address the physical, mental, social and spiritual.

Commercial Exploitation

Given the present day interests in bio-diversification and traditional medical knowledge, there is ample room for legitimate as well as unethical exploitation of the indigenous medicine sector by the pharmaceutical and tourist industry and practitioners of other systems of medicine and also from agencies and individuals within. Existence of large number of medical "texts" giving thousands of recipes treasured by traditional practitioner families regarding herbs and other natural products of medicinal properties complicates any attempt at formulating a norm of safe and ethical practice.

"Communication Impasse"

In the last 10 years there has hardly been any communication on what Allopathic and Ayurvedic systems can offer jointly to solving health problems of an individual or of the community.

Some allopaths believe indigenous knowledge should be kept out of their sphere to either protect allopathy from a dangerous contaminant or protect indigenous medicine from being endangered. Even so, India and Japan are living examples where indigenous medicine has been surviving and flourishing in close dialogue with Western medicine since 1928. Major US universities and its NIH also develop research on mixed treatments between allopathy and “alternative medicine” such as yoga and acupuncture.

3.6 PRIVATE SECTOR ACTIVITIES

(1) INSTITUTIONS

The MoH established the Private Health Sector Development directorate to provide the overall leadership in improving the interface between MoH policy-makers and the private sector. From the side of the private sector, the stakeholders are discussed in Section 8.2 of this Volume. At present, there is a bill in Parliament that proposes to regulate the Private Medical Institutions. It will establish an Executive Council that will be responsible for fostering public-private partnerships at all levels of the health system. The Executive Council will be composed of members representing both the public and private sectors:

1) A representative each from the Sri Lanka Medical Association, the Independent Medical Practitioners, the College of General Practitioners, the Sri Lanka Dental Association, and the Sri Lanka Nursing Association;
2) Three persons from among persons who have rendered distinguished services in the field of Accountancy, Law or Management;
3) Six representatives from the Association of Private Hospitals and Nursing Homes; and
4) the following ex-officio members - the DGHS, the Director of Private Medical Sector Development, the Registrar of the Sri Lanka Medical Council, and all Provincial Directors of Health Services.

The Director-General of Health Services shall be the Chairman of the Council and the Director of Private Medical Sector Development shall be its Secretary.

(2) ACTIVITIES

Data on the size, growth, distribution and activities of private providers is very limited in Sri Lanka. The MoH has no public reports on the private sector but the Central Bank has some on private hospitals in the Western Province. This province being the most populous and the richest has attracted most private practitioners as well as most private facilities. The Central Bank statistics showed a slight increase in patients both IPD (17%) and OPD (11%) from 2000 to 2001. It is the hope that the private sector will soon be asked to report regularly on their staffing and performance.

Table 3.6.1 shows the percentage of private sector inpatients and outpatients in the total number of patients in the year 2000. The information of inpatients and out-patients in private sector was reported from 34 private hospitals located in 6 provinces; however, it does not cover the number of outpatients seen by private general practitioners. Therefore, the total number of outpatients in the private sector should be bigger than 2.75%, but it will not exceed 20% of total outpatients.

Table 3.6.1 Performance of Private Hospitals *

	Private	% of total	Public	% of total	Total Publ+Priv
In-patients	118,515	2.87%	4,015,000	97.13%	4,133,515
Out-patients	1,225,141	2.75%	43,329,000	97.25%	44,554,141

Note : * Based on information reported by 34 private hospitals located in the Western Province (22), Southern Province (6), Central Province (2), North Western Province (2), Eastern Province (1) and Uva Province (1).

Source: Central Bank of Sri Lanka Annual Report – 2001.

(3) ISSUES ON IMPROVING INFORMATION ON PRIVATE SECTOR

The MoH and the JICA Study Team conducted a Private Sector Workshop during which several issues were identified regarding areas for improving information about services of private health care providers.

One, users need more information about the private health care services available: the services available at different facilities and the prices charged. Private practitioners need information about private hospitals to improve their referrals. Private hospitals need to share information among them.

Two, examples of effective information transfer from the private to the public sector were raised. Currently, notification of infectious diseases under categories A and B is mandated by law. However, some GPs may treat a patient with a category B disease but actually not inform the MOH or epidemiological unit. The reporting of vaccinations provided by the private sector was also disputed.

Three, for improvement of public-private partnerships, the main area where information was lacking was said to be the lack of information systems to register and monitor private practitioners. The proposed basic framework for collection of information on private providers is shown in Figure 3.6.1.

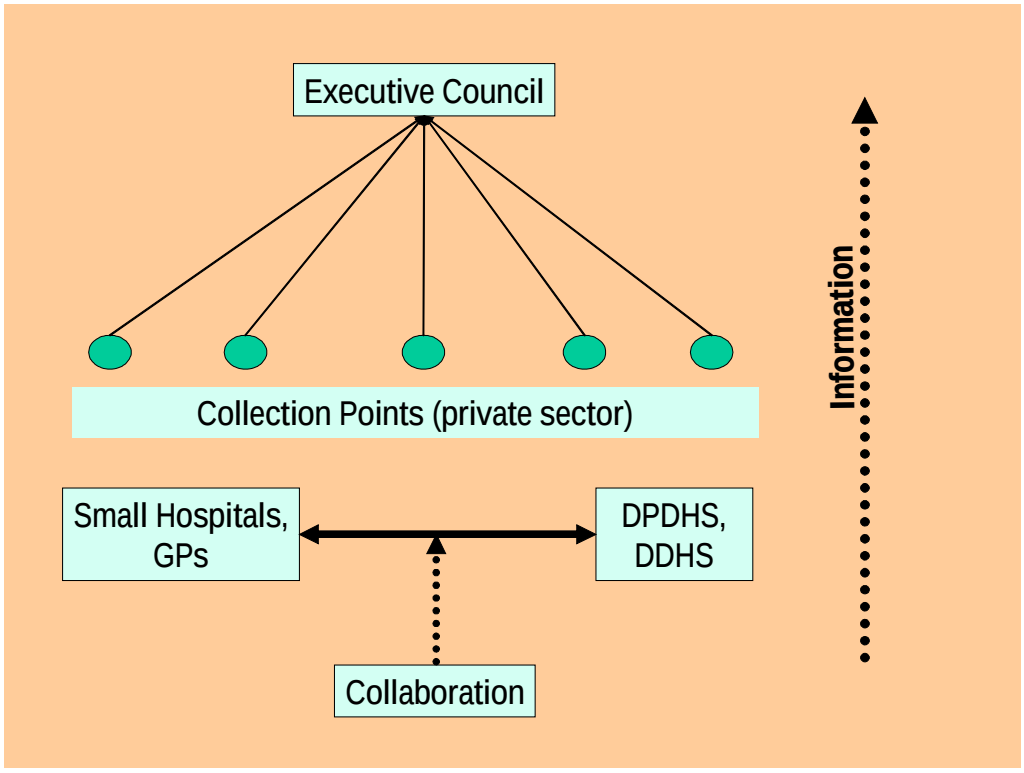


Figure 3.6.1 Basic Framework for Collecting Information on Private Providers under the New Legislation

A database would be developed to store and analyse this data. This would be updated regularly. The Executive Council would publicise this data through a Bulletin and on a website. The data to be collected by private sector collection points would be: Qualifications of staff; Quality of patient service; and Health information and statistics.

Four, at the MOH/DDHS level, the importance of collaboration between the private sector collection points and public sector officials (all DPDHS and DDHS) was stressed. This would contribute to better reporting of data and provide safety checks against inaccurate or misleading information.

Five, the importance of making this information available to the public in a proactive manner was also emphasised. The two ways that were suggested for making the information available to inform the public were through a bulletin and website.

3.7 INTEGRATION OF SERVICES

Integration may take several forms – structural, systems and service provision. It may be across sectors such as public, private-for-profit and private-not-for-profit. It may be across levels of facilities as it may also be within facilities. It may be integration of various types of services as well. This section focuses mainly on examining the experiences and prospects of integrating public health services with those of hospital services. It also describes the current thinking about integration across levels of facilities through a referral system.

(1) INTEGRATION OF PUBLIC HEALTH WITH HOSPITAL SERVICES

The Ministry of Health made several attempts[10] at integrating at the point of delivery all the services – promotive and preventive services on one hand and curative and rehabilitative services on the other. From the start, working in public health has not been as glamorous and lucrative as in hospitals. Medical officers had to be forced or even paid higher to work in communities. The divide grew bigger and bigger that the staff were isolated from each other. As such, one of the earliest attempts at integration was more of physical in nature. The offices of the Medical Officers of Health were built within hospital compounds or beside those of the hospital directors. The intention was to get the public health and hospital people to live together, talk and even work together. However, the idea remained as such so much so that when an epidemic occurred, the MOH sent the report to his hospital counterpart by post instead of handing it over personally.

When health staff were allowed to engage in private practice during off hours, the potential for integration continued to dim. Hospital staff had more opportunities for private practice. Because of their expertise and clientele, they were preferred by owners of private hospitals. In the early 1990s, the Ministry of Health once more tried its hands at getting the public health and hospital people to work together. This time, the Ministry piloted a scheme that rests primarily on appointing a group of people, a minimum of three, to be responsible for a district health system. The idea was to have one person taking overall rein over both curative and preventive services, another one for field work mostly and a little of hospital duties, and the third one to be mostly hospital work and a little only of public health responsibility. However, in practice, all the three stayed in the hospital and gave excuses like having severely ill patients to avoid going to the field. With the health system being not in a position to enforce its regulation, the field continued to be neglected. Having no medical offices supervising them, the rest of the field staff had no direction. The scheme then had to be discontinued as the promotive and preventive services were reaching rock bottom.

With the introduction of training programmes towards becoming a public specialist, the opportunities for people working in the field have improved albeit a little only. Certainly, Medical Officers of Health can engage in private practice in town. However, they will continue to have difficulty in matching the financial returns of their counterparts in hospitals who can receive Rs.160-280 per hour when they moonlight in private intensive care units. Based on the experience of the Ministry of Health, therefore, it seems having the public health and hospital people working together may not be that easy.

Another form of service integration can actually be found within hospital facilities. Table 3.2.1 shows that all types of health services are expected to provide health education services on top of the outpatient, clinics and/or in-patient services.

[10] Dr. Malinga Fernando, interview by JICA Study Team member, Sri Lanka, August 12, 2003.

(2) INTEGRATION ACROSS LEVELS: THE REFERRAL SYSTEM

A formal referral system has been considered by the National Advisory Council not as a "panacea for all the shortcomings"[11] but as aide to "minimising some of the prevailing deficiencies" that include the considerable overlapping of services between the primary, secondary and tertiary services. It's been claimed that tertiary care institutions, such as apex teaching hospitals with advanced technical capabilities, and secondary care hospitals, such as General Hospitals, devote considerable time and effort in delivering basic primary curative care. A study done at the National Hospital Colombo in 1980 showed that at least 35%-40% of inpatients and 70%-75% of outpatients could be efficiently managed in the periphery. As such, the OPDs of these hospitals are grossly overcrowded mainly by the presence of a large number of patients who require only basic curative care. If patients requiring basic care could be diverted to lower medical care units appropriate to their needs, unnecessary costs could be minimised while the quality of care could be improved.

The National Advisory Council identified the five main factors that facilitate the bypassing phenomenon:

1) Lack of confidence in the lower level institutions due to perceived low quality of services;
2) Logistical barriers;
3) Inadequate flow of information between the health care systems;
4) Poor organisational and managerial skills; and
5) Lack of interest and lackadaisical attitude of staff towards patients.

Its proposed structure for the formal referral system is diagrammatically represented in Figure 3.7.1.

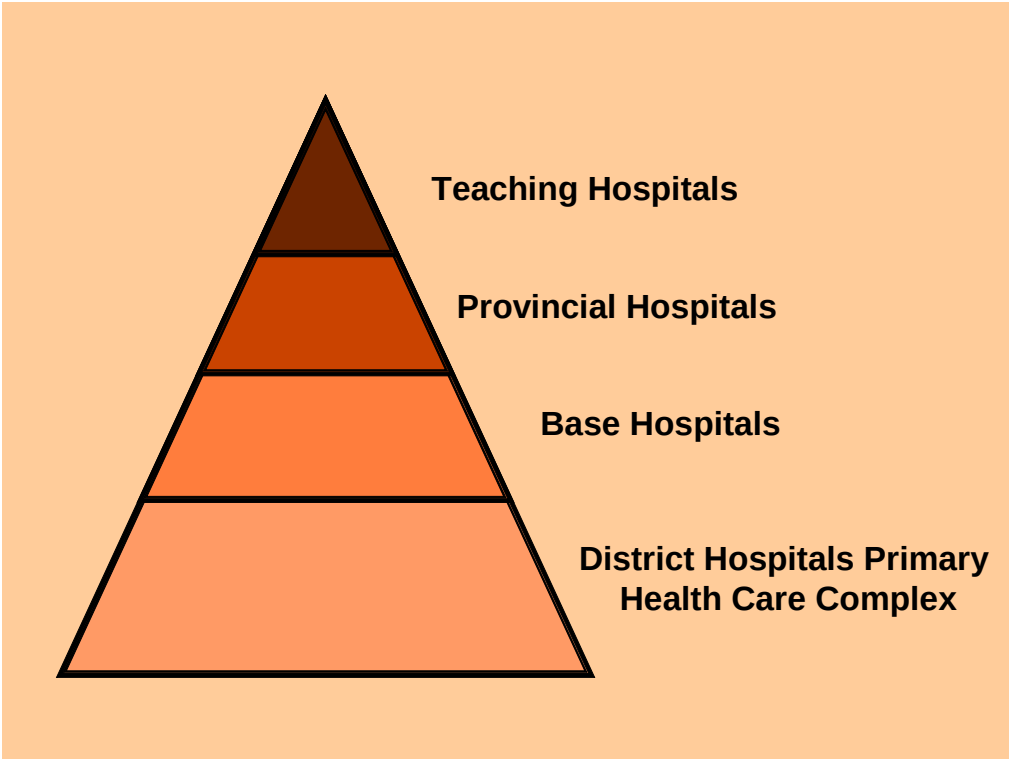


Figure 3.7.1 Structure of Formal Referral System Proposed by the National Advisory Council

The width of the pyramid represents the relative number of persons who should be served by the respective persons. The epidemiological pattern of diseases in the area would influence the

[11] National Advisory Council of the Ministry of Health, Nutrition and Welfare, *Principles of a Referral System for Health Care Delivery in Sri Lanka* (May 2003).

movement of patients between the respective institutions of the pyramid as well as the individual preference. Ideally, the bottom of the pyramid should cater to the more common and non-life threatening conditions which would be the bulk of the patient load while the more severe conditions warranting specialist care only should be dealt with at the apex of the pyramid.

In formulating the Policy on a Formal Referral System, the concept of supply and demand should be the foremost consideration. An epidemiological analysis of the population has to be conducted to determine the relative prevalence and incidence of disease conditions and alternative methods of addressing them. Population density is a key determinant of the appropriate composition of the provider network. Existing patterns of hospital use, type of services used and distance of treatment centres from the households must be considered. The quality of services at all levels must be acceptable to patients.

It is essential that when designing a good referral system the health planners, health managers, epidemiologists, specialist medical officers and other grade medical officers all be involved in the design through a participatory approach. The consumer point of view should also be represented. In the pyramidal hierarchy the services to be provided at each level of the hospital have to be clearly defined.

The referral system has to be supported by manuals as well as training that specifies the functions of different elements of the system and the relationship between them. Communication between different levels of providers should ensure that patients so referred to hospitals from lower levels are not subject to delays and unnecessary investigations. When back referral occurs complete information about the illness, treatment provided and instructions on follow up care should be clearly stated. The financing aspect should be a priority consideration when formulating a policy. This would ensure a continuous and an adequate supply of drugs and other facilities to be available to make the services efficient.

Furthermore, for the referral system to succeed, its design and implementation should consider several realities. One, the establishment of the provincial council system has brought about a provincial health services that is managed by the provincial directorate. The vast majority of the population fall within this provincial system of health services. Two, the municipalities of Colombo and Kandy provide public health facilities to the population of that area within a separate administrative system than the central government. Three, the health services in the North East have been disrupted due to twenty years of civil conflict. Four, the up country plantations sector also needs to be considered as a separate entity within the health services. Five, since the people of this country have exercised their sovereignty in choosing the hospital of their choice so far, credible alternatives have to be provided to them in the referral complex.

For an efficient functioning of the referral system, the central government and the provincial councils would have work very closely together. In addition, the community leaders, religious leaders and other various local organisations should be willing to support the system. The services should have a manageable proportion of patients, and, depending on the geographical area, the different levels of care could be situated within the same complex.

Dr. Malinga Fernando[12], a member of the Council, pointed out two requirements for the overall functioning of a referral system. One is to address the root causes of bypassing. This means that the quality and reliability of services provided in lower level hospitals must be improved. The reforms must include adequate staffing with proper qualifications and training, strengthening of diagnostic capabilities, a continuous supply of essential drugs and an adequate budget. The other requirement is the passage of a legislation that will penalise bypassing.

[12] Dr. Malinga Fernando, interview by JICA Study Team member, Sri Lanka, August 12, 2003.

The National Advisory Council proposes a pilot project that will incorporate regular dialogue, continuous observation, monitoring and evaluation as regular activities. It underscores the importance of soliciting feedback from the community.

CHAPTER 4

RESOURCE MANAGEMENT

4 RESOURCE MANAGEMENT

This chapter examines the management of the following resources:

1) Human Resources;
2) Drugs and Other Medical Supplies;
3) Medical Equipment;
4) Physical Facility; and
5) Funds.

4.1 HUMAN RESOURCES

The discussion on the management of human resources for health in Sri Lanka includes the following major components:

- Policy and Plan;
- Demand and Supply;
- Distribution;
- Quality and Competency;
- Production; and
- Personnel Development in the Ministry.

(1) POLICY AND PLAN

There have been several initiatives to develop human resources for health. In the 60s, a task force set up by the Ministry of Health designed a national health plan. In 1975, a health manpower study was undertaken. In the late 1970s and early 1980s, two studies, one on cadre determination of all medical, nursing and paramedical personnel (Report of staffing study 1981) and the other on nursing (1977), were undertaken. In 1992, a National Health Policy was initiated. In 1993, a study was undertaken by the Human Resource Development Council on Human Resource Development in the Health Sector. In 1994, a Perspective Plan for Health Development in Sri Lanka (1995-2004) was formulated. Their impacts on policy and the implemented plan on Human Resource Development are not known. The 1993 study found that health manpower planning in Sri Lanka has been episodic and, to a large extent, limited in scope; health manpower development in the private sector has not been given due consideration and the demand pattern for services and the technological changes have not been taken into account.

In addition, there have been some studies that examined issues of human resource policy and management in the public sector health system, such as the draft Strategic Human Resource Plan 1999-2009 and the Health Manpower Development Plan for Sri Lanka 1997-2006. In the Health Manpower Development Plan 1997-2006 for Sri Lanka report, recommended actions for health manpower plan precisely described what should be done in the area of HRD policy formulation and plan formulation, production, manpower management and others; however, none of them have been implemented.

One of the big issues in human resources is that there is no overall human resources policy and development plan existing in this country mainly due to a lack of an organisation at the national level to take the initiative and the lead. Recently, at the Sub-Cabinet level, there have been attempts to discuss and propose specific actions to address issues of the trade unions and other stakeholders. However, the absence of a central human resources unit or department or that of a durable mechanism to link functions of several units within the Ministry might serve as a handicap because decision-making might be segmented.

Because of the lack of a comprehensive human resource workforce plan and the lack of information on human resources, combined with no reference between human resource development and service needs, the existing categories of human resources do not seem to reflect actual needs. Their roles and responsibilities sometimes do not match with the actual health service needs and demands in this country. Many categories have vaguely defined roles particularly between similar categories such as pharmacists and dispensers as well as MLTs and Microscopists. The role of the Public Health Midwife is no longer midwifery in the field but is more on health promotion, public health service delivery and prevention of NCDs, so that the role and training curriculum of the pubic health midwife should be reviewed and changed according to the service needs. The connection between service needs / demands and supply of human resources need to be established and the changing pattern of service needs is to be reflected in the planning of human resources.

However, why is there no comprehensive policy and plan for the development and management of human resources for health? One of the major reasons is the absence of a central Human Resource Unit or Department within the Ministry of Health to coordinate various Human Resource functions. Therefore, various information regarding HRD and capacities to plan the HRD are scattered in different places. Whilst the stated policy within the public sector is to decentralise to Provincial level, the Provinces lack any real HR planning and management capacity. Other drawbacks is that there is no mechanism for involving other stakeholders such as private sector employers, education providers, or consumers, in making decisions on strategic Human Resource issues such as the future composition of the workforce, the numbers of specific cadres to be trained, etc.

It would be important to have a unified unit or a department, or if not a mechanism to unify all compartmentalized human resource functions existing inside and outside of MoH. It might be considered expanding their organisation and workforce according to the role and functions of human resource related units. The human resource related information should be corrected in MoH related agencies such as training institutions, provincial health departments, the Ministry of Education and private hospitals where there is training capacity for human resources. The problem that existed in the past regarding compartmentalization of functions with no clear unified body to coordinate the functions need to be clearly solved in order to have a functional human development sector which can contribute to attain key objectives of the health sector strategy in the country.

(2) DEMAND AND SUPPLY

There are various kinds of category of health personnel. health personnel include not only physicians and nurses, but also paramedical and non-technical employees such as Administrative Officers and Drivers. There are 276 categories of health personnel in public sector in Sri Lanka. There are 21 categories within paramedical. Registered/Assistant Medical Officer is a unique category. They had been produced during the era of shortage of medical officers, and they are not produced now.[1]

Projection of Demand for Cadre

The Department of Health Service has prepared a projection of health human resources in 2010 based on revised cadre. Table 4.1.1 shows the projection of key health personnel

[1] In fact, some AMO has been produced in NIHS, because of political intervention.

Table 4.1.1 Cadre Projection of Key Health Personnel in 2010

Categories	Cadre in 2010	Existing in 1999	Balance	Growth rate
Medical Officers	n.a.	n.a.	n.a.	n.a.
Nursing Officers	47,517	13,240	34,277	258.9%
Public Health Midwives	14,852	7,409	7,443	100.4%
Microscopists	1,148	300	848	282.7%
Radiographers	924	271	653	241.0%
Pharmacists	3,420	807	2,613	323.8%
Medical Laboratory Technologists	3,312	743	2,569	345.8%
Physiotherapists	1,359	205	1,154	562.9%
Occupational Therapists	373	44	329	747.7%
Public Health Inspectors	2,872	1,074	1,798	167.4%
ECG Recordist	476	131	345	263.3%
Community Health Nurses	961	0	961	-
EEG Recordist	83	19	64	336.8%
Speech Therapists	31	2	29	1,450.0%
Public Health Nursing Sisters	659	262	397	151.5%
Entomology Assistants	218	63	155	246.0%
Dental Technician	19	11	8	72.7%
Ophthalmic Technologists	141	57	84	147.4%
Health Education Officers	147	42	105	250.0%
Audiology Scientist	15	0	15	-
Perfusionists	16	4	12	300.0%
Dispensers	1,249	825	424	51.4%
Field Assistants	1,859	845	1,014	120.0%
Opthologist	4	4	0	0%
Radiotherapists	47	8	39	487.5%
School Dental Therapists	1,137	350	787	224.8%
Food and Drugs Inspectors	68	21	47	223.8%

Source: Department of Health Services

In 2010, most of category needs are more than double the number of existing health personnel in 1999. Figures 4.1.1 and 4.1.2 are projections for production of nurses and public health midwives. The projections show three levels of production (high, middle, and low case).

It is not easy to increase the number of health personnel to meet the cadre projection in 2010. The demand for nurses can be met by 2010 only in a scenario when production is high (Figure 4.1.1). According to Figure 4.1.2, **the production of public health midwives will be unable to attain the number of cadre projection even in the high case**. In addition, it is necessary to consider the numbers lost by brain drain to private sector and overseas, quality of graduates, and limitation of finance and facilities.

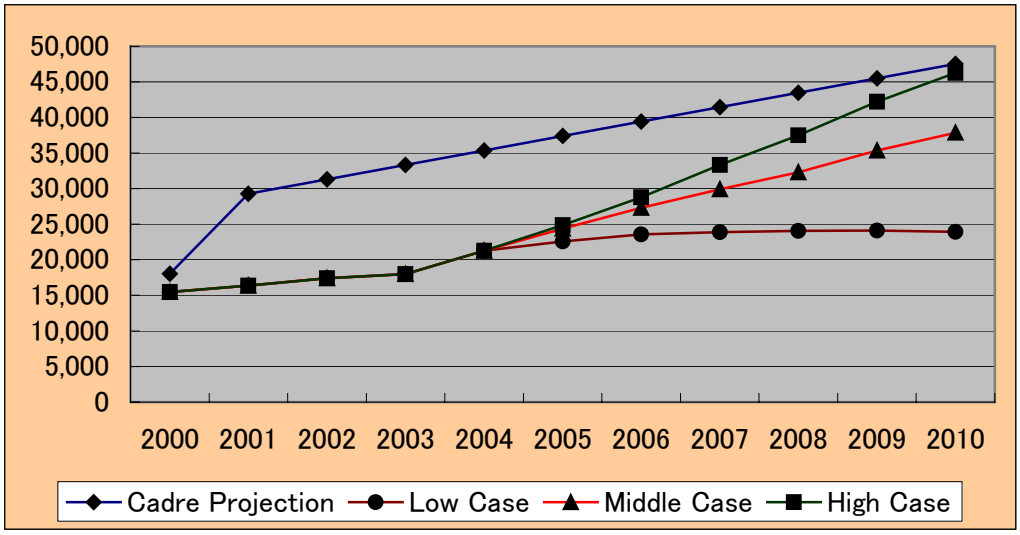


Figure 4.1.1 Projection for Production of Nurses

Source: Department of Health Services Technical Categories Projections & Scenarios Up to 2010

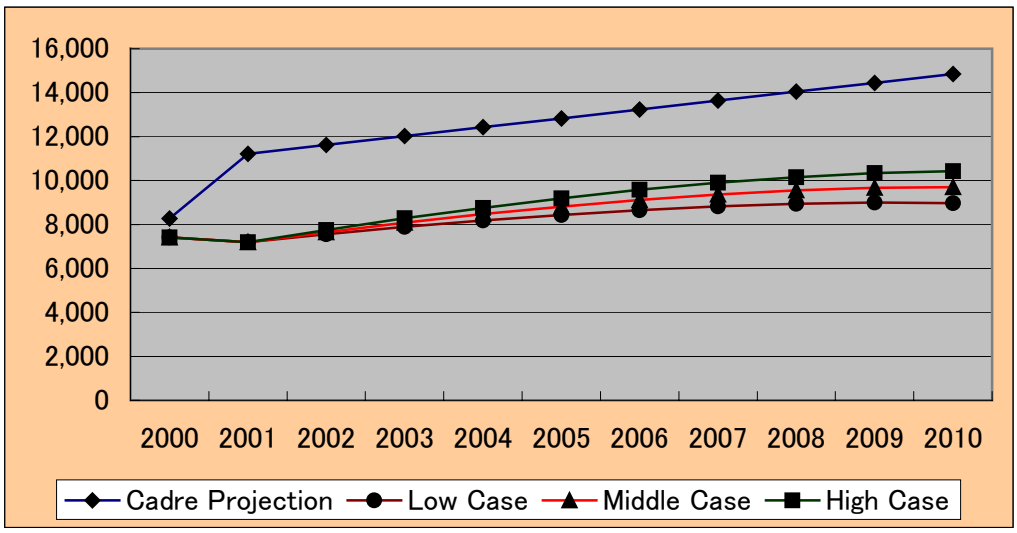


Figure 4.1.2 Projection for Production of Public Health Midwife

Source: Department of Health Services Technical Categories Projections & Scenarios Up to 2010

Shortage due to Unfilled Cadres

There is shortage of staff for some categories not only because of lack of cadres but also because of having these cadres not filled up. Table 4.1.2 reflects the problem of vacancies specifically among key staff. It is worst among public health nursing sisters (PHNS) such that the available workforce is only a little more than the demand. Out of 10 cadres, there are three unfilled for public health inspectors (PHI), two for nurses and one for public health midwives (PHM). Aside from financial constraint, another possible explanation for these vacancies is simply the absolute lack in the production these types of personnel.

Table 4.1.2 Vacancies in the MoH for Selected Health Personnel, 1999

Category	Nurses	Public Health Midwives	Public Health Inspectors	Public Health Nursing Sisters
Present Cadre	18,016	8,272	1,489	466
Existing No.	14,052 *	7,409	1,074	262
Vacancy (Number)	3,964	863	415	204
Vacancy (%)	22%	10%	28%	44%

Sources: *Department of Health Services (2001) Annual Health Bulletin 2000,
Department of Health Services Technical Categories Projections & Scenarios Up to 2010

The MoH is in the process of upgrading its standards for hospitals through a re-categorisation scheme. If the proposed cadre for the scheme is adopted to analyse the number of personnel in 2001, then the share of vacancies will double for nurses, triple for PHM and not much change for the other two categories (Table 4.1.3) compared to those in 1999.

Table 4.1.3 Vacancies in the MoH for Selected Health Personnel, 2001

Category	Medical Officers	Nurses	Public Health Midwives	Public Health Inspectors	Public Health Nursing Sisters
Revised Cadre	n.a.	29,286	11,216	2,091	554
Existing No.	6,553	15,844	7,630	1,486	270
Vacancy (No.)	n.a.	13,442	3,586	605	284
Vacancy (%)	n.a.	54.1%	68.0%	71.1%	48.7%

Note: The numbers of revised cadre are based on revised norms.

Sources: Department of Health Services (2001) Annual Health Bulletin 2000

(3) DISTRIBUTION

Maldistribution Across Districts

There is a significant imbalance existing in the distribution of current staff. Figure 4.1.3 shows huge disparities in distribution of health personnel by district. Specifically the number and the rate of health personnel in the Northern Province is extremely low while Colombo, Kandy and Galle have higher concentrations because of tertiary care health facilities. However, the private sector, which is concentrated more in urban areas, is not included in the figure.

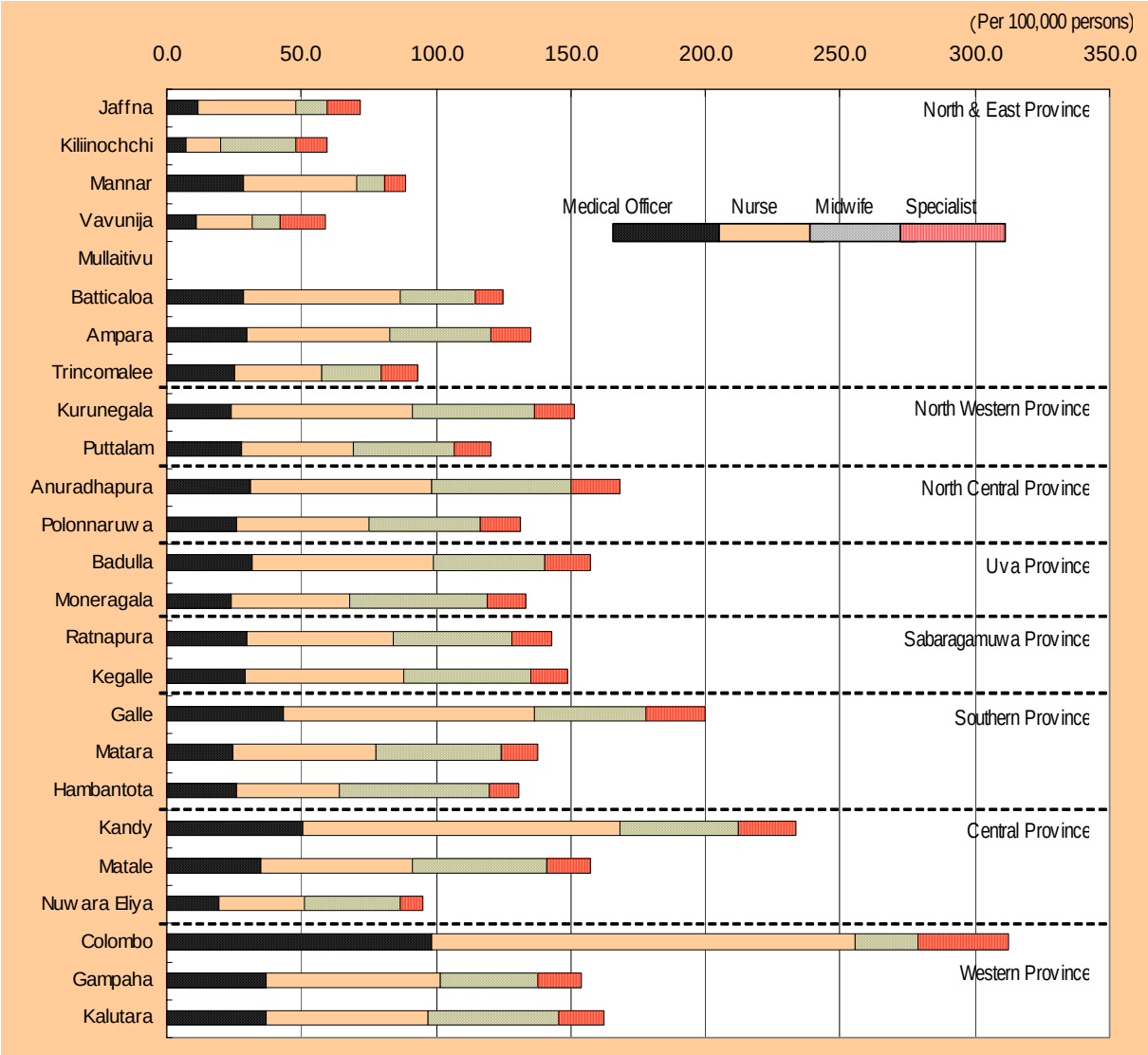


Figure 4.1.3 Distribution of Health Personnel by District (per 100,000 population)

Source: Department of Health Services (2001) Annual Health Bulletin 2000

Distribution by Institutions

1) Public sector

a. Concentration to tertiary institutions

Health human resources tend to be concentrated in tertiary institutions such as the National Hospital and Teaching Hospitals, because these institutions provide broad services. However, it is difficult to say that present resource is allocated appropriately.

b. Lack of health personnel at secondary level

Secondary level institutions such as District Hospitals tend to have insufficient number of health personnel. Lack of health personnel at secondary level is a serious problem and affects upper level

institutions. Lacking or insufficient number of health personnel is an obstacle for providing appropriate health services, and is a cause of bypassing referral system.

2) Private sector: allopathic medicine

a. Growth and shift to private sector

The private sector, which includes both western medicine and indigenous medicine, is not included in the figure. Private medical institutions have around 50% of share of curative outpatient services, although they tend to be located at urban or sub-urban areas. A number of NGOs and civil society organisations, on the other hand, provide both curative and preventive services in rural areas or in the conflict-affected areas. These health personnel are not counted in the health human resources statistics that are prepared by the government.

Although the MoH has no public reports on the private sector, the Central Bank has but only for some private hospitals (Table 4.1.4). Between 2000 and 2001, the average increase is five percent. More doctors and technical staff were absorbed in the private sector. It has been reported that many health personnel of the public sector also work in the private sector on their off-duty hours. Some health personnel tend to move to the private sector from the public sector to seek better salary. On the other side, there are large numbers of young doctors without adequate clinical training in the private sector (Hsiao, 2000).

Table 4.1.4 Human Resources in Private Hospitals [(a)]

	2000	2001(b)	Change (%)
1. Doctors	1,140	1,216	7
Permanent	182	193	6
Visiting	847	906	7
Part-time	111	117	5
2. Nursing staff	2,640	2,718	3
Nurses	1,891	1,970	4
Qualified	1,356	1,407	4
Trainees	535	563	5
Attendants	749	748	0
3. Other staff	2,495	2,624	5
Technical staff	495	526	6
Administrative staff	450	475	6
Other (labourers etc)	1,550	1,623	5

Note: (a) Based on information reported by 34 private hospitals located in the Western Province (22), Southern Province (6), Central Province (2), North Western Province (2), Eastern Province (1) and Uva Province (1).
(b) Provisional

Source: Central Bank of Sri Lanka Annual Report – 2001

b. Lack of Nurses

The private sector employs nurses from overseas to secure the necessary number. The newly opened Apollo Hospital in Colombo, for instance, employs nurses from India with approval by the Ministry of Health.

3) Indigenous medicine

a. Significant roles of Indigenous Medicine

Indigenous medicine such as *Ayurveda*, *Unani*, and *Siddha* has significant roles for health traditionally, especially in rural areas in Sri Lanka. Indigenous medicine is provided both by government and private hospitals, clinics, and even at tourist facilities. Bandaranaike Memorial *Ayurvedic* Research Institute is the centre of indigenous medicine research, and carries out research activities pertaining to clinical, drug and literature research in *Ayurveda* and Traditional medicine. Many health personnel such as Ayurvedic Therapists are trained and certified by the government institutions. Training for indigenous medicine is also available overseas such as in India. However, there are some unqualified practitioners in rural areas.

b. Lack of Statistics

Existing statistics do not cover all health personnel. It is necessary to identify various kinds of health personnel of public and other sectors such as private and civil societies to plan appropriate human resource allocation.

Tables 4.1.5 and 4.1.6 present some human resource indicators in the sector across the nation. About 16,000 physicians have been registered under the Ayurvedic Medical Council, Sri Lanka.

Table 4.1.5 Number of Physicians Registered under the Ayurvedic Medical Council, Sri Lanka.

	As of 31st Dec. 2000	As of 31st Dec. 2001
Traditional (General) Graduates	4,855	4,707
BAMS	349	395
BSMS	189	209
BUMS	89	97
Diploma Holders	3,607	3,602
Diploma in Ayurveda Shastri	486	526
Total (1)	**9,575**	**9,639**
Special Traditional Physicians		
Snake Bites	2,869	2,832
Fractures & dislocations	1,420	1,415
Ophthalmology	573	561
Burns	30	35
Boils and Carbuncles	499	482
Rabies	166	159
Mental	84	83
Skin	262	259
Vidum Pilissum (Burning and penetrating skin with special tools)	67	7
Others	676	658
Total (2 specialists)	**6,646**	**6,491**
Total 1 + 2	**16,221**	**16,130**

Notes: BAMS – Bachelor of Ayurvedic Medical Science; BSMS – Bachelor of Siddha Medical Science; BUMS – Bachelor of Unani Medical Science.

Table 4.1.6 Comparison of Numbers of Practitioners by Type of Practice in the Private Sector, December 2002

Practitioner Type	Practitioners	Specialists
Ayurveda	8,295 *(? 9825)*	6,345 *(? 6570)*
Siddha	1246	204
Unani	265	40
Homeopathy	n.a.	n.a.
Acupuncturists	n.a.	n.a.
Totals *(incomplete)*	9,806	6,589

Note: These figures do not tally with figures of the previous table. (n.a. means not available)

Source: Compiled by N D Kasturiaratchi-2003-02-12-on information provided by the Commissioner of Ayurveda

It is clear from the above that general indigenous practitioners outnumber specialists in the private sector 10 to 6. Among the specialists, those specialising in snakebites are the most frequent and may reflect past, maybe current demand (see Chapter 8); next come bonesetters and specialists in eye care. The only category that seems to die out is the Vidum Pillisum.

Ayurveda and *Siddha* are the most prevalent categories of general practitioners. What is not apparent in this table is that most *Siddha* practitioners also use *Ayurveda* approaches. In the last 20 years, they have experienced many problems especially with supplies.

The table below revealed that majority of the personnel in government Ayurvedic facilities belong to the administrative and support services, such as the administrative officer, clerk, minor staff, storekeeper, overseers, masseuse (physiotherapists), machine operator, cook, and driver. In fact, the minor staff accounts for 64% of the total human resources. Only three out of ten staff members are considered service providers. Of the eight provinces, only Southern and Uva provinces have management staff. There is only one senior scientist post in the country. All of the lecturer posts are in one province – Uva. The issue here for planning is this – is this rational?

Table 4.1.7 Distribution of Human Resources in Government Ayurvedic Facilities, 2002

		SHARE OF MAJOR TYPES OF PERSONNEL (%)			TOTAL (Number)
		Management	Service Providers	Administrative & Support	
Department of Ayurveda	Ayurvedic Hospital (Borella)	0.6	37.1	62.3	313
	Research Hospital (Nawinna)	2.3	28.7	69.0	87
Provincial Ayurvedic Department	Western	0	32.7	67.3	205
	Central	0	32.9	67.1	149
	Southern	0.3	28.1	71.6	331
	Sabaragamuwa	0	30.1	69.9	239
	North-western	0	0	0	0
	Uva	1.7	20.9	77.5	302
	North-central	0	0	0	0
	North-east	0	25.3	74.7	75
	All	0.6	29.6	69.8	1701

Source: MoH

Distribution in Special Communities

1) Estate Area

There are health personnel working in estate (plantation) area that are not officially counted. In Nuwaraeliya District, for instance, the number of health personnel per population is extremely low compared with other districts except conflict-affected areas (see Table 4.1.8). Residents in the district live in some 339 estates where control is held by the estate trust. Most of the residents are Indian Tamil. In the areas, the trust recruits estate health workers such as medical assistant officers and midwives who care for the residents in the area. Health volunteers who are selected from estate workers, in addition, have roles of health promotion at each community. Those health personnel are not counted on official statistics, and some of them are not officially certified. It can be said that there are more health personnel in the estate areas than what appear in the government's statistics. The quality of the health personnel, however, is difficult to assess for appropriateness. It seems to be difficult for the MoH offices to conduct training courses for them and to control their quality, because these health personnel do not belong to the DPDH (Deputy Provincial Director of Health office) but to the estate trust. They do not have opportunities of training that are held by MoH offices, although they have some opportunities to attend ad hoc workshops.

2) Conflict-Affected Area

In conflict-affected areas, mostly located in the Northern and Eastern Provinces, the number of health personnel is low even compared with other provinces that do not have tertiary hospitals. The rate of medical officers per 100,000 population in Kilinochchi District, for instance, is only 7.2 compared with the national average of 41.1. There are no Radiographers, Physiotherapists, and ECG Recordists (Department of Health Services, 2001). Fulfilment of cadre of each category, in addition, is extremely low compared with those of national average as shown in Table 4.1.8, although some provinces such as Central Province face an over-strength cadre situation. A cause of the vacancy is difficulty of deployment of health personnel under the conflict situation.

Table 4.1.8 Comparison of National Average and Conflict-Affected Areas, 1999

Category	Public Health Midwives			Public Health Inspectors			Public Health Nursing Sisters		
Province	National	Northern	Eastern	National	Northern	Eastern	National	Northern	Eastern
Present Cadre	8,272	547	630	1,489	149	156	466	27	43
Existing No.	7,409	156	421	1,074	49	99	262	1	7
Vacancy	863	391	209	415	100	57	204	26	36
Fulfilment (%)	89.5%	28.5%	66.8%	72.1%	32.9%	63.5%	56.2%	3.7%	16.3%

Sources: Department of Health Services (-) Technical Categories Projections & Scenarios Up to 2010

Lack of psychotherapists, especially Tamil speakers, is a serious problem in the conflict-affected areas. Some people in Polonnaruwa district, where there was a conflict zone, for instance, are suffering from psychological problems such as trauma by the civil war. Some people had lost their family, land and property because of the civil war. There are many suicides, alcoholics, and other psychological problems. However, there is only one psychotherapist in the district, and he is attached to the general hospital. In rural areas affected by the civil war seriously, people who have psychological problems can take consultation at a rural hospital from the psychotherapist once a month. Nevertheless, it is difficult for the psychotherapist to treat Tamil speaking patients because of lack of knowledge of Tamil.

Reasons for Maldistribution

The reasons for this problem of unequal distribution of human resources are, firstly, the capacity at provincial level to improve imbalance of health manpower is weak. The provinces cannot recruit personnel for paramedical fields from their areas, so that those who are recruited from other areas tend to avoid going to places far from their home areas. This precipitates a problem resulting in lack of health manpower in the rural areas, as it would be a disadvantage for health personnel to go to remote areas in terms of career development and income. A more decentralised human development system is needed to overcome the problem of understaffing and the imbalance of staffing.

Another reason for the disparity in distribution is the demand for services itself. Urban areas such as Colombo, Kandy, and Galle, have Tertiary Hospitals such as the National Hospital and Teaching Hospitals. These hospitals have a large number of health personnel and they care not only for people within a district but for also people from provinces and from other regions. The National Hospital in Colombo, for instance, covers the whole area of Sri Lanka.

(4) QUALITY AND COMPETENCY OF HEALTH STAFF

Another problem area in health human resource development is the issue of quality. This issue might have two main aspects; one is technical competency and the other is human attitude. The presidential task force in 1992 emphasized the importance of human resource development with emphasis on building positive human attitudes and appropriate knowledge and skills in provision of services of defined quality. This aspect needs to be emphasized in today's health service settings. For improvement of technical competency, in-service training and continuing education with career development and re-registration requirements need to be institutionalised. The private sector has not been involved in training health professionals, but some private sector employers have established nursing training schools primarily to provide staff for their own requirements. The production of human resources in the private sector has no mechanism to ensure quality. MoH has a responsibility to look into this aspect of quality assurance from the patient protection point of view.

The strongest complaints heard from the public today are mostly on the attitudes of health services providers. People's satisfaction and responsiveness is related to this aspect of human attitudes. In-house training, supervision and performance appraisal should be established in each institution. To have a courteous and kind attitude should be emphasized to health service providers from the beginning of their career.

(5) PRODUCTION

The production system of health human resources in Sri Lanka can be categorised as:

- Basic Training;
- Postgraduate Training;
- Post-Basic Training; and
- Continuing/In-service Training.

Basic Training

Basic trainings for health personnel are provided by various kinds of governmental bodies and some private bodies. In the private sector, currently, there is no education and training institution except indigenous medicine such as for Ayurvedic practitioners. Medical Faculties of universities provide education and training for medical officers (physicians), dental surgeons and pharmacists, and teaching hospitals conduct training programmes. Nurses training schools provide education and training for

nurses. Other paramedical personnel are trained in various kinds of training institutions such as the National Institute of Health Science (NIHS). Under the process of decentralisation, there are five regional training centres (Kadugannawa, Kurunegala, Jaffna, Batticaloa, Galle) for paramedics, especially for public health workers such as PHI and Midwives. The NIHS coordinates them and exchanges training staff to improve training skills. Table 4.1.9 shows Basic Trainings that are provided by the governmental bodies.

Many training programmes are conducted in English, though some courses (e.g., part of nursing and midwifery courses) are conducted in Singhalese. Tamil is used as teaching language at nursing schools and regional training centres in Jaffna and Batticaloa.

Table 4.1.9 Basic Trainings

Category	Education/Training Institute	Duration of Training	Pre-qualification
Medical Officer	Medical Faculty of University (6 universities)	5 years	G.C.E. A Level
Dental Surgeon	Faculty of Dental Science, University of Peradeniya	4 years	G.C.E. A Level
Assistant Medical Officer	NIHS	3 years	G.C.E. A Level
Nurses	Nurses Training School (12 schools)	3 years	G.C.E. A Level
Pharmacist	Medical Faculty, University of Colombo / NIHS	2 years	G.C.E. A Level
Medical Laboratory Technologist (MLT)	Medical Research Institute (MRI), NIHS, and School of MLT, TH Peradeniya	2 years	G.C.E. A Level
Radiographer	School of Radiography	2 years	n.a.
Physiotherapist	School of Physiotherapy	2 years	n.a.
Occupational Therapist	School of Physiotherapy	2 years	n.a.
Public Health Inspector	NIHS, Regional Training Centres	18 month	G.C.E. A Level
Midwife	NIHS, Regional Training Centres	18 month	G.C.E. A Level
Dental Therapist	Dental Therapist's Training School	2 years	n.a.
Family Health Worker	Nurses Training School	1 year	n.a.

Source: Department of Health Services (2001) Annual Health Bulletin 2000

Postgraduate Training

Postgraduate Training is conducted both locally and abroad. In Sri Lanka, the Postgraduate Institute of Medicine (PGIM) conducts various kinds of postgraduate courses and follows the practice of awarding academic degrees, following the successful completion of the academic courses and the final examination (A further condition requires that a Board Certificate be obtained to ensure satisfactory professional competence). The PGIM has 1,445 trainees as at the end of 2001. Table 4.1.10 shows qualifications and number of trainees of PGIM.

There are many students taking postgraduate studies on specific skills and knowledge in foreign countries, although the PGIM has offered various kinds of higher degree courses.

Post-Basic Training

The Post-Basic School of Nursing (PBN) and the National Institute of Health Science (NIHS) conduct post-basic training programmes for nursing personnel and public health staff. The PBN conducts two training courses: Nursing Tutor training and Ward Sisters (1 year training and 6 months practical training), and short-term and ad hoc training programmes. The NIHS provides post-basic trainings such as Teaching Skill Training and Middle Level Manager Training. These post-basic training programmes are not designed based on long-term and systematic health human resources development policy.

In-Service/Continuing Training

In-service training programmes (both regular base and ad hoc base) are conducted for most categories of staff (Department of Health Services, 2001). The NIHS, the PBN, and other institutions provide in-service training programmes. Table 4.1.11 shows continuing education programmes at the NIHS.

Table 4.1.10 Postgraduate Qualifications and Number of Trainees of PGIM, 2001

Course	No.	Course	No.
Doctor of Medicine (MD)	860	Master of Science (MSc)	45
- Anaesthesiology	93	- Community Medicine	25
- Dermatology	20	- Community Dentistry	3
- Ophthalmology	0	- Health Education	0
- Paediatrics	131	- Medical Administration	17
- Community Medicine	44	Diplomas	189
- Community Dentistry	3	- Family Medicine	54
- Pathology	57	- General Dental Practice	6
- Clinical Oncology	11	- Laryngo-OtoRhinology	0
- Psychiatry	57	- Legal Medicine	31
- Family Medicine	5	- Medical Microbiology	6
- Radiology	31	- Ophthalmology	33
- Forensic Medicine	35	- Pathology	43
- Medicine	257	- Psychiatry	0
- Medical Microbiology	29	- Tuberculosis and Chest Diseases	6
- Medical Administration	0	- Transfusion Medicine	10
- Obstetrics and Gynaecology	87	- Venereology	0
Master of Surgery (MS)	313	- Child Health	38
- Dental Surgery	2		
- Ophthalmology	66		
- Oral Surgery	17		
- Orthodontics	7		
- Otolaryngology	20		
- Restorative Dentistry	4		
- Surgery	197	*Total*	*1,445*

Source: PGIM (2002)

Table 4.1.11 In-service/Continuing Training at the NIHS, 2002

Nature of Training	Duration of Training	Number of Trainees
Orientation in Community Health for DDHS/Health Ministries	6 weeks	25
Management Training for MOs	10 days	25
Management Training for Provincial Health Care MLM	4 weeks	20
Training on HLM Production	2 weeks	10
Training on Social Science for Trainers	5 days	25
Review of Teamwork Skills	2 days	25
Participation in Community Health Development for PHC Personnel	4 weeks	25
Community Health Management for PHC Personnel	4 weeks	25
Management Training for Senior Pharmacists	2 weeks	25
Training to Improve Skill of MLTs	5 days	25

Source: Lee, Kenneth (2002), The Future of the National Institute for Health Sciences

Most training programmes are ad hoc based. There is no systematic in-service training system and continuing education, although some institutions have regular programmes. Especially at provincial level, in-service and continuing education tend to have less priority than infrastructure construction. Provincial ministers for health seem to be not interested in training, because in-service training is not

attractive for them or for politicians. In Kurunegala district, in fact, there is no budget for in-service training in 2002, although the regional training centre submitted a proposal for in-service training programmes (Rs.1.3 million) to the provincial ministry.[2] The Regional Training Centre, therefore, requests financial support to NGOs to conduct the proposed programmes. Again, these programmes are not regular.

Issues for Planning

Problems in health human resources development can be summarized as follows.

1) Shortage of Training Facility

Shortage of training facilities is a significant constraint of health human resources production. In the School of Nursing Colombo, for instance, there are only three rooms and one hall (tentatively using as class room) for 651 students. In addition, the insufficient number of hostel facilities (250) causes geographical constraints for students who come from outside of Greater Colombo. Many of them take more than one hour and half, sometimes three hours, for single trip to the school. The hostel facility is only available for girls; the boys have to travel to school from their home or find accommodation by themselves. The students who travel from their home tend to be unable to concentrate on lectures, because they are exhausted by travel to the school.[3] Indeed, the School of Nursing Sri Jayawardenapura has sufficient classrooms, equipment, and hostels for all. However, that is an exception, and many nursing schools have the same problems. The School of Nursing Kurunegala, for instance, is suffering for lack of facilities such as classrooms, hostels and furniture. The library of the school does not have sufficient books because of insufficient budget to purchase publications, although it has many shelves, which were donated by the government of Japan.

Figure 4.1.4 shows the location of training institutions in Sri Lanka. The PBN, which provide post-basic nursing training, for instance, has no hostel for trainees, although their trainees come from all over the country. It is not easy for people who live outside of Greater Colombo to participate in courses.[4] The NIHS and other regional training centres have the same geographical constraints. Most of trainees in the regional training centre at Kurunegala, who are recruited by the line ministry, are from outside of Kurunegala district such as Polonnaruwa.

The quality of training facilities and equipment, in addition, is insufficient. A cause seems to be lack of maintenance for the facilities and equipment. Both central and provincial institutions tend to be short of maintenance staff members that maintain training facilities and equipment.

[2] Most of in-service training for paramedics is conducted by district level. Regarding budget, DPDHS office or regional training centre has to submit proposal to province when they plan training programmes.
[3] Interview with the Acting Principal of Nursing School Colombo, 07 May 2002
[4] Interview with Special Grade Nursing Tutor of PBN, 07 May 2002

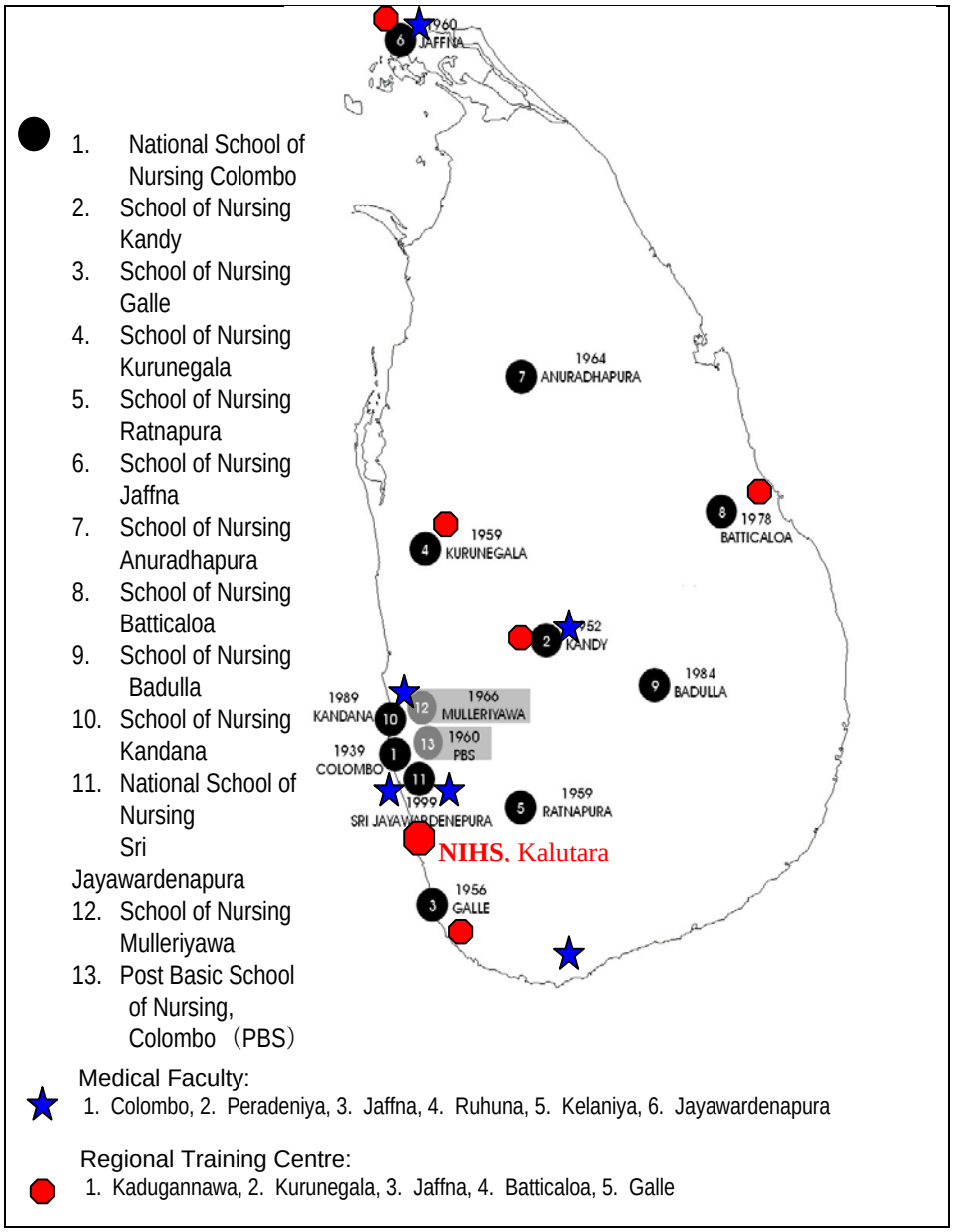


Figure 4.1.4 Location of Training Institutions

2) Shortage of Trainees

Shortage of trainers is a cause of limited production of health human resources. Both number and quality seem to be insufficient. The School of Nursing Colombo, for instance, has only nine tutors, and they teach 651 students (that means 72 students/tutor[5]). The School of Nursing Kurunegala, likewise, is suffering for lack of tutors. The rate of students per tutor has deteriorated to around 60 in 2002, compared with 40 in the 1960s, although the number of tutors has increased. One cause is limited capacity of the PBN that produces tutors for nursing schools. The production of nursing tutors seems to be less interesting than the production of nurses. Regional training centres for training paramedics such as public health inspectors and midwives are facing lack of tutors as well. The Regional Training Centre Kurunegala, for instance, is conducting two basic training courses

[5] Appropriate number is 20 students/tutor

for public health inspectors and midwives. However, there are only two tutors who train 80 midwife trainees, and only one unqualified tutor who trains 38 PHI trainees.

Training of trainers programmes, on the other hand, seem to be insufficient. The Medical Research Institute (MRI), which trains medical laboratory technologists (MLT), is facing a shortage of trainers, although it had a good tutor who had been trained in Japan. However, technology (tutor skills) transfer has not been conducted sufficiently, because there is no training budget except basic training for MLT.[6] In addition, the quality of trainers seems to be a problem in terms of not only technical skill but also communication skills or teaching method. The Centre for Professional Development, National Institute of Education (NIE), provides teaching method courses to tutors from health training institutions in terms of assistance for implementation of curriculum. However, the courses are not regular but only on request from those institutions. There is no systematic in-service training programme.

3) Problems in Curriculum

Education/training curriculum affects quality of trainees. Thus the curriculum has to meet not only present needs but also future demands. The curriculum is developed by various institutions. The curriculum for Nurses both on basic and post-basic training is developed by the Ministry of Health. Curriculum for Medical officers and paramedics training is developed by the Science Maths and Health Education Unit, the Centre for Curriculum Development, the NIE. The NIE has curriculum developers for medical officers and paramedics, and they develop curriculum. The NIE sometimes invite resource persons from the Ministry of Health to develop curriculum, although the NIE, which is under the Ministry of Human Resource Development, Education and Culture, does not have direct relation with the Ministry of Health. Contents of curriculum, furthermore, are discussed by the Board of Studies with participation from the Medical Faculties of universities and the PGIM for medical officers curriculum, and from the NIHS for paramedics curriculum; the Board meet every two months. These training institutions develop curriculum from practical views.[7] There are feedback from training courses to curriculum and teaching methods. In evaluation of training programmes in the NIHS, for instance, tutors evaluate each course, and students evaluate each lecture.

It is necessary to consider if the present curriculum meets future demands such as those of the ageing society or of epidemiological transition. The lack of personnel in charge of mental health service such as psychologists, occupational therapists and counsellors is significant. In 1996, there were only 26 psychiatrists in public sector (less than 10 in private sector) in Sri Lanka (PTF, 1997). In addition, some curricula have not been revised for many years. The courses of the PBN are conducted according to the curriculum that was developed in 1968, although the curriculum for nursing education has been revised recently.

Training Curricula seem to concentrate on technical aspects only. For instance, there is no training curriculum about ethical or social aspects for MLTs, and some MLTs tend to abuse the system after they are assigned to medical institutions. It is necessary to teach not only technical skills but also ethics in the process of health human resources production to prevent a moral dilemma and to promote responsible health workers.

[6] Interview with Director of MRI, 07 May 2002
[7] Interview with Director General of NIE, 13 May 2002

(6) PERSONNEL DEVELOPMENT WITHIN THE MINISTRY

Health human resources production is important, but it is not the only goal of human resource development for health. Health personnel have to adapt to epidemiological transition and new technology. Health human resources management, therefore, has significant roles in quality control, career development, and continuing training for health personnel. Medical Officers and Nurses have career ladders. However, quality control and systematic continuing training of health personnel seems to be insufficient. Monitoring and evaluation for career of graduates of each training institution seem to be lacking.

Recruitment and Deployment

Deployment of health human resources is based on the cadres of each institution. The central MoH recruits and deploys Medical Officers, and provincial MoHs recruit other categories, after administrative devolution/decentralisation. However, in fact, there are problems like limited authority, capacity and budget for recruitment at province/district level. Provinces do not always have the authority to decide cadre and to select health personnel that work in the province.

In addition, it is difficult to deploy health personnel to specific areas such as remote rural areas, estate areas, and conflict-affected areas. A central dispensary (CD) located at a border between North-Central Province and Eastern Province, for instance, has a medical officer who has worked at the CD since 1987. No Medical Officer wants to come to the CD because the CD is located in a conflict-affected area. In this manner, there is a huge differentiation in cadre vacancies among provinces. As to cadre fulfilment of public health nurses in 1999, for instance, Northern Province was only 28% compared with 156% (over cadre) in Central Province. The inequality of deployment of health personnel causes geographical inequality of health services.

On the other hand, outsourcing of health personnel both technical and non-technical may contribute to improve the situation of shortage of health human resources. Especially for non-technical categories such as cooks and drivers, it maybe necessary to examine feasibility of introduction of outsourcing in terms of cost efficiency. Generally, outsourcing in the health sector can also reduce staff salaries and contribute to flexible employment without negotiation with trade unions.

Work Environment Condition, Motivation, Incentives and Ethic

The work environment and conditions of health personnel depend on institutions. A nurse of the Welikanda Rural Hospital in Polonnaruwa district has to care for four wards by herself during duty hours, because of no alternative nursing staff. On the other hand, some general hospitals in urban area have many medical officers. Health personnel tend to be unwilling to work in conflict-affected areas, estate hospitals, and other difficult places such as remote rural areas. “Great consideration needs to be given to their needs, particularly the stress of working in a conflict situation (Wijemanne, 1997).” There is no incentive to go to difficult locations. In terms of salary, for instance, medical officers tend to lose the opportunity of working at private clinics after duty hours in rural areas.

The brain drain of health human resources, on the other hand, is a serious problem, especially for medical officers. Some medical officers move to private hospitals or overseas to seek better salary and work environment. “The government gave public sector physicians the privilege to do private practice in their off-duty hours (Hsiao, 2000)”. Administrative officers such as line ministry staff or provincial staff, however, cannot work in private sector according to the regulation. In terms of salary, to become an administrative staff has less incentive than continuing as medical officers. Regarding nurses, the human resources drain can be also seen. Some nurses tend to go to foreign countries, administrative work or private sector to seek better salary. People tend to see a nurse as a stable job because unemployment is a serious socio-economic issue in Sri Lanka.

Some health personnel in the public sector quit working and escape to the private sector or overseas, although the government takes a huge cost to train them.

Quality Control, Career Development and Continuing Training

1) Medical Officers

Figure 4.1.5 shows a career ladder of Medical Officer in Sri Lanka. Medical officers have various kinds of opportunities to take postgraduate education and other training. However, medical students have to wait one or two years to enter a faculty of medicine of universities since the late 1980s.[8] Production of Medical Officers, on the other hand, tends to be excessive. Newly graduated students have to wait to have opportunity of internship. Thus, it takes a longer time for them to become a Senior House Officer than the expected duration. This is a cause of brain drain to overseas or private sector. In addition, Hsiao pointed out that "insufficient government funding for public health services has kept physicians' salaries very low compared to what other equivalent professionally trained persons can earn in the private sector. As a result, the chance of a large exodus of the best doctors and specialists to the private sector have always been great (Hsiao, 2000:xiv)." Medical officers tend to work at private hospitals after they finish their duty work at public hospital to earn additional salary, even if they remain in the public sector.

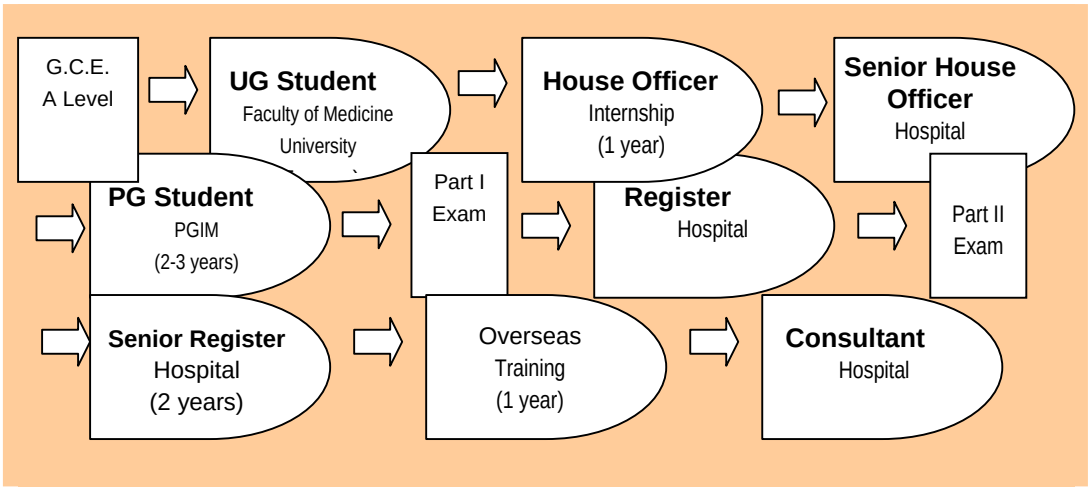


Figure 4.1.5 Career Ladder of Medical Officer

The quality of medical officers is certified by the PGIM. The PGIM has conducted various postgraduate courses to meet present and future demands. However, once medical officers are qualified, there is no monitoring and evaluation system of their quality.

2) Nurses

Figure 4.1.6 shows the career ladder of nurses. The shortage of nurses has been pointed out for a long time. The number of production of nurses has increased sharply during the last decade. However, quality of education seems to have deteriorated because of lack of training facilities and

[8] Universities had been closed from the late 1980s to early 1990s. The gap between candidate and enrolment has been narrowed recently.

tutors. For instance, a tutor conducts three nursing practice for hundreds of students per day in the School of Nursing Kurunegala. Continuing education for nurses, in addition, is limited because of lack of tutors who can conduct advanced training.

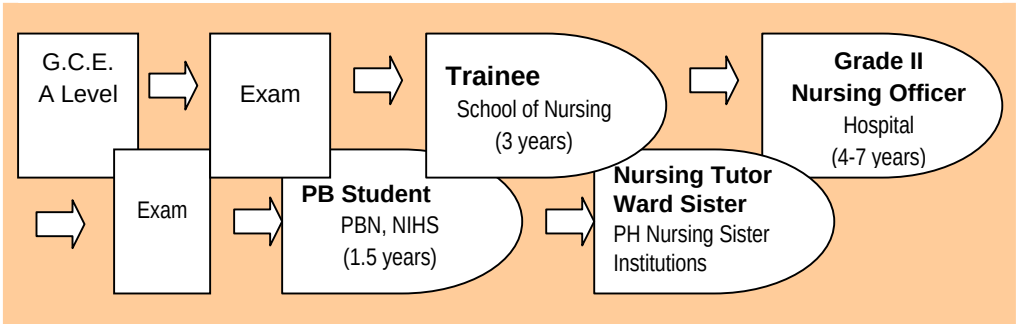


Figure 4.1.6 Career Ladder of Nurses

Source: Ohno Nursing School in the Educational System of Sri Lanka, Compiled by MoH-JICA Study Team

Some qualified nurses, especially male nurses, on the other hand, tend to quit their job in Sri Lanka and go abroad such as in Middle East countries. The brain drain is a problem in terms of accelerating shortage of nurses and squandering production cost for them.

3) Paramedical Staff

There are 21 categories within paramedics such as Medical Laboratory Technologist, Radiologist, and Public Health Inspector. They are trained at such institutions as NIHS, MRI and regional training centres for one or two years. Figure 4.1.7 shows Career Ladder of paramedics.

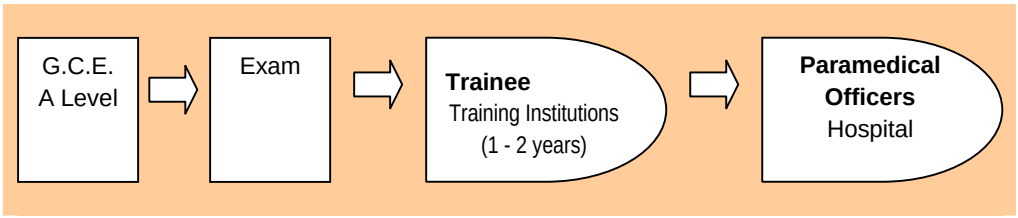


Figure 4.1.7 Career Ladder of Paramedics

However, there is no systematic continuing education/training for paramedics including training of trainers. Continuing training for paramedics tend to be ad hoc and supported by donor agencies such as WHO, UNFPA and JICA, because training institutions do not have sufficient budget for continuing education.

4) Managers

The quality of health human resources seems to depend on management ability of managers in each institution. Continuing training for health personnel is important for quality assurance of staff, and providing better services. However, there are not many managers who recognise or are

aware of the importance of continuing medical education. Training of managers, thus, is important.

The NIHS has conducted a middle level manager training programme for district level managers. The training course is comprehensive and includes management skills and planning methods. Quality of managers, however, seems to be insufficient for effective management of medical institutions. Some managers such as a director of a base hospital and managers of MoH office do not know their implementation budget, and how to prepare adequate plans to expand their activities, although they tend to be good at preparing statistics.

Management of the Castle Street Hospital in Colombo seems to be a good practice. The hospital has introduced Japanese management skills known as the 5S: *Seiri, Seiton, Seisou, Seiketsu, and Shitsuke* (Arrangement, Putting in order, Cleaning, Cleanliness, Upbringing) for hospital management.

Current Problems in Personnel Management

The Working Group on Human Resources for the MoH-JICA Study identified the key managerial problems as follows:

1) Insufficient quality control caused by:
   - Lack of specialists adapted to the change of disease pattern
   - Low responsiveness to patients caused by work-load, concentration in certain facilities, part-time working after duty hours
   - Increasing under-trained intern staff
   - Unsystematic continuing training
2) Low motivation in government facilities due to part-time working after duty hours
3) Lack of Monitoring and Evaluation, lack of performance-based wage system
4) Brain drain overseas due to low compensation, low incentives, and (only for doctors) shortage of good posts
5) Mismanagement of personnel / concentration in urban area due to lack of incentive for work in rural areas, proportional distribution not according to disease pattern / care needs.
6) Low social status of paramedical/co-medical personnel
7) Low management / planning ability of health service sections at local level
8) Insufficient devolution, e.g., deployment of doctors by central MoH
9) Lack of planning skill due to shortage of experience in the past
10) Discretionary administration due to budgetary constraints

4.2 DRUGS AND OTHER MEDICAL SUPPLIES

The purpose of this section is twofold – to describe the planning challenges related to drugs and other medical supplies on the one hand and to discuss the causes of these challenges by examining the components of drug supply management in Sri Lanka on the other hand. Because of information gaps in the private sector, this section focuses primarily on the government sector. It also deals mainly with drugs because they often account for about 20% of total health expenditure and because the challenges related to drugs are somehow applicable to other medical supplies.[9]

(1) POLICY, LEGISLATION & REGULATION

The policy is to supply safe effective, quality drugs and other supplies whenever and wherever needed equitably at a reasonable cost to the state. Towards this end, the Cosmetics, Devices and Drugs Act No. 27 was approved as a law of the land in 1980 and amended by Act No 38 of 1984. It serves as the legislative framework to regulate the use of medicinal drugs in the country. It is a comprehensive legislation, based in part on Canadian legislation, which placed a strong emphasis on generics and controls: (a) registration, (b) manufacture, (c) importation, (d) sale, (e) advertising, (f) labelling, (g) distribution as samples, (h) testing, and (i) destruction of outdated medicinal drugs.

When it comes to the importation, storage, distribution, and use of narcotics, the policy of Sri Lanka is embodied in the Poisons, Opium and Dangerous Drugs Ordinance (Chapter 218) as amended by Act No. 13 of 1984.

When the WHO introduced the concept of essential drugs, Sri Lanka adopted its own policy on essential drugs and published its first Essential Drug List (EDL) in 1985.

In 1996, the then Ministry of Health, Highways and Social Services drafted the "National Medicinal Drug Policy" to "ensure that drugs and medical devices of approved quality, safety and efficacy are made available to the community at reasonable prices and with uninterrupted delivery".[10] Towards this aim, the proposed strategies included the establishment of a Cosmetics, Devices and Drugs Control Authority that will overlook the areas of Good Manufacturing Practices, Drug Registration, Regulatory Control and Inspection. To minimise waste due to spoilage, pilferage and other reasons, operational guidelines were scheduled to be developed for procurement, quality assurance, inventory control, distribution and transportation, and storage and warehousing.

The Policy further stipulates additional strategies:

1) Adherence to WHO Ethical Criteria on Promotion and Advertising;
2) Updating of the National Essential Cosmetic Devices and Drugs List for different levels of institutions;
3) Revision of the National Formulary at least once in three years;
4) Establishment of a National Cosmetics, Devices and Drugs Information Centre;
5) Ensuring appropriate prescribing by medical practitioners;
6) Promotion of appropriate self-care with "over the counter drugs"; and
7) Requiring approval of a recognised Ethics Committee for all trials of medicinal drugs and devices.

[9] The MoH classifies medical supplies into: drugs, surgical consumables and laboratory chemicals
[10] Ministry of Health, Highways and Social Services, National Medicinal Drug Policy (Draft), November 1996.

To date, all the aforementioned strategies have been adopted except for the establishment of information centre and formulation of operation guidelines.

Despite the contribution of development partners in the Sri Lanka health system, there is yet to be formulated a policy on donations of drugs (and medical equipment). This policy will also improve coordination among central purchasing authorities. It has been observed that, due to the lack of coordination among central purchasing authorities, a large amount of resources are being wasted following duplication of items being purchased. In certain instances it has been found that, certain life saving items are out of stock in some institutions, while large quantities are stored without being used in others. Quality and type of items imported by the institutions also vary and, as such, the prescribers and users are confused in selecting the correct items. All these clearly indicate that a well coordinated supply system should be developed so that the end user would get maximum benefit out of the available but limited resources. Dr. Ajith Mendis[11] explicitly articulated coordination among central purchasing authorities as another area that may benefit from a clearly defined policy on drug procurement. Apparently, the MSD, FHB, BES, AMC, and EPI overlap in their acquisition of at least seven types of drugs, eleven devices and one vaccine (Table 4.2.1).

Table 4.2.1 Items Supplied by More than One Central Purchasing Authority

Description	Name of Item	MSD	FHB	BES	AMC	EPI
A. Drugs	Tabs. Ferrous Sulphate	✓	✓			
	Tabs. Folic Acid	✓	✓			
	Tabs. Calcium Lactate	✓	✓			
	Inj. Depo Provera	✓	✓			
	Tabs. Chloroquine	✓			✓	
	Tabs. Primaquine	✓			✓	
	Tabs. Fansidar	✓			✓	
B. Devices	Kidney Trays	✓	✓			
	Vagina Speculam	✓	✓			
	Tissue Forceps	✓	✓			
	Artery Forceps	✓	✓			
	Surgical Scissors	✓	✓			
	Forceps	✓	✓			
	Instrument Trolleys	✓	✓			
	Examination Lamps	✓	✓			
	Uterine Sound Forceps	✓	✓			
	Electric Sterilizer		✓	✓		
	Mini Autoclave		✓	✓		
C. Vaccines	Inj. Tetanus Toxoid					✓

Note: MSD = Medical Supplies Division; FHB = Family Health Bureau; BES = Bio-Engineering Services; AMC = Anti-Malaria Campaign; EPI =Epidemiological Unit

Source: MoH-JICA Study

[11] See Supporting Document Vol. II (Study Number 1.9 by Dr. U. A. Mendis, MoH)

(2) AVAILABILITY AND ACCESSIBILITY[12]

There are two approaches to assessing availability of drugs. The subjective approach considers the perception of the primary clients whereas the objective one requires actual count of a basket of medicines. The 2002 IDA/WV Health Service Project[13] did both. Among the interviewees, the health administrators were the least satisfied with the availability of drugs in their respective institutions while the senior doctors were the most satisfied. From the perspectives of the pharmacists and patients, it seems there is ambivalence. Half of each group expressed satisfaction and the other half a contrary opinion (Table 4.2.2).

Table 4.2.2 Availability of Drugs in Government Health Institutions

Personnel Interviewed	Number Interviewed	Percentage Not Expressing Satisfaction
Health Administrators	41	63
Senior Doctors	39	11
Government Pharmacists	42	45
Patients	42	50

Source: MC Consultants, Final Report on Drug Costs and Availability, IDA/WB Health Services Project, 15 October 2002.

When it comes to private hospitals, shortages of drugs were not reported. Stocks are not kept in large quantities, too. Inspection of government hospital drugstores and dispensaries revealed that some drugs were short in supply and these are listed in Table 4.2.3 In the wards, the drugs in short supply are Co-amoxyclove, Ciprofloxacin, Nalidix Acid, Neomycin, Domphenelone, and Phenobarbitone. The study classified the factors affecting drug availability into the following: insufficient funds allocations; not maximizing the use of allocation; delays in the placement of orders, due to suppliers or in the distribution; increase in the number of patients; over-usage; quality failures; losses due to spoilage, pilferage, improper issues (last come, first issue), and expiry; wastage due to improper handling, bulk pack dispensing, bad dispensing practices, bad packaging, and patients wastage or use; and problems related to management such as poor monitoring or stock control, lack of trained pharmacists, and lack of regular audits and supervision.

Table 4.2.3 Drugs that are Short in Supply in Government Health Institutions

Types	Drugs
Anti-infection	Amoxicillin, Cloxacillin, Erythromycin, Tetracycline, Co-trimoxazole, Nalidix Acid, and Griseofulvin
Cardiovascular	Verapamil, Methyldopa, Captopril, Atenelol Enalopril
Analgesics	Paracetamol, Aspirin, Ibuprufen, Diclofenac Suppositories
Anti-allergy	Chlorphenirarmine
Gastrointestinal	Cimetidine
Respiratory tract	Salbutamol, Theophyliine, Aminophylline
Dermatological	Hydrocortisone, Betamethazone

Source: MC Consultants, Final Report on Drug Costs and Availability, IDA/WB Health Services Project, 15 October 2002.

[12] Because many of the studies that are cited employed purposive sampling techniques, stating generalisations is not attempted. Instead, all the evidence presented is taken to be indicative of the prevailing situation in most health facilities in the country and were validated through a series of consultations with national experts in the conduct of the Health Master Plan Study.
[13] MG Consultants, Final Report on Drug Costs and Availability, IDA/WB Health Services Project, 15 October 2002.

Among many factors, the availability and accessibility of drugs are influenced by the activities related to estimation and allocation, procurement (including importation), storage, distribution and inventory as well as to manufacturing and drug financing.

Estimation and Allocation

Estimation of requirements is performed annually with the use of Estimate Books that are distributed to institutions/regions. In general, estimation of drugs, dressings & surgical consumables are prepared by pharmacist or by Registered Medical Practitioner when there is no pharmacist. The estimates for laboratory chemicals are prepared by Medical Laboratory Technologist in the institutions. The estimates for teaching hospitals and specialised campaigns as well as from the Armed Forces are submitted directly to the Medical Supplies Divisions. The estimates from hospitals under the Provincial Councils are consolidated by the Divisional Pharmacists at the office of the DPDHS before they are forwarded through the formal channel.

The institutional estimate books are checked and certified by the Drug Review Committee. The Committee consists of the DMO, Chief Pharmacist, Chief MLT, Consultants, MOIC – OPD, and Matron. Estimates are approved at the provincial level by the Central Drug Committee consisting of following members: Provincial Director of Health Services; Regional Director of Health Services; Divisional Pharmacist; Divisional RMO; and Consultants appointed to the Committee. At the approving stage of the estimate, there is no representative from the institution. If any alteration has to be made on the estimated quantities, there is no way to get the ideas of the end-users.

The institutions make their estimates for drugs that are appropriate for their level. There are three different lists of drugs designed for the three levels of institutions:

Level 1 – Central Dispensaries (CD) and CDs with Maternity Homes (MH);

Level 2 – Hospital with inpatient facilities manned by Medical Officers (MOs), Registered Medical Officers (RMOs) and Assistant Medical Officers (AMOs); and

Level 3 – Teaching, Provincial, Base and Specialised Hospitals.

The criteria used in preparation of estimates include the following: consumption rate of the previous year; available stock positions, disease pattern of the area, financial allocation, and addition of some percentage to the previous year estimate. Specifically, 79% said that they followed the method stated in the manual on management of drugs, 27% added ten per cent to the previous estimate, only 20% used diseases pattern in the region, and 4% considered financial allocation.[14] When it comes to allocating the drugs they receive, one pharmacist said that drugs were distributed according to percentage received, while another said it was done according to prescribing habits. In reality, morbidity and mortality data cannot be solely utilised as reliable basis for estimation of drugs because of the absence of information on OPD and of a well-developed medical records department even in large hospitals. At the time of estimation, officers do not have any information on the rupee allocation.

The Deputy Provincial Director of Health decides the allocation to an institution at the local level. In certain instances, this amount is being decided without considering the population, facilities available in institutions, geographical situation, morbidity and mortality patterns. Ninety percent (90%) of the respondents[15] indicated that drugs are being allocated to institutions according to the levels as indicated in the drug estimate books. Half of them (55%) have indicated that additional allocations are given whenever the supplied drugs become out of stock.

[14] See Supporting Document Vol. II (Study Number 1.4 by Mr. C. Edward)
[15] See Supporting Document Vol. II (Study Number 1.4 by Mr. C. Edward)

What are the areas for improving estimation, ordering and allocation? The Policy and Human Resources Development Project Report on Drugs and Supplies[16] developed a comprehensive of common problems:

1) Financial allocation for the Division is not intimated in time to be distributed to institutions under the Division.
2) The estimate books, numbering seven in total (separate estimates for drugs as well as other medical items), are not sent at the same time by the MSD.
3) Each drug is estimated and the total value obtained for all items should be within the allocation given. It is observed that certain institutions purposely undervalue estimates so that greater quantities of expensive drugs could be estimated.
4) Doctors are not familiar with drug estimate books; hence, drug prices and some of their prescriptions are for drugs not included in the hospital drug lists. Inadequate knowledge of drug prices lead to an increase in hospital drug budgets.
5) Upgrading of institutions is not known at the time of estimation. These changes were carried out without considering the drug allocation to a particular institution.
6) MOs were appointed to lower-level institutions such as CD and MH; as such, drugs used in higher-level institutions are requested. However, when these MOs were replaced by RMO/AMOs, most drugs previously ordered by the MOs were not used by the latter and are wasted.
7) New Consultants were appointed after estimates are prepared which posed difficulties in calculating of accurate estimates. Sometimes Medical Clinics are also started when there are more doctors although the institutions are not geared for such facilities.
8) Some Medical Officers of Health are also involved in treating curative illnesses; hence, drugs not entitled for such institutions manned by these officers are requested for.
9) The pharmacists were of the view that there are variations in prescribing patterns by MOs.
10) Some Heads of Institutions who are on transfer orders were not interested in preparing proper estimates for drugs for the following year.
11) When a drug is out of stock (e.g., Antibiotics) alternative available drug is prescribed. This results in excessive consumption of the latter. Often the alternatives are more expensive.
12) Drugs are estimated by other categories of staff (even labourers) in the absence of Pharmacists.
13) MSD issues drugs at prices higher than that indicated in the drug estimate books. This is because estimate books are prepared about six months ahead and there are price increases afterwards.
14) Drugs are issued without considering level of use in some Divisions, while in other Divisions drugs are being requested for without considering the level of use, but are not issued by the Division.
15) Sometimes bigger quantities are requested for due to fear of lesser quantities being issued by MSD. Such over estimation may lead to wastage.
16) Certain drugs (e.g., malarial drugs) are estimated by Divisions as well as by Specialised Campaigns in the same Divisions resulting in over estimation.
17) In view of unrealistic estimation, supplementary estimates are prepared during the year because drugs are needed even though allocation has been already used.
18) Sometimes the value of medical items supplied by MSD exceeds the divisional allocation.
19) There are instances where drugs are supplied to institutions without being estimated for same.

[16] Fernando, G. Report on Drugs and Supplies, Policy and Human Resources Development Project, October 2002.

20) Sometimes the entire requirement for the whole year is supplied but such products cannot be used until end of the year as the shelf life period is not valid for one year.
21) Drug Review Committee meetings are held at divisional level; follow up action is taken. However, at times this does not happen in institutions.
22) Doctors are not involved when estimates are prepared.
23) List of out-of-stock drugs are not sent to doctors.
24) Out-of-stock periods may not be taken into account when estimates are prepared.

Procurement (including Importation)

The State Pharmaceuticals Corporation (SPC) was established in 1971 originally as the exclusive importer for the country. With the open market policy in 1977, some private companies were registered as importers, too.

All requirements of the MS are ordered with the SPC, which requires a minimum of 9-12 months lead-time to supply an item. The order list contains up to 500 – 600 items. These items vary in specification, description, quantity, pack sizes and delivery date. Because of the time between assessment and delivery, drugs with a minimum three years shelf life are required.[17]

The purchases are made by SPC through three types of tenders (Table 4.2.4). It uses its funds initially and subsequently collects the money from the DHS. For this purpose, SPC charges 12% of the C & F value of goods as service charge. This includes all clearing and ordering expenses such as port and airport levy. SPC clears and delivers the goods, which arrive at the Port of Colombo and the Airport Katunayake, to the stores of the MSD.

Table 4.2.4 State Pharmaceutical Corporation: Comparison of Tenders

Type	Value	Approving Authority	Time to Supply First Tender
SPC	Less than Rs.10 Million	SPC Tender Board	11 months from date of requisition
Ministry	Between Rs.10 Million and Rs.20 Million	Ministry Tender Board	13 months from date of requisition
Cabinet	More than Rs.20 Million	Cabinet Tender Board	Minimum 15 months from date of requisition

In order to ensure that products supplied are of the prescribed good quality, all suppliers are required to provide a certificate of quality from the Manufacturer or from an independent Quality Control Laboratory for each manufactured batch which are closely scrutinized prior to acceptance. No consignment of drugs is cleared from the port in the absence of such Certificates.

The SPC faces several problems related to procurement.[18] One, on completion of the stringent tender procedure and award as indicated previously, the successful supplier, after accepting award, at times, informs the SPC of his inability to ship goods within the specified period. He indicates various excuses such as: late receipt of raw material; delays and strikes at port; non-availability of carrier vessels; requiring price increase; unforeseen circumstances; and request extension of delivery time. The SPC is compelled to accept extended delivery time because a new supplier would require at least another 90 days for manufacture and supply; which means a total delay of at least 120 days.

[17] See Supporting Document Vol. II (Study No 1.5 – 1.7)
[18] See Supporting Document Vol. II (Study No. 1.5 – 1.7)

Two, sometimes there is no suitable offer after invitation of worldwide tender. In such a case, the SPC is compelled to obtain fresh Tender Board approval to invite a new tender from selected sources (registered sources and suppliers). This problem results to a delay of at least another 100 days.

Third, some items are not being manufactured anymore at the time of tender. There is no available supplier. This happened with the following supplies: Polybactrin Spray and Saventrine.

Fourth, the problem of quality of item is noticed upon receipt at MSD stores despite testing conducted before awarding of contract. In some instances, quality failure on certain batches is declared only after they have been distributed to the stores. In such instances, the entire stock of the relevant batch is rejected and fresh stock ordered. The delay in receipt of fresh stock is approximately 90 – 120 days.

Finally, the inability to forecast accurate estimates of requirements compels the Director of Medical Supplies Division to order the same item on more instances in one year (additional order lists). The SPC has to make fresh orders with suppliers; this leads to at least 90 – 120 days delay.

Although the major part of the procurement is done through the SPC, the MoH allows for emergency purchases by calling for direct quotations from suppliers, by purchasing directly from SPC outlets or directly from the agent. In teaching hospitals, the Director has the power to approve requests from consultants for local purchases. In other hospitals, this power lies in the Provincial Director.

Storage, Distribution and Inventory

The Medical Supplies Division (MSD) is in charge of central storage and distribution of medical supplies including the following: pharmaceuticals, dressings, X-ray films and chemicals, contrast media, special drugs, surgical consumables and non-consumables, special drugs, dental items, laboratory chemicals and glassware, and printed forms. It has Regional Medical Supplies Division (R-MSD) offices that are situated in each DPDHS area for storage of medical supplies. In general, most R-MSD offices are understaffed.[19]

The R-MSD offices were easily accessible to vehicles with adequate parking facility. Most R-MSD offices have been constructed according to a type plan. However, the physical conditions were not satisfactory. The roofing was unsatisfactory. Ventilation was inadequate to maintain optimum room temperature. There was no fire extinguisher. Cargo handling facilities were inadequate. Some lack basic principles in the storage facilities required to maintain the quality of drugs. For example, out of all R-MSD only Badulla has cool room facilities for storage of vaccines and X-ray items and drugs, which need low storage temperature. Others have refrigerators for this purpose.

The distribution of supplies from MSD to R-MSD is on a quarterly basis. Transport to RMSD is by lorries or railway wagons. When transport is by the MSD lorry, the cost of fuel and the financial claim of the staff for the trip are reimbursed by the funds from the provincial administration. The lorries belonging to the R-MSD also collect supplies from the MSD. The cost of maintenance of these vehicles is borne by the provincial government. Transport of supplies from R-MSD to the end-users is by R-MSD lorries. Lorry is the most convenient means of transportation. Most R-MSD offices have a lorry and some vans for transport of vaccines. A common complaint is that these vehicles are being used by the provincial authorities for other activities not realizing the importance of timely distribution of drugs to the respective health institutions. Severe delays in distribution are experienced due to constraints related to transport facilities.

Generally, medicines are at times not distributed on time. In the MoH-JICA Study, 44 (44%) respondents stated that supplies are received very late.[20] Six out of ten respondents (62%) collected drugs weekly because stocks are not available at the MSD. Unfortunately, more than a quarter (76%)

[19] See Supporting Document Vol. II (Study No. 1.5 – 1.7)
[20] See Supporting Document Vol. II (Study No. 1.5 – 1.7)

reported that collecting drugs from MSD is a very tedious process and many delays are encountered at all sections.

There are teaching hospitals that fall under the line ministry. Drugstores, indoor dispensaries and OPD dispensaries vary among these institutions. Buildings are not according to any type plan. In most institutions, the available space is grossly inadequate and as such, only a week to two weeks stock could be accepted and stored. As a result, it is observed that many bulk items are being stored on corridors and wherever space is available. All teaching hospitals obtain supplies directly from the MSD. In these institutions, depending on the allocation of cadres, the availability of manpower differs. Some teaching hospitals, although they have either a lorry or a van, depend entirely on MSD vehicles for the transport of drugs.

All base hospitals come under the Provincial Health Ministries. In Sri Lanka there are a total of 35 base hospitals. The drugstores, indoor dispensaries and OPD dispensaries are similar to those of teaching/provincial hospitals, but smaller in size and with lesser number of staff. The type of specialities available from province to province varied. Buildings are not constructed to any type plan. Unlike in teaching hospitals drugs are received from the respective R-MSD. As the available space for storage for drugs is limited, many bulk items are stored on corridors and wherever space is available. The number and type of staff vary between institutions. Pharmacists, Dispensers and Labourers are involved in the logistics of drugs. In most institutions, cadre vacancies have to be created and approved for the smooth functioning of the institutions or existing cadres must be filled. Most base hospitals depend on the vehicles of R-MSD for the supply of drugs. However, in case of emergency, even ambulances are used to collect drugs.

At the institutional level, the common problems related to storage and stock control are:

1) Physical Facility

   Most of the hospital stores are part of hospital buildings and not suitable as stores. They are poorly maintained and inadequate in many ways for storage. Facilities for packing goods, receiving & delivering goods such as platform, pallet trucks are deficient. Storage space is inadequate. Ventilation is inadequate. Cold storage facilities are poor. Because the building is part of the hospital, access to the stores is difficult in some institutions. There is no separate security for the stores. There is no separate office room for the staff. There is no separate telephone facility. There is no separate store for the surgical consumable and special items like inflammable items.

2) Human resources

   There is shortage of Pharmacists, Medical Laboratory Technologists, Drivers, Storekeepers and Labourers.

3) Inventory

   The institutions are found to maintain records as specified in the circulars of the department. The inventory systems work through registers. Separate drugs registers are maintained for bulk items at store level. Retail issues are done at Dispensary Level. These registers are maintained by Pharmacists in Teaching Hospitals, BH and DH and RMO in PUs., RH and CD & MH and CD. In the institution where the drug store is assigned to a Pharmacist as officer in charge, the registers are better maintained.

   The survey reveals that there is no defined time interval for balancing the Stores' Stock Books due to the heavy work load of the Pharmacist, whereas the Dispensers are balancing their books daily.

   Stock verification was not regular. Shortage of manpower and lack of funds were the reason for this. Stock verification was done by clerical grade staff. Due to their unfamiliarity with medical items, inventory is a slow and laborious process for them, resulting in delay.

4) Disposal

Disposal of unwanted supplies was studied by a board of survey composed of four members. Disposal is by burying, burning and crushing.

Manufacturing

Local industry supplies 20% of the drug market. The seven large private manufacturers are: MSJ Industries; Astron, Ltd.; Glaxo Smith Kline Beecham; Gamma Pharmaceuticals; Interpharm Ltd.; Chesico Ltd.; and Hemas Healthcare. Aside from these seven firms, another player in Sri Lanka is owned by the Government – the State Pharmaceuticals Manufacturing Corporation (SPMC). Previously, one Chairman and Working Director supervised the SPMC and SPC. In 1998, though, a separate Chairman was appointed to the SPMC. Consequently, SPMC lost a captive market. Nonetheless, it continues to produce a total of 51 items, mainly generic products. Through the WHO, it has exported diethylcarbamazepine tablets to 10 countries.

The major challenge facing SPMC is to be price competitive while maintaining the quality of their products. Although it does not have to worry about investment for facilities, which were donated by the Japanese government, it is handicapped by its inability to produce any of its raw materials. It has to import from India or China. It does not receive any preferential incentive from the government. The tax incentive it receives when importing is also accorded to other private manufacturers in Sri Lanka.

Threat to Availability: Drug Financing

The Ministry of Health obtains funds from the Treasury to Medical Supplies Division. This is an advance account to procure pharmaceuticals, consumable items and some other supplies. Non-consumable items are obtained through a capital budget. Votes are collected by the treasury to the provinces of the hospital coming under the Ministry of Health to obtain their requirements of drugs, surgical and laboratory items.

The trend in government expenditure for drugs has been upward since 1991 (Figure 4.2.1). In 2002, the government budgeted Rs.4.8 billion on drugs and medical consumables; Rs.3.2 billion is allocated for the line MoH hospitals (mainly teaching), and Rs.1.6 billion for Provincial Councils (Provincial, Base and District hospitals). As a comparison, the budget for personal emoluments was Rs.4 billion.

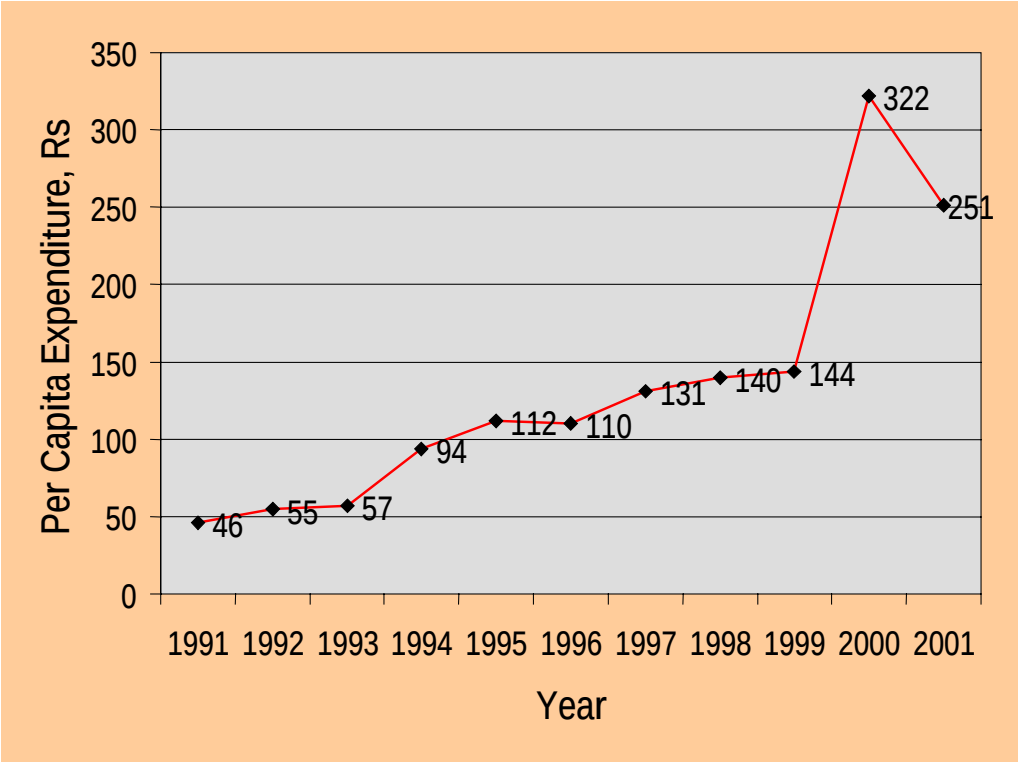


Figure 4.2.1 Government Expenditure for Drugs and other Medical Supplies, 1991-2001
Source: MoH-JICA Study No. 1.9

Is the increase in expenditures for drugs and medical supplies sustainable? Is the allocation of these resources fair and cost-effective? Is their use efficient? These are the major issues related to drug financing that need to be addressed as part of the bigger policy question on health finance.

(3) QUALITY ASSURANCE

Drugs may be of poor quality because they are illegal ones – unregistered, smuggled, counterfeit, adulterated, unlabelled, and spoilt/expired. Quality failures may also be due to many other reasons such as improper formulation, improper production, bad packaging or handling, and decomposition during transport, storage or dispensing from opened bulk packages. In Sri Lanka, the National Drug Quality Assurance Laboratory conducts pre- and post-marking quality surveillance to make available drugs of good quality to the general public. The State Pharmaceutical Corporation, the major importer, ensures that the drugs supplied to them conform to international standards as specified in the British Pharmacopoiea and International Pharmacopoiea. In addition, Good Manufacturing Practices Certificate, as recommended by WHO, is obtained with respect to each batch of a drug imported.

Nevertheless, the IDA/WB Project pinpointed specific types of medicines that were supplied to government stores but were of poor quality during the inspection such as Promethazine, Ceferoxime, Methyldopa, Frusemide, Metformin, and Aluminium Hydroxide, on one hand, and Paracetamol, Aspirin, Amoxicillin, Cloxacillin, on the other hand. The latter group consists of drugs that were found to be short in supply, too. The poor quality drugs could be due to quality failure in manufacturing. Nonetheless, it could also be attributed to delays in disposal. During its he MoH-JICA documented about a quarter of the facilities having kept expired drugs in dispensaries for several years due to a setback in the appointment of boards of survey for destruction. (See Supporting Document Vol. II)

Drug Regulation and Quality Assurance

The Drug Regulatory Authority is mandated by the Cosmetics, Devices and Drugs Act to carry out drug registration, licensing of retail and wholesale pharmacies, licensing of manufacturers, licensing of importers, inspection of storage facilities and vehicles, issuance of license to import drugs for personal use that are lifesaving, and regulation of cosmetics and medical devices.

Most of the operational problems of DRA are rooted to inadequacy in working space - for evaluation of applications, storage of registration applications, storage for registration samples and drugs seized by F&DI, and for maintaining confidentiality. Also, the present organisation structure has been criticised by WHO experts as being not suitable for a regulatory agency.[21] Since there are no proper guidelines, maintaining trained and adequate staff and evaluation of drugs for registration have been difficult.

The National Drug Quality Assurance Laboratory (NDQAL) was established in 1970 at the General Hospital, Colombo premises, with its facilities limited to chemical testing, and the Medical Research Institute was testing a part of Microbial and Biological for Pharmaceuticals. Initially it was called the National Drug Control Laboratory and headed by a BSc. graduate with training in pharmaceutical analysis in Japan. After him, the laboratory was headed by a BSc Pharmacy Graduate in the U.K. During this period, 4 Government Pharmacists and 5 Government Medical Laboratory Technologists were selected and trained in Japan, India and the United Kingdom for a period of six months in different places by the World Health Organisation (WHO). After a period of time, the laboratory head with a Pharmacy degree left the country; his successor was a Pharmaceutical Analyst and he was assisted by the Government Pharmacists and Medical Laboratory Technologists who trained abroad. As the facilities available then no longer met the standard of the WHO, a new and modern laboratory was set up in 1988 with the assistance of the NORAD Agency of the Norwegian Government.

At present, the activities of the NDQAL are primarily analysis of the following:

1) Samples of the drugs purchased on tender;
2) Post surveillance samples (i.e., Drugs, which are in use at the public medical institutions);
3) Collected samples by the regulatory officers;
4) Complained samples from government institutions; and
5) Drugs manufactured by local manufacturers, which are registered with the authority.

The staff of the Laboratory has increased. Most of the Pharmacists and Scientific Officers are engaged in the Analysis of Drugs. The officers with short-term training for 3 months in pharmaceutical analysis are engaged in the functions. Others who are recently recruited are to be given foreign exposure.

The needs of the NDQAL are many: expansion of laboratory areas; provision of additional laboratory equipment; upgrading of computer system so it will have Internet access; and further staff development.

Shortage of Qualified Pharmacists

One of the primary reasons for not fully enforcing the Cosmetics, Devices and Drugs Act is the absolute shortage of trained Pharmacists in the country. Instead of addressing the problem in the supply side, the government has adopted remedial measures by training and appointing dispensers. Even the private sector is in need of pharmacists so much so that some stores are staffed only by unsupervised dispensers.

The qualification of the pharmacists in Sri Lanka needs to be upgraded. Their one-year academic training for basic pharmacy is equivalent only to that of a pharmacy technician in other countries. However, the status quo does not provide motivation for staff to take a diploma in pharmacy. The government has not provided a cadre for the diploma holders to receive higher salary or allowance.

[21] Fernando, G. Report on Drugs and Supplies. Policy and Human Resources Development Project, October 2002.

(4) RATIONAL USE

In Sri Lanka, there is no system of monitoring drug use particularly with the help of a set of indicators like the one formulated by WHO (Table 4.2.5).

Table 4.2.5 WHO Core Drug Use Indicators

Prescribing Indicators	Patient Care Indicators	Facility Indicators
Average number of drugs per encounter	Average consultation time	Availability of a copy of the essential drugs list or formulary
Percentage of drugs prescribed by generic name	Average dispensing time	Availability of key drugs
Percentage of encounters with an antibiotic prescribed	Percentage of drugs actually dispensed	
Percentage of encounters with an injection prescribed	Percentage of drugs adequately labelled	
Percentage of drugs prescribed from an essential drugs list or formulary	Patient's knowledge of correct dosage	

The IDA/WB Health Services Project reported its observations on patterns of prescribing, dispensing and use of medicines and they are quoted as follows:

- "There seems to be over-prescribing in private hospitals particularly of vitamins and analgesics;
- Qualified pharmacists do not man these all the time. Some are being trained on the job without a master pharmacist. Hence, there can be dispensing errors;
- Many poor patients do not purchase from pharmacies the quantity of drugs prescribed;
- When patients request generic substitutes most of the pharmacists obliged;
- The Osusalas carried most of the drugs in the list of essential drugs. they are well organised and manned by qualified pharmacists;
- Most patients do not know about generics. There is self-medication for common cold, flu, cough, constipation, analgesics and some antibiotics and dermatological products. Only a few patients admitted stopping of medication when relieved of symptoms;
- Patients complained about the inability to differentiate the drugs and lack of proper directions for use;
- Non-compliance is a serious factor as there is not enough counselling; and
- A high percentage of doctors and dispensers agree that the patients do not consume all the drugs as prescribed."[22]

To improve rational prescribing, the MoH updates essential drugs lists and maintains pharmacy committees. The MoH-JICA revealed that only a quarter of the respondents believe that meetings of the Regional Drug Review Committees are being conducted and another quarter believe that they are not. (See Supporting Document II) Majority have expressed very poor attendance by supervising officers for drug review committee meetings. Nonetheless, three of four respondents indicated that drug shortages and the existing situation on drugs are being discussed in the drug review committee meetings.

The other three approaches[23] effective in other developing countries to rationalise the use of drugs but have not been tried in Sri Lanka are the introduction of standard treatment guidelines, problem-based basic professional training and targeted in-service training of health workers. To improve access to unbiased drug information, the following have been published: Sri Lanka Prescriber ; Drug Index; Sri Lanka Hospital Formulary; and Manual on Management of Drugs. Planners should bear in mind another finding of Laing: "Several simplistic approaches have proven ineffective, such as disseminating prescribing information or clinical guidelines in written form only."

[22] MG Consultants, 2002.
[23] Laing, RO, Hogerzeil, HV and Ross-Degnan, D, Ten Recommendations to Improve Use of Medicines in Developing Countries, Health Policy and Planning, 16 (1), 13-20.

(5) PLANNING CHALLENGES

Sri Lanka has had a history of pharmaceutical management dating back to 1857 when the state assumed responsibility for providing medical care and a medical store was established.[24] The Medical Supplies Working Group for the MoH-JICA Study identified many closely linked challenges in the management of drugs and other medical supplies.

Availability: Shortage and Overstock

Some essential medicines are not always available in public health facilities according to specifications when and where they are needed, while a few are overstocked (Figure 4.2.2).

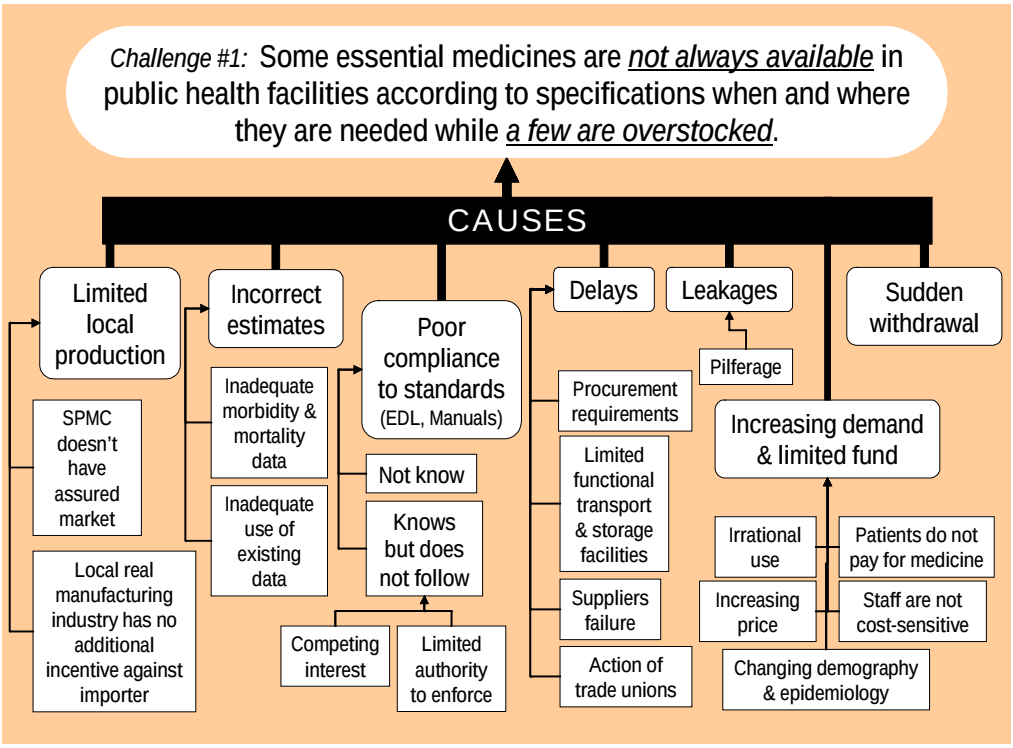


Figure 4.2.2 Problem Tree of Under- and Over-stocking

The limited local production capacity, weaknesses in supply management, increasing demand in the face of funding constraints, and sudden withdrawal of drugs due to quality failure contribute to occasionally running out of stock.

On the other hand, incorrect estimates, poor compliance with standards and delays lead to either medicines being out of stock or overstocked. Incorrect estimates are due to inadequate or no morbidity data and, more importantly, due to inadequate use of existing data. A few officials and staff do not comply with standards either because of their lack of knowledge or refusal to follow the given regulations. A few specialists do not follow the standard treatment guidelines with respect to special drugs. Economic gain is another variant of competing interest. There have been sudden changes in procurement specifications by clinicians that have caused delay; however, these changes could have been prevented. Other sources of delays are inadequacy in transport and storage facilities, suppliers' failure, and actions of trade unions.

Inconsistent Quality

[24] JICA - MoH Survey No. 1.4

Some medicines in the public sector are expired or substandard; these in general are not issued to patients, while the private sector drug outlets, at times, issue expired, substandard, adulterated or even fake drugs (Figure 4.2.3).

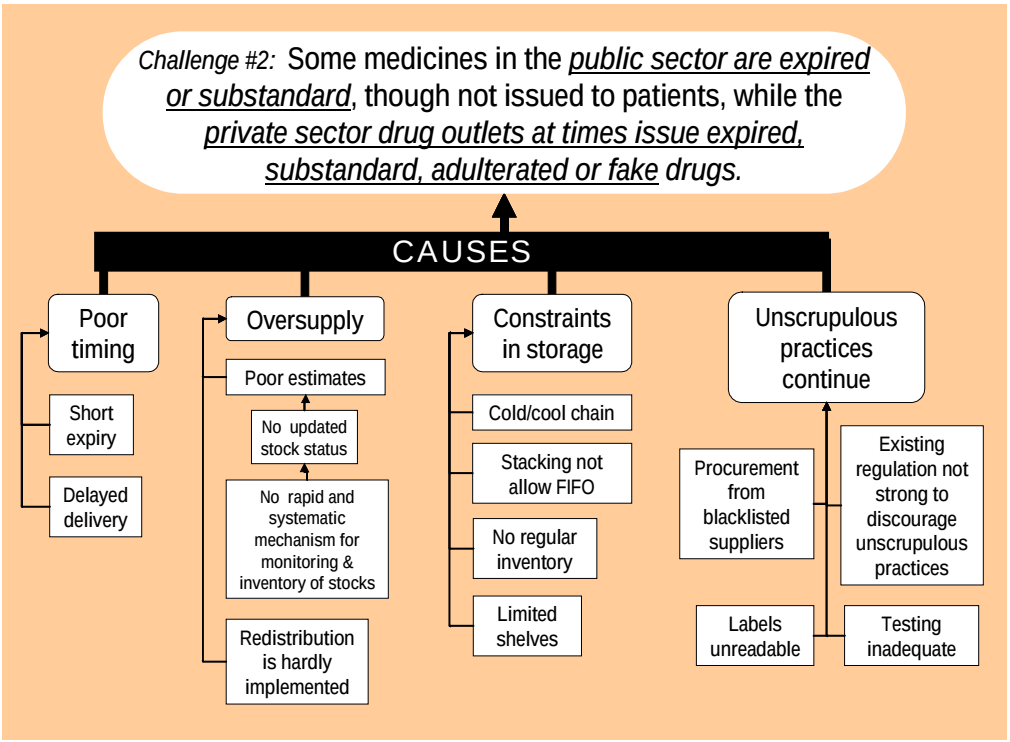


Figure 4.2.3 Problem Tree of Inconsistent Quality of Drugs and Other Medical Supplies

The medicines in the public sector become expired or substandard because of problems associated to short expiration period for a few, delays in delivery for some, manufacturing failure for others, and conditions in storage facilities. In the private sector, the clients need to be protected from unscrupulous practices that include issuance of expired, substandard, adulterated or fake drugs. These practices persist for various reasons. The on-going drug testing seems to be inadequate. Manufacturers do not label their drugs clearly. Labels in a few storage facilities are not easily readable. Existing regulations are not strong enough to discourage unscrupulous practices.

Irrational Use of Drugs

At times, prescribing, dispensing and use of medicines have not been rationalised on scientific basis (Figure 4.2.4).

Rational use of drugs includes practices related to prescribing, dispensing and actual use. On the part of the prescribers, some do not comply with standards and many seldom spend ample time to counsel patients or their relatives. At times, they are not assertive against patients' irrational requests. Some have limited opportunities for continuing education and they lag behind in terms of state-of-the-art medical practices. A few succumb to competing interests pedalled by drug manufacturers, distributors or medical representatives.

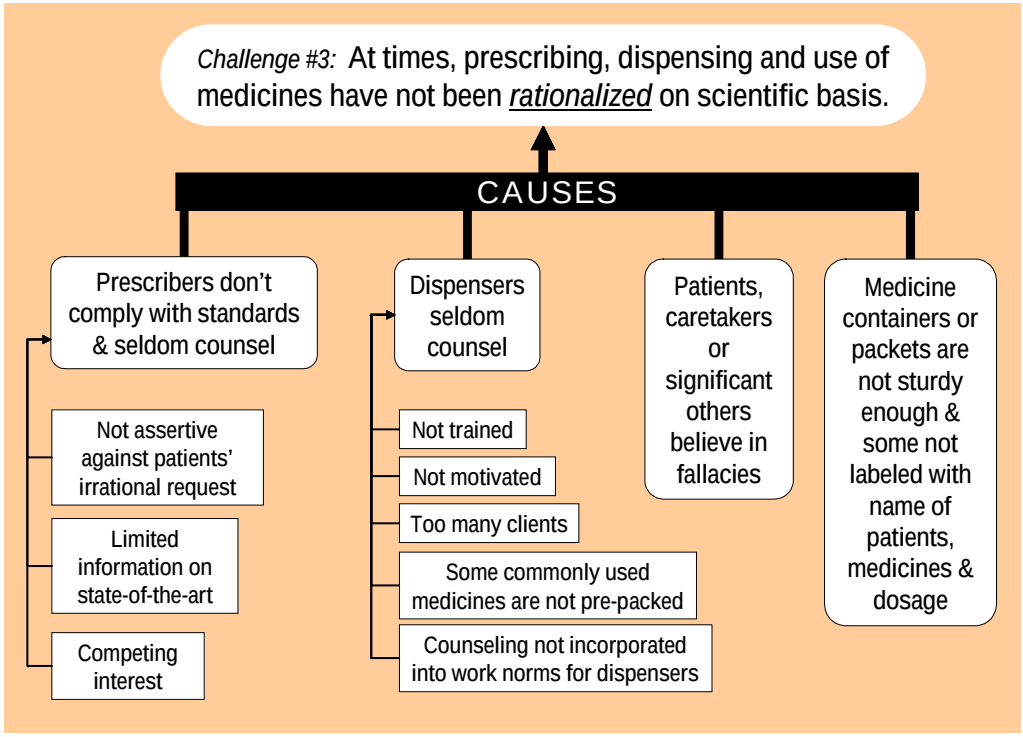


Figure 4.2.4 Problem Tree of Causes of Irrational Use of Drugs

On the part of the dispensers, not all are trained in giving drug information. They are hardly motivated to giving information as there is no incentive for doing so and counselling is not incorporated into work norms. Others are simply overwhelmed by the volume of clients. In many drug outlets, pre-packaging is a common practice but not for all commonly used drugs.

Irrational drug use will continue for as long as the patients, caretakers or their significant others believe in fallacies like 'there is a pill for every ill' or 'that the more expensive medicines are superior'. It will be exacerbated if the medicine containers or packets are not sturdy enough, and if they are not labelled with at least the name of patients, name of medicines and dosage.

Long Waiting Time

Generally in government hospitals, waiting or queuing for medicines often takes time. However, time is a resource. When clients wait, resources are wasted. In government hospitals, resources are wasted in as much as clients have to wait for a long time before they can have their prescriptions filled from the pharmacies. Like many of the issues previously mentioned, the long waiting time is also a result of a combination of factors. Some of the higher-level hospitals are particularly vulnerable to failures in the referral system that occurs when patients bypass lower-level facilities leading to congestion in these higher-level hospitals. Most health facilities share common challenges: there is only a limited number of dispensers; limited number of windows for dispensing; and a pharmacy system that has not been updated.

No Coherent National Drug Policy

Sri Lanka still has to adopt a national drug policy that will stipulate the goals of the government for the pharmaceutical sector as well as the main strategies and approaches for achieving them. The "National Medicinal Drug Policy" that was drafted in 1996 has not been officially approved by the government.

4.3 MEDICAL EQUIPMENT

The primary planning issue on medical equipment in Sri Lanka is this: Medical equipment in some health facilities are not functional or recalibrated, others are under-utilised as they lay idle and have not been used or even unpacked, while a few essentials are not available.

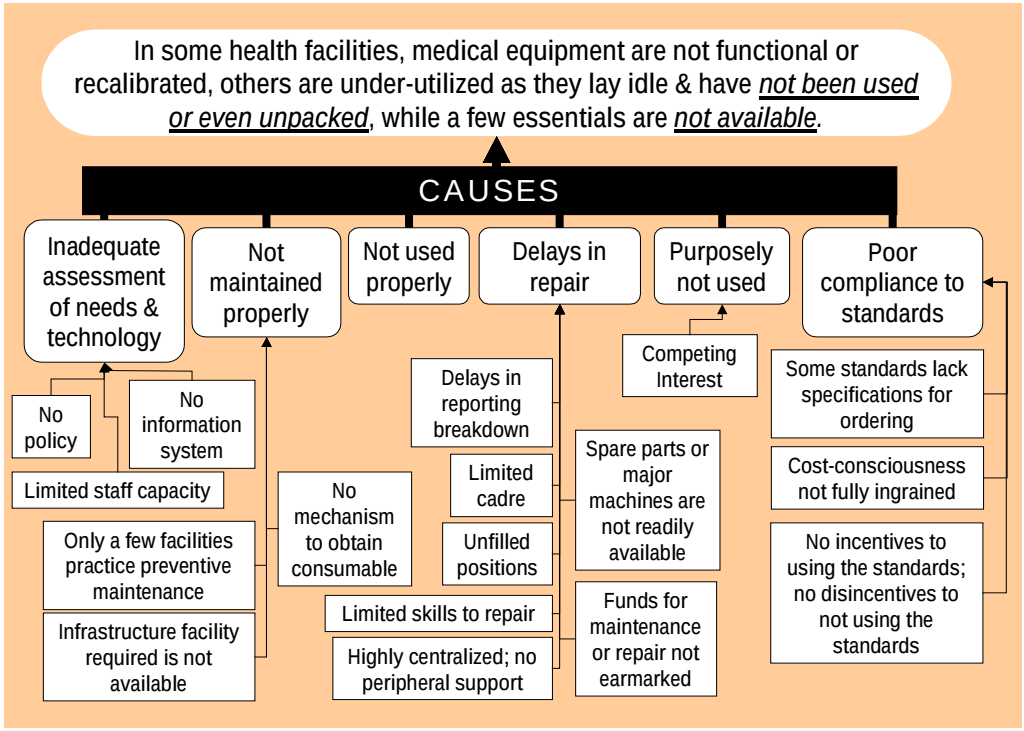


Figure 4.3.1 Inter-relationships of Problems Related to Medical Equipment

The factors that contribute to the major issue on medical equipment can be traced to inadequate assessment of needs and technology, not performing the required planning and budgeting, and not practicing preventive maintenance, periodic inspections and calibration. Equipment inventory and service records are not maintained properly making monitoring and evaluation difficult. In most facilities, safety and risk management, productivity and cost, history monitoring, and performance evaluation procedures are not followed properly.

Some equipment are not being used properly while others are purposely not being used because of competing interests. When equipment are improperly used, they lead to break down. In a survey of one institution per type of health facility in the Western, North Central and Sabaragamuwa provinces, it was observed that only 49% of the 3,697 pieces of equipment were actually in good working condition. Repairs are delayed because they are not reported immediately, because of limited human resources skilled in repair work particularly in the peripheral localities, because funds are not being earmarked for maintenance or repairs, and because some parts or machines are not readily available in the domestic market.

One of the main reasons for premature equipment failure is that approximately 90% of the end-users have not been trained on proper use of equipment. Basic equipment maintenance trainings have been carried out in the past but they have not been successful as most of the trainees, primarily from the labour grade, lacked the basic skills and some were not competent enough to do the job satisfactorily.

Substandard equipment are found especially in peripheral institutions partly because of lack of standard specifications for ordering. While there is no incentive for using existing standards, there is also no disincentive for not using them.

The purpose of this section is to examine in detail the following areas related to medical equipment:

- Condition;
- Policy;
- Assessment, Planning and Acquisition;
- Utilisation; and
- Maintenance and Training.

(1) CONDITION OF MEDICAL EQUIPMENT

The survey, commissioned by the MoH-JICA, on equipment in government health facilities in three provinces of Sri Lanka documented the problems in the management of medical equipment.

Most of the places are over-equipped

This is true especially with low cost and basic equipment such as instrument sterilisers, nebulisers and suction apparatus. More than 50% of them are not being used. In some places brand-new equipment are lying idle in stores.

Poor distribution of equipment

In some places, equipment are not being used because the number of equipment available is more than required to do the desired work, while another section of the same institution is severely affected by not having the same equipment.

Equipment distribution among different hospitals is also not satisfactory. For example, Balangoda Base Hospital has only two Nebulisers and Nivitigala Peripheral Unit, a smaller institution than Balangoda, has five Nebulisers.

Poor quality of equipment

Many substandard equipment were found specially in peripheral Institutions. Lack of standardisation is the main reason for this situation. This has become a big burden to the system.

Poor infrastructure facilities

More than 50% of the power sockets are not in good working condition. Electricity supply in most of the places was not satisfactory. High voltage fluctuations and high harmonic content were very commonly found. The poor quality of power supply has affected considerably the performance of medical equipment. In addition, inadequate space, high room temperature, high humidity, dust, etc. have also affected the performance of equipment. No one is responsible for this situation. However, this cannot be easily overlooked because, for example, the cost of electricity is very expensive. The annual electricity bill for the Colombo National Hospital is approximately Rs.150 million, that is equivalent to the cost of two units of brand-new MRI Scanners.

Only forty-nine percent are in good working condition (Table 4.3.1)

Considering all the medical equipment available in the three provinces surveyed, it turned out that the Western Province has two for every one found in the other provinces. The share of all the primary level health facilities (from District Hospital to MoH) included in the survey is only 7% of all the equipment; the rest are in Teaching, General / Provincial, and Base Hospitals.

Table 4.3.1 Functionality of Medical Equipment in Western, Sabaragamuwa and North-Central Provinces, 2002

Hospital	Quantity Surveyed	%	Good Working Condition	%	Poor Working Condition	%	Out Of Order	%	Not Known	%
NHSL	1,583	100	928	58.6	547	34.6	66	4.2	45	2.8
PANADURA B.H	177	100	60	33.9	82	46.3	26	14.7	9	5.1
MINUWANGODA DH	34	100	12	35.3	15	44.1	7	20.5	0	0
BULATHSINGHALA PU	20	100	3	15	7	35	10	50	0	0
ATURUGIRIYA R.H	4	100	2	50	2	50	0	0	0	0
PITIPANA M.H & C.D	2	100	0	0	2	100	0	0	0	0
KALAGEDIHENA M.H	1	100	1	100	0	0	0	0	0	0
PILIYANDALA MOH	18	100	3	16.7	14	77.8	1	5.6	0	0
RATNAPURA G.H	692	100	313	45.2	159	23	117	16.9	103	15
BALANGODA B.H	95	100	34	35.8	35	36.8	4	4.2	22	23
RAMBUKKANA D.H	45	100	14	31.1	29	64.4	2	4.4	0	0
NIVITIGALA P.U	35	100	10	28.6	17	48.6	7	20	1	2.9
DEMATAPITIYA R.H	3	100	0	0	3	100	0	0	0	0
ALGAMA M.H	4	100	1	25	3	75	0	0	0	0
YATIYANTOTA C.D	0	100	0	0	0	0	0	0	0	0
ARANAYAKE MOH	16	100	2	12.5	12	75	2	12.5	0	0
ANURADAPURA G.H	619	100	253	40.9	249	40.2	72	16.6	14	2.3
POLONNARUWA G.H	283	100	160	56.5	88	31.1	30	10.6	5	1.8
MEDIRIGIRIYA D.H	31	100	14	45.2	6	19.4	11	35.5	0	0
MIHINTALE P.U	18	100	12	66.7	1	5.6	5	27.8	0	0
HABARANA R.H	12	100	4	33.3	6	50	2	16.7	0	0
NUWARAGALA M.H	3	100	0	0	3	100	0	0	0	0
DAMBINNA C.D	2	100	0	0	1	50	1	50	0	0
DIMBULAGALA MOH	0	*	0	*	0	*	0	*	0	*
TOTAL	3,697	100	1,826	49.4	1,281	34.6	363	9.82	199	5.4

Note : **Good working condition** - Equipment functions satisfactorily such that the end users are satisfied with the performances. But this does not say that equipment is periodically calibrated and tested.
Poor working condition - Equipment functions unsatisfactorily; *needs minor repairs*
Out of order - Equipment does not function; n*eeds major repairs*
Not known - Equipment is not being used *(idling*).

Source: MoH-JICA Study No.1.8

The Western Province has the highest percentage (55%) of equipment being in good working condition and the least (6%) with equipment that are not functional. Sabaragamuwa seems to have the most difficulty in maintaining medical equipment. Although it does not have that many equipment, and there is a regional BMES in the province, Sabaragamuwa has the lowest percentage of equipment that are in good working condition (45%) and the highest percentage that are out of order (13%).

Across levels of health facilities, the peripheral units have the highest percentage of equipment that are out of order in the Western and Sabaragamuwa Provinces; they have the second highest in the North-Central Province.

The medical equipment that was considered to be of poor working condition were actually in need only of minor repairs.

Three of ten pieces of equipment belong to this category.

(2) POLICY

The Government of Sri Lanka still has to develop a national policy that will define the types of equipment suitable for different levels of health institutions and serve as the basis for procurement or acquisition as well as for allocation of funds. It has been reported that, at present, Hospital Administrators and consultants tend to use their influence to purchase equipment to suit their individual preferences.[25]

While it is true that the policy on medical equipment should be developed as part of the functional rationalisation of services, the policy by itself should incorporate provisions for the support infrastructure to ensure the optimal use and life of the equipment. More than 40% of the equipment are functioning without having proper infrastructure facilities at present.

Together with an implementation guideline, the policy should be developed for all stages of equipment assessment, planning, acquisition, utilisation, maintenance, and management. It should be consistent with the national needs, goal and resources and should cover and integrate activities relating to identification of needs, use of appropriate technology, planning, budgeting, legislation or regulation of standards of safety and efficiency, specification, procurement, commissioning, inspection, maintenance and repair, replacement policy, technical and logistic service to support equipment, personnel development, education and training. It should mandate the development of an information system on equipment to support rational decision-making.

Moreover, there seems to be a need for a policy on accepting medical equipment. At present, donations are of different makes. Repair and maintenance of these equipment do require technicians who are conversant with a wide gamut of specifications. In the end, procurement of spare parts for replacement does end up to be costly if at all they are available.

The MoH policy on maintenance of equipment stipulates that, through service agreements, the local representatives of the respective manufacturers shall maintain highly sophisticated equipment such as CT Scanners, MRI Scanners, Gamma Cameras, Colour Doppler machines, etc. The maintenance of all the other middle level and basic equipment shall be the responsibility of the Division of Biomedical Engineering Services. Considering that only 49% of the equipment are in good working condition, and the value of equipment not working is approximately Rs.6 Billion, the MoH may gain immediate benefit from a stronger maintenance policy while allocating additional resources to have those not in good condition to be running through minor repairs only. As mentioned in Section 2.5, the lack of facilities is one of the reasons for bypassing. Having the medical equipment functioning aside from distributing them outside of Colombo can help in decongesting higher-level facilities. In the final analysis, such a policy will contribute to better public perception of government services, thereby leading to more mileage for the politicians.

(3) ASSESSMENT, PLANNING AND ACQUISITION

Budget

From 1991 to 2001, the government acquired 4,049 million rupees worth of medical equipment. In 2001 alone, it allocated almost a billion rupees (Rs.936 million), equivalent to 50 rupees per person (Figure 4.3.2). The average public expenditure for equipment is 20 rupees per capita.

[25] JICA - MoH Survey No. 1.9 (Supporting Document II)

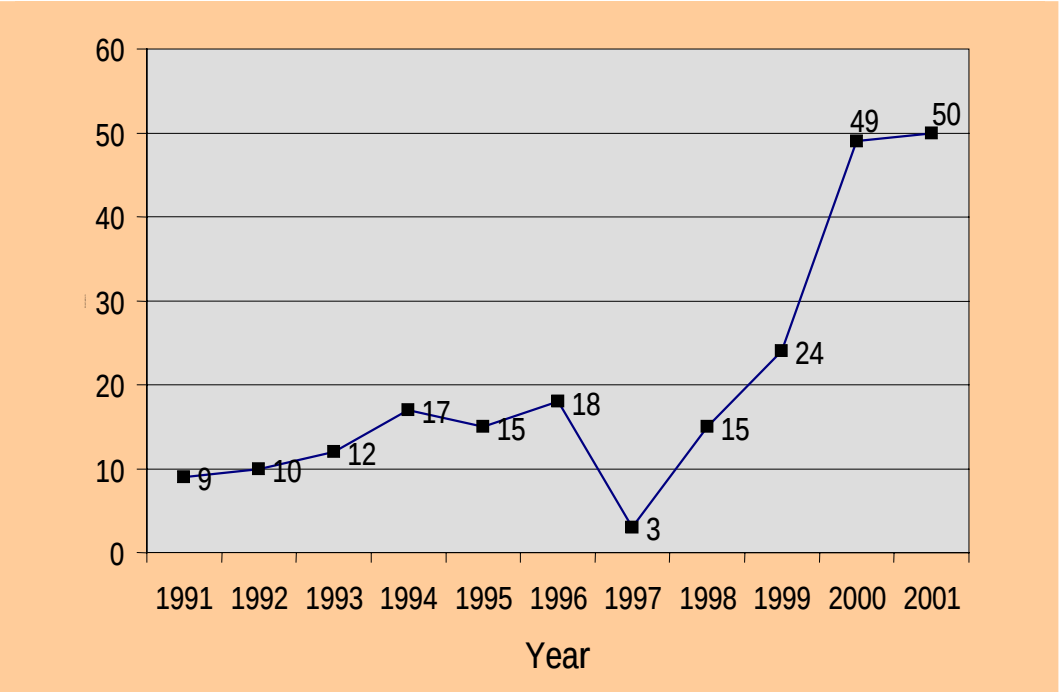


Figure 4.3.2 Trends in Government Expenditure for Drugs and Equipment, Rupees Per capita, 1991 – 2001

Source: Mendis, MoH-JICA Study No. 1.9

Assessment

In the MoH, neither needs assessment nor technology assessment is formally and systematically conducted (Table 4.3.2).

Table 4.3.2 Present Situation of Medical Equipment Assessment, Planning and Procurement

Areas	Activities	Being Performed?
Assessment	Needs assessment	No
	Technology assessment	No
Planning	Requirement planning	No
	Budgeting (cost of ownership)	No
Procurement (Acquisition)	**Preparation of specification**	**Yes**
	Preparation of bid document	**Yes**
	Bid evaluation	**Yes**
	Installation and commissioning	**Yes**

Source: MoH

Planning

Like in other units of the Ministry of Health, it seems planning is not regularly performed even for medical equipment. There is no methodology to plan equipment requirement, both at national and provincial level. In most institutions, no one is responsible for this function. Most heads of institutions do not have the faintest idea about the quantity and quality of the equipment available at their institutions.

Planning for equipment is made difficult by the fact that a national inventory of medical equipment has not been made so far.[26]

Many sophisticated equipment are not being used or under-utilised due to lack of operational skills and lack of other operational requirement such as spare parts and chemicals. In one of the hospitals visited during the Equipment Survey, the blood gas analyser was not functioning due to lack of consumables. Hospital does not have funds to purchase the consumables.

More than 40% of the equipment are functioning without having proper infrastructure facilities. More than half of the power sockets inspected were not working properly. There was high voltage fluctuation, from 180-240 volts, in some areas. When X-ray facilities are purchased, one needs to provide a special room that will prevent radiation from escaping and special protective devices for the operators and patients. During the Equipment Survey, a few X-ray machines were seen in corridors due to unavailability of rooms. In this case, the lack of foresight jeopardises not only the lifetime of equipment but also the safety of patients and health staff.

Procurement

Despite the reality that the MoH does not assess its needs and cost-effectiveness of technology, and despite the difficulty in planning in the absence of an inventory, the government continues to spend its rupees to buy new equipment.

The three agencies responsible for procurement are the Bio-Engineering Services (BES), Medical Supplies Division (MSD) and Provincial Councils (PC). The BSE is the sole supplier of major equipment to institutions coming under the central government (e.g., Teaching Hospitals, Specialised Campaigns). Though the supply of drugs is the responsibility of the Central government to all Health Institutions in the country, the Provincial Councils have been given the authority to obtain requirements of medical equipment, laboratory apparatus and devices from any private source following laid down tender procedures[27] Coordination among the three agencies is attempted but has not been smooth always. For example, there was a year when microscopes were supplied by the BES and MSD independently.

The preparation of specification is done by a committee consists of a Clinical Expert (normally a Doctor), a Technical Expert (normally an Engineer), and a Financial Expert (normally an Accountant). It is noteworthy that though this committee is apparently competent to do the job, competent people are hardly found in the system to perform this activity.

As far as bid evaluation is concerned, the lowest conformed bid is selected for the procurement. Here some important factors such as past experience, technology life cycle and the after sales services are not considered in the selection process.

When it comes to installation and commissioning for sophisticated equipment, the supplier is responsible. The long time gap between procurement and commissioning is common; this is due to lack of planning.

Equipment are procured in bulk centrally at present, assuming that the same level of equipment can be distributed among different levels of institutions. This may have to be reviewed as the requirement significantly varies according to the size and functions of each hospital.

Donation

One of the ways by which equipment are acquired is through acceptance of donations from donor countries or institutions. Compared to the national expenditure for equipment, how do donations stand? Is the system dependent on donations? There have been anecdotal reports that some donated equipment

[26] JICA - MoH Survey No. 1.8(Supporting Document II)
[27] JICA - MoH Survey No. 1.9(Supporting Document II)

broke down early and that the repair cost was exorbitant. At other times, spare parts were hard to come by or there was no technician trained to repair. Because of these, would it be better for the government to be selective when accepting donations? This is an issue for further research and for policy formulation.

(4) MAINTENANCE AND MANAGEMENT

Activities

Among the major activities related to maintenance and management, there is only one that is regularly performed and that is breakdown maintenance (Table 4.3.3). Preventive maintenance and periodic inspection are not conducted even in major hospitals partly because of lack of technical personnel and partly because some decision-makers do not believe in their worthiness. Service records are not maintained properly, thereby establishing a hurdle to monitoring and evaluation. In the first place, staff productivity, cost of making equipment available at good working condition, performance of equipment and its contribution to enhancing services, all these are not being monitored. The cost of removing particularly radiology equipment, for example Gamma cameras, is also not performed.

Table 4.3.3 Present Situation of Medical Equipment Maintenance and Management

Areas	Activities	Being Performed?
Maintenance	Preventive maintenance	No
	Periodic inspection & calibration	No
	Service documentation	No
	Breakdown maintenance	**Yes**
Management	Safety and risk management	No
	Productivity monitoring	No
	Cost history	No
	Performance evaluation	No
	Cost of removal from the service	No

Source: MoH

Organisation

The Division of Biomedical Engineering Services is the main centre for the maintenance and management of medical equipment in Sri Lanka. Its main responsibilities are:

- Procurement of healthcare equipment for teaching and specialised hospitals;
- Service and maintenance of medical equipment in government hospitals;
- Procurement and management of spare parts for the above equipment;
- Provision of technical advice on healthcare equipment to the ministry; and
- Training of Technicians and End Users.

The BES has a staff of 171; 5% Biomedical Engineers, 13% Technical Officers and 32% Technicians. Its Deputy-Director General is one of the Deputy-Director Generals of the MoH; the system provides a clear ladder for the other Engineers.

The total value of equipment repaired by BES in 2001 was Rs.5,078 million. The BES central workshop located at Colombo was built in 1993 by the Government of Japan. Small regional units are maintained at Galle, Kandy and Jaffna Teaching Hospitals. It has the following workshops: radiology and imaging

equipment; electronic and monitoring equipment; laboratory equipment; operating theatre and I.C.U equipment; general equipment and dental equipment; and mechanical.

The BES still carries out most of the maintenance activities. Though there are maintenance units at provincial level, the staff and the facilities available at these places are not satisfactory. Therefore, they cannot be expected to perform up to the level required. Despite the increase in the number and cost of equipment of the MoH, there has been no corresponding increase in the technical staff available to maintain and service them.

There is no hospital that has its own equipment maintenance staff. The BES has trained many people from healthcare institutions on basic equipment maintenance, but it has not been successfully worked out as most of the trainees were from labour grade. They were not competent enough to do the job satisfactorily. Keeping competent staff at institutional level also has become extremely difficult as medical equipment maintenance is still recognised as a labour grade job by many healthcare decision-makers, and the salary structure is not encouraging.

Productivity

How productive is the system in BES? Table 4.3.4 shows one of the ways by which productivity can be measured. It compares the actual working hours with the total working hours of personnel. Overall, it seems the BES productivity is only 11%. The highest productivity is only about a fifth of the total whereas the lowest is only three percent. This means that, during a period of five-and-a-half calendar months, the best workshop had substantive output of 23 working days while the least performers had only three. In terms of the number of repairs performed by a technical person, the monthly average is a low of approximately 9.82. The actual productivity is believed to be lower than these figures because the staff worked overtime for 120 hours.

Table 4.3.4 Productivity of BES

Section	No. of repairs	No. of persons	No. of repairs per month	Average Time per repair	Working hours per month	Productivity
A	438	15	2.43	4.53	11.01	7.56%
B	2,670	17	13.09	1.46	19.11	13.13%
C	713	10	5.94	4.04	24.0	16.48%
D	1,936	31	5.20	1.41	7.33	5.03%
E	7,658	25	25.53	1.28	32.7	22.46%
F	472	14	2.81	1.66	4.46	3.06%
G	376	9	3.48	1.20	4.18	2.87%
Total	14,263	121	9.82	1.58	15.52	10.66%

Source: MoH

Another way of assessing productivity is in financial terms – the cost of service. An analysis of the cost per repair at the BES was done and it shows to be high. The average cost per repair, including spare parts is Rs.22, 975.95. Excluding spare parts, the cost even for very basic equipment, such as blood pressure apparatus, nebulisers, spot lamps, etc., is Rs.7,484.54 in the central BES but only Rs.200.00 in the Sabaragamuwa Provincial Biomedical Engineering Unit.

The productivity of BES is influenced by many factors. For one, the average working days of BES staff is less than 60% of total working days (218) in a year. If an equipment fail on a Friday, it will not be possible to repair it until next Monday according to the present system even if it is life-saving equipment.

Another factor that hampers productivity is the fact that BES staff, when they are called to do repair job, spend much time on travelling which is about 14% of the total working time. Because staff members spend only 11% of total working time on equipment maintenance, this means more time is spent travelling than working. The total distance travelled by BES staff in year 2001 is approximately 450,000 kilometres; approximately 30,000 man-hours are being wasted every year. Considering that the average travelling distance per repair is 31.30 kilometres, the time spent is deemed not commensurate to what they are asked to do in the field – minor repairs that could have been accomplished by the end-users if they were given the proper training.

The other factors that affect productivity are as follows:

1) Equipment repair downtime is approximately 12 days;
2) Present breakdown reporting system, through normal postal service and Job Reporting Card that is often incompletely filled up, takes many days;
3) Lack of skilled technical personnel;
4) Lack of transport facilities; and
5) The huge difference between the salary of government[28] and private sectors.

Budget

The 2001 budget for equipment maintenance was 3.27% of total value of equipment maintained. This needs to be increased at least up to 10%. It seems the increase in the equipment budget has not been accompanied by an increase in the maintenance budget.

Allocation for training in year 2001 was much more less than even the expenditure on stationery. Skills of present maintenance staff need to be enhanced. Due importance needs to be given to training of end-users. Experience has clearly shown that more than 80% of the breakdowns are caused by mal-usage of equipment.

One of the ways to improve productivity and generate additional budget is for the BES to cater to the private sector. It has a competitive advantage because its facilities in Colombo are far superior to those at private heath institutions.

Aside from catering to the private sector, the other policy issue is whether the BES could be a regional training centre for health technologies. It has the experience and capacity to train foreign personnel on Medical Equipment Management. Three times, it successfully conducted the Third Country Individual Training Programmes on Medical Equipment Maintenance. In addition, it may be the only institution in the South Asia Region that maintains all the categories of equipment under one roof.

(5) TRAINING AND UTILISATION

Training and utilisation are discussed together in this sub-section because of their inter-dependence. When the users are trained on proper operation of their equipment and they are trained to do preventive maintenance, then there is lower probability of break down. When they are also trained to do minor repairs, then equipment downtime will be shorter and client satisfaction will be greater.

[28] Average monthly income of technical staff is Rs.10,454.54

Table 4.3.5 Present Situation of Medical Equipment Training

Areas	Activities	Being Performed?
Training	Operator training	Sometimes
	Service and maintenance training	Sometimes

In Sri Lanka, training of operators or end-users is not always done (Table 4.3.5). Periodical training on proper usage of equipment is not carried out, too. It has been estimated that about 70% of the end-users have not been trained; consequently, some staff wrongly use the equipment even without ill intent. When it comes to service and maintenance training, the story is more or less the same. They are not always done whereas periodical training on equipment service and maintenance is not performed at all.

As mentioned under the section of Maintenance and Management, some field staff were trained already for maintenance responsibilities. However, the trainees were handicapped even before the training started because their academic preparation was not adequate.

The lack of Operation and Service Manuals compounds the problem of improper use and poor maintenance of equipment. It is a common problem in peripheral institutions.

In closing, the medical equipment available in government healthcare institutions are not performing at a satisfactory level due to many problems. There is no explicit policy covering equipment management and maintenance at present. There is limited number of experienced biomedical engineers at provincial levels. The supply of spare parts and consumables is irregular. Information regarding the quality and capacity of equipment suppliers is limited. There is a serious lack of awareness on the contribution of effective equipment management towards the goal of better health for all. As such, the issues for planning may include the following:

1) Conduct needs assessment quickly and immediately; thereafter, take specific actions;
2) Develop the National Health Policy on Equipment and formulate standards;
3) Establish mechanism and provide support for technology assessment;
4) Strengthen existing BMES at the central and provincial levels, and establish BMES so that there will be one in every province that is strategically located;
5) Establish a Logistics Unit in every district; and
6) Institutionalise the monitoring of BMES performance based on evidence, reinforcing the capacity of BMES and MoH staff in use, maintenance and repair of equipment.