Democratic Socialist Republic of Sri Lanka
Ministry of Health

PREPARATORY SURVEY
FOR
THE PROJECT FOR IMPROVEMENT OF BASIC SOCIAL SERVICES TARGETING EMERGING REGIONS

FINAL REPORT

JANUARY 2012

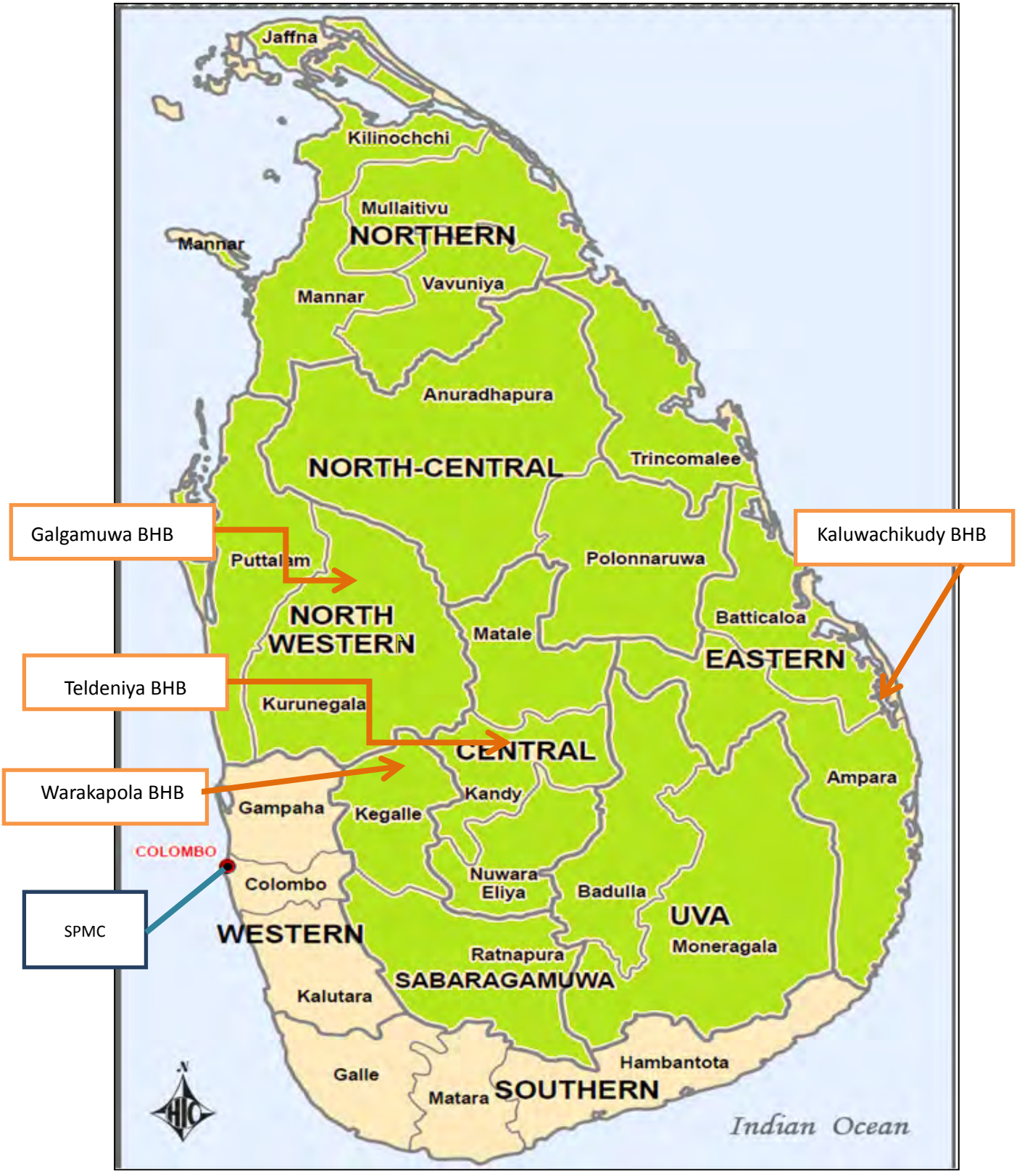
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
GLOBAL LINK MANAGEMENT, INC.
INTEM CONSULTING, INC.

SAD
CR(3)
12-002

The following foreign exchange rates are applied in the study (as of December 2011)

- USD 1 = 76.8 JPY
- LKR 1 = 0.7 JPY

Location Map



State Pharmaceutical Manufacturing Corporation (SPMC)

Front view of SPMC

Tablet compression machine

Film coating machine

Filling, capping and labeling line

BH Teldeniya

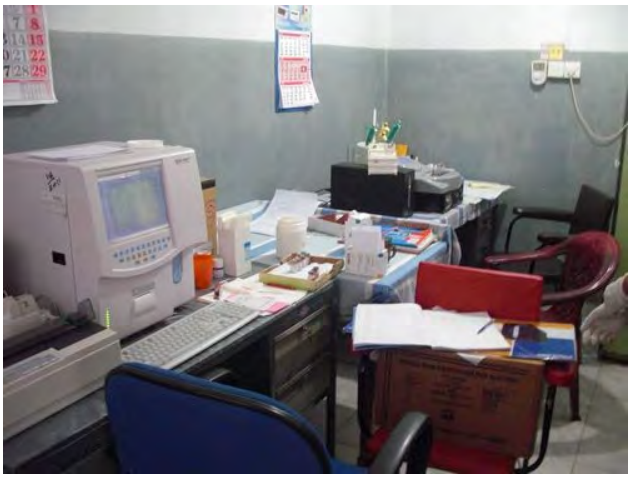
Front view of the Hospital

Clinical laboratory

BH Galgamuwa

Front view of the Hospital

X-ray room



Hematology analyzer and biochemistry analyzer

Ward

BH Kaluwanchikudy

Front view of the Hospital

PCU/ECU

BH Warakapola

Front view of the Hospital

New x-ray unit before installation

Ultrasound scanner

Clinical laboratory

Ambulance

Ambulance

Interior of ambulance

Abbreviations

AMO	Assistant Medical Officer
BES	Biomedical Engineering Services
BH	Base Hospital
BHA, BHB	Base Hospital type A, Base Hospital type B
bn	Billion
BOR	Bed Occupancy Rate
BP	British Pharmacopoeia
B/S	Balance Sheet
BTMU	Bank of Tokyo Mitsubishi UFJ
C	Central Province
CBG	Criteria Based Grant
CBSL	Central Bank of Sri Lanka
CD	Central Dispensary
CEB	Ceylon Electricity Board
CSSD	Central Sterile Supply Department
CTG	Cardiotocography
CVD	Cardio-vascular diseases
DBH	District Base Hospital
DG	Director General
DGH	District General Hospital
DH	District Hospital
DM	Diabetes mellitus
DRA	Drug Regulatory Authority
E	Eastern Province
ECG	Electrocardiography
ECU	Emergency Care Unit
ENT	Ear, Nose and Throat
ERD	External Resource Development
EU	European Union
FC	Finance Commission
FCP	Foreign Currency Portion
GBV	Gender-based violence
GDP	Gross Domestic Product
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
GMP	Good Manufacturing Practices
GoSL	Government of Sri Lanka
HIMS	Health Information Management System
HLC	Healthy Lifestyle Centre(s)
HMP	Health Master Plan
HPLC	High Performance Liquid Chromatography
HRH	Human Resources for Health
HSDP	Health Sector Development Programme
ICB	International Competitive Bidding
ICU	Intensive Care Unit
IDP	Internally-displaced people
IHD	Ischemic Heart Disease
IMMR	Indoor Mortality and Morbidity Return
IMR	Infant Mortality Rate
JFY	Japanese Fiscal Year
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
LCB	Local Competitive Bidding
LCP	Local Currency Portion

LM	Line Ministry
MBBS	Bachelor of Medicine & Bachelor of Surgery
MCH	Maternal and Child Health
MDGs	Millennium Development Goals
MDPU	Management Development & Planning Unit
MH	Maternity Home
MICU	Medical Intensive Care Unit
MLT	Medical Laboratory Technologist
MMR	Maternal Mortality Ratio
MO	Medical Officer
MoFP	Ministry of Finance and Planning
MoH	Ministry of Health
MOH	Medical Officer of Health, or Medical Office of Health
MoH&IM	Ministry of Health and Indigenous Medicine
MSD	Medical Supplies Division
MSU	Medical Statistics Unit
N	Northern Province
NC	North Central Province
NCD	Non-Communicable Diseases
NCE	New Chemical Entity
NDQAL	National Drug Quality Assurance Laboratory
NECORD	North East Community Restoration and Development Project
NHSL	National Hospital of Sri Lanka
NPD	National Planning Department
NPP	NCD Prevention Project
NW	North Western Province
Obgy	Obstetrics and Gynaecology
ODA	Official Development Assistance
OPD	Outpatient Department
OT	Operation Theatre
PBC	Premature Baby Care
PC	Provincial Council
PCU	Primary Care Unit
PDHS	Provincial Director of Health Services
PGH	Provincial General Hospital
PGIM	Post Graduate Institute for Medicine
PH	Provincial Hospital
PHI	Public Health Inspector
PHM	Public Health Midwife
PIU	Project Implementation Unit
P/L	Profit/Loss Statement
PMCU	Primary Medical Care Units
PMU	Project Management Unit
PQ	Prequalification
PSDG	Provincial Specific Development Grant
PSM	Professions Supplementary to Medicine
PU	Peripheral Unit
QCBS	Quality-Cost Based Selection
RDHS	Regional Director of Health Services
RFP	Request for Proposals
RH	Rural Hospital
RMO	Registered Medical Officer
ROA	Return on Asset
ROE	Return of Equity

Sub	Sabaragamuwa Province
SAARC	South Asian Association for Regional Cooperation
SBCU	Special Baby Care Unit
SEC	State Engineering Corporation
SICU	Surgical Intensive Care Unit
SLR	Sri Lanka Rupee
SOE	Statement of Expenditure Procedure
SOEs	State Owned Enterprises
SPC	State Pharmaceutical Corporation of Sri Lanka
SPMC	State Pharmaceutical Manufacturing Corporation of Sri Lanka
STEP	Special Term for Economic Partnership
TB	Tuberculosis
TH	Teaching Hospital
TOD	Treasury Operation Department
ToR	Terms of Reference
TQM	Total Quality Management
UNFPA	United Nations Population Funds
UNICEF	United Nations Children's Fund
USD	United States Dollars
USP	United States Pharmacopoeia
VP	Visiting Physician
WB	World Bank
WHO	World Health Organization
WRCD	Weekly Return on Communicable Diseases

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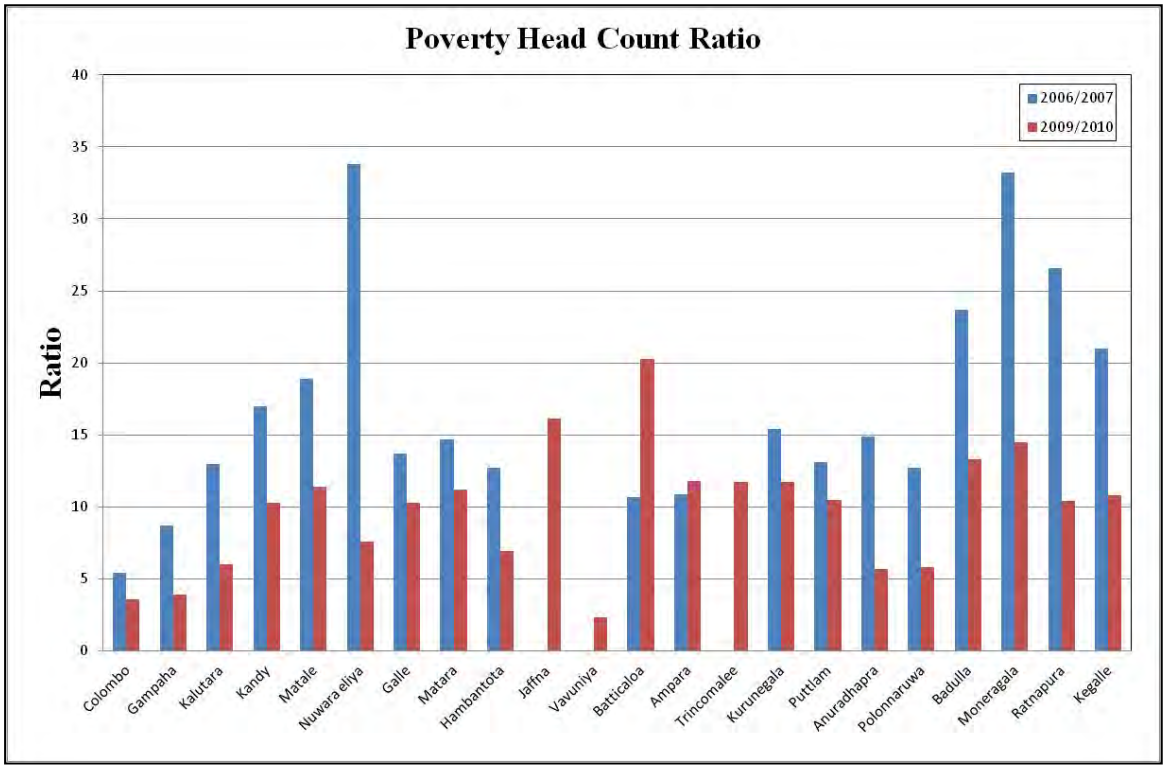
CHAPTER 1 INTRODUCTION

1.1 Sri Lanka: Economic Growth and Poverty Reduction

Sri Lanka is an island with an area of 65,610 square kilometres and a population of 20 million in 2007. Having ended the three-decade long conflict, the country has begun to enjoy its macro-economic growth. The country's ultimate goal, stated in the Central Bank's Annual Report 2010, is to reduce poverty and surpass the targets set under the Millennium Development Goals (MDGs). Sri Lanka's target for MDG Goal 1 is to reduce the proportion of the population below the national poverty line from 22.7% (2002) to 13.1% (2015)[1]. According to the result of the "Household Income and Expenditure Survey 2009/10[2]", Sri Lanka's poverty head count ratio has now been reduced to 8.9 %, thus the country has achieved its MDG Goal 1 Target.

Figure 1-1 shows the progress in reducing poverty head count ratio by district. While most districts have halved the ratio, the data from two districts in Eastern Province (Batticaloa and Ampara) indicates a worsening situation.

Figure 1-1: Poverty head count ratio (2006/07-2009/10)



Source: Department of Census and Statistics, Ministry of Finance and Planning, Sri Lanka, 2009 , "Poverty in Sri Lanka", page 2, and Department of Census and Statistics, 2011, "Household Income and Expenditure Survey 2009/10, page 35.

Although no explanation is given in the report, it is assumed that, as a much wider range of households were included in the latest survey, a more realistic assessment of the situation has

[1] MDGs in Sri Lanka: http://www.mdg.lk/

[2] Department of Census and Statistics, Ministry of Finance and Planning, Sri Lanka, 2011, page vii Table H1. This HIE survey has covered 19,958 households of all island except Mannar, Kilinochchi and Mullaitivu due to difficulty in access to households.

been presented. It is also worthwhile to note that the poverty situation has dramatically improved in the central and hilly districts such as Nuwara Eliya, Moneragala and Ratnapura.

Table 1-1 shows the main socio-economic figures and targets for Sri Lanka. Due to Sri Lanka's successful economic performance, it graduated to middle-income status in January 2010 from the list of Poverty Reduction and Growth Trust-eligible countries.

Table 1-1: Main socio-economic targets

Target	Unit	2005	2010(Actual)	2016 (Projection)
GDP	USD billion	24.4	56.0	98.0
Per capita income	USD	1.241	2,399	4,470
Access to electricity	%	75	88	100
Unemployment	%	7.2	4.9	3.2
Infant mortality	Per 1,000	11.2	8.5	4.0
Maternal mortality	Per 100,000	45	33	20
Primary school enrolment	%	95	99	100

Source: Central Bank of Sri Lanka, 2011, Annual Report 2010, page 22, modified by the Study Team

However, despite all of the development efforts and achievements, there still remain emerging areas where basic social services such as hospital services, are lagging behind. The Japan International Cooperation Agency (JICA), as a long-standing partner working to improve the Sri Lankan health sector, initiated a dialog with the Ministry of Finance and Planning with the goal of preparing further assistance to Sri Lanka. The two governments agreed to conduct a preparatory survey to provide an evidence base for planning a future framework of assistance from Japan to Sri Lanka.

1.2 Health Outlook of Sri Lanka

Based on the strong commitment from the government, the health status of people in Sri Lanka has in general steadily improved over the past decade, as seen in Table 1-2. Child malnutrition is one of the remaining challenges, though it has shown a significant improvement since the 1980s, when over 30% of the children below the age of five were stunted.

Table 1-2: Selected health indicators 2000 - 2010

Indicators	2000	2005	2010
Life expectancy at birth	69	NA	71 (2009)
Neonatal mortality rate (per 1,000 live births)	13	12	10
Infant mortality rate (Per 1,000 live births)	19	17	14
Under 5 mortality rate (per 1,000 live births)	23	20	17
1-year old vaccinated against measles (%)	98	99	96 (2009)
Children under 5 years stunted (%)	18.4	17.3 (2007)	19.2 (2009)
Maternal mortality ratio (per 100,000 live births)	59	45	39 (2008)
Births attended by skilled health staff (%)	97	99 (2007)	na
Prevalence of TB (per 100,000 population)	108	102	101 (2009)
Confirmed indigenous malaria cases [(1)]	210,039	1,640	0 (2008)
Number of physicians per 10,000 [(2)]	NA	5.2	6.8
Number of nurses and midwives per 10,000 [(2)]	NA	14.1	17.7

Source: WHO "Global Health Observatory Data Repository", (1) WHO "Malaria Country Profile", (2) Calculated by JICA study team based on GoSL data

The current health status enjoyed by the people in Sri Lanka far exceeds those of other South Asian countries, as shown in Table 1-3. As already stated in Table 1-1, the major MDG targets such as the infant mortality rate (Target: 9/1,000 live births) and maternal mortality ratio (Target: 36/100,000 live births) have already been achieved in 2010. The other health related indicators, such as the under-five mortality rate (Target: 12/1,000), proportion of 1-year old children immunised against measles (Target 99 %), are on track.

Table 1-3: Selected health indicators in South Asia (2009 unless otherwise stated)

	South Asia	Sri Lanka	India	Bangladesh	Bhutan	Nepal	Pakistan
Life expectancy at birth	64[1] (2008)	75	65	68	67	68	65
Infant mortality rate (Per 1,000)	55[2]	15	50	40	46	43	71
Under five mortality rate (per 1,000)	69[2]	17	65	51	59	52	88
1-year old vaccinated against measles (%)	75[2]	96	71	89	98	79	80
Maternal mortality Ratio (per 100,000 live births)	290[2] (2008)	39 (2008)	230 (2008)	340 (2008)	200 (2008)	380 (2008)	260 (2008)
Births attended by skilled health staff (%)	50[2]	99 (2007)	53 (2008)	24	71 (2007)	19 (2006)	39 (2007)
Contraceptive prevalence rate (%)	53.9[2] (2008)	68 (2007)	54 (2008)	53 (2008)	35 (2007)	48 (2006)	27 (2008)
Pregnant women receiving ANC (at least once) (%)	70[2]	99 (2007)	75 (2008)	51 (2007)	88	44 (2006)	61 (2007)
Incidence of TB (per 100,000)	173[2]	66	168	225	158	163	231

Source: http://data.worldbank.org/indicator/SP.DYN.LE00.IN/countries, (1) World Bank "World Development Indicators 2010", (2) United Nations "Statistical Annex: Millennium Development Goals, Targets and Indicators 2011"

Meanwhile, the longer life expectancies are posing a new challenge to the government of Sri Lanka: meeting the rising costs of healthcare accompanying the rapid increase in Non-Communicable Diseases (NCDs). According to the Annual Report of the Ministry of Finance and Planning 2010, both live discharges and deaths due to NCDs are on the rise.

Table 1-4: Live discharges and deaths due to NCDs 2005-2008

Disease		2005	2006	2007	2008
Coronary heart disease	Live discharges	65,836	75,399	80,919	81,045
	Deaths	3,762	4,125	4,536	4,466
Rheumatic heart disease	Live discharges	3,680	3,309	3,513	3,573
	Deaths	69	35	37	61
Essential hypertension	Live discharges	78,367	83,128	82,550	79,699
	Deaths	586	428	437	385
Stroke	Live discharges	19,215	22,487	24,921	26,793
	Deaths	2,549	2,893	3,193	3,102
Diabetes mellitus	Live discharges	51,476	58,429	60,944	59,409
	Deaths	675	597	545	579
All cancers	Live discharges	44,672	48,484	52,444	59,356
	Deaths	2,683	3,163	3,388	3,384

Source: Ministry of Finance and Planning, 2011, Annual Report 2010, page 83,

In addition, the following is the ranking of hospital deaths in Sri Lanka in 2007. This ranking is not unique to urban and more developed districts, as 16 out of 25 districts recorded Ischemic heart

disease as the number one killer in the hospital[3].

Table 1-5: Leading causes of hospital death (2007)

Disease	%
Ischemic heart disease	13.1
Neoplasm	10.1
Pulmonary heart disease and diseases of the pulmonary circulation	10.1
Cerebro-vascular disease	9.2
Diseases of the gastro-intestinal tract	7

Source: Ministry of Health, 2010, Annual Health Statistics, page 37, Table 35.

1.3 Japanese Contributions to Improving Health Service Delivery in Sri Lanka

Japanese cooperation with the Sri Lankan health sector dates back several decades. The well-known contribution includes the formulation of the Health Master Plan and the establishment of the State Pharmaceutical Manufacturing Corporation (SPMC) in 1985. As described in Chapter 4, SPMC has continued to produce essential drugs for the country until the present, and the expansion of its production lines is considered a priority issue for the country.

Table 1-6: Grant assistance to SPMC

E/N	Project Title	Cost (100 million Japanese Yen)
1985	The Establishment Project of Pharmaceutical Centre of Essential Drugs (1/2)	18
1986	The Establishment Project of Pharmaceutical Centre of Essential Drugs (2/2)	7.4

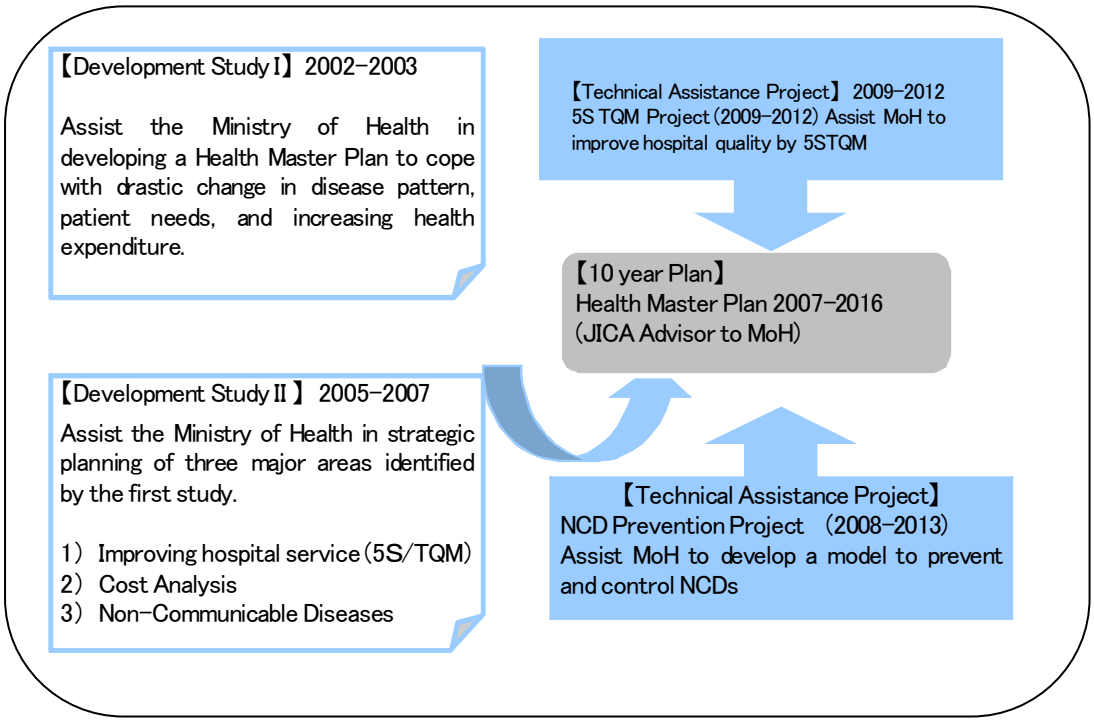
Source: Ministry of Foreign Affairs, White Paper, Statistical Section, 1986, 1987

By using the Yen-loan scheme, the Government of Japan assisted the Government of Sri Lanka to improve the national blood transfusion service in 2000/2001 with a total amount of 2.84 billion Japanese yen. This project has contributed to the establishment of a safe and efficient blood supply for the control of infectious diseases in the country. The ODA Loan was used for the construction of the National Blood Transfusion Centre, supply of equipment to the centre as well as local blood banks, and consulting services including engineering services and technical training. The other Yen-loan example was the “Small-scale Infrastructure Rehabilitation and Upgrading Project II” in 2004. From the total contribution of 11.77 billion Japanese yen, 6.6 billion was used for health sector support, such as improving rural hospitals.

Currently, a technical cooperation project on “Health Promotion and Preventive Care Measures of Chronic NCDs (NPP)” is being implemented by the Ministry of Health. This project aims to develop an implementation model to prevent and control chronic NCDs with a focus on Ischemic heart diseases through community screening, health guidance and health promotion activities. The background of the current technical assistance is shown in Figure 1-2.

[3] Neoplasms are the leading cause of death in Colombo, Galle and Jaffna.

Figure 1-2: Background and area of JICA assistance



Source: JICA Study team

In addition to NPP, JICA provided technical support to MoH in advancing the 5S-TQM programme for government hospitals.

The following Table shows the list of Japanese contributions in the past two decades.

Table 1-7: Major Japanese cooperation to Sri Lanka (health sector) (Unit: 100 million Japanese Yen)

Grant Aid			Technical Cooperation	
E/N	Project Title	Cost	Project Title	Period
1995	The Project for the Improvement of the Faculty of Dental Sciences in the University of Peradeniya	1.14	-	
1996	The Project for the Improvement of the Faculty of Dental Sciences in the University of Peradeniya	4.94	Nursing Education Project in Sri Lanka	1996-2001
	The Project for the Establishment of the School of Nursing, Sri Jayewardenepura	0.91		
	The Project for Improvement of Educational Equipment for the Faculty of Medical Science, the University of Sri Jayewardenepura	7.21		
1997	The Project for the Improvement of the Faculty of Dental Sciences in the University of Peradeniya	17.51	-	
	The Project for the Establishment of the School of Nursing, Sri Jayewardenepura	2.65		
	The Project for Improvement of Educational Equipment for the Faculty of Medical Science, the University of Sri Jayewardenepura	2.18		

Grant Aid			Technical Cooperation	
1998	The Project for the Establishment of the School of Nursing	11.8	Dental Education Project at the University of Peradeniya	1998-2003
1999	The Project for Improvement of the General Hospital Ratnapura	5.54	-	
2000	The Project for Improvement of the General Hospital Ratnapura	1.44		
2001	The Project for Improvement of Medical Equipment in the General Hospital Matara	3.62		
	The Project for Improvement of the General Hospital Ratnapura	9.58	-	
2002	The Project for Improvement of the General Hospital Ratnapura	3.26	Master Plan Study for Strengthening Health System	2002-2003
2005	The Project for the Improvement of Central Function of the Jaffna Teaching Hospital (detailed design)	0.9	The Development Study on Evidence-Based Management for the Health System in Sri Lanka	2005-2007
2008	The Project for the Improvement of Anuradhapura Teaching Hospital	1.04	-	
	The Project for the Improvement of Anuradhapura Teaching Hospital	0.26	Project on Health Promotion & Preventive Care Measures of Chronic NCDs	2008-2013
2009	The Project for the Improvement of Anuradhapura Teaching Hospital (Phase II)	3.9	Medical Service Administration	2008-2011
	The Project for the Improvement of Anuradhapura Teaching Hospital (Phase II)	4.91	Improvement of Quality and Safety in Healthcare Institutions in Sri Lanka	2009-2012
	The Project for the Improvement of Central Functions of Jaffna Teaching Hospital	22.98	-	

Source: Ministry of Foreign Affairs of Japan and JICA Knowledge Site

1.4 Major Donors Contributions to Improving Health Services in Sri Lanka

According to the annual report of the External Resources Department of Sri Lanka, a total amount of US$47 million was contributed to health sector development by all bi- and multilateral donors in 2010. Although there are many organizations that have contributed to the improvement of health services in Sri Lanka, Japan, the World Bank, UN agencies, the Saudi Fund and the Government of the United States accounts for about 83 per cent of total foreign funds for the health sector. Some donors contribute through the National Health Development Fund that is administered by the Ministry of Health. According to the MoFP, the organizations listed below are the donors for the National Health Development Fund between 2004 and 2010.

Table 1-8: Donors for the National Health Development Fund

Years	Name of the Donors	Purpose of Donation	Amount in SLR
2004	World Health Organization (WHO)	Rehabilitation and Treatment for Tsunami affected people	1,655,200.00
2005	WHO	Rehabilitation and Treatment for Tsunami affected people	2,640,000.00
2005	NOVO Nordisk India Pvt	To Establish Diabetes Care Clinics in Sri Lanka	10,997,000.00
2006	NOVO Nordisk India Pvt	To Establish Diabetes Care Clinics in Sri Lanka	9,773,900.00
2007	Sight Savers International Sri Lanka	Construction of a new Paediatric Ophthalmology Unit of the Lady Ridgeway Hospital	2,000,000.00

2008	Sight Savers International Sri Lanka	Construction of a new Paediatric Ophthalmology Unit of the Lady Ridgeway Hospital	8,000,000.00
2008	WHO	Emergency relief for five Flood affected Districts	3,300,000.00
2008	UNICEF Sri Lanka	Nutrition & Food Security Survey in Sri Lanka	1,161,526.00
2008	Lepra Ch. Leprahilfe Emmaus Schweix	Anti-Leprosy Campaign in Sri Lanka	2,118,900.00
2008	Chamber of Commerce South Korea	Improvement of Health Care Facilities in Horan Electorate	4,296,800.00
2009	Sight Savers International	Construction of a new Paediatric Ophthalmology Unit of the Lady Ridgeway Hospital	7,420,000.00
2009	WHO	Strengthening of Public Health Services in IDP Camps Cheddikulum	7,796,500.00
2009	WHO	Mental Health Services to Serve Internally Displaced Persons in Vavuniya District	2,753,259.00
2009	WHO	Health Intervention in Conflict-affected Areas in Northern Prov.	23,750,000.00
2009	UNICEF Sri Lanka Country Office	Nutrition and Food Security Survey in Sri Lanka	11,500,000.00
2010	Sight Savers International	Construction of a new Paediatric Ophthalmology Unit of the Lady Ridgeway Hospital	1,580,000.00
2010	WHO	Flood relief activities	1,200,000.00
2010	WHO	Nutrition Day Expenses	1,131,000.00
2010	UNICEF Sri Lanka	Nutrition and Food Security Survey in Sri Lanka	965,075.64

Source: National Health Development Fund, MoFP

The World Bank (WB), the World Health Organization (WHO) and JICA, however, are three major organizations that are actively providing support especially in the field of NCD prevention as described below.

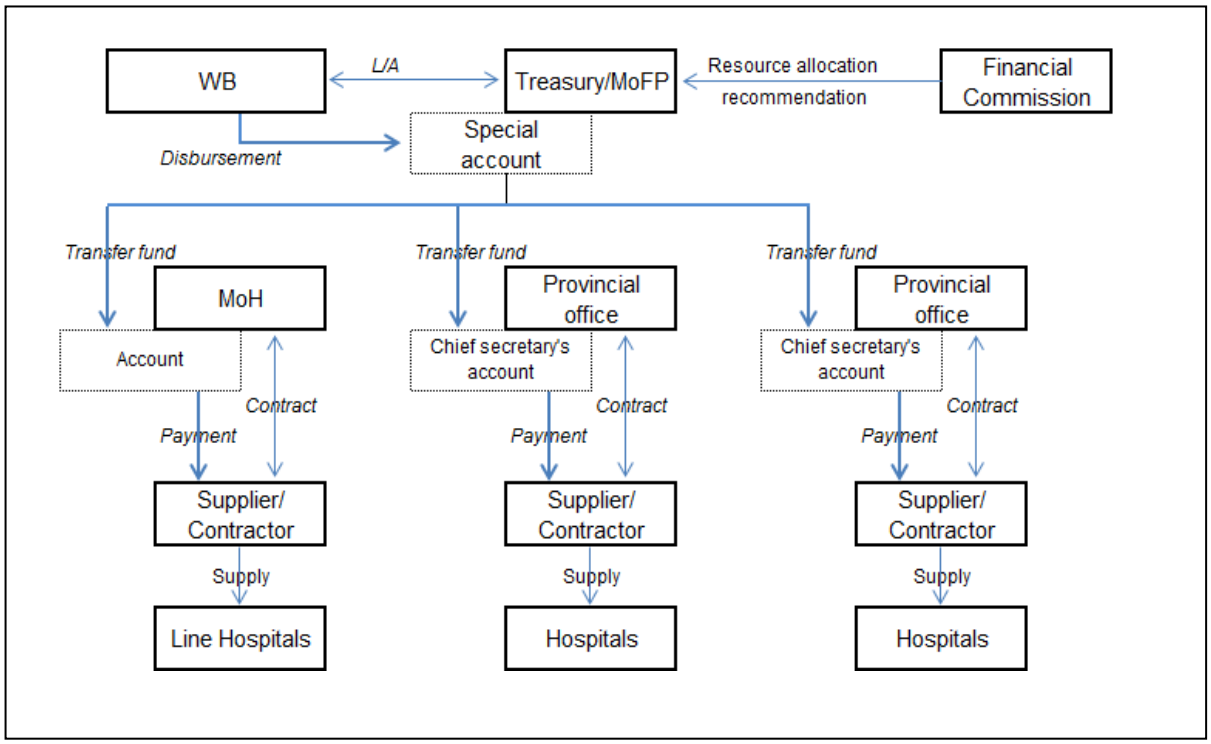
1.4.1 The World Bank (WB)

According to the ERD Annual Report 2010, the World Bank portfolio was comprised of 32 projects. The total value was approximately US$1,346 million of which about US$260 million was in grant form. The Health Sector accounted for 7 per cent and the majority was channelled through the Health Sector Development Project (HSDP). The original HSDP (US$61.38 million) was made effective in October 2004 with the project development objective to "improve efficiency, equity, and quality of health care by strengthening planning, management, and monitoring capacity at the district, provincial and central level with a specific focus on supporting preventive care services at the district and divisional level". The project covered all nine provinces and 25 districts in Sri Lanka. However, right after commencement, Sri Lanka was affected by the tsunami and Avian influenza, and about US$22.5 million was reallocated to provide assistance with these national emergencies.

In 2009, the bank approved a supplementary grant of US$ 26.7 with two major components: support for decentralised health service delivery at the provincial and district levels (component 1)

and strengthening the stewardship functions of the central Ministry of Healthcare and Nutrition (Component 2)[4]. The implementation structure for HSDP is shown below.

Figure 1-3: Implementation structure for HSDP



Source: The World Bank Sri Lanka Office

The bank is now preparing for the second HSDP which will align with the five-year plan of MoH. Therefore the bank is now waiting for the draft plan that is to be completed by December 2011. Upon receipt of the draft, the bank will make comments, send a mission in April, appraise and submit project plan to the board in September.

According to the bank, HSDP II differs from the previous one and will be based on results-based financing. The most important aspect under result-based financing is setting objectives with results indicators. As long as the objectives can be measured by the results indicators, the bank can finance any aspect of the project including human resources and tax. The World Bank considers the most important aspect for all donors to grasp is what MoH plans to achieve in five years.

1.4.2 The World Health Organization (WHO)

The WHO Country Office in Sri Lanka takes a leading role in supporting MoH in developing the health service delivery system. The current Country Cooperation Strategies (2006-2011) emphasise the following five areas of cooperation[5].

- **Human resources for health**: Rationalise the development and management of human resources; support pre-service and continuing education in clinical, public health and management competencies; strengthen the regulatory framework to ensure quality of performance of health staff.

[4] Project Paper on a Proposed Additional Credit of the Amount of SDR 16.3 million to the Democratic Socialist Republic of Sri Lanka for a Health Sector Development Project, June 18, 2009

[5] WHO Country Cooperation Strategy 2006-2011

- **Communicable diseases**: Strengthen the surveillance system for existing, emerging and re-emerging diseases; address priority communicable disease programmes; coordinate action for pandemic preparedness.

- **Non-communicable diseases and mental health**. Support prevention and control of major non-communicable diseases (NCDs), mental health disorders and related priorities; promote integrated and cost effective approaches for prevention and management of major NCDs; support surveillance of NCD risk factors and their determinants.

- **Child, adolescent and reproductive health**. Reorient the existing maternal and child health services by inclusion of a package of services and interventions for child, adolescent and reproductive health and nutrition using a lifecycle approach.

- **Emergency preparedness and response**. Strengthen and communicate information for emergency preparedness, response and dissemination; contribute to networks for coordinated preparedness and crisis management; continue to address health and rehabilitation in post-tsunami and post-conflict areas; institutionalise the Emergency Preparedness and Response programme within the health sector.

The WHO Sri Lanka Office is currently planning for the next Country Cooperation Strategy starting from 2012.

1.4.3 United Nations Children's Fund (UNICEF)

The United Nations Children's Fund (UNICEF) is working in the field of (1) health & nutrition, (2) water, sanitation and hygiene (WASH) & construction, (3) education and (4) child protection. The current five-year country cooperation programme (2008 – 2012) will end next year and UNICEF is currently preparing for the next cycle. In the health & nutrition section, UNICEF emphasises (1) improvement of maternal and child nutrition in low performing districts, (2) strengthening maternal, neonatal and child health care and monitoring with a special focus on disadvantaged population in the estate sector and the rural areas, and (3) enhancing access to quality basic health, nutrition and early childhood care and development services for women and children in resettlement areas/emergencies. From 2009 to 2010, UNICEF re/constructed 10 rural primary health care facilities (Government Health Centres), 3 paediatric wards, 1 mother and 1 new born care unit, 1 lactation management centre, 4 maternity wards and 2 labour rooms in conflict affected areas[6].

For the years of 2011-2012, UNICEF intends to spend US$3.5 million on health and nutrition activities in the Northern Province, and US$1.5 million in the Eastern Province. The major activities for the North are to establish and upgrade a comprehensive obstetric care facility, special intensive baby unit, paediatric ward, and therapeutic feeding centre in each district hospital. For the East, UNICEF plans to scale up the integrated nutrition programme and preventing micronutrient deficiencies amongst under-five and pregnant/breastfeeding women through supplementation and de-working treatment for parasite control[7].

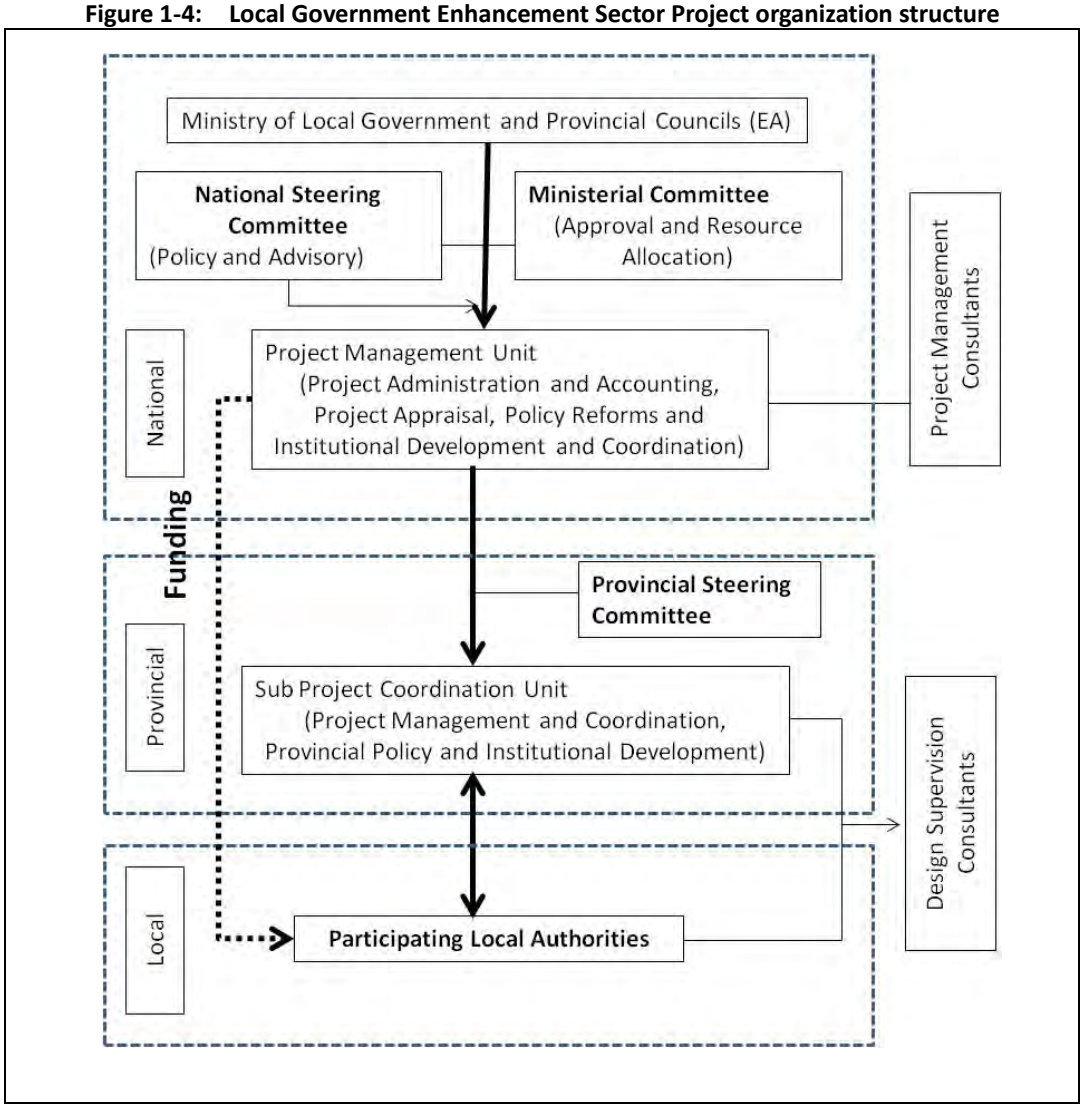
1.4.4 Asian Development Bank (ADB)

Although the Asian Development Bank (ADB) may not be a major donor in the health sector, it is worth including in this section due to its "Local Government Enhancement Sector Project",

[6] UNICEF Sri Lanka, page 4
[7] *ibid*., page 22-25

approved on October 21, 2011. This US$59 million project will provide capital grants for about 100 selected local authorities[8] for the implementation of eligible sub-projects such as water supply and sanitation, drainage, solid waste management, roads and bridges, improvement of maternity and health centres and others. The other outputs include local government policy reform and capacity building support and project management and administration support. The project commenced in the third quarter of 2011 and will end in the 2nd quarter of 2015. The project organization structure is shown in Figure 1-4.

Figure 1-4: Local Government Enhancement Sector Project organization structure

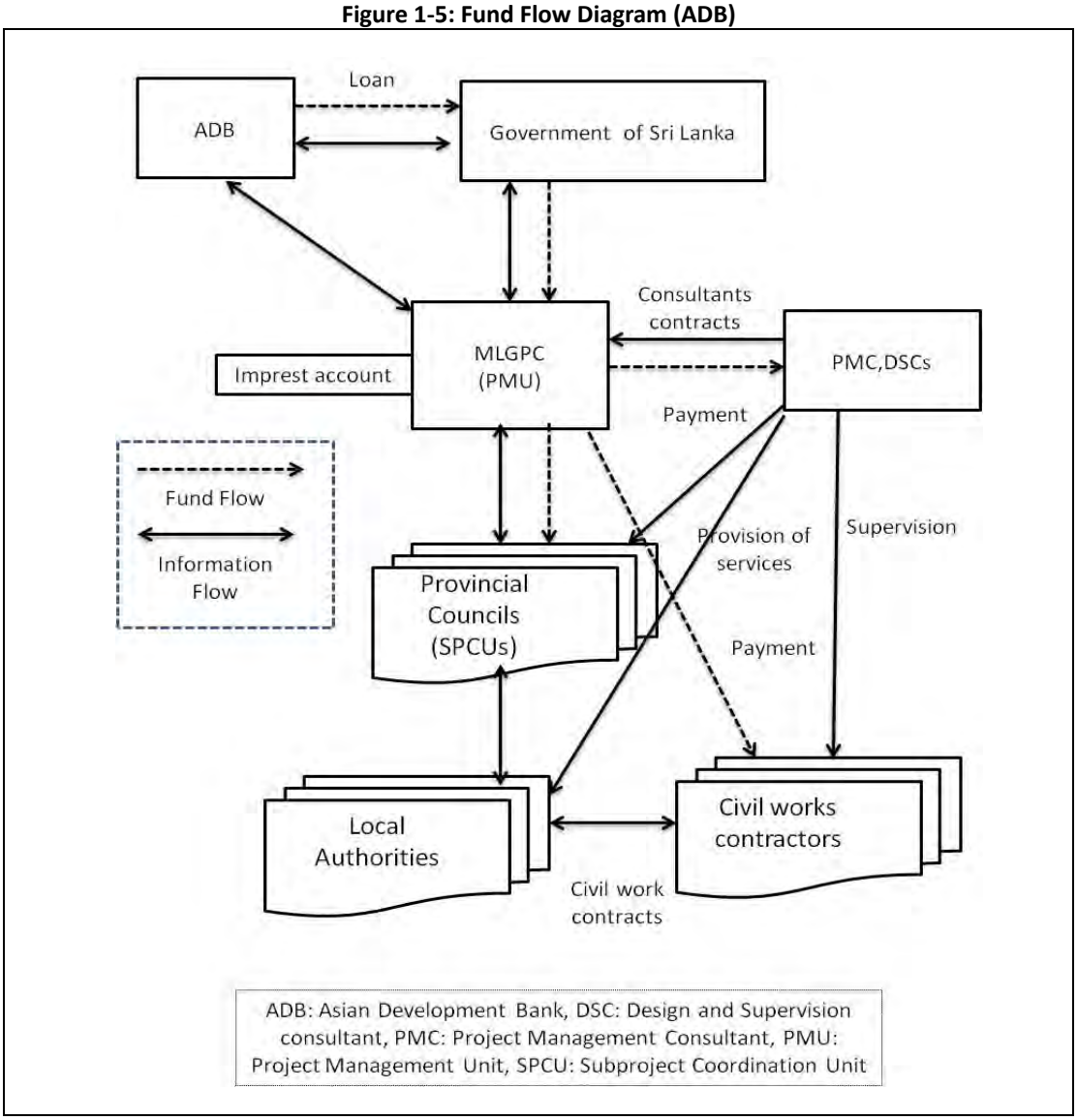


Source: Project Administration Manual for Democratic Socialist Republic of Sri Lanka: Local Government Enhancement Sector Project, page 9

The project is estimated to cost US$68.6 million, and ADB is providing a US$59 million loan with a 32-year term, including an 8-year grace period. The interest rate is 1.0% per annum during the grace period and 1.5% per annum thereafter. This project's Fund Flow Diagram is shown in Figure 1-5.

[8] The number of local authorities (Pradeshiya Sabhas) for each province are: Western Province, 8; North Central Province, 13; Uva Province, 13; North Western Province, 13; Sabaragamuwa Province, 15; Southern Province, 18; and Central Province, 18.

Figure 1-5: Fund Flow Diagram (ADB)



Source: Project Administration Manual for the Democratic Socialist Republic of Sri Lanka: Local Government Enhancement Sector Project, page 17

1.5 Dialogue with the Government of Sri Lanka

The Japan International Cooperation Agency (JICA) dispatched a preparatory survey mission in April 2011 to undertake scoping research and develop implementation arrangements for a further survey to be conducted. Both parties agreed to conduct a 'preparatory survey' to facilitate formulation of the project for the "Improvement of the Basic Social Service Targeting the Lagging Behind Regions".

In July 2011, JICA dispatched a Fact Finding Mission and agreed with the Government of Sri Lanka as follows:

1) The project name will be changed to "The Project for the Improvement of Basic Social Services Targeting the Emerging Regions".
2) The project will focus on (1) strengthening pharmaceutical manufacturing capacity for reliable and efficient supply of essential drugs, and (2) strengthening the capacity of secondary-level hospitals to provide sufficient curative services as regional core hospitals,

thereby contributing to the improvement of health status of people in Sri Lanka through access to quality care services.

3) JICA will dispatch a preparatory survey team and a survey will be jointly conducted with the Ministry of Health.

In November 2011, JICA dispatched an appraisal mission to discuss and agree on the basic framework for future cooperation between the two governments. After a series of consultation meetings, the two parties came to an agreement and signed the Minutes of Discussions (MD) on the 24th of November 2011. Chapter 6 of this Preparatory Report reflects the contents of these MDs.

1.6 Policy Framework and the Rationale for the Project

There are four major policies that are closely associated with this project: *"Mahinda Chintana"* (2010-2016), The Health Master Plan (2007-2013), The National Policy & Strategic Framework for Prevention and Control of Chronic Non-Communicable Diseases (2009), and The National Medicinal Drug Policy (2005).

1.6.1 "Mahinda Chintana"

The *"Mahinda Chintana"* is the highest-level development plan for Sri Lanka. The current plan was published in 2010 with a full vision and direction for the country. Under section 6.2 of "The Emerging Wonder of Asia", the main challenges in the health sector are stated as (a) responding to a changing disease and demographic pattern, (b) human resource management, (c) improving responsiveness and (d) addressing the needs of vulnerable groups.

The current government recognises that ensuring greater access for low-income households and reducing inequalities helps to improve overall health indices. The government aims to provide a health care system that ensures easy access to modern health care services for all, including people in emerging areas. Among many future strategies, the following strategies highlight the importance of this project[9]. The health sector development initiatives by time horizon are attached in Annex 1.

1) **The growing incidence and mortality from non-communicable diseases will be brought under control and reduced through preventive and curative actions:** In order to reduce the growing NCD burden, better coordination between preventive and curative care is essential, and availability of medicines for secondary prevention should be ensured.

2) **Improve efficiency of healthcare delivery services:** The use of higher-level facilities for conditions that could be treated at a lower level facility will be reduced through implementation of an effective referral system.

3) **Increasing local drug production capacity:** By 2020, Sri Lankan local pharmaceutical companies will have a significant share of the drug market. They will also be able to cater to the foreign market, competing with other South Asian medical drugs producers. The government will increase the capacity of the State Pharmaceutical Manufacturing Corporation while encouraging the private sector to set up new production plans as partnership projects.

[9] "Mahinda Chintana" , The Emerging Wonder of Asia, 2010, page 148-154.

1.6.2 Health Master Plan

The Health Master Plan (HMP) for Sri Lanka was formulated in 2003 with the assistance of JICA and finally approved by the Cabinet in 2007. This policy and strategic framework (2006 - 2015) was designed to support Sri Lanka's overall economic and social goals. It aims to facilitate equity by making health services accessible, especially to the poor and marginalised. The HMP aims to improve health status and reduce inequalities by adopting five strategies:

1) Deliver comprehensive health services, which reduce the disease burden and promote health;
2) Empower communities to participate actively in health maintenance;
3) Improve human resources for health delivery and management;
4) Improve health financing, mobilization, allocation and utilization of resources; and
5) Strengthen stewardship and management within the health system.

Implementing the HMP has become an integral part of the management of the health system through existing structures and regimes.

1.6.3 The National Policy & Strategic Framework for Prevention and control of NCD

As stated in the *"Mahinda Chintana"* , chronic NCDs such as cardiovascular diseases, diabetes mellitus, chronic respiratory diseases, chronic renal diseases and cancer, have become a significant disease burden to Sri Lanka. In 2009, in order to reduce premature mortality due to chronic NCDs, the Ministry of Health formulated a national NCD prevention and control policy with the following key strategies:

1) Strategy No. 1: Support prevention of chronic NCDs by strengthening policy, regulatory and service delivery measures for reducing level of risk factors of NCDs in the population;
2) Strategy No. 2: Implement a cost-effective screening program at the community level with special emphasis on cardiovascular diseases;
3) Strategy No.3: Facilitate provision of optimal NCD care by strengthening the health system to provide integrated and appropriate curative, preventive, rehabilitative and palliative services at each service level;
4) Strategy No. 4: Empower the community for promotion of healthy lifestyles for NCD prevention and control;
5) Strategy No. 5: Enhance human resource development to facilitate NCD prevention and care;
6) Strategy No. 6: Strengthen national health information systems including disease and risk factor surveillance;
7) Strategy No. 7: Promote research and utilisation of findings for prevention and control of NCDs;
8) Strategy No. 8: Ensure sustainable financing mechanisms that support cost-effective health interventions at both preventive and curative sectors; and
9) Strategy No. 9: Raise the priority of NCDs and integrate prevention and control into policies across all government ministries, and private sector organizations.

Since May 2008, JICA has been assisting the Ministry of Health to implement the "Project on Health Promotion and Preventive Care Measures of Chronic NCDs, NPP". NPP aims to formulate an implementation model to prevent and control NCDs through low-cost screening, health guidance and follow-up strategies and health promotion. Among the nine key strategies stated in the NCD policy, NPP assists MoH in accomplishing the strategies No. 2, No. 4 and No. 7.

In August 2011, the Ministry of Health issued a circular to establish "Healthy Lifestyle Centres

(HLC)" at every possible institution. Prevention should always be accompanied by a curative sector. The newly identified patients need to be properly tested, diagnosed and treated. The high-risk group should receive follow-ups and guidance at the LHC by medical and healthcare personnel. Upgrading the secondary-level institutions and increasing the production of necessary drugs will certainly promote and accelerate the implementation of the government NCD programmes. More information on NCDs and HLCs will be described in Chapter 2.

1.6.4 National Medicinal Drug Policy (2005)

The objectives of the policy are follows:

1) To ensure the availability and affordability of efficacious, safe and good quality medicines relevant to the health care needs of the people in a sustainable and equitable manner;
2) To promote the rational use of medicines by healthcare professionals and consumers; and
3) To promote local manufacture of essential medicines.

In recent days, the unstable supply and lower quality of imported drugs have become national issues. MoH has now prepared a new National Drug Policy and it was presented to the Parliament in January 2012[10].

1.7 Objectives, Schedule and Methodologies

Based on the policy dialogs between the two governments, a preparatory survey has been carried out with the following objectives, schedule and methodologies.

1.7.1 Survey objectives

This preparatory survey is conducted to collect necessary information for the project especially on the SPMC and the actual conditions of secondary health institutions existing in the emerging regions.

1.7.2 Survey schedule

The preparatory survey was conducted from 20 July 2011 to 31 January 2012 according to the following schedule.

Table 1-9: Survey schedule

Schedule	Survey Activities	Methodology
20/07 – 26/07	➢ Preparation of Inception Report ➢ Pre-test questionnaires	
27/07 – 12/08	➢ Field Survey: North Western, North, North Central, Central, Uva and Sabaragamuwa provinces. ➢ Facility survey of SPMC	➢ Interview ➢ Observation ➢ Data collection
15/08 – 31/08	➢ Finalization and sending out of questionnaires to secondary-level institutions ➢ Facility survey of SPMC	➢ Questionnaire survey
01/09 – 10/09 15/09 – 30/09	➢ Preparation of Progress Report ➢ Submission to JICA and the Government of Sri Lanka	
01/10 – 14/11	➢ Follow-up on the secondary-level institution survey, ➢ Cost and financial analyses ➢ Implementation structure analysis ➢ Finalization of draft final report	➢ Telephone interviews ➢ Discussion/consultation with MoH

[10] Daily News, December 7, 2011

Schedule	Survey Activities	Methodology
15/11 – 15/12	➢ Submission of the draft final report to JICA and the Government of Sri Lanka ➢ Discussion and finalization of the report	
15/12 – 30/12	➢ Preparation of indicators	
04/01 – 18/01	➢ Conduct baseline survey	➢ Questionnaire survey ➢ Field visit ➢ Interview
19/01 – 31/01	➢ Preparation and submission of the final report	

1.7.3 Survey areas

As agreed in the Minutes of Discussion dated on 11 August 2011, this preparatory survey was conducted in the seven provinces namely, Northern, Eastern, North Central, North Western, Central, Uva and Sabaragamuwa.

1.7.4 Survey methodology

The questionnaires for the secondary-level institutions were sent to all 61 secondary-level institutions[11] from the Ministry of Health and by the end of September 2011, 57 responses were obtained. The survey on SPMC was conducted with great cooperation from the General Manager of SPMC. The team made a full facility and equipment survey, reviewed the expansion proposal and collected qualitative information from the staff members. The baseline survey methodology for indicators is described in Chapter 7.

1.7.5 JICA study team members

JICA dispatched a 'study team' consisting of seven members as listed below.

Table 1-10: JICA study team members

	Name	Area of research responsibility
1	Keiko Nishino	Team leader/health administration/project planning
2	Naomi Imani	Health sector analysis
3	Reiko Sata (Dr.)	Provincial health service
4	Makoto Suzuki	Medical equipment/SPMC
5	Daigo Hirano	Building and facilities
6	Soichi Takai	Financial analysis/project planning
7	Takayuki Kojima	Financial analysis/project planning

The JICA study team conducted the preparatory survey under the supervision and guidance of Ms. Miwa Hiasa, Deputy Director, South Asia Division 3, South Asia Department, and Dr. Palitha Mahipala, Additional Secretary, Ministry of Health.

[11] Questionnaires and the list of institutions are attached as Annex 2 and 3.

CHAPTER 2 Health Service Delivery System

2.1 Organization of Health Service Delivery

2.1.1 Decentralised health administration

In Sri Lanka today, around 65% of outpatient services and 85-90% of inpatient services are provided by government health institutions[12]. In the government sector, health care delivery was, along with other functions, decentralised in 1987 by amendments to the Constitution (often referred to as "The 13th Amendment"). Since then, a majority of the primary and secondary-level healthcare institutions have been managed by the provincial governments through the provincial Ministries of Health or equivalent (referred as provincial MoH hereafter), while the central MoH remains responsible for tertiary-level hospitals. In 2010, 994 out of 1043 government curative care institutions were under provincial health administration. The demarcations between the central and provincial health authorities as stipulated by the constitutional amendments are listed in Annex 4, while Table 2-1 summarises the current roles and functions played by the central and provincial governments.

Table 2-1: Functions of the central and provincial governments in health administration

	Central Government (Ministry of Health)	Provincial Government (Provincial Councils through provincial Ministry of Health)
Policy formulation and implementation	➢ Formulation of policies, regulations and programmes/projects, ➢ Implementation of policies, regulations and programmes/ projects and provision of guidance to provincial governments ➢ Epidemic and endemic control	➢ Implementation of policies, regulations and programmes/projects with guidance from the central MoH
Service provision	➢ National Hospital of Sri Lanka (NHSL) ➢ Teaching Hospitals (TH) ➢ Provincial Hospitals (PH) ➢ Special Hospitals ➢ Selected DGHs, BHs and DHs	➢ District General Hospitals (DGH) ➢ Base Hospitals (BH) ➢ Divisional Hospitals (DH) ➢ Primary Medical Care Units (PMCU) ➢ Medical Offices of Health (MOH)
Human resources	➢ Pre-service training of HRH ➢ Recruitment and placement of Health Service cadres	➢ In-service training of HRH (except for post graduate training of doctors) ➢ Provision of salaries to personnel working in institutions managed by the province
Supervisory functions	➢ Supervision of statutory institutions and public corporations ➢ Regulation and supervision of private medical and health care facilities	

(1) Health administration by the provincial authorities

The central Ministry of Health, often called the "Line Ministry" (LM), is in charge of all the tertiary-level hospitals and special purpose hospitals, as well as some secondary and a very small

[12] MoH "Health Information Abstract 2010", June 2010

number of primary-level curative institutions, which altogether numbered 49 in 2010. Apart from managing these hospitals, the Line Ministry's role in the provision of services is rather indirect, through (a) appointment of professional and semi-professional categories of health personnel including doctors, nurses, and officers in health administrations, (b) central procurement of major medical equipment and medicines and their delivery to the district warehouses, and (c) activities, including procurement and facility expansion/renovation. These activities take place under the vertical programmes of MoH (such as NCD, malaria, Leprosy and TB control) and under some donor funding channelled through MoH[13].

Other functions the central government plays through the Ministry of Health include formulating policy and programmes and ensuring their implementation, pre-service training of health personnel, regulation and supervision of private medical and health care facilities, supervision of specified statutory institutions and public corporations including SPMC, etc.

(2) Health administration by the central authorities

Each province has a provincial government called the Provincial Council (PC) with its own cabinet and ministries. A PC is responsible for ensuring financial resources for day-to-day operations as well as maintenance and expansion of the facilities under their management including primary and secondary-level health care institutions. A PC also has the authority to decide on the upgrade of existing hospitals to higher categories. The Line Ministry may be consulted before such a decision is taken, as additional personnel and supplies including drugs by MoH would become necessary. Otherwise approval and provision of necessary financial resources for expansion of an upgraded hospital is a sole discretion and responsibility of the PC.

The health administration structures of the provinces may be similar but not uniform. All matters related to health, both allopathic (western) and indigenous (ayurvedic) medicines are handled by the provincial MoH. In some provinces, other areas such as women's affairs, children's welfare and sports are also placed under the same ministry.

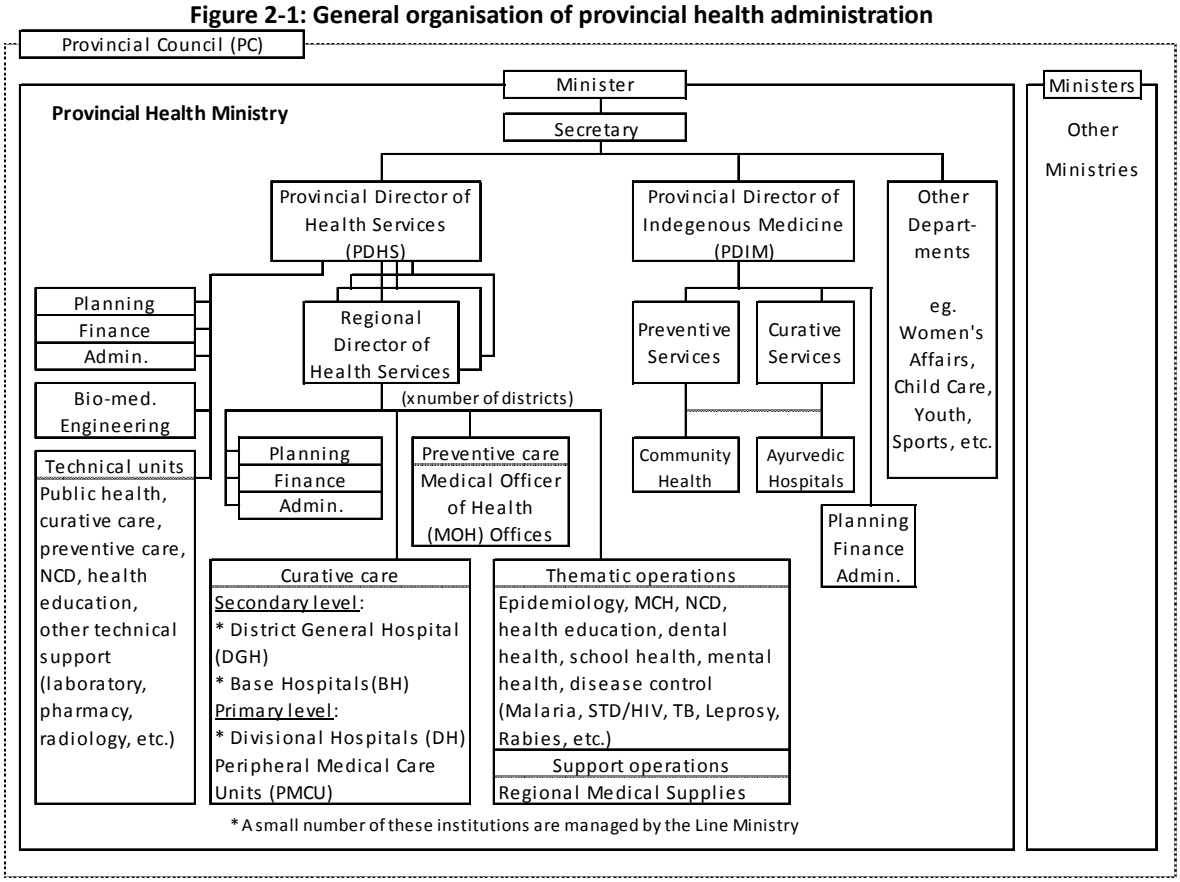
A provincial MoH is typically headed by a minister, assisted by a secretary. Each province has a Provincial Director of Health Services (PDHS) who has overall responsibility for allopathic medicine. Under PDHS there is a Regional Director of Health Services (RDHS) for each district in the province who is directly responsible for the day-to-day operations related to health service provisions, both curative and preventive.

The organisation of the curative service deliveries will be discussed in detail in the next section. Preventive services, including immunisations for children, comprehensive reproductive health care (antenatal, postnatal, family planning and well women clinic services), nutrition services, NCDs and school health, are provided through 297 (as of 2008) health units called the "Medical Office of Health (MOH)". Each MOH covers a population of roughly 80,000 to 100,000 people and is headed by a Medical Officer of Health (MOH), who functions as the manager of the operation. Under the MOH, public health nursing sisters, public health midwives and public health inspectors carry out preventive care services, including outreach activities. A MOH is typically located next to a hospital, in which space is utilised for the provision of preventive services.

A conceptual model of the provincial health administration is presented in Figure 2-1, while the current organizational structures of Central Province as an example are found in Annex 5.

[13] In 2010, funding from WHO, GFATM and the World Bank (grant component) was channelled through MoH to the provincial hospitals.

Figure 2-1: General organisation of provincial health administration



2.1.2 Organisation of government curative care institutions

Curative care is provided through a network of 1,043 (as of 2010[14]) health institutions organised into eight categories: The National Hospital, specialised hospitals, teaching hospitals (TH), provincial general hospitals (PGH), district general hospitals (DGH), base hospitals (BH), divisional hospitals (DH) and primary medical care units (PMCU)[15]. BHs are further divided into A (BHA) and B (BHB), and DHs into A, B and C subcategories according to their bed strengths.

This current categorization of hospitals came into force in around 2008 with a view to facilitate an organised hospital development mechanism. The "Recategorisation of Hospitals" published by the central MoH (Annex 6) roughly defines the level and range of the services to be provided[16]. Table 2-2 sums up the organisation of the hospitals under old and new categorisations.

[14] MoH "Hospitals and Bed Strength in Sri Lanka by Districts (Government Sector)", 2010

[15] Hospitals which do not have MOH nearby also provide preventive services.

[16] It was noted, however, that most of the hospitals are not fully equipped to provide the services at the expected level. More details on the actual standards of the services provided are found in Chapter 3.

Table 2-2: Organization of hospitals under "old" and "new" categorisations

	Old categorisation	Current categorisation	No	Bed strength	Managed by:
Tertiary	National Hospital	National Hospital	1	3,291	LM [(1)]
	Teaching Hospital (TH)	Teaching Hospital (TH)	21	17,736	LM
Secondary	General Hospital (GH)	Provincial General Hospital (PGH)	3	3,889	LM
		District General Hospital (DGH)	18	9,509	LM x 7 PC[(2)] x 11
	Base hospital (BH)	Base Hospital (BH) – Type A & B	A=21 B=45	13,672	LM x 7 PC x 59
Primary	District Hospital (DH)	Divisional Hospital (DH) – Type A, B & C (Inpatient facilities available)	A=39 B=143 C=276	20,659	LM x 2 PC x 456
	Peripheral Unit (PU)				
	Rural Hospital (RH)				
	Maternity Homes (MH)	Primary Medical Care Unit (PMCU) (Inpatient facilities only available at former Maternity Homes)	476	745	PC x 476
	Central Dispensary (CD)				

(1) Line Ministry = Central Ministry of Health
(2) Provincial Councils
Source: MoH "Hospitals and Bed Strength in Sri Lanka by District 2010"

1) **Teaching hospitals (TH) / Provincial general hospitals (PGA):** THs are those hospitals that are engaged in undergraduate and/or postgraduate training. They provide comprehensive services, from outpatient-based consultation to highly specialised medical care by specialist doctors (referred as "consultants") including those trained in sub-specialities. PGHs are established in those provinces without THs to provide medical care of a similar standard. They typically have the bed strengths of 1,000 or above.

2) **District general hospitals (DGH) / Base hospitals (BH):** Each district has one DGH and at least one BH to meet the local needs for secondary-level health care services. BHs are classified into Type A and Type B, according to bed strength.

3) **Divisional hospitals:** Former district hospitals, rural hospitals and peripheral units. The divisional hospitals are classified into Type A, Type B and Type C according to bed strength.

4) **Primary medical care units:** At the very grassroots level, former central dispensaries and maternity homes provide most basic curative services.

In addition to the above-mentioned hospitals there are special hospitals including Ragama Rehabilitation Hospital, Angoda and Mullariyama Psychiatry Hospital and Eye Hospital.

Outpatient services, including clinics for specific care, are offered at all the levels, though to a differing extent. When a patient who has come to the outpatient department (OPD) requires follow-up visits, he is normally asked to come back on a specific day when a clinic session is conducted as per a fixed schedule. Varieties of clinics vary from one institution to another but medical, surgical, ante- and post-natal, immunisation clinics are commonly found even at PMCU, where they are conducted by medical officers (MOs) and midwives. More specialised clinics such as diabetes, renal, psychiatric, etc. may be routinely organised at higher-level hospitals by MOs and in-house or visiting consultants.

2.1.3 Referrals

Sri Lankan health care is based on the open system, which allows people to walk into any health institution of their choice, be it primary or tertiary, to receive the health and medical care they

require. As such, a systematic referral system does not exist

This has resulted in general overcrowding of hospitals that offer specialist care and more sophisticated facilities, most of which are at the tertiary level. More resources are being allocated to these "popular" hospitals to cope with the ever increasing demand, and in turn primary and some secondary institutions are increasingly underutilised, as they are not well endowed to revamp their services to a level people will find acceptable. As a consequence many hospitals are unable to offer services they should be providing according to the government standard, having to "refer" more people out to higher-level hospitals or private facilities.

As a result of the lack of a referral system mentioned earlier, the current Health Information Management System (HIMS) collects no data on such referred cases. "Transfer", which is the term used for moving patients to other facilities by ambulance, occurs quite frequently but again there is currently no systematic collection of data on this. This makes it extremely difficult to find out the extent of actual referrals happening. The only means available for determining the rate of referrals is through an assessment of the bed occupancy rate (BOR), of which the trend is shown in Table 2-3.

Table 2-3: Bed Occupancy Rate (BOR) of selected categories of hospitals 2005 - 2007

BOR (%)		2005	2006	2007
Base Hospitals (secondary)		79	72.5	70
tertiary	Provincial Hospitals	104.7	87.5	94.8
	Teaching Hospitals	97.8	89.4	82.6

Source: "Health Information Abstract 2010" MDPU, MoH

MoH recognises the potential of a functional referral system for a reduction of the superfluous demand for tertiary-level care, as stipulated in the Health Master Plan. However, no significant progress toward the development of an institutionalised referral system has been undertaken so far.

2.2 Public Health Expenditures

In 2006, the government's share of total health expenditures was slightly less than 50%[17]. The rest was financed privately, of which over 85% was financed by out-of-pocket expenditures of individuals. The ratio of total health expenditure to GDP gradually increased from 3.5% in 1995 to 4.2% in 2006.

2.2.1 National

Between 2005 and 2010, overall health expenditure in the public sector grew by 67% from Rs. 46 billion to Rs. 77 billion. With the overall increase in the government expenditures, however, the proportion of the health component actually shrank from 5.8% to 3.9 % over the same period.

The government health expenditure consists of two categories: recurrent and capital. Table 2-4 shows the recent trends in the public health expenditures[18] in Sri Lanka.

[17] Institute for Health Policy "Sri Lanka Health Accounts: National Health Expenditures 1990-2006", Aug. 2009

[18] Expenditures incurred by the central and provincial health authorities, including the indigenous medicine sector.

Table 2-4: Trends in government health expenditures 2005-2010*

	Health Expenditures				Total Government Expenditures (1)	% of health in total government expenditure
	Capital	Recurrent	Total	% of recurrent expenditure		
	(Rs. billion)					
2005	9	37	46	80%	793	5.8%
2006	11	44	55	80%	1,072	5.1%
2007	12	50	62	81%	1,353	4.6%
2008	11	55	66	83%	1,412	4.7%
2009	10	59	69	86%	1,789	3.9%
2010	13	64	77	83%	1,968	3.9%
Growth between 2005-2010	44%	73%	67%	3 points	148%	- 1.9 points

* Including expenditure by provincial authorities
Source: MoFP "Annual Report 2010", (1) NPD

(1) Recurrent expenditure

Recurrent expenditure, which accounted for 83% of the health expenditure in 2010, refers to the expenses necessary to run and maintain the existing systems. This includes salaries, fuel and utilities (water, electricity, etc.), maintenance and repairs of buildings and equipment, supplies of drugs and medical consumables, etc. It is exclusively financed by the GoSL expenditures.

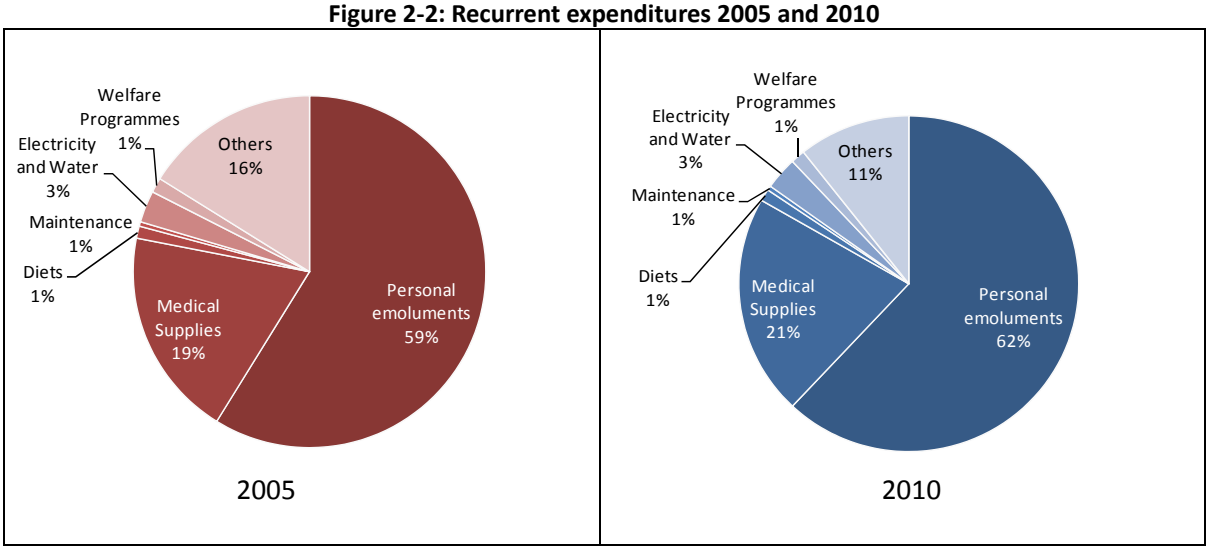
Table 2-5 shows the main components and recent trends of the recurrent expenditure. Between 2005 and 2010, it grew by 73%. The biggest increase was for medical supplies at 91%, which includes drugs, X-ray films, dental, laboratory and surgical consumables and non-consumables, dressings, oxygen, etc.

Table 2-5: Recurrent expenditures on health (Rs. million)

Category	2005	2007	2010	% Increase b/w 2005 and 2010
Personal emoluments	21,757	29,128	39,577	82%
Medical supplies	7,100	10,826	13,582	91%
Diets	409	547	736	80%
Maintenance	150	234	272	81%
Electricity and water	1,075	1,403	2,002	86%
Welfare programmes	504	922	865	72%
Other	5,976	6,460	6,799	14%
Total	36,951	49,520	63,833	73%

Source: MoFP Annual Report 2010

Figure 2-2: Recurrent expenditures 2005 and 2010



(2) Capital expenditure

Capital expenditure covers all the items not included in the recurrent category. They include not only acquisition of assets (land, buildings, equipment, furniture, vehicles, etc.), but also capacity development activities, as well as various programmes/projects, some of which may be financed with external resources.

Capital expenditure increased by 44% from Rs. 9 billion to Rs. 13 billion between 2005 and 2010, but its proportion declined from 20% to 17%, reflecting the greater resources needed to maintain the health system. The government is looking into ways to sustain the free health care system, including encouraging private sector growth through tax incentives[19]. The current initiatives in accelerating preventive interventions for NCDs also aim to lighten the financial burden on the curative side.

2.2.2 Provincial

As mentioned earlier, provincial councils are responsible for allocating financial resources for the provision of preventive and curative services except for those provided by the hospitals under the Line Ministry's management. As shown in Table 2-6, the share of health spending by the provincial councils in terms of the total government health expenditure is less than 30 %, despite the fact that the overwhelming majority of health care institutions are under provincial management. This may be due to the fact that all tertiary hospitals, which are more expensive to operate/maintain/develop, are managed by the central government. The declining share of the provincially managed hospitals may also indicate that more emphasis is has been placed on tertiary care in recent years.

Table 2-6: Health expenditure by central and provincial governments 2005-2010

Year	Rupees (billion)			% expended by PCs
	Central Gov.	Provincial Councils	National Total	
2005	30	16	46	34.8%
2006	38	17	55	30.9%
2007	44	18	62	29.0%
2008	48	18	66	27.3%
2009	50	19	69	27.5%
2010	55	22	77	28.6%
Growth b/w 2005-10	83%	38%	67%	

Source: MoFP Annual Report 2010

Sources of funds available for provincial councils include local tax and licence fees, profits made by enterprises directly run by the provincial governments, programme grants from Line Ministries and annual grants from the central government. As most of the provinces have very minimal income of their own (0.6-0.7% of GDP[20]), provincial councils are almost totally dependent on the grants provided by the central government.

The grants to provinces are allocated annually based on the recommendations made by the Finance Commission, an independent body directly under the President. Its function is primarily to ensure equity among the provinces in terms of resource availability, reflected in the distribution of the grants from the central government to the provincial councils. The flow of the funds is shown in Figure 2-3 and Figure 2-4.

[19] Ministry of Finance and Planning, 2009, Annual Report 2008, page 88

[20] Expenditure Estimates 2011 of Ministry of Local Government and Provincial Councils

The major components of the annual grants to provinces are as follows:

1) **Block Grant**: The Block Grant is provided to cater for the recurrent costs of the provincial governments. The amount is determined by deducting the estimated revenue from the estimated recurrent needs of a PC for the same year.

2) **Criteria-Based Grant (CBG)**: This is a part of the provincial capital budget and is designed to favour disadvantaged provinces. The amount is determined based on fixed criteria such as population, area, per capita income, and socio-economic disparities.

Figure 2-3: Budgeting flow

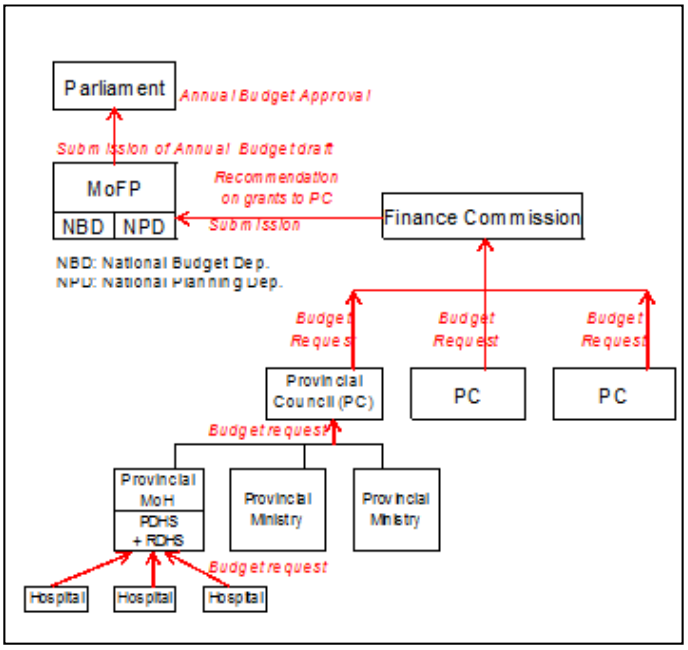
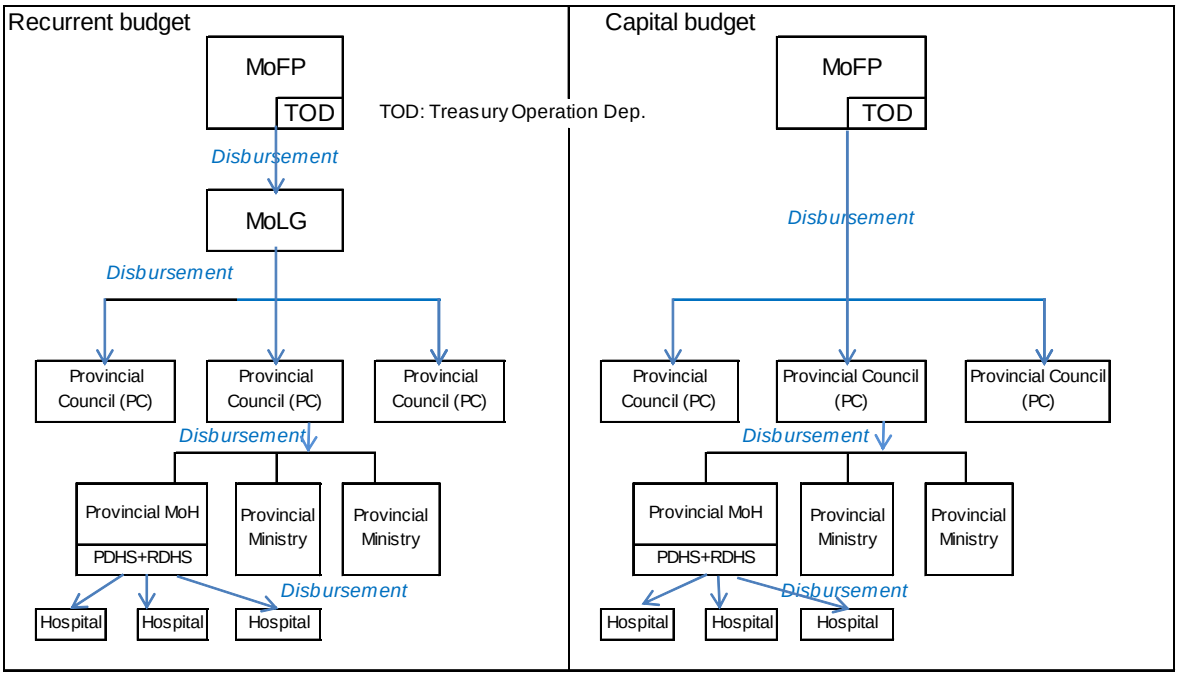


Figure 2-4: Disbursement flow



3) **Provincial Specific Development Grant (PSDG)**: This constitutes the biggest part of the capital budget of a province. The amount is determined by the Finance Commission in consultation with the Department of National Planning (NPD) and the respective provincial council on the basis of national priority and provincial needs.

4) **Foreign funds**: For externally funded projects, funds are often channelled to provincial councils as a part of the government grants to the province. In 2010, funds from such donors as UNICEF, UNFPA, World Bank, ADB as well as JICA were given to provinces in this manner.

The 2011 allocation of the grants to all the provinces are shown in Table 2-7.

Table 2-7: Allocation of government grants to provincial councils 2011 (Rs. millions)

	West.	Central	East.	South.	N. West.	N. Central	North.	Uva	Sabaragamuwa
Recurrent Total	7,170	13,270	10,473	11,172	12,657	7,386	9,153	8,897	9,823
CBG	400	375	250	325	300	276	275	300	335
PSDG	1,575	1,400	815	1,450	1,450	1,275	1,150	1,150	1,100
UNICEF	0	123	293	0	0	0	309	145	0
UNFPA	0	45	88	0	0	45	45	0	0
Others	161	1,090	4,265	85	91	260	1,564	2,019	928
Capital Total	2,136	2,865	5,330	1,860	1,841	3,083	3,343	3,469	2,363
Of which foreign funds	40	884	3,464	35	45	1,336	1,689	1,759	725
Grand Total	9,306	16,135	15,803	13,032	14,498	10,469	12,496	9,438	9,948
Per capita (Rs.)	1,585	5,998	10,195	5,234	6,196	8,443	10,501	9,300	6,249

Source: MoFP "Expenditure Estimates 2011 Vol.1"

The health sector received some 20% of the total grants in 2011, which was the second highest proportion after the road sector.

Table 2-8: Distribution by sector of the Government grant allocations to provincial councils, 2010

Sector	Amount (Rs. millions)	%
Roads	6,538	27.3
Health	4,749	19.9
Education	4,109	17.2
Agriculture	426	1.8
Irrigation	630	2.6
Administration	1,550	6.5
Others	5,907	24.7
Total	23,909	100

Source: MoFP "Expenditure Estimates 2011 Vol.1"

2.3 Human Resources

2.3.1 Current availability of Human Resources for Health

As of the end of 2009, the government health sector employed a total of 107,560 personnel including non-technical and casual staff. About 51% work with the Line Ministry and its institutions and the rest with the provincial institutions[21]. Table 2-9 shows the number of major categories of health personnel employed in the public sector in 2009. Compared to 1999 when availabilities of doctors and nurses per 100,000 of population were 36.7 and 73.8 respectively, the situation has greatly improved in the last 10 years. As of 2010 around 14,000 qualified doctors were practicing in the private sector on either a full-time or part-time basis. Nurses in the private sector number around 15,500[22].

[21] MoH "Health Manpower updated on 31. 12. 2009" published on the MoH website

[22] MoH "Health Information Abstract 2010"

Table 2-9: Human resources for health in the government sector 2009

Category	Institutions under:		Total	per 100,000 population
	MoH	Provincial Councils		
Medical officers	8,531	5,189	13,720	66.76
Of whom are specialists	825	310	1,135	5.52
Nursing officers	17,279	9,403	26,682	129.83
Midwives	1,117	7,609	8,726	42.46
Pharmacists	750	441	1,191	5.80
Radiographers	353	111	464	2.25
Med. lab. technologists	923	409	1,332	6.48
Hospital attendants	3,620	4,576	8,196	39.88
Sanitary labourer	7,470	6,049	13,519	65.78
Ordinary labourer	6,349	4,251	10,600	51.58

Source: Calculated from MoH "Health Manpower updated on 31.12.2009"

2.3.2 Regional distribution of health personnel

Despite the improved availability of health personnel, the benefits are not felt evenly by all regions. The geographical imbalances in terms of HRH distributions, which were also noted in *"Mahinda Chintana"*, are shown in Table 2-10.

Table 2-10: Availability of different categories of HRH in the government sector by province 2007

	Western	Central	Southern	Northern	Eastern	North Western	North Central	Uva	Sabaragamuwa	Total
Population (000)	5,707	2,599	2,417	1,159	1,493	2,276	1,196	1,275	1,888	20,100
# hospital beds	20,977	10,150	7,224	4,249	5,098	6,303	4,489	4,766	5,438	68,694
Beds/1000 pop	3.7	3.9	3.0	3.7	3.4	**2.8**	3.8	3.7	2.9	3.4
Medical officers (all hospital-based categories)										
Number	4,004	1,569	1,124	392	609	960	392	597	781	10,428
Per 100,000 pop	70.2	60.4	46.5	33.8	40.8	42.2	32.8	46.8	41.4	52.1
Per 1,000 beds	190.0	154.6	155.6	92.3	119.5	152.3	87.3	125.3	143.6	151.8
Medical specialists										
Number	336	126	104	18	55	78	44	49	42	852
Per 100,000 pop	5.9	4.8	4.3	1.6	3.7	3.4	3.7	3.8	2.2	4.3
Per 1,000 beds	16.0	12.4	14.4	4.2	10.8	12.4	9.8	10.3	7.7	12.4
Dental officers (all hospital-based categories)										
Number	687	167	75	33	54	88	42	53	70	1269
Per 100,000 pop	12.0	6.4	3.1	2.8	3.6	3.9	3.5	4.2	3.7	6.3
Nurses										
Number	11,433	4,256	3,603	751	1,689	4,004	1,353	1,804	2,283	31,176
Per 1,000 beds	545.0	419.3	498.8	176.7	331.3	635.3	301.4	378.5	419.8	453.8
Midwives										
Number	1,284	932	879	242	747	654	426	462	758	6,384
Per 100,000 pop	22.5	35.9	36.4	20.9	50.0	28.7	35.6	36.2	40.1	31.9
Technical support staff (Technical officers)										
Number	2,167	733	895	364	568	748	361	447	690	6,973
Per 1,000 beds	103.3	72.2	123.9	85.7	111.4	118.7	80.4	93.8	126.9	101.5
Non-technical support staff (labourers and attendants)										
Number	8,790	5,207	3,356	2,770	2,823	3,818	1,939	2,185	2,970	33,858
Per 1,000 beds	419.0	513.0	464.6	651.9	553.7	605.7	431.9	458.5	547.8	493.0

Source: World Bank "Prevention and Control of Selected Chronic NCDs in Sri Lanka" 2010

Although not visible from the above Table, disparities within provinces and districts also exist. Among other reasons, the scarcity of Tamil-speaking medical professionals is also a factor behind the less-than-adequate staffing in the estate areas and conflict-affected regions, where Tamil is dominantly spoken. Some measures to ease this problem have been taken, such as lowering entrance requirements for midwife training in the conflict-affected Tamil-speaking regions. However overall, the government is yet to put in place suitable deployment, training and recruitment policies and practices that can effectively address the issue of inequitable distribution of HRH[23].

2.3.3 Deployment of HRH

The MoH appoints all the professional and semi-professional medical, technical and administrative health personnel not only for the centrally managed institutions but also for provincial health administrations and hospitals under them[24]. Such tools as staffing norms and cadre lists are supposed to facilitate optimal placement of the HRH.

MoH has developed new staffing norms[25], which specify the number of nursing officers, midwives, PSM (Professions Supplementary to Medicine)[26] and other paramedics to be deployed at different kinds of medical institutions. These are considered to be based on international standards but with the current level of available human and financial resources, it is very unlikely that these norms could be applied in near future.

Each province and institution has a cadre list that specifies the number of personnel by category to be deployed there. The provincial public service commissions are the approving authorities. Most of the cadre lists, however, are thought to underestimate the actual needs, as the number of positions could not be increased without accompanying financial resources.

As the tools are unrealistic, it is not clear how appointments by MoH are determined. In general, it appears, hospitals with heavier patient loads are given priority to cope with the demand for services. This is perfectly logical but may be perpetuating or even worsening the imbalances among the hospitals, as those underutilised due to lack of human resources are not likely to get additional staff needed to improve their services.

Health personnel are expected to accept the appointment given and serve in one duty station for 4 years before a transfer can be considered. However, there are cases where a newly appointed MO leaves the post after a very short period, discouraged by poor social infrastructure such as water, electricity, housing and schools for children, along with the lack of opportunities for private practice.

2.3.4 Production of major categories of HRH

Fully-qualified medical doctors are trained at universities, all of which are under the Ministry of Higher Education[27]. Most of the other categories of health personnel are produced by the training institutions managed by the MoH of the central government.

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[23] MoH, “Human Resources for Health Strategic Plan (2009-2018) Situation Analysis”, Jul 2009 (page 18)

[24] Only clerical and minor staff at hospitals and health administration are appointed by the provincial authorities.

[25] MoH “Norms for the Health Cadre”, 2011

[26] This category includes radiographers, physiotherapists, occupational therapist, pharmacists and medical laboratory technologists (MLT).

[27] Doctors without MBBS degrees are called Assistant Medical Officers (AMOs) and Registered Medical Officers (RMOs).

1) MBBS Doctors

Undergraduate training of medical doctors is undertaken at medical faculties of eight universities[28]. Each year some 1,100 students are accepted. After graduation with the MBBS degree, they are placed in government hospitals for on-the-job training as "intern MOs".

2) Specialists (Consultants)

The Post Graduate Institute for Medicine (PGIM) attached to the University of Colombo is the only institution in the country that gives post-graduate level training. Overseas trained specialists need to be certified by the PGIM Board to have their qualifications recognised. In 2009, 178 specialist doctors were certified by PGIM, including 33 in general medicine, 14 in general surgeries, 14 in paediatrics and 13 in obstetrics and gynaecology, 13 in radiology and 5 in anaesthesiology[29].

3) Nurses

MoH runs 16 nursing training schools across the country. All of them are attached to TH, PGH, DGH or BH. The training duration is 3 years. Some universities offer undergraduate training programmes for nurses leading to a Bachelor's degree in nursing.

4) Professions supplementary to medicine (PSM)

PSM includes radiographers, physiotherapists, occupational therapists, medical laboratory technologists (MLT) and pharmacists. There is one training institution for each of the first three categories, three for MLTs, and two for pharmacists, all managed by MoH. The training duration is 2 years.

The Universities of Peradeniya, Colombo, Ruhuna and Jayewardenepura run 4-year undergraduate courses which lead to Bachelor's degrees in physiotherapy, medical laboratory sciences and pharmacy. The annual intake for each course is 35-40.

The intake of trainees into the MoH-managed institutions has been irregular as it depends on availability of financial resources both for training and absorption into the government health services rather than the actual needs[30]. The actual intake for the past 5 years is shown in Table 2-11.

Table 2-11: Intake for training of different categories of HRH 2006-2010

	2006	2007	2008	2009	2010
Nurses	3,806	1,953	0	0	4,070
Midwives	0	0	0	0	228
Medical Lab Technicians	0	475	0	0	140
Pharmacists	213	257	0	100	42
Dispensers	0	261	0	0	46
Radiographers	40	167	0	76	60

Source: MoFP "Annual Report 2010"

Training of health personnel is also facing a challenge resulting from the epidemiological transition. With NCDs accounting for a major health burden in Sri Lanka, for example, both pre-service and in-service training must be systematically refined to meet this new challenge.

2.3.5 HRH policies and strategies

Development and management of Human Resources for Health (HRH) has been a long-standing

[28] Colombo, Peradeniya, Sri Jayewardenepura, Kelaniya, Jaffna, Ruhuna, Eastern, Rajarata universities

[29] PGIM Newsletter vol. 17

[30] MoH "HRH Strategic Plan (2009-2018) Situation Analysis", July 2009

agenda in the health sector. Since the early 1990s, various proposals and plans were formulated regarding several HRH issues including those mentioned above, and also those related to human resource management such as decentralisation and performance appraisal, mobilisation of resources for health and formulation of proper human resource development policies and plans[31]. The Health Master Plan 2007-2016 also identifies "Improved Management of HRH" as one of the five strategic objectives. In the plan the lack of an organisation/key unit with the mandate to lead the implementation of these policies and plans is pointed out as a factor behind the slow and sporadic actions taken so far.

In 2009 the HRH Strategic Plan was finalised and published by MoH. The document identifies seven strategic objectives in three areas as shown in Table below:

Table 2-12: HRH Strategic Plan

Areas	Strategic Objectives
Area 1: HRH Planning	(1) Strengthen HRH planning process to respond to the service and population needs. (2) Institutional HRH planning as an integral part of national health plans that address national health priorities.
Area 2: HRH Training	(3) Improve the production and quality of training to meet skill and development needs in changing service environments.
Area 3: HRH Management	(4) Develop and institutionalise human resource management systems. (5) Address health workers' needs to ensure optimal workforce retention and participation. (6) Establish a performance management system for HRH to improve productivity and performance of health workers. (7) Ensure effective deployment procedures that minimise distribution imbalances.

Source: MoH "HRH Strategic Plan (2009-2018) Situation Analysis", July 2009

The document also stresses the importance of political will to address the HRH issues and to allocate sufficient resources as a crucial factor to move the situation forward.

2.4 Essential Drugs and Common Medicines

2.4.1 Overview

The list of essential drugs for Sri Lanka is compiled by a national committee based on the WHO model list. Additional items and categories are included in view of the needs of the Sri Lankan population and disease prevalence based on three criteria, namely efficacy, safety and cost-effectiveness. The latest version (2009) of the "Essential Drug List" contains more than 500 items (468 kinds of drugs). There is also a "Hospital Formulary List", which is a list of drugs that are required to be available in governmental institutions. The list is determined in a similar manner as the essential drug list.

The number of newly registered drugs available in the general market and at private hospitals is rapidly increasing. The Drug Regulatory Authority (DRA) controls importation and circulation of drugs through registration and issuance of licences for the importation and manufacture of drugs. Further details of this registration system can be found in section 2.4.2.

The regulations for drugs and medical consumables are implemented in line with the "Cosmetics Devices and Drugs Act (1980)". Also the "National Medicinal Drug Policy for Sri Lanka (2005)" describes objectives as stated in 1.5.4 according to *"Mahinda Chintana"* principles. The new

[31] *ibid*.

National Medicinal Drug Policy, which should include recommendations on the reselection system of essential drugs, limiting drug imports and restrictions on prescribing variety, is expected to be finalised soon, and may be available in part by January 2012[32].

Under the free health care system, drugs are available free of charge at governmental institutions. The Medical Supplies Division (MSD) of MoH has the responsibility to distribute medicinal drugs, surgical items (consumables and non-consumables), simple medicinal equipment and reagents for laboratories to all the governmental institutions. The government owned State Pharmaceutical Corporation of Sri Lanka (SPC) handles most drug imports in the country. SPC imports more than 20,000 items for MSD as well as for its own retail pharmacies which charge lower prices than other private pharmacies. At the same time, the State Pharmaceutical Manufacturing Corporation of Sri Lanka (SPMC), another government-owned company, produces several kinds of oral essential drugs. SPMC will be discussed in detail in Chapter 4.

There are some purely private markets for private hospitals and pharmacies. Although the private market is growing along with the economic development and it has surpassed governmental purchases in terms of total spending, drug distribution by the government is still crucial in this country.

2.4.2 Drug registration system

The Drug Regulatory Authority (DRA) is a department under MoH, responsible to the Director General of Health Services, with responsibility in quality assurance of drugs and cosmetics. There is a sister department called the National Drug Quality Assurance Laboratory (NDQAL), which provides technical support for the testing of products and the manufacturing process for local manufacturers.

Every company that sells drugs including medical consumables and cosmetics is required to obtain a license from DRA. Every product to be sold needs to be registered before it can be put on the market. These registrations need to be renewed every 1 to 5 years. A new chemical entity (NCE), after passing a documentary examination, must undergo special processes, such as laboratory and clinical tests, before it can be registered. DRA automatically rejects all products which have been rejected by one of the “reference countries”, namely USA, UK, Australia, Norway and some European countries, without any investigation.

Domestic manufacturers also need to obtain a license. Each of their products needs to have its formulation approved, and be registered separately by strength. Each product must undergo a 6-month stability test along with a kind of stress test based on its shelf life before it is allowed to circulate. The passed products get a one-year registration until the end of their shelf life, and then get full registration for five years after that. In addition, NDQAL takes part in Good Manufacturing Practice (GMP) inspections and provides advice on GMP to local manufacturers.

2.4.3 Budget allocation and drug procurement

The Medical Supply Division (MSD) prepares a budget plan with a corresponding distribution list of drugs for two years in advance based on the actual consumption in the previous year and requests obtained from each institution. After finalization of the annual plan, MSD firstly places orders with SPMC and other local manufacturers based on their production capacity and then orders the additional amounts required for the year from SPC. SPC issues an international tender notice on behalf of MSD one year before the appointed day of delivery.

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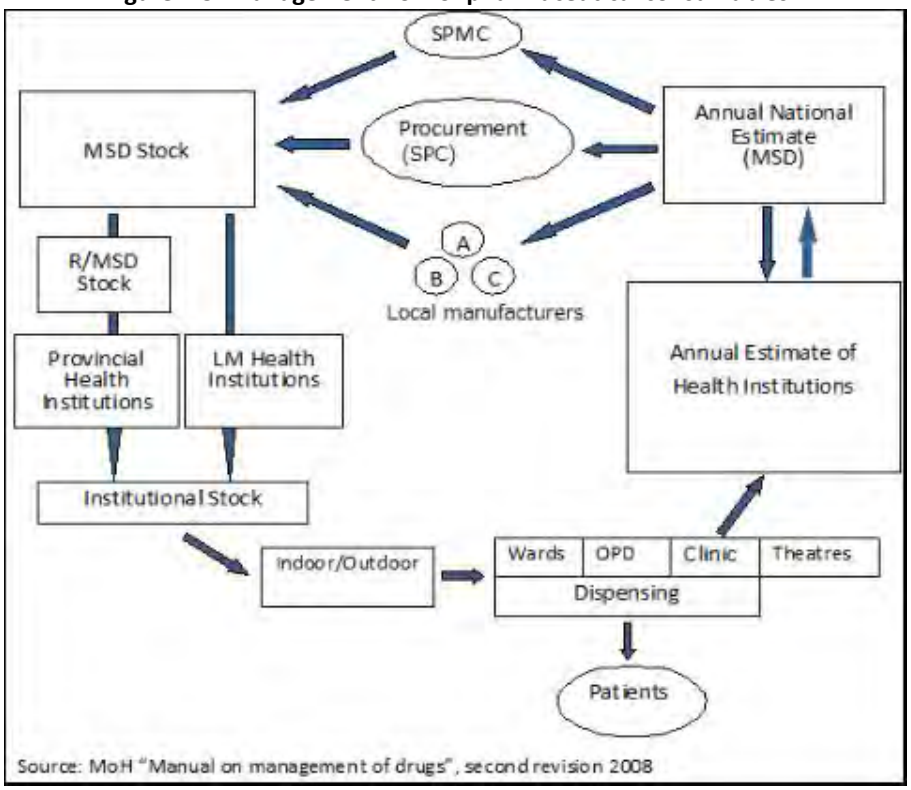
[32] Daily News 18 October 2011

For some surgical consumables such as gauze and cotton wool, MSD gives preference to local small manufacturers and directly purchases from them according to the policy. Basically, the central MSD distributes drugs to all institutions through respective regional MSDs quarterly, except for Line Ministry institutions that receive direct deliveries from the central MSD. In each institution, there are separate dispensing windows for inpatients and outpatients. Generally the stock for the latter is rather limited. These activities are depicted in Figure 2-5.

Figure 2-5: Management flow of pharmaceutical consumables



The expenditure for medical supplies grew from Rs. 7.1 billion out of total health expenditure of Rs. 46 billion in 2005 (15%) to Rs. 13.6 billion out of Rs. 77 billion in 2010 (18%)[33], as shown in Table 2-4 and 2-5. For 2011, a more than 30% increase is predicted because of the extended OPD hours[34]. According to the Manual on Management of Drugs (2008), an appropriate proportion for drugs and medical consumables is about 11% of total health expenditure. However, the expenditure on drugs and medical consumables has gone far beyond this threshold for the last couple of years because of the increasing demand for better services, escalating unit cost of drugs, changing patterns of morbidity, and rehabilitation demands related to the internal conflict.

Table 2-13: Expenditure on medical supplies 2009 and 2010

Year		Import by SPC	Local production		Others and Irregular Purchase	Total	Total import* (reference)
			By SPMC	By others			
2009	Rs. million	10,509	599	697	344	12,149	21,547
	%	87	5	6	2	100	
2010	Rs. million	10,436	908	923	1,284	13,551	22,439
	%	77	7	7	9	100	

*Central Bank of Sri Lanka, Imports for "Medical and Pharmaceutical Products"
Source: Domestic Data of Financial Department of MSD as of Aug.2011

[33] Ministry of Finance and Planning, Annual Report 2010
[34] Daily News, 2 September 2011.

In Sri Lanka, drug shortages sometimes become a serious problem. It is not simply because of lack of finance. The problems, triggered by heavy dependence on drug importation, unforeseen situations, such as severe deterioration of drugs, product failure or late delivery, can cause an island-wide stock-out of medicines. Considering these circumstances, MoH has been trying to decrease its dependency on imports by strengthening local manufacturing capacity and by establishing a stable import procedure. On August 3, 2011, the Sri Lankan Health Minister and a delegation including the director of MSD called upon the Indian Health Minister to discuss the problems described above and a consensus was reached to enforce strict control over poor-quality dealers[35].

At a time of stock-out, hospitals first contact regional MSD for additional supplies. When the regional MSD does not have the required items in stock, help from the central MSD is sought before resorting to local purchase. Such irregular expenditure on local purchases made either by MSD or institutions accounted for nearly 10% of total medical supplies purchased in 2010 as shown in Table 2-13.

2.5 Facilities and Equipment

2.5.1 Facilities

The required minimum facilities at different levels of curative medical institutions can be summarised as shown in the Table 2-14. However, additional facilities may be provided depending on specific needs (for details, refer to Annex 6).

[35] Daily News, 5 August 2011

Table 2-14: Facilities at different categories according to re-categorisation of hospitals

<table>
<tr><th>Primary Medical Care Unit</th><th>Divisional Hospital</th><th>District Base Hospital</th><th>District General Hospital</th><th>Teaching/ Provincial Hospital</th></tr>
<tr><td>Outpatient care</td><td rowspan="2">Outpatient care with a ECU for limited emergency care and screening</td><td colspan="3">Outpatient Department with separate Preliminary Care Unit, Emergency Care Unit and screening facilities</td></tr>
<tr><td rowspan="3">Limited emergency care: Facilities for stabilization of patients before referring to secondary or tertiary care medical institutions.</td><td colspan="3">Clinic facilities</td></tr>
<tr><td>Basic laboratory facilities</td><td colspan="3" rowspan="3">In-ward facilities
2 Medical units
2 Surgical units
2 Ob-Gyn units
2 Paediatric units
1 ENT surgical unit
1 Eye surgical unit
Anaesthesia Unit
3 Medical units
3 Surgical units
3 Ob-Gyn units
3 Paediatric units
3 ENT surgical unit
2 Eye surgical unit</td></tr>
<tr><td>Minor operation facilities</td></tr>
<tr><td rowspan="2">Facilities for a poly-clinic including Ante-Natal & Post-Natal, Family Planning, Child Health, Well Women etc.</td><td>Labour room</td></tr>
<tr><td>Wards: 1 Maternity ward, 1 male and female Medical and Surgical wards each and one children’s ward</td><td rowspan="12"></td><td rowspan="2">1 Dermatology unit
1 Psychiatry unit
1 Rheumatology unit
1 STD/AIDS Unit
1 ENT surgical unit
1 Orthopaedic surgery
1 Neo-natology unit</td></tr>
<tr><td rowspan="11"></td><td>Dental unit</td></tr>
<tr><td rowspan="2">Facilities for continuation of treatment of patients referred by secondary and tertiary medical institutions for a limited period of time</td><td rowspan="10">1 Neurology unit
1 Cardiology unit
1 Oncology unit
1 Neurosurgical unit
1 Genito urin. surg. Unit
1 Paediatric surgical unit
1 Nephrology unit
Chest Medicine
Transfusion Medicine</td></tr>
<tr><td rowspan="2">Facilities for a polyclinic including Ante-Natal, Post Natal, Family Planning, Child Health, Well Women clinic etc.</td></tr>
<tr><td colspan="2">Intensive Care Units
Medical Intensive Care Unit
Surgical Intensive Care Unit</td></tr>
<tr><td>Ambulance</td><td rowspan="2"></td><td rowspan="2">Cardiac Intensive Care Unit
Coronary Care Unit</td></tr>
<tr><td rowspan="2">(Services of visiting consultants will be available in some of these hospitals through out-reach clinics)</td><td colspan="2">Operation Theatres</td></tr>
<tr><td colspan="3">Diagnostic services
Radiology Department
Pathology Dept. with Histopathology, Haematology and Microbiology Units</td></tr>
<tr><td rowspan="6"></td><td colspan="3">Medico-legal Department</td></tr>
<tr><td colspan="3">Maxillo Facial Surgical Unit</td></tr>
<tr><td colspan="2"></td><td>Orthodental Unit</td></tr>
<tr><td colspan="2">Medical Records Unit</td><td>Medical Statistic Unit</td></tr>
<tr><td></td><td colspan="2">Public Health Unit</td></tr>
<tr><td>Psychiatry, Rheumatology, STD/AIDS or any other relevant unit will be added according to need</td><td>Chest Medicine, Neurology, Cardiology and Transfusion Medicine Units will be added according to service requirements.</td><td>Accident Service/ Trauma Surgery unit
Dept of Anaesthesia</td></tr>
</table>

Source: Re-Categorization of Hospitals

2.5.2 Equipment:

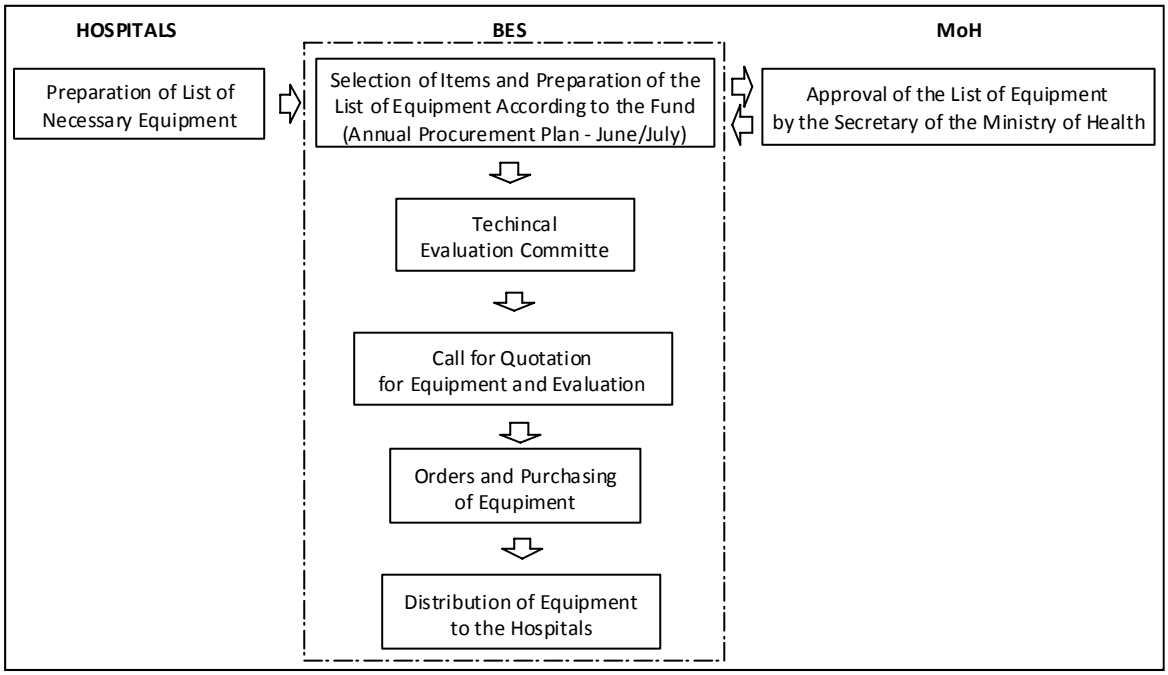
For planning or selection of medical equipment for each category of hospitals, the Desired

Equipment List issued by the Biomedical Engineering Services (BES) is followed. However, for the selection of equipment, it is essential to consider the actual needs of the hospital, availability of resources such as money to operate and maintain the equipment, manpower, the technical level of staff, and available infrastructure in the facilities, including radiation protection of walls in the X-ray examination rooms, and stabilised electric power.

1) Procurement procedure: Line Ministry Institutions

For the line ministry hospitals, procurement is based on the "Annual Procurement Plan". BES receives the lists of required equipment from all hospitals and selects items to be provided in order of priority and according to the funds available and they prepare a list of equipment to be purchased for the following year. This list is then submitted to the Secretary of the Ministry of Health for approval. Once the list is approved by the health secretary, BES appoints a "Technical Evaluation Committee" to call for quotations for medical equipment and for evaluation. Then they place orders for the purchase of equipment and deliver it to the hospitals. This procedure is shown in Figure 2-6 below.

Figure 2-6: Procurement process of medical equipment for Line Ministry hospitals



For items worth more than Rs. 3 million, quotations are called for by the Tender Branch of MoH.

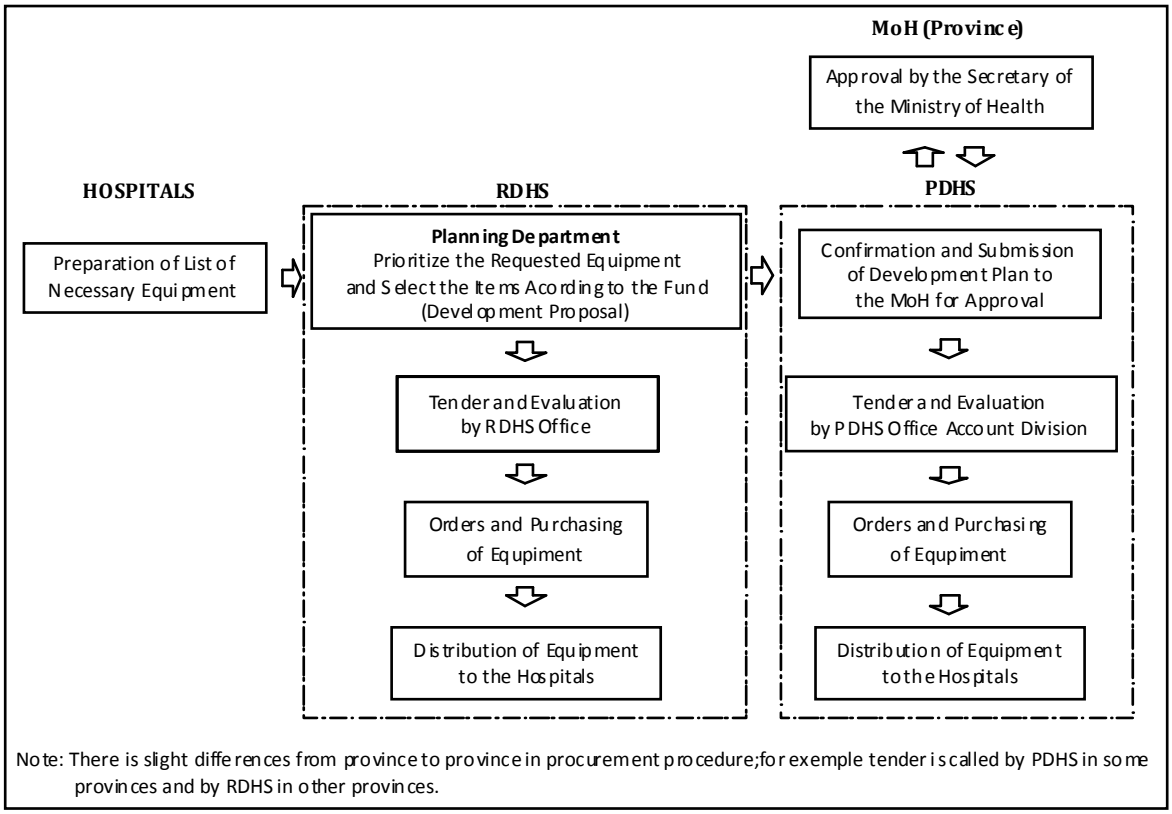
Apart from the above-mentioned procedure, when there are urgent requests, BES submit a list of equipment prepared by each hospital to the "Expenses Control Committee" of the Ministry of Health and then to the Secretary for approval. Alternatively, requests are sometimes made directly to the secretary and the approved request comes to the BES through the secretary. Once the approved list is received, either the BES itself calls for quotations and purchases the equipment or the hospital is asked to call for quotations and money is given by the BES to the hospital to purchase the equipment.

2) Procurement procedure: Provincial institutions

Each hospital prepares a lists of needed equipment listed in order of priority and submits it to RDHS. The planning department of the RDHS reviews the lists from different hospitals and selects items to be procured according to the availability of funds allocated to that section, at the time of the "Development Proposal" formulation for the following year. The proposal is then submitted to

PDHS, which in turn submits it to the Provincial Health Secretary for approval. Once it is approved, tenders are called for by the PDHS office accounts division or by the RDHS office and the orders are placed for purchasing equipment. The purchased items are delivered to the hospitals by RDHS. This procedure is shown in Figure 2-7.

Figure 2-7: Procurement process of medical equipment for provincial hospitals



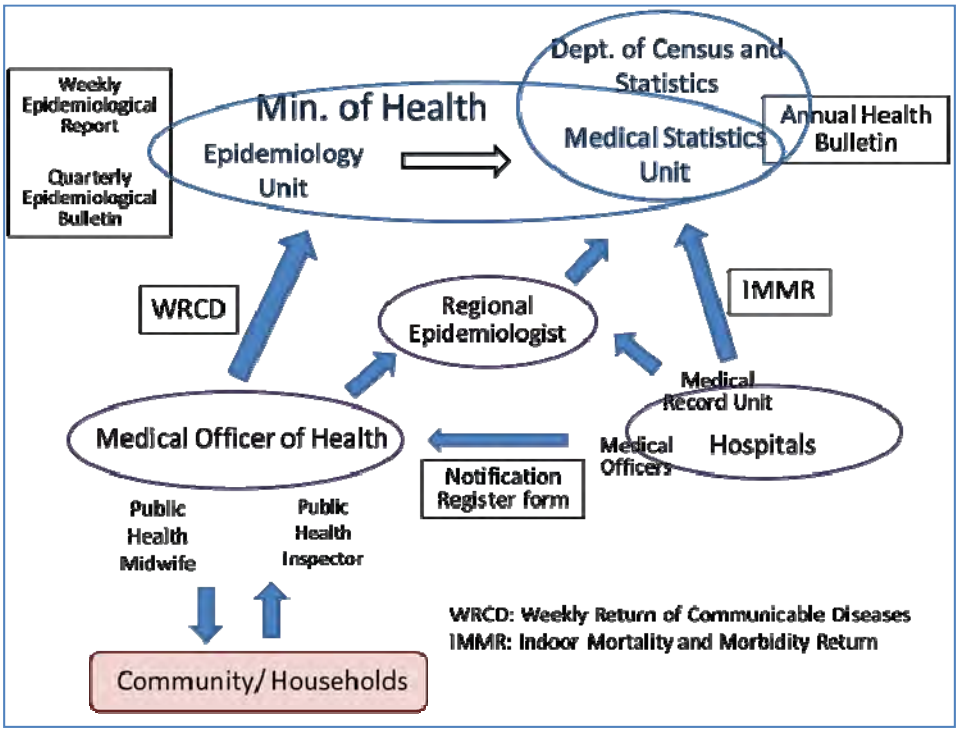
Note: There is slight differences from province to province in procurement procedure;for exemple tender is called by PDHS in some provinces and by RDHS in other provinces.

For urgent requests made by hospitals, the funds are allocated from the recurrent budget and the call for tenders and the purchase of equipment is done by the RDHS office.

2.6 Health Information Management System

Sri Lanka has a well-established system to collect information related to maternal and child health (MCH) and the control of communicable diseases (Figure 2-8). The Medical Office of Health (MOH) is in charge of information collection. MOHs routinely send reports to the Regional Epidemiologist and relevant medical officers in RDHS such as MO-MCH, and at the same time launch investigations when required. Each MOH is required to submit a weekly report to the Central Epidemiological Unit (MoH) – especially for the 21 notifiable diseases (epidemic diseases). The information is compiled into the Epidemiological Reports, published weekly and quarterly.

Figure 2-8: Health information flow



Source: Interview from Medical Statistics Unit and Epidemiology Unit

With the demographic and epidemiological transitions, some limitations in the HIMS have emerged. There are currently no viable collecting and reporting channels for information related to the elderly or persons with disability in the community.

Information on hospital-based service utilisation and disease prevalence (mainly of inpatients) is collected by the Medical Record Unit in each hospital. The Medical Record Unit obtains information mainly from bed head tickets (BHT) in which ward doctors fill diagnosis or directions to paramedical staff. Although some departments of the secondary-level institutions are equipped with computers, the on-line information system is not ready for use except in a few pilot hospitals. The data, such as the number of admissions/deliveries/deaths and cause of admission/death are sent to the Medical Statistics Unit of the Department of Census and Statistics either directly or via the Regional Epidemiologist on a quarterly basis. However, the disease prevalence of outpatients, the referral situation and drug consumption are not included in the current information system. Most of the state hospitals also do not have an adequate system to keep individual medical records especially for outpatients, which is essential in maintaining the quality of clinic service for chronic patients. In general, chronic outpatients bring notebooks on their own to keep medical records, such as results of blood tests and drug dosages.

Population-based statistics for health are also often outdated. The Medical Statistics Unit compiles all data sets and publishes the “Annual Health Bulletin” however it takes a few years before the Bulletin is published. To meet recent health requirements, a reorganization and/or expansion of the existing information system is desirable.

2.7 NCD Prevention

2.7.1 NCD prevention policy and institutionalization

As stated in Chapter 1, the Cabinet approved the "National Policy & Strategic Framework for Prevention and Control of Chronic Non-Communicable Diseases" in 2009. The objective of this policy is to reduce premature mortality due to chronic NCDs by 2% annually over the next 10 years through the expansion of evidence-based curative services, and individual and community-wide health promotion measures for the reduction of risk factors.

The NCD Unit under the Deputy Director General Medical Service 1 is responsible for coordinating island-wide programmes for NCD prevention. The responsibility of the NCD Unit includes acute NCDs such as trauma and poisoning, and excludes Cancer and Mental health that are handled by the 'Director, Cancer' and 'Director, Mental Health'.

In January 2010, MoH established a "National NCD Steering Committee" that is chaired by the Secretary of Health. This committee was established to discuss the overall directions and guidelines for NCD prevention. However, only a few meetings have been held since the inauguration. During 2010, MoH established a position for "Medical Officer – NCD" at RDHS office, and filled 23 positions except Kilinochchi and Mullaitivu as of December 2011[36]. MoH also announced a Job Description of MO-NCD in February 2011, as shown in Annex 7.

2.7.2 Healthy Lifestyle Centres

In August 2011, MoH sent out a letter to all PDHS, RDHS, heads of decentralised units, directors of Teaching Hospitals, MSS, DMOs, MOICs, and heads of institutions, requesting them to make necessary arrangements for establishing, wherever possible, Healthy Lifestyle Centres (HLC) in healthcare institutions. It was recommended to establish at least 3 centres per MOH area with facilities to provide health guidance, screening, basic treatment, referral and follow-up for the target population. The necessary equipment for HLC is listed in Table 2-15 and the NCD Unit has spent more than Rs. 84 million in 2011 to establish HLCs.

Table 2-15: Basic equipment for each Healthy Lifestyle Centre

	Items
1	3 tables & chairs
2	TV & DVD
3	White boards
4	Display boards (2)
5	Small cupboard to keep health education materials
6	Screening equipment (weighing scale, stediometer, waist tape, mercury BP apparatus, stethoscope, glucometer, BMI calculator, calculator, peak flow meter, and arrangement to check total cholesterol if available)
7	Documents (Invitation forms, register, monthly summary, personal health records and follow-up clinic guidelines)
8	IEC materials

Source: MoH letter dated 15 August 2011

In addition, the following drugs were categorised as a priority for managing NCDs and it was recommended that they be available at all primary-level healthcare institutions, thereby avoiding stock-out situations.

[36] As of December 2011, MO/NCD of Jaffna, Hambantota, Moneragala, Colombo and Ampara are only acting MOs and not permanent.

Table 2-16: Priority drug list to manage NCDs at primary-level Institutions

	Drugs
1	Adrenaline Tartrate 0.1% Injection 1ml Ampoule
2	Aspirin tablet 100 mg
3	Atenolol tablet 50 mg
4	Atorvastating tablet 10 mg
5	Beclometasone Diproprionate – aerosol inhaler – 50 mcg metered dose, 200 dose Unit MDI dry power capsule for breath induced device, 100 mcg DPI & mcg DPI
6	Chlorpheniramine Maleate (chiorphenamine) – injection 10 mg in 1 ml Ampoule, tablet 4mg
7	Enalapril Maleate tablet 5mg
8	Frusemide – injection 20 mg in 2ml Ampoule, tablet 40 mg (Furosemide)
9	Glibenclamide tablet 5mg
10	Glyceryl Trinitrate tablet 0.5 mg sublingual
11	Hydrochlorothiazide tablet 25 mg
12	Hydrochrtisone Hemisuccinate injection 100 mg vial
13	Metformin tablet 500 mg & 850 mg
14	Nifedipine slow release tablet 20 mg
15	Salbutamol – respiratory solution 0.5 % in 10 ml bottle, tablet 2mg & 4 mg
16	Theophylline slow release tablet 125 mg

Source: A Letter from Directors to Addition Secretary MS, MoH dated 12 August 2011

MoH also issued the "Guidelines for Management of NCDs in Primary-level Institutions", shown in Annex 8. The NCD Unit is now planning to review these guidelines to align them with the actual situation in the field.

2.7.3 NCD Prevention Project (NPP)

As stated in Chapter 1, JICA has been assisting MoH to implement the "Project on Health Promotion and Preventive Care Measures of Chronic NCDs, NPP" since May 2008. The outline of this five-year project is shown in Table 2-17.

Table 2-17: Outline of NCD Prevention Project, NPP

Project Title	Project on Health Promotion and Preventive Care Measures of Chronic NCDs
Duration	May 2008 to March 2013
Project Purpose	Effective and efficient implementation models to prevent and control NCDs (DM, Hypertension, and Hypercholesterolaemia) are developed.
Outputs	1) Risk factors of cardiovascular diseases are identified by the Ragama Health Study based on the evidence. 2) Intervention guidelines and manuals are formulated based on available evidences and related literature. 3) Institutional and technical feasibilities of the consolidated intervention guidelines are assessed for development of the NCD prevention models in pilot areas. 4) Expansion plan for health check-up/ guidance and health promotion for prevention of cardiovascular diseases is finalised for island-wide implementation.
Major Activities	➢ Conduct risk factor surveys in Ragama MoH area and produce evidence for decision making; ➢ Prepare NPP implementation guidelines for health check-ups, health guidance and follow-up, and health promotion; ➢ Prepare tools and manuals to facilitate implementation of NCD prevention; ➢ Analyse costs of NCD prevention for planning of island-wide expansion; ➢ Implement NCD prevention activities in Kurunegala and Polonnaruwa to examine institutional, financial and technical feasibility of the NPP model; and ➢ Assist MoH to plan for island wide expansion of NCD prevention activities.

Project Management and Implementation group	Project Director: Dr. R.R.C. Ruberu, Secretary of Health Project Manager: Dr. Wimal Jayantha, Deputy Director General, Planning, MoH Project implementing group: NCD Unit, Kurunegala RDHS, Polonnaruwa RDHS and University of Kelaniya JICA team: Keiko Nishino (leader) and 7 JICA Experts

Aligned closely with the NCD policy, NPP has developed a robust model that is ready for implementation in other districts and Healthy Lifestyle Centres. NPP is currently finalising all documents such as guidelines, manuals and tools and is assisting MoH to establish HLCs.

CHAPTER 3 Health Services of the Emerging Regions

3.1 Socio-economic Conditions of the Seven Regions

Sri Lanka is comprised of nine provinces, which are divided into a total of 25 districts. Western province leads the country's economic development, earning 48.4% of GDP in 2007, followed by Southern Province (10.5%), North Western (9.6%) and Central (8.9%) provinces. The conflict-affected region of Northern province contributed least to the GDP at 3.3% in the same year[37].

The seven provinces included in this survey were chosen jointly by the GoSL and JICA as socio-economically less-developed regions. Some of the differences amongst the provinces are shown in Table 3-1.

Table 3-1: Selected geographical, demographic and economic indicators of the seven "emerging regions"

Province	District	Area	Population (2010) (1)	Pop. Distribution (2001) (2)	Mean Household Income (2009-10) (3)	GDP per Capita (2009) (4)	Unemploy-ment Rates (2010) (5)
		Km^2	(,000)	Urban/Rural/Estate	Rs	Rs. 000	%
National		62,705	20,653	14.6 / 80.0 / 5.4	36,451	236	4.9
Central	Kandy	1,917	1,431	12.2 / 80.5 / 7.3	33,063	175	6.7
	Matale	1,952	497	8.2 / 86.9 / 4.9	30,013		
	Nuwara Eliya	1,706	761	6.1 / 40.3 / 53.6	31,029		
Northern	Jaffna	929	611	14.7 / 85.3 / 0.0	18,917	134	Na
	Kilinochchi	1,205	156	0.0 /100.0 / 0.0	na		
	Mannar	1,880	104	0.0 /100.0 / 0.0	na		
	Vavuniya	1,861	174	35.5 / 64.5 / 0.0	39,640		
	Mullaitivu	2,415	148	0.0 /100.0 / 0.0	na		
Eastern	Batticaloa	2,610	534	23.7 / 46.3 / 0.0	22,844	183	5.3
	Ampara	4,222	644	19.0 / 81.0 / 0.0	24,721		
	Trincomalee	2,529	374	13.4 / 86.6 / 0.0	24,291		
North Western	Kurunegala	4,624	1,563	2.4 / 97.2 / 0.5	36,922	213	4.8
	Puttalam	2,882	779	9.2 / 90.5 / 0.3	32,918		
North Central	Anuradhapura	6,664	830	7.1 / 92.7 / 0.1	37,586	189	3.6
	Polonnaruwa	3,077	410	0.0 / 99.9 / 0.1	31,526		
Uva	Badulla	2,827	886	6.6 / 72.7 / 20.7	32,313	168	4.1
	Moneragala	5,508	440	0.0 / 97.7 / 2.3	22,161		
Sabaraga muwa	Ratnapura	3,236	1,125	5.7 / 84.2 / 10.1	41,312	157	4.6
	Kegalle	1,685	818	2.2 / 90.8 / 7.1	29,342		

Source: (1) (2) Dept. Census and Statistics
(3) Dept. Census and Statistics, Household Income and Expenditure Survey 2009-10
(4) (5) Ministry of Finance and Planning, Annual Reports 2009 & 2010

While Sri Lanka has largely been successful in providing universal education and health care, there remain some regional disparities as seen in Table 3-2.

[37] MoFP, Annual Report 2010

Table 3-2: Selected health and social indicators of the seven "emerging regions"

Province	District	Maternal Mortality Rate (2006) [1]	Infant Mortality Rate (2006-07) [2]	Measles vaccination coverage (2006-07) [3]	Net enrolment for primary education (2007) [3]	Primary completion rate (2007) [3]	Households with access to electricity (2006-07) [4]	Households with safe drinking water (2006-07) [4]	Households using adequate sanitation facilities (2006-07) [3]
		Per 100,000 live births	Per 1,000 live births	% of under 1 year-olds	%	%	%	%	%
National		39.3	15	97.1	89.9	83.6	80.0	84.8	91.7
Central	Kandy	23.9	22	98.8	85.0	78.0	81.7	78.2	91.9
	Matale	33.1	26	95.7	87.5	74.0	72.8	79.6	75.2
	Nuwara Eliya	80.7	19	97.0	89.9	68.8	75.8	51.4	75.7
North	Jaffna	37.9	14.9 (2009) [5]	87.1 (2004) [3]	90.8	129.4	48.2 (2009) [6]	96.0 [3]	75.9
	Kilinochchi	102.8	NA	95.3 (2005-06) [3]	92.1	84.2		92.2 [3]	95.8
	Mannar	46.2	15.19 (2009) [5]	80.7 (2004) [3]	129.4	164.4		85.1 [3]	63.8
	Vavuniya	39.3	25.40 (2009) [5]	90.5 (2004) [3]	120.4	176.4		87.3 [3]	67.1
	Mullaitivu	NA	NA	90.2 (2005-06) [3]	114.1	148.4		54.7 [3]	30.3
East	Batticaloa	77.4	5	94.1	102.0	92.1	70.8	96.5	81.5
	Ampara	85.0	27	96.0	105.9	94.7	66.3	89.5	87.1
	Trincomalee	11.9	21	97.7	108.0	99.0	NA	NA	85.5
North West	Kurunegala	33.5	29	98.6	93.3	87.0	71.6	89.4	79.0 [7] (2008)
	Puttalam	51.6	23	94.0	92.1	84.2	69.0	92.8	95.8
North Central	Anuradhapura	29.7	27	100.0	89.9	82.6	66.6	85.3	86.3
	Polonnaruwa	14.7	5	100.0	86.5	78.5	74.4	88.6	80.4
Uva	Badulla	42.9	31	96.0	85.9	74.8	77.9	79.3	85.9
	Moneragala	70.5	21	96.1	78.3	76.8	52.7	85.4	84.9
Sabaragamuwa	Ratnapura	51.6	16	95.1	82.6	71.9	62.7	61.9	88.1
	Kegalle	35.7	18	99.1	95.1	84.1	82.5	74.2	93.2

Source: (1) UNFPA, ICPD+15 (Family Health Bureau, MoH), (2) DHS Preliminary Report, (3) UNICEF, MNC Health and Nutrition 2010, (4) Dept. Census and Statistics, Poverty in Sri Lanka, (5) Northern Provincial Council, Statistical Information 2010, (6) MoFP, Annual Report 2010, (7) 2008 data supplied by UNICEF Sri Lanka Office

For Northern and Eastern Provinces, which were affected by the civil war that ended in May 2009, some statistical data are not available. Careful efforts were made to complete the above Tables, but caution must be exercised when interpreting the results, as some of data may not conform to other information.

In Northern Province the efforts of rehabilitation and resettlement of the internally displaced people (IDP) are ongoing. In Kilinochchi and Mullaitivu Districts, where the war lingered longest, the process started only a short time ago. Progress may be slow as demining must be completed before areas can be opened for resettlement. The PDHS is rehabilitating destroyed hospitals as soon as the area is cleared of mines, in the hope that they will serve as an incentive for IDPs to resettle there. There has been a significant amount of foreign aid and given this situation, the state, needs, and even the catchment population of the hospitals are far more dynamic than other provinces.

3.2 Health Facilities Survey of the Secondary-level Institutions

3.2.1 Context and methodology

The standard facilities and services to be available at different levels of curative medical institutions (hereafter referred to as "the standard") are specified in the MoH document "Recategorization of the Hospitals" (see Annex 6). The initial visits by the JICA Mission to selected hospitals in July–August 2011 indicated that many hospitals are yet to fulfil the prescribed functions.

The survey aimed to determine the needs of secondary hospitals by assessing the gaps between the standard and the actual conditions. The data collected were to be utilised as a means of selecting target institutions to be strengthened under the planned Japanese assistance project. To this end, self-administered questionnaires for district general hospitals (DGH) and base hospitals (BH) were developed (attached as Annex 2) and sent to all the 61 hospitals in the seven provinces listed as DGHs or BHs in the MoH's "Hospitals and Bed Strength in Sri Lanka by District (Government Sector) 2010". The information sent back from the hospitals was then tabulated and clarifications were sought for irregularities and missing data by telephoning the applicable hospitals. By the end of September 2011, 57 institutions out of 61 had returned the questionnaire, as shown in Table 3-3[38].

Table 3-3: Numbers of the institutions surveyed by province and type

Province	Questionnaire sent to:				Questionnaire returned by 30.09.2011 from:			
	DGH	BHA	BHB	Total	DGH	BHA	BHB	Total
Central	3	2	4	9	3	2	4	9
North	4	2	4	10	3	2	4	9
East	2	3	9	14	1	3	7	11
N. West	1	2	5	8	1	2	5	8
N. Central	1	0	5	6	1	0	5	6
Uva	1	2	3	6	1	2	3	6
Sabaragamuwa	1	1	6	8	1	1	6	8
Total	13	12	36	61	11	12	34	57

Source: JICA-MoH Survey on Secondary-level Institutions

3.2.2 Limitations

Due to the methodology employed, it was not possible to independently verify the information supplied. Some inconsistencies were also noted among the information obtained through different channels, in which case the data received most recently were taken as the most accurate reflection of the current situation.

There were also difficulties in obtaining some data which was thought to be crucial in analysing the functions of a hospital. For example, information on referred cases and their reasons for referral are not collected under the current health information management system. In lieu of appropriate referral records, the survey used the number of outward transfers by ambulance as the indicator for referrals but the sources of this information were not uniform, ranging from the ambulance log books to personal memories, depending on the record keeping systems of individual hospitals. To facilitate the analysis, additional telephone interviews were also conducted with all the hospitals to find out the main reasons for transfers to supplement the information. In addition, information obtained through visits was also applied when verifying and analysing the data.

[38] The list of the institutions involved in this survey is attached as Annex 3.

3.2.3 Utilization of secondary-level institutions

Table 3-4 shows an overview of the utilisation of the surveyed hospitals by category. Variations even within a category are quite significant.

Table 3-4: Overview of service utilisation at secondary institutions by category

Indicator		DGH (N=11)	BHA (N=12)	BHB (N=34)	ALL (N=57)
Catchment area population (,000)	Range	85 – 826	140 – 806	10 – 565	10 – 826
	Average	417.1	391.6	168.4	270.0
Number of beds	Range	139 – 747	100 – 475	40 – 358	40 – 747
	Average	496	282	150	251
Bed Occupancy Rate (%)	Range	61 – 96	33 – 109	10 – 140	10 – 140
	Average	78	80	63	70
OPD attendance (/month average) 2010	Range	3,840 – 29,035	4,767 – 17,754	1,015– 18,961	1,015 – 29,035
	Average	17,226	12,483	9,004	11,456
Number of admissions (/month average) 2010	Range	416 – 6,344	600 – 4,649	12 – 3,310	12 – 6,344
	Average	4,069	2,619	1,130	2,059
Number of deliveries (/month average) 2010	Range	6 – 576	11 – 503	0 – 307	0 – 576
	Average	362	261	61	160
Monthly patient load (OPD+admission+clinics) as % of population	Range	3.0 – 34.1%	1.3 – 24.6%	3.1 – 38.1%	1.3 – 38.1%
	Average	11.8%	7.7%	12.9%	11.7%

Source: JICA-MoH Survey on Secondary-level Institutions

Bed occupancy rate (BOR) is an indicator commonly used to assess utilisation of hospitals. Factors behind low BOR could be (1) oversupply of beds, (2) lack of manpower, as well as (3) lack of facilities and supplies for necessary investigations and treatment. The survey found 13 hospitals with BORs of less than 50% as shown in the Table 3-5. While more in-depth investigations would be needed to identify the factors behind the low BORs, oversupply could be ruled out for those with high population/bed ratio, such as Teldeniya, Galgamuwa, Kalawana, Rikillagaskada and Kalmunai North. Low availability of specialist doctors appears to be a common factor, except for Kalmunai North. Many of them have also recently been re-categorised from DH to BH, and as such are still missing some essential facilities that a secondary institution requires.

Table 3-5: Secondary hospitals with BOR less than 50% in 2010

	Province	Hospital and Category		BOR (%)	# Beds	Pop. /bed	# Specialists	Remarks
1	N	Mankulam	BHB	10	40	250	0	Inpatient facilities only recently built.
2	NW	Galgamuwa	BHB	22	131	2,290	2	Being upgraded from DH to BHB
3	E	Kalmunai North	BHA	33	413	1,162	5	Line Ministry hospital
4	NW	Polpitigama	BHB	34	110	800	0	
5	E	Mahaoya	BHB	35	100	400	0	Still functioning as DH
6	Sab	Kalawana	BHB	38	82	1,463	0	
7	C	Teldeniya	BHB	39	87	3,494	0	Being upgraded from DH to BHB
7	Uva	Siyambalanduwa	BHB	39	117	521	0	
9	N	Kayts	BHB	40	59	814	0	The surrounding areas not yet fully resettled.
9	NC	Kebitigollewa	BHB	40	83	726	1	
9	NC	Welikanda	BHB	40	62	301	0	Still functioning as DH
12	C	Rikillagaskada	BHB	44	126	1,339	1	Recently upgraded from DH to BHB
13	U	Wellawaya	BHB	46	112	262	1	

Source: JICA-MoH Survey on Secondary-level Institutions

3.2.4 Human resources

It is difficult to assess the sufficiency of human resources at each institution, as the approved posts in the cadre lists do not necessarily reflect the true needs for provision of the services expected of the secondary hospitals. As such, this survey only looked at availability of particular categories of personnel rather than sufficiency.

A majority of institutions face shortages of staff, though to differing extents. Re-employment and contractual arrangements are sometimes made as temporary measures. Staff shortages are also an issue for non-professional categories such as ward attendants and labourers in some provinces. This may be an issue of financial resources rather than human, as the number of minor employees is reportedly kept at a minimum in order to employ more professional staff within the allocated budget.

(1) Specialist doctors (Consultants)

The extent of utilisation of secondary institutions is believed to be closely related to the availability of specialist doctors along with appropriate medical facilities. For example, the number of deliveries is very much dependant on availability of comprehensive emergency obstetric care. In Sri Lanka, all deliveries of first time mothers, as well as high-risk pregnancies, are to be conducted in institutions that offer specialist care.

According to the norms, secondary hospitals are to have 2 consultants each for medicine, surgery, paediatrics and obstetrics and gynaecology, and 1 each for other areas. This translates to 11 consultants for BH and 25 for DGH. In reality, even just in terms of numbers, only 3 out of the 57 institutions fulfil this standard. The average numbers of consultants are 16 for DGH, 6.9 for BHA and 2.3 for BHB. More than a third of BHBs (N=12 out of 34) did not have a single consultant at the time of the survey. Some hospitals provide specialist care as per a fixed schedule through visiting consultants who are attached to other secondary or tertiary institutions.

Table 3-6 shows the numbers of consultants available by hospital category, while Table 3-7 lists the hospitals that did not have a single specialist at the time of the survey.

Table 3-6: Number of consultants at 3 categories of secondary hospitals

Indicator		DGH (N=11)		BHA (N=12) [1]		BHB (N=34) [1]		ALL (N=57)	
		LM(4)	Prov.(7)	LM(3)	Prov.(9)	LM(2)	Prov.(32)	LM(9)	Prov.(48)
Number of Consultants	Range	7 – 21		1 – 12		0 – 9		0 – 21	
	Average	16.0		6.9		2.3		5.9	
		18	15	6.3	7.1	6.5	2.0	12.0	4.8

Source: JICA-MoH Survey on Secondary-level Institutions

Table 3-7: Hospitals without specialists

Province	Institutions	Category	# beds	BOR (%)
C	Teldeniya	BHB	87	39
C	Hettipola	BHB	58	NA
N	Chavakachcheri	BHB	104	66.2
N	Kayts	BHB	59	40
N	Mankulam	BHB	40	10
E	Kaluwanchikudy	BHB	150	80
E	Mahaoya	BHB	100	34.5
NW	Polpitigama	BHB	110	34
NC	Welikanda	BHB	62	40
U	Siyambalanduwa	BHB	117	39.1

Province	Institutions	Category	# beds	BOR (%)
Sab	Warakapola	BHB	138	53.2
Sab	Kalawana	BHB	82	38

Source: JICA-MoH Survey on Secondary-level Institutions

(2) Medical officers (MOs)

The doctor-population ratio was calculated using the catchment area population divided by the number of doctors[39] as shown in Table 3-8. In general, Line Ministry hospitals are better staffed but this was not the case for BHAs.

Table 3-8: Number of MOs and population and the number of patients per doctor at 3 categories of secondary hospitals

Indicator		DHG (N=11)		BHA (N=12)		BHB (N=34)		ALL (N=57)	
		LM(4)	Prov.(7)	LM(3)	Prov.(9)	LM(2)	Prov.(32)	LM(9)	Prov.(48)
Number of MOs (excl. consultants)	Range	16 – 186		6 – 105		1 – 90		1 – 186	
	Average	103.3		49.1		23.6		44	
		123.0	95.9	37.7	52.9	74.0	20.5	87	36
Population per doctor	Range	697 – 8,967		1,207 – 15,000		1,429 – 56,000		697 – 56,000	
	Average	3,713		7,308		10,395		8,407	
		4,891	3,039	7,201	7,344	3,784	10,808	5,415	9,358

Source: JICA-MoH Survey on Secondary-level Institutions

The 10 institutions that have the largest coverage populations per doctor are listed in Table 3-9.

Table 3-9: 10 Institutions with worst population/doctor ratio

	Province	Institution	Cat	Catchment population	# doctors	Pop. per doctor
1	E	Kaluwanchikudy	BHB	280,000	5	56,000
2	C	Teldeniya	BHB	305,000	11	27,727
3	NC	Tambuttegama	BHB	441,000	22	20,045
4	NW	Polpitigama	BHB	88,000	5	17,600
5	NW	Galgamuwa	BHB	300,000	18	16,667
6	N	Kayts	BHB	48,000	3	16,000
7	NW	Dambadeniya	BHB	300,000	20	15,000
7	C	Dickoya	BHA	300,000	20	15,000
7	Sa	Kalawana	BHB	120,000	8	15,000
7	NC	Welikanda	BHB	45,000	3	15,000

Source: JICA-MoH Survey on Secondary-level Institutions

With the current status of the staffing norms and cadre lists discussed earlier, it is not very clear how placements of doctors are determined by MoH. While some hospitals have almost permanent vacancies, there are others that have more MOs than the number of the posts officially approved by the provincial authorities.

As giving appointments is at the discretion of MoH, the main concern of the provinces is keeping the appointed personnel. It was emphasised a number of times by health administrators that reasonable accommodation facilities ("quarters") must be provided to attract and retain doctors, especially consultants, who are in great demand.

[39] Including consultants, intern MOs, AMOs and RMOs.

(3) Nurses

Table 3-10 shows population and the numbers of beds per nurse for different categories of the hospitals. Large LM hospitals appeared to be most favoured, though for the BHA category, like other categories of staff, provincial hospitals are on average better staffed.

Table 3-10: Number of nurses and population and the number of beds per nurse at 3 categories of secondary hospitals

Indicator		DHG (N=11)		BHA (N=12)		BHB (N=34)		ALL (N=57)	
		LM(4)	Prov.(7)	LM(3)	Prov.(9)	LM(2)	Prov.(32)	LM(9)	Prov.(48)
Number of nurses	Range	42 – 540		18 – 220		0 – 172		0 – 540	
	Average	228.2		124.2		51.6		101.0	
		315.7	195.4	103.0	131.2	130.5	46.7	225.0	77.7
Population per nurse	Range	513 – 4,000		636 – 6,818		667 – 24,000*		513 – 24,000*	
	Average	1,995		3,179		4,881*		3,950*	
		2,248	1,858	2,628	3,362	2,422	5,040*	2,414	4,244*
# beds per nurse	Range	1.38 – 4.07		1.76 – 7.14		1.03 – 29.50*		1.03 – 29.50 *	
	Average	2.55		2.83		5.11*		4.12	
		1.70	3.03	2.25	3.02	2.25	5.29*	2.01	4.72*

* Excluding one BHB with no nurse

Source: JICA-MoH Survey on Secondary-level Institutions

Although the acute shortage of nurses in Northern Province is said to have eased[40], it is evident the province is still short-staffed of nurses. Five of the top 10 institutions with largest numbers of beds per nurse are in Northern Province. Mankuram BHB does not have a single nurse while Point Pedro is the only BHA on the list.

Table 3-11: 10 Institutions with the largest number of beds per nurse

	Province	Institution	Cat	# beds	# nurses	# beds per nurse	Pop. per nurse
1	N	Mankulam	BHB	40	0	-	-
2	N	Kayts	BHB	59	2	29.5	24,000
3	NC	Welikanda	BHB	62	6	10.3	7,500
4	N	Cheddikulam	BHB	222	24	9.3	1,583
5	N	Chavakachcheri	BHB	104	12	8.7	5,917
6	NC	Kebitigollewa	BHB	83	10	8.3	2,500
7	C	Hettipola	BHB	58	7	8.3	4,571
7	N	Point Pedro	BHA	264	37	7.1	4,054
7	E	Samanthurai	BHB	175	29	6.0	6,414
7	NC	Padaviya	BHB	195	33	5.9	1,545

Source: JICA-MoH Survey on Secondary-level Institutions

(4) Other technical and non-technical staff

Shortages of technical support staff were reported by many heads of institutions interviewed, including PDHSs. Table 3-12 shows the numbers of radiographers, pharmacists and MLTs for different categories of hospitals. LM hospitals enjoy better availability for this category of staff. There are a number of hospitals that have more staff than specified in their approved cadre lists. It is not clear whether they have excess staff or the cadre lists are out-dated.

[40] World Bank, "Prevention and Control of Selected Chronic NCDs in Sri Lanka" 2010

Table 3-12: Number of selected categories of technical staff at 3 categories of secondary hospitals

Indicators		DHG (N=11)		BHA (N=12)		BHB (N=32)*		ALL (N=55)	
		LM(4)	Prov.(7)	LM(3)	Prov.(9)	LM(2)	Prov.(30)	LM(9)	Prov.(46)
Radiographers	Range	2 – 7		1 – 4		0 – 3		0 – 7	
	Average	4.2		2.6		1.3		2.2	
		5.8	3.3	2.7	2.3	2.5	1.2	2.4	2.0
Pharmacists	Range	2 – 18		1 – 14		0 – 10		1 – 18	
	Average	12		7.0		2.9		5.5	
		15	10	9.3	5.8	6.5	2.6	6.3	5.1
Medical Laboratory Technologists (MLT)	Range	1 – 21		1 – 12		0 – 6		0 – 21	
	Average	12		6.5		2.5		5.1	
		16	9.6	7.7	5.1	5.5	2.3	5.5	4.7

* 2 BHB did not provide information on these categories of staff.

Source: JICA-MoH Survey on Secondary-level Institutions

Staff shortages were also reported for the non-professional category. Some provinces are reportedly cutting back the number of minor employees (ward attendants, labourers, etc.) to cover the costs of professional staff.

3.2.5 Availability of essential drugs

The hospitals were asked (1) how well their needs for drugs were covered by the supplies from the Line Ministry (through MSD), (2) the number of items that went out of stock, and (3) the items that faced most serious stock crisis in 2010. Answers provided may have been retrieved from memories of individuals in charge of the matters rather than from a stringently maintained logistic information management system.

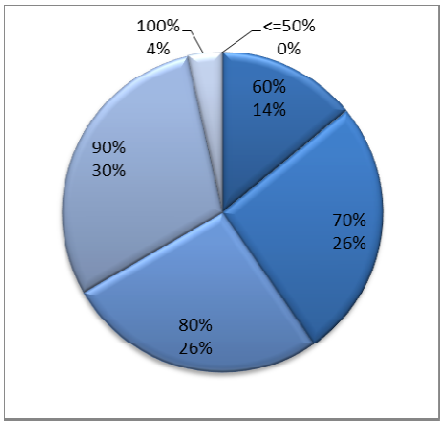
Responses indicate that over 80 per cent of hospitals involved in this survey had more than 70 per cent of their drug requirements fulfilled by the MSD supplies in 2010. Of the secondary hospitals surveyed, 30% experienced stock-out of more than 20 items in 2010[41].

Table 3-13: Sufficiency of MSD supplies 2010

Sufficiency (%)	No. of hospitals	Percentage
100	2	4 %
90	17	30 %
80	15	26 %
70	15	26 %
60	8	14 %
50 or less	0	0
Total	57	100 %

Source: JICA-MoH Survey on Secondary-level Institutions

Figure 3-1: Sufficiency of MSD supplies 2010



[41] This information may not be 100% accurate, as some institutions do not have an established system for logistics management.

Table 3-14: Number of stock-out items

No. of stock-out items	No. of hospitals	Percentage
0	3	6 %
1 – 10	22	39 %
11 – 20	14	25 %
21 – 30	8	14 %
< 30	9	16 %
NA	1	0
Total	57	100 %

Source: JICA-MoH Survey on Secondary-level Institutions

Figure 3-2: Number of stock-out items

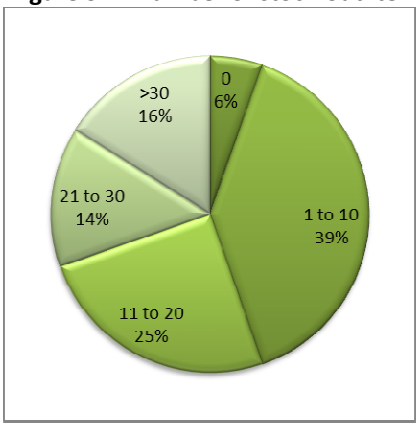
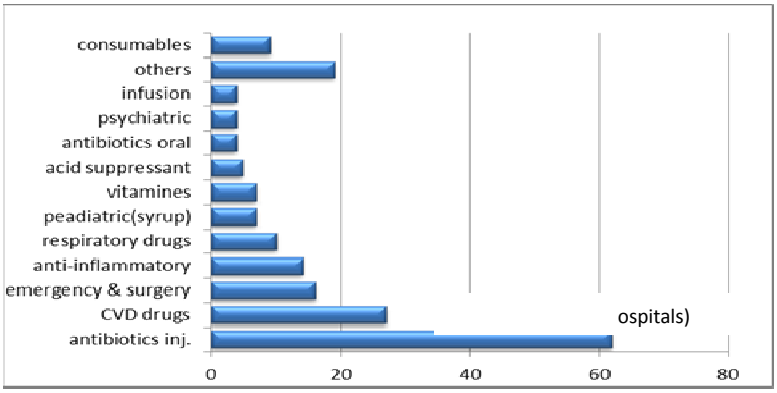


Figure 3-3 shows the responses to a multiple-answers question regarding the items which experienced stock-out in 2010. In total, 180 drugs were reported. The most frequently mentioned (by more than 5 institutions) were Cloxacillin inj. (antibiotics), Cefuroxime inj. (antibiotics), Atorvastatin tab. (CVD drug), Metformin tab. (CVD drug), Paracetamol tab. (anti-inflammatory) and Theophyllin tab. (respiratory drug). The most often reported categories for stock-out were antibiotics injections and oral drugs for cardiovascular disease (CVD) control – possibly because they contain more items than other categories, including new drugs for which demands are often higher than traditional ones. The volume of the cases/patients affected by the shortages is not known.

Figure 3-3: Stock-out by category of drugs 2010



Source: MoH JICA Health Care Facility Survey for Secondary-level Institutions

3.2.6 Condition of health facilities

Almost all hospitals surveyed suffer from a shortage of appropriate spaces and equipment to deliver medical services expected of secondary-level institutions. Every year gradual improvements are made through additional equipment and/or renovations and expansions of the facilities using the regular capital budget provided through the provincial councils.

(1) Central Province

a) Kandy District

There is one district general hospital and two base hospitals (both Type B) as follows:

DGH Nawalapitiya: The hospital with 526 beds has seen steady development in infrastructure over the years and possesses almost all basic infrastructure required for the re-categorization. The most urgent need is the construction of a surgical ward complex and the supply of medical equipment such as laparoscope, Colour Doppler, etc.

BHB Gampola (Line M): A teaching hospital that possesses almost all basic infrastructure; however urgent improvement of the theatre complex including an ICU, PCU/ECU and appropriate medical equipment is needed.

BHB Teldeniya: Although a base hospital type B in a catchment area with a population of 304,709, it does not possess the basic infrastructure needed to deliver medical services required at the secondary level. The urgent needs are improvements of the theatre complex including an ICU, radiology department, laboratory, blood bank, ward units and quarters, and additional medical equipment. With development of the facilities, human resources should also be secured.

b) Nuwara Eliya District

There is one district general hospital, one base hospital type A and one base hospital type B in Nuwara Eliya District.

DGH Nuwara Eliya (Line M): The hospital, with 426 beds, has submitted a proposal for a Netherlands Loan for the construction of a new hospital complex but this still has not been approved. The most urgent needs are the improvement of a medical ward unit, a dermatology ward unit and a high dependency unit.

BHA Dickoya: The construction of a 150-bed hospital complex is ongoing. The next most urgent need is the construction of additional quarters for consultants, MOs, nurses and other staff. Equipment such as a drug counting machine for the dispensary; a semi-auto analyser and other basic equipment for the laboratory, etc. are also needed.

BHB Rikillagaskada: Improvement of basic infrastructure required for secondary-level institutions is needed. This includes the development of an operation theatre complex including ICU, laboratory, blood bank, etc. Major urgent equipment needs include a nebuliser, monitor, pulse oximeter for ECU; biochemistry analyser, and a haematology analyser for the laboratory.

c) Matale District

There is one district general hospital, one base hospital type A and one base hospital type B in Matale District. The condition of the facilities is as follows:

DGH Matale: Matale is an important district general hospital in the district hospital network. Recently some infrastructure has been improved, including the operation theatre, dermatology building and psychiatric ward, but there is a need to continue with the improvement of the administration block, chest clinic building and eye clinic building. The major items of equipment required in the hospital are a biochemistry analyser, a haematology analyser, etc. for the laboratory.

BHA Dambulla: Improvement of facilities undertaken recently includes the renovation of the outpatient department, mental health unit and staff quarters, but there is a need to continue with the renovation of clinic buildings, etc. The hospital major equipment needs are a cardiac monitor, infusion pump, CTG machine, an ultrasound scanner, etc. for medical, surgical, gynaecology/obstetrics and paediatric ward units; and an automatic biochemistry analyser for laboratory.

BHB Hettipola: Hettipola Hospital has infrastructure required for a primary care unit but not for a secondary-level institution. The hospital needs improvement of almost all basic infrastructure, such as the outpatient department, operation theatre complex, radiology, laboratory, blood bank, etc. and medical equipment necessary for these facilities.

(2) Northern Province

a) Jaffna District

Point Pedro Base Hospital Type A, Telippala Base Hospital Type A, Chavakachcheri Base Hospital Type B and Kayts Base Hospital Type B are secondary-level hospitals of Jaffna District.

BHA Point Pedro: One of the most important secondary-level hospitals in Jaffna District. The years 2010 and 2011 have seen improvements in kitchen facilities, the operation theatre (rewiring), wards and an internal road under the EnRep project. The hospital's current needs are construction of a mental health unit, surgical ward unit, department of physiotherapy, CSSD and quarters, and the renovation of the operation theatre, radiology department and entire sewerage system. The major equipment needs are a multi-paramonitor, syringe pump, pulse oximeter, etc. for the ward unit; and a biochemistry analyser, haematology analyser for the laboratory, etc.

BHA Telippala: The infrastructure of the outpatient department, operation theatre and wards has been improving in 2010 and 2011. However, to improve the delivery of medical services to the people they need to continue improving other infrastructure, such as the physiotherapy unit, blood bank, quarters, etc. and the supply of medical equipment such as monitors and pulse oximeters for wards and equipment for radiology and the laboratory.

BHB Chavakachcheri: The hospital improved the infrastructure of the outpatient department and administration block in 2009. The hospital has received assistance from Finland Red Cross to improve the infrastructure of the medical and surgical ward units and quarters. Other urgent needs reported are the improvement of the operation theatre, blood bank, mortuary and kitchen.

BHB Kayts: The hospital has not made any improvements in infrastructure in recent years. To provide better medical services to the catchment area population, the hospital needs urgent construction of basic infrastructure such as an outpatient and administration department, operation theatre, laboratory, blood bank, radiology department, surgical ward and supply of equipment for these facilities. In order to improve these facilities, human resources shall need to be secured.

b) Mannar District

DGH Mannar: In 2010, the hospital developed the infrastructure of the operation theatre and has been supplied with equipment such as a CTG machine, eye operating microscope, etc. Current urgent major needs are the improvement of infrastructure of the clinics, a medical ward unit, eye, ENT, skin and cardiology units. Major medical equipment needs are monitors, CTG machines, etc. for the ward unit, equipment for the laboratory, etc.

c) Mullaitivu District

The conditions of infrastructure of the two secondary-level institutions are as follows:

DGH Mullaitivu: Based on the master plan of the hospital, UNICEF has undertaken the development of a paediatric, maternity and SBCU complex and the NECORD Project has undertaken the improvement of 30 rooms in the nursing officers' quarters complex and consultant quarters. Other major needs are construction of a medical ward unit, wards for orthopaedic, eye, skin and laboratory. Improvement in the sewage system is also needed.

BHB Mankulam: The hospital has upgraded to a base hospital from central dispensary a few years ago and it does not possess the basic infrastructure required for a secondary-level hospital. The hospital possesses only an outpatient department, one ward unit of 40 beds and two consultants' quarters. Basic facilities required in the re-categorization, such as clinics, operation theatre, laboratory, radiology and blood bank, etc. need to be constructed to function as a base hospital.

d) Vavuniya District

There is one district general hospital and one base hospital Type B in Vavuniya District. The conditions of the facilities are as follows:

DGH Vavuniya: The hospital has 593 beds and is an important district general hospital in the region. The infrastructure of an emergency unit is under construction. The hospital will have assistance from the Government of China for the construction and supply of medical equipment to the operation theatre and wards. In recent years, the hospital has been supplied with equipment for the laboratory, dental unit, surgical ward unit, radiology department, etc. Other urgent needs are the improvement of wards, quarters, etc., and the supply of equipment for the Intensive Care Unit, operation theatre, orthopaedic unit, etc.

BHB Cheddikulam: The hospital possesses 222 beds and has seen improvement of facilities such as the outpatient department, operation theatre and wards in recent years. In 2009 and 2011, the hospital was supplied with equipment for the operation theatre, radiology department, etc.

(3) Eastern Province

a) Batticaloa District

BHB Kaklawanchikudy: The hospital has developed the outpatient department and operation theatre in recent years. A three-story building is under construction and the maternity unit on the ground and first floor is already functioning. The hospital could provide smooth medical services if other infrastructure such as the administration department, clinics, wards, laboratory, etc. could be improved and equipment for the blood bank, operation theatre, etc. were supplied.

b) Ampara District

The conditions of the six base hospitals of Ampara District are as follows:

BHA Kalmunai North (Line M): Kalmunai North is an old hospital with a history of more than 100 years. The hospital is trying to improve the facilities and in recent years has developed the clinics and administration complex. The most urgent needs are the construction of a new operation theatre, radiology department, etc. and the supply of medical equipment for these facilities.

BHA Kalmunai South (Line M): The hospital has started the construction of a new outpatient and radiology department but they do not have enough funds to complete them. The hospital could deliver better medical services if they were able to complete this building and construct other buildings such as a surgical ward unit, etc. and supply equipment such as an ECG, monitor, ultrasound for the ECU; endoscopy, ventilator, CTG machine, etc. for the ward units; and equipment for the laboratory, etc.

BHB Mahaoya: The outpatient department and clinic complex and gynaecology and obstetrics unit are under construction. In addition to this, the most urgent needs are development of male and female ward units, quarters for consultants and nurses, and the supply of such equipment as an ECG, hysteroscope, infusion pumps, monitors, a defibrillator, CTG machines and so forth.

BHB Samanthurai: In recent years the hospital has developed an operation theatre and surgical wards and also some staff quarters, and has received some equipment such as operation tables,

anaesthesia apparatus, etc. The major urgent needs are the construction of buildings for clinics, PCU, ICU, wards and the supply of medical equipment such as a dental unit for the outpatient department; defibrillator, monitors, etc. for the wards, etc.

BHB Dehiattakandiya: In 2010 the hospital developed infrastructure for a premature baby care (PBC) unit and has been supplied with equipment such as incubators and a phototherapy unit. Other equipment needs are a mini-autoclave, ECG, etc. for the outpatient department, a monitor, pulse oximeter, etc. for the ECU and ward units, an automatic film processor for the radiology department, etc.

BHB Akkarapatthu (Line M) : In recent years the hospital has developed a labour room and drug store and has been supplied with some equipment such as a biochemistry analyser, anaesthesia apparatus, etc. The most urgent needs in infrastructure are the improvement of the surgical ward unit, gynaecological and post-natal ward units, and quarters. Major equipment needs are an ECG, dental chair, etc. for the outpatient department, a defibrillator, monitor, CTG machines, etc. for the ward units. Facilities for MICU and SCIU are available but they are not functioning due to lack of equipment.

c) Tricomalee District

The conditions of one district general and three base hospitals are as follows:

DGH Trincomalee: From 2010 the hospital has been developing its infrastructure: a three-story building with a PCU/ECU, radiology department, laboratory, gynaecology and an obstetric ward unit, paediatric ward unit, etc. With the assistance of AMERICARES new Emergency Care, ward units and an operation theatre will be developed. In addition to this, the Government of China will assist in the improvement of existing ward units and supply of equipment. The other major needs are improvement of quarters for consultants, medical officers and nurses.

BHA Kanthalai: A building for the outpatient department is under construction. The hospital was supplied with a haematology analyser in 2010 and an ultrasound scanner and monitors in 2011. The Government of China will assist with the improvement of infrastructure for a trauma care unit in 2012. Other major needs are the improvement of the maternity complex, a new drug store and the sewerage system. Major equipment needs are equipment for the ECU, equipment such as monitor, pulse oximeter, glucometer, etc. for the ward units, etc.

BHB Mutur: In 2010, the hospital developed a three-story building for the MO quarters and a general store. The Government of China will assist with the development of an administration department and renovation of some existing buildings. Other major needs include the construction of a building for wards.

BHB Kinniya: The whole hospital has been improved since the tsunami (2004). The major needs in improvement of infrastructure are the construction of quarters for consultants, MOs and nurses and the construction of a drug store. Major equipment needs include a defibrillator, monitor, endoscope and CTG machine for the ward units, and anaesthesia apparatus with a ventilator and operation lamp for the operation theatre.

(4) North Western Province

a) Kurunegala District

In Kurunegala District there are five base hospitals. The conditions are as follows:

BHA Kuliyapitiya: The hospital has 475 beds and it is one of the important secondary-level hospitals in Kurunegala District. The hospital has constructed a five-story building for wards, a new

drug store and a new SBCU in recent years. The current major needs are improvement of the laboratory, blood bank and quarters for nurses. Major equipment needs are a mini-autoclave and ECG for the outpatient department; a mobile ventilator, ECG, etc. for PCU/ECU, defibrillator, monitor, pulse oximeter, etc. for the ward units, etc.

BHA Nikawaratiya: The hospital developed the surgical unit and drug stores in 2009, and in 2010 was supplied with equipment such as an operation table, patient monitor, CTG machine, ECG, scanning machine, etc. The current major needs are the supply of an 800 Kw. generator, a purified water system, supply of an ambulance, repair of the roof of paediatric unit and development of a computer network system within the hospital. The major equipment needs are a laparoscope and flexible hysteroscope for operations, cardiac monitor, etc.

BHB Dambadeniya: In recent years the hospital has seen a continuous development and increase in its utilisation due to the improvements in facilities. The hospital possesses an operation theatre with two operation rooms, radiology department, SBCU, and a blood bank. The current major needs are the construction of a new building for outpatient department with an administration department, PCU/ECU, MICU/SICU, clinic building and a laboratory that complies with the standard set by the re-categorization.

BHB Galgamuwa: Galgamuwa Base Hospital is one of the important secondary-level health institutions in the region. It does not possess the necessary basic infrastructure to deliver a standard level of medical services to the population. Major improvements needed in infrastructure are the improvement of the outpatient and administration department, construction of an operation theatre including ICU and CSSD, laboratory, blood bank, gynaecology and obstetric wards and a surgical ward.

BHB Polpitigama: The hospital with 110 beds has a very low bed occupancy rate (34%) due to lack of basic infrastructure required for its re-categorization as a secondary-level institution. The hospital also needs to improve quarters for MOs, nurses and other staff, and human resources. Urgent development is needed in order to deliver the standard medical services to the population of the region.

b) Puttalam District

There is one district general hospital and two base hospitals in Puttalam District and the conditions of each hospital are as follows:

DGH Chilaw: The Chilaw District General Hospital with 532 beds possesses almost all the basic infrastructure to deliver standard medical services as a secondary-level hospital. Major needs are improvements in the medical unit complex, surgical unit complex, drug store, etc. and supply of equipment such as an ECG, dental unit, etc. for the outpatient department; an ECG, pulse oximeter and sucker for PCU; pulse oximeter, infusion pump, CTG machine, etc. for inpatient facilities, and other equipment for the operation theatre, radiology, laboratory, etc.

BHA Puttalam: The hospital has made improvements to infrastructure of the ICU and blood bank in recent years and in 2010 to 2011 has received equipment such as anaesthesia apparatus, an ultrasound scanner, infant warmer, blood gas analyser, etc. The current major needs are improvement of infrastructure of eye ward unit, female surgical ward unit, quarters, etc. Major equipment needs are delivery beds, a ventilator, EGC, syringe pump, mobile X-ray, electrolyte analyser, etc.

BHB Marawila: In recent years the hospital has constructed an ambulance garage and has renovated the eye ward, medical female ward, medical male ward and blood bank. The hospital will continue with the improvements of the physiotherapy unit and operation theatre with the

assistance of WHO. The major equipment needs are an ECG, autoclave for dental, etc. for outpatient department; a cardiac monitor, defibrillator, pulse oximeter for PCU; a ventilator for ICU; a biochemistry analyser and haematology analyser for the laboratory, etc.

(5) North Central Province

a) Anuradhapura District

Anuradhapura District has three base hospitals and the conditions of the facilities are as follows:

BHB Padaviya: In recent years the hospital has improved the infrastructure of the renal clinic building, ECU, X-ray and kitchen, and has been supplied with equipment such as an X-ray unit, ultrasound scanner, etc. The hospital will continue with the development of infrastructure of the outpatient department, isolation ward units, etc. with the assistance of the European Union and German Red Cross. Other major needs are development of an MICU/SICU, laboratory, consultant's quarters, etc. Major equipment needs are the supply of monitors, infusion pump, phototherapy unit, CTG machine, ultrasound scanner for ward units, dental X-ray unit, etc.

BHB Tambuttegama: In recent years the hospital has improved the infrastructure of the nurses' quarters and MOs quarters and the operation theatre (renovation) and has been supplied with equipment such as operation tables, a haematology analyser, biochemistry analyser, etc. The current most urgent construction needs are a gynaecology and obstetric unit, a surgical complex including operation rooms and a new outpatient and administration department and the supply of equipment such as monitors, a paediatric resuscitator, a pulse oximeter for wards, anaesthesia apparatus, diathermy for the operation theatre, etc.

BHB Kebitigollewa: In 2011, the hospital constructed ETU buildings and received some equipment for this unit. The most urgent needs are the construction of quarters for consultants, MOs and nurses and supply of equipment for the operation theatre, laboratory, blood bank, etc.

b) Polonnaruwa District

There is one district general and two base hospitals in Polonnaruwa District. The conditions of the facilities are as follows:

DGH Polonnaruwa: Polonnaruwa Hospital with 601 beds possesses almost all the basic standard infrastructure to function as a district general hospital. In 2011, a surgical ward complex with 160 beds has been developed and supplied with an ultrasound scanner, automated blood culture machine and haematology analyser. The current major needs are development of the PCU/ECU, dialysis and cardiology units. Other infrastructure needs are the improvement of quarters for consultants, family quarters for MO, quarters for nurses and for minor staff.

BHB Medirigiriya: To function as a secondary-level hospital, Medirigiriya hospital needs to improve infrastructure in the operation theatre complex including the ICU, SCBU, and the main drug store. The hospital equipment needs are a refrigerator, microscope, etc. for the outpatient department; monitor, ventilator, pulse oximeter, etc. for the ward units; a spectrophotometer, flame photometer, centrifuge for the laboratory, etc.

BHB Welikanda: The hospital possesses the infrastructure of a divisional hospital but not of a base hospital. To function as a secondary-level hospital all basic infrastructure such as PCU/ECU, operation theatre including the ICU, radiology department, laboratory, blood bank, etc. need to be developed. When this infrastructure has been developed, human resources must be secured.

(6) Uva Province

a) Badulla District

The conditions of the three base hospitals are as follows:

BHA Diyatalawa: The hospital has 268 beds and is one of the most important secondary-level hospitals in Badulla District. In recent years the hospital has constructed a new building for outpatients and the administration department and has renovated the ICU unit, maternity unit, etc. The current major needs are the construction of a new ward complex and supply of equipment for the operation theatre, laboratory, etc.

BHB Mahiyangana: In 2009, a new maternity ward complex was constructed and in 2011 it was supplied with equipment such as patient monitors, a defibrillator, dialysis machine, etc. The current major needs are the construction of an outpatient and administration complex, clinics, quarters and sewerage system, and supply of equipment such as a steriliser, nebuliser, ECG, etc. for the outpatient department; a glucometer, defibrillator, ECG, etc. for the ECU; a nebuliser, sucker, pulse oximeter for the ward units; a ventilator, monitor and syringe pump for the ECU; an automatic film processor, illuminator, etc. for the radiology department and a biochemistry analyser, microscope, etc. for the laboratory.

BHB Welimada: The hospital has developed the outpatient department and received an X-ray unit in 2009. The current major needs are development of the operation theatre complex and surgical unit, PBU and ICU, the ward complex for obstetric, laboratory, blood bank and quarters. New equipment for these facilities will be needed.

b) Moneragala District

In Moneragala District there is one district general hospital and two base Hospitals. The conditions of the facilities are as follows:

DGH Moneragala (Line M): Major improvements that are being carrying out by the hospital in 2011 are renovation of the labour room, renovation of ward units and kitchen and improvement of other infrastructure such as water supply and treatment plant, changing of electricity lines, etc. In 2010 and 2011, the hospital was supplied with a fully automated biochemistry analyser, haematology analyser and flame photometer for the laboratory; an operation table and operation lamp for the operation theatre, etc. The current major needs are construction of new building for the surgical ward unit, CSSD, renovation of the operation theatre, and supply of equipment for the outpatient department, PCU, ward units, etc.

BHB Wellawaya: The hospital has improved the infrastructure of the ward and received some equipment such as an X-ray unit, ventilator, ultrasound scan, etc. in 2011. In the near future, the hospital will construct and renovate some building(s) and be supplied with additional equipment with the assistance of the Government of China. The current needs are the development of quarters for consultants, MOs and nurses. Major equipment needs are equipment for the outpatient department, ECU, ward units, radiology department and laboratory.

BHB Siyambalanduwa: In 2008, the hospital developed the infrastructure of the outpatient department and ward complex, and in 2009 was supplied with an X-ray machine and operation table. The current major needs in infrastructure are improvements of infrastructure of the PCU, MICU/SICU, paediatric ward unit, blood bank and supply of equipment for these facilities.

(7) Sabaragamuwa `Province

a) Kegalle District

The conditions of the facilities of one general hospital and three base hospitals below are as follows:

DGH Kegalle (Line M): Kegalle Hospital is a district general hospital with almost all specialities required of secondary-level institutions and possesses 746 beds. In 2010 the hospital developed the operation theatre complex. The current major needs in infrastructure are improvement of the ward complex, health promotion complex and MO quarters. Major equipment needs are equipment for the outpatient department, ECU, ward units, ICU, blood bank, etc.

BHB Karawanella: In 2008-2009, the hospital developed the maternity ward. The major needs in infrastructure are the development of the administration department and construction of a new clinic unit. Major equipment needed is an instrument for histopathology processing.

BHB Warakapola: In 2011 the hospital renovated the labour room. In order for the hospital to deliver appropriate medical services at the secondary level, all basic infrastructure required for a base hospital is needed, such as an operation theatre, maternity complex, radiology department, ICU, laboratory, blood bank and equipment.

BHB Mawanella: The major needs are the improvement of infrastructure of the outpatient department, PCU/ECU, clinics, gynaecology and obstetric ward unit, medical ward unit and laboratory. Major equipment needs are equipment for the outpatient department, ICU, operation theatre, radiology and laboratory.

b) Ratnapura District

In Ratnapura District there are four base Hospitals. The conditions of the facilities are as follows:

BHA Embilipitiya: Currently the hospital possesses 370 beds with plans for an increase to about 600 beds in the near future. The hospital has constructed a new maternity unit and the current needs are construction of a new outpatient department, PCU/ECU, clinic building, medical ward unit and surgical ward unit and quarters. Major equipment needs are a nebuliser, tablet counting machine and ECG for the outpatient department; a multi-monitor, syringe pump, high dependency beds, etc. for the ward units; a blood gas analyser and serum electrolyser for the ICU; a fluoroscopy unit, mammography, etc. for the radiology department; a tissue embedding system and biochemistry analyser for the laboratory.

BHB Balangoda: The hospital developed the operation theatre including an ICU and surgical ward units in 2006. The current major needs in infrastructure are the establishment of male and female ward units. Major equipment needs are an ECG, dental unit, etc. for the outpatient department; a cardiac monitor, pulse oximeter, ECG, etc. for the ECU and ward units; a phototherapy unit, sucker and pulse oximeter for PBU; anaesthesia apparatus, a monitor for the operation theatre, automat for the radiology department and a microscope for the laboratory.

BHB Kahawatta: In recent years the hospital has renovated ward units and clinics and has been supplied with equipment such as a film processor for the radiology department, an operation table and anaesthesia apparatus for the operation theatre, multi-monitor, etc. The current needs are construction of a medical ward unit and quarters for consultants. Major equipment needs are instruments for dressing rooms; a drug counting machine for the dispensary; a multi-monitor, pulse oximeter, defibrillator, etc. for the ECU; an infusion pump, multi-monitor, etc. for ward units; an operation table, anaesthesia apparatus, etc. for the operation theatre.

BHB Kalawana: In order for the hospital to function at a secondary level, all basic infrastructure such as the outpatient department, operation theatre including the ICU, blood bank, surgical ward unit, etc. required for a base hospital need to be developed. In addition to this, quarters for MOs, nurses and for other categories of staff shall need to be improved in order to secure necessary human resources.

The needs of the hospitals mentioned above are summarised in Table 3-15.

Table 3-15: Conditions of district general hospitals and base hospitals

Institution	Urgent Construction/Renovation Needs		Major Equipment Needs [3]
	Major Items [1]	Other [2] Items	
Central Province			
DGH Nawalapitiya (Kandy)	- Construction final stage of maternity, PBU, OT complex - Surgical ward complex - Renovation of post-natal ward	PCU	OPD: ECG ECU: syringe pump, defibrillator, monitor Ward: defibrillator, syringe pump, monitor, etc. ICU: syringe pump, monitor X-ray: fluoroscopy, Colour Doppler
BHB Teldeniya (Kandy)	- Surgical complex - X-ray department - Quarters	PCU, MICU, SICU, OT, Lab, Blood Bank	OPD: spot lamp, bed, dental chair, etc. ECU: defibrillator, monitor, etc. Ward: bed, monitor, sucker, etc.
BHB Gampola Line M (Kandy)	- Theatre complex - ICU - Accident ward	PCU	OPD: refrigerator Ward: monitor, BP apparatus, slit lamp ICU: ventilator X-ray: CT scanner
DGH Nuwaraeliya Line M (Nuwara Eliya)	- Medical ward - Dermatology ward - High dependency	-	Ward: defibrillator, ventilator, monitor, etc. OT: OT table, laminar flow X-ray: X-ray machine, mobile X-ray
BHA Dickoya (Nuwara Eliya)	- Doctors quarters - Quarters - Waste management system	PCU, ECU, MICU, SICU	OPD: drug counting machine X-ray: safe light, lead apron hanger, etc. Laboratory: semi-automatic analyser, etc.
BHB Rikillagaskada (Nuwara Eliya)	- Operation theatre - Blood bank - Consultant/MO quarter	PCU, MICU, SICU, Lab	OPD: refrigerator, dressing trolley, etc. ECU: monitor, pulse oximeter, nebuliser, etc. X-ray: lead apron, film hanger, etc. Laboratory: biochemistry analyser, etc.
DGH Matale (Matale)	- OPD 1st floor, administration block - Chest clinic building - Eye clinic building - Improvement of infection-control unit - Expanding of children's ward Improvement of general clinic (development plan)	PCU	OPD: tablet counting machine, etc. ENT: spot lamp, ENT bed, etc. OT: autoclave, etc. X-ray: X-ray machine Laboratory: biochemistry analyser, haematology analyser, spectrophotometer, etc.
BHA Dambulla (Matale)	- Clinic building renovation - Mortuary construction Step11 - OPD clinic toilet complex	PCU, MICU, SICU	OPD: autoclave, bed, ECG ECU: infusion pump, syringe pump Ward: monitor, ventilator, infusion pump, etc. OT: anaesthesia apparatus X-ray: Colour Doppler Laboratory: biochemistry analyser Blood Bank: refrigerator
BHB Hettipola (Matale)	- OPD - Ambulance garage - Ward toilets (repair)	PCU, MICU, SICU, OT, X-ray, Lab, Blood Bank	OPD: lamp, instruments, etc. ECU: monitor, defibrillator, pulse oximeter Ward: monitor, pulse oximeter, ECG, etc.

Institution	Urgent Construction/Renovation Needs		Major Equipment Needs [3]
	Major Items [1]	Other [2] Items	
Northern Province			
BHA Point Pedro (Jaffna)	- CSSD - OT (renovation) - X-ray (renovation) - Surgical ward - Mental health unit - Dept. physiotherapy - Quarters - Entire sewage system (renovation)	PCU, MICU, SICU	OPD: dental unit ECU: ECG, sucker, nebuliser, ventilator Ward: monitor, syringe pump, etc. OT: OT light, pulse oximeter, etc. X-ray: computerised radiography Laboratory: haematology analyser, etc. Blood Bank: donor bed, water bath, centrifuge, etc.
BHA Telippalai (Jaffna)	- Physiotherapy unit - Blood Bank - Doctor quarters	SICU, OT, Blood Bank	Ward: monitor, pulse oximeter Laboratory: analyser
BHB Chavakachcheri (Jaffna)	- Surgical theatre - Blood bank - Kitchen - Mortuary	PCU, MICU, SICU	- (not mentioned)
BHB Kayts (Jaffina)	- OPD block - X-ray - Surgical ward complex (OT)/ICU - Paediatric ward	Lab, Blood Bank	Ward: patient monitor, trolley
DGH Mannar (Mannar)	- Medical ward complex and clinics 3-story block - 4-story building for eye, ENT, skin and cardiology - Central sewage system - Water treatment plant	- PCU, ECU, SICU, Lab	OPD: refrigerator, etc. Ward: monitor, CTG, etc. ICU: transport ventilator, etc. Laboratory: biochemistry analyser, etc. Blood Bank: (need equipment)
DGH Mullaitivu (Mullaitivu)	- ICU - Laboratory - Medical ward	-	ICU: transport ventilator, temporary pacemaker X-ray: conventional X-ray unit
BHB Mankulam (Mullaitivu)	- Construction of medical store and kitchen - Renovation of medical officers quarters - Construction of nursing quarters	PCU, MICU, SICU, OT, X-ray, Lab, Blood Bank	OPD: autoclave, steriliser, dental X-ray unit, etc. ECU: patient monitor, ECG, cardio bed, etc. Ward: ECG, IV stand
DGH Vavuniya (Vavuniya)	- Ward complex of 200 beds - Quarters (repair) - Proper water and electricity system	PICU, SICU	OPD: dressing trolley, instruments, etc. ECU: bed, etc. Ward: monitor, CTG, pulse oximeter, etc. ICU: ventilator, monitor, etc. OT: anaesthesia apparatus monitor, etc. X-ray: mobile X-ray, ECG Laboratory: biochemistry analyser, etc.
BHB Cheddikulam (Vavuniya)	- BP boxes - Defibrillator - Ambu bag - Others	PICU, MICU, SICU	- (not mentioned)
Eastern Province			
BHB Kaklawanchikudy (Batticaloa)	- Completion of maternity unit - Clinic complex and surgical ward and ICU - Administration block and auditorium	MICU, SICU, Lab	OPD: refrigerator, ECG, dressing table, etc. ECU: monitor, pulse oximeter, ECG, etc. Ward: ECG, pulse oximeter, nebuliser, etc. OT: (need equipment) Blood Bank: (need equipment)
BHA Kalmunai North Line M (Ampara)	- Primary Care Unit - Radiology department - Theatre complex/CSSD	PCU, MICU, SICU, Lab	OPD: dental unit ECU: (need equipment) X-ray: automatic processor, Colour Doppler, etc.
BHA Kalmunai South Line M (Ampara)	- Completion of OPD complex - Completion of X-ray unit - Surgical ward complex	PCU, ECU, SICU	OPD: dental chair, refrigerator, etc. ECU: monitor, ultrasound, ECG Ward: endoscopy unit, ventilator, CTG, etc. ICU: ventilator X-ray: X-ray unit, CT scanner Lab: (need equipment)

Institution	Urgent Construction/Renovation Needs		Major Equipment Needs [3]
	Major Items [1]	Other [2] Items	
BHB Mahaoya (Ampara)	- Male and female wards - Consultant quarters - Nurse quarters	ECU, MICU, SICU, Lab	OPD: ECG, refrigerator, hysteroscope, etc. ECU: patient monitor, pulse oximeter, etc. Ward: defibrillator, monitor, CGT, warmer, etc. OT: monitor, anaesthesia apparatus, etc. X-ray: static X-ray, automatic film processor, etc Blood Bank: defree
BHB Samanthurai (Ampara)	- Clinic complex - Ward complex	PCU, MICU, SICU, Lab	OPD: spot lamp, dressing table, etc. ECU: monitor Ward: monitor, defibrillator OT: light source X-ray: mobile X-ray, ultrasound
BHB Dehiattakandiya (Ampara)	-	PCU, MICU, SICU	OPD: autoclave, ECG, refrigerator, etc. ECU: monitor, nebuliser, ECG, etc. Ward: monitor, nebuliser, infusion pump, etc MICU: defibrillator, pulse oximeter, etc. OT: anaesthesia app. OT table, laryngoscope, etc X-ray: automatic film processor Laboratory: biochemistry analyser, etc.
BHB Akkarapatthu Line M (Ampara)	- Gyne and post natal ward - Surgical male ward - Quarters for consultants and nurses	MICU, SICU	OPD: autoclave, ECG, nebuliser, etc. PCU: nebuliser, ECG, infusion pump, etc. ECU: pulse oximeter, infusion pump, ECG, etc. Ward: monitor, pulse oximeter, etc. OT: (need equipment) X-ray: fluoroscopy radiography, CT scan, etc. Laboratory: (need equip. for histopathology)
DGH Trincomalee (Tricomalee)	- Nurses and matron quarter complex - Consultants quarters complex - MO quarters complex	-	ECU: monitor, ECG. Ward: monitor, ultrasound, CTG, etc. ICU: monitor, defibrillator, ventilator, etc. OT: diathermy, anaesthesia app. monitor, etc. X-ray: static X-ray, ultrasound, etc.
BHA Kanthalai Line M (Trincomalee)	- Maternity ward complex - New drug stores - Sewerage system	PCU, Lab	OPD: tablet counting machine, dental chair, etc ECU: monitor, bed, etc. Ward: monitor, ventilator, glucometer, etc. ICU: (need equipment) OT: diathermy, monitor, autoclave X-ray: automatic film processor
BHB Mutur (Trincomalee)	- Renovation of all building - Construction of official bldg. - Construction of OPD, ETU, quarters	PCU, MICU, SICU, X-ray, Lab, Blood Bank	Ward: monitor, pulse oximeter, ECG, CTG, ultrasound, etc.
BHB Kinniya (Trincomalee)	- Drug store - Consultant quarters - Quarters for MOs and nurses	PCU, SICU, Lab	Ward: monitor, defibrillator, CTG, ultrasound, infusion pump, ventilator, etc. ICU: ventilator, etc. OT: OT lamp, anaesthesia apparatus X-ray: X-ray machine
North Western Province			
BHA Kuliyapitiya (Kurunegala)	- Laboratory - Blood bank - Nurses quarters	-	OPD: autoclave, ECG PCU: ventilator, ECG, sucker, pulse oximeter ECU: spiral board, ventilator, etc. Ward: monitor, defibrillator, CTG, etc. ICU: monitor, ventilator, pulse oximeter X-ray: (need equipment) Laboratory: (need equipment)
BHB Nikawaratiya (Kurunegala)	- Paediatric unit roof repair - Ambulance - Computer network within the hospital - 800KW Generator - Purified water system	PCU, MICU, SICU, OT	ECU: refrigerator, autoclave Ward: monitor, pulse oximeter, spirometer, laparoscope, hysteroscope, etc. X-ray: fluoroscopy unit
BHB Dambadeniya (Kurunegala)	- OPD - PCU - Clinic building - Laboratory	MICU, SICU	OT: (one set of equipment for one OT) X-ray: automatic film processor Laboratory: microscope, electrolyte analyser, haematological analyser

Institution	Urgent Construction/Renovation Needs		Major Equipment Needs [3]
	Major Items [1]	Other [2] Items	
BHB Galgamuwa (Kurunegala)	- Theatre complex - CSSD - ICU - Blood bank - Laboratory - Dispensary - Surgical ward - Gyne/Obst ward - Drug store	PCU	OPD: autoclave, steriliser, etc. ECU: ventilator, defibrillator, monitor, etc. Ward: monitor, pulse oximeter, infusion pump, ultrasound, CGT, delivery bed, etc.
BHB Polpitigama (Kurunegala)	- Toilet system of ward 1, 2, 3, 5, ETU - MO quarters renovation/construction - RMO quarters, nursing quarters	PCU, MICU, SICU, OT, X-ray, Lab, Blood Bank	OPD: spot lamp, refrigerator, sucker, etc.
DGH Chilaw (Puttalam)	- Medical unit complex - Surgical unit complex - Drug store	ECU	OPD: refrigerator, dental chair, ECG, etc. PCU: ECG, sucker, pulse oximeter Ward: monitor, pulse oximeter, CTG, etc. ICU: defibrillator, ventilator, etc. OT: diathermy, anaesthesia apparatus, etc. X-ray: automatic film processor, etc. Laboratory: biochemistry analyser, etc.
BHA Puttalam (Puttalam)	- Eye ward - Female surgical ward - Mortuary - Nurses quarters	ECU	OPD: dental chair PCU: monitor, defibrillator, etc. Ward: delivery bed ICU: ventilator, electrolyte analyser, etc. OT: anaesthesia apparatus, OT table, etc. X-ray: ultrasound
BHB Marawila (Puttalam)	- 2 medical wards - Eye ward (funds donated by the public to complete the work) (Physiotherapy unit to be equipped)	ECU, SICU	OPD: ECG, autoclave, dressing trolley, etc. PCU: monitor, defibrillator, pulse oximeter, etc MICU: ventilator OT: diathermy, monitor, ventilator, etc. X-ray: fluoroscopy radiography Laboratory: biochemistry analyser, etc.
North Central Province			
BHB Padaviya (Anuradhapura)	- Consultant's quarters - Hospital colour wash - Record room	PCU, MICU, SICU, Lab	Ward: monitor, infusion pump, CTG, etc. X-ray: dental X-ray
BHB Tambuttegama (Anuradhapura)	- Gyn and Obst unit and labour room - Surgical ward complex - New administration block	PCU, ECU, MICU, SICU	Ward: monitor, pulse oximeter, etc.
BHB Kebitigollewa (Anuradhapura)	- Consultant quarter - MO quarter - Nurse quarter	MICU, SICU	- (not mentioned)
DGH Polonnaruwa (Polonnaruwa)	- PCU and ECU - Dialysis unit - Cardiology unit	PCU, ECU	- (not mentioned)
BHB Medirigiriya (Polonnaruwa)	- OT and ICU complex - SCBU - Main drug store	PCU, ECU, X-ray, Lab	OPD: autoclave, refrigerator, microscope, etc.. Ward: monitor, defibrillator, pulse oximeter, etc Laboratory: centrifuge, etc.
BHB Welikanda (Polonnaruwa)	- Operation theatre - Male ward - Quarters	PCU, ECU, Clinic, MICU, SICU, X-ray, Lab, Blood Bank	- (not mentioned)

Institution	Urgent Construction/Renovation Needs		Major Equipment Needs [3]
	Major Items [1]	Other [2] Items	
Uva Province			
BHB Diyatalawa (Badulla)	- Ward complex	-	OT: anaesthesia apparatus Laboratory: semi-automatic analyser
BHB Mahiyangana (Badulla)	- Construction of OPD, clinic and administration complex - Renovation of interim doctor quarters (12) - Construction of sewerage system	PCU, SICU	OPD: steriliser, autoclave, ECG, etc. ECU: defibrillator, ECG, glucometer, etc. Ward: pulse oximeter, nebuliser, etc. ICU: monitor, ventilator, syringe pump, etc. OT: OT table X-ray: automatic film processor, etc. Laboratory: biochemistry analyser, etc. Blood Bank: weight scale, thermometer, etc.
BHB Welimada (Badulla)	- Theatre complex - ICU and PBU - Ward complex for obstetrics - Ward complex for surgical - Intern house officers quarters	ECU, Lab, Blood Bank	OPD: autoclave, refrigerator, ECG, etc. PCU: ECG, diagnostic set, etc. Ward: defibrillator, monitor, CTG, etc. X-ray: automatic processor, dental X-ray, etc.
DGH Moneragala Line M (Moneragala)	- OT renovation - Construction CSSD - Construction surgical ward	ECU	OPD: dispensing scale, Holter PCU: monitor, infusion pump, syringe pump Ward: monitor, syringe pump, CTG, etc. ICU: pulse oximeter, wheel chair X-ray: fluoroscopy, ultrasound Laboratory: autoclave, microscope, etc.
BHB Wellawaya (Moneragala)	- Quarters for consultant, MO and nurses	PCU, MICU, SICU, OT	OPD: autoclave, dental chair, ECG, etc. ECU: monitor, infusion pump, etc. Ward: monitor, syringe pump, etc. X-ray: automatic film processor, etc. Laboratory: biochemistry analyser, etc.
BHB Siyambalanduwa (Moneragala)	- Blood Bank - Septic tank - Paediatric ward	PCU, MICU, SICU	- (not mentioned)
Sabaragamuwa Province			
DGH Kegalle Line M (Kegalle)	- Ward complex 4-story - Health promotion complex 4-story - MO quarters 4-story	PCU	OPD: autoclave, refrigerator, etc. ECU: ventilator, monitor, ECG, etc. Ward: monitor, pulse oximeter, laryngoscope, nebuliser, doppler, etc.
BHB Karawanella (Kegalle)	- Administration block - Clinic	MICU, SICU	- (not mentioned)
BHB **Warakapola** (Kegalle)	- Maternity complex - Theatre complex - Radiology complex	PCU, MICU, SICU, Lab, Blood Bank	X-ray: X-ray unit
BHB Mawanella (Kegalle)	- Clinics/OPD complex - PCU/ETC - Gyn ward - Medicine ward	SICU, Lab	Ward: steriliser ICU: mobile X-ray OT: OT table X-ray: automatic film processor, dental X-ray
BHA Embilipitiya (Ratnapura)	- OPD, clinic and ETU/PCU building - Medical unit - Surgical unit	-	OPD: tablet counting machine, ECG Ward: monitor, syringe pump, HD bed, etc. ICU: blood gas analyser, serum electrolyser X-ray: X-ray, fluoroscopy, mammography, etc. Laboratory: biochemistry analyser, etc.
BHB Balangoda (Ratnapura)	- Male and female medical ward	-	OPD: dental unit, trolley, ECG, etc.. ECU: monitor, pulse oximeter, ECG, etc. Ward: monitor, defibrillator, CTG, etc. OT: anaesthesia apparatus, monitor, etc. X-ray: automatic film processor Laboratory: microscope
BHB Kahawatta (Ratnapura)	- Clinic building renovation - Construction of medical ward - Construction of quarters	PCU, MICU, SICU, Lab	OPD: drug counting machine, forceps, etc. ECU: monitor, defibrillator, etc. Ward: monitor, infusion pump, etc. OT: OT table, OT lamp, monitor, etc.

Institution	Urgent Construction/Renovation Needs		Major Equipment Needs [3]
	Major Items [1]	Other [2] Items	
BHB Kalawana (Ratnapura)	- OT, Blood Bank, ICU - PBU, drug store - Outpatient department	PCU, X-ray, Lab	OPD: nebuliser, ECG, dental chair, etc. ECU: ECG, pulse oximeter, etc. Ward: nebuliser, ECG, CTG, glucometer, etc.

Remarks: With regard to the quarters for staff, refer to the following section
[1] "Major Items" means the urgent construction and/or renovations proposed by each hospital
[2] "Other Items" means that these facilities should be constructed and equipped in accordance with the "Re-categorization of Hospitals"
[3] "Major Equipment Needs" as provided by the respondents.

Source: MoH JICA Health Care Facility Survey for Secondary-Level Institutions

(c) Availability of staff quarters:

There is a shortage of quarters for consultants, MOs, nurses and other staff in many hospitals, as shown in Table 3-16 below. The existing quarters in some hospitals require renovation. Availability and conditions of the quarters are often considered to be related to how well a hospital is staffed. Therefore, it is important to consider the construction and/or renovation of quarters in the implementation of health facilities development.

Table 3-16: Availability of staff quarters

Province/ District		Cat.	Hospital Name	Number of Existing Quarters			
				Consultants	MO	Nurses	Others
C	Kandy	DGH	Nawalapitiya	5	15	1	4
C	Kandy	BHB	Teldeniya	0*	7**	2**	2**
C	Kandy	BHB (LM)	Gampola	1*	4*	22 *	0*
C	Nuwaraeliya	DGH (LM)	Nuwaraeliya	11*	14*	73*	54*
C	Nuwara Eliya	BHA	Dickoya	2*	4*	1*	8*
C	Nuwara Eliya	BHB	Rikillagaskada	0*	1*	4*	2*
C	Matale	DGH	Matale	5**	8**	5**	3**
C	Matale	BHA	Dambulla	8***	9***	1***	6***
C	Matale	BHB	Hettipola	0	3	1	1
N	Jaffna	BHA	Point Pedro	1*	3*	1	0*
N	Jaffna	BHA	Telippalai	-	5	2	2
N	Jaffna	BHB	Chavakachcheri	0*	0*	0*	0*
N	Jaffna	BHB	Kayts	-	3	1	1
N	Mannar	DGH	Mannar	1*	5*	1*	0*
N	Mullaitivu	DGH	Mullaitivu	-	3	-	18
N	Mullaitivu	BHB	Mankulam	-	2*	-	1
N	Vavuniya	DGH	Vavuniya	4*	7*	3*	5*
N	Vavuniya	BHB	Cheddikulam	1*	3*	1*	1*
E	Batticaloa	BHB	Kaklawanchikudy	-	3*	-	-
E	Ampara	BHA (LM)	Kalmunai North	5	12	3	-
E	Ampara	BHA (LM)	Kalmunai South	4*	1*	0*	0*
E	Ampara	BHB	Mahaoya	1*	1	1*	0*
E	Ampara	BHB	Samanthurai	0*	0***	-	0*
E	Ampara	BHB	Dehiattakandiya	4*	10*	5*	5*
E	Ampara	BHB(LM)	Akkarapatthu	3*	0*	10*	0*
E	Trincomalee	DGH	Trincomalee	10*	12*	21*	18
E	Trincomalee	BHA(LM)	Kanthalai	-	-	1*	1
E	Trincomalee	BHB	Mutur	1	3	1	-
E	Trincomalee	BHB	Kinniya	-	1*	0*	-
NW	Kurunegala	BHA	Kuliyapitiya	5*	2*	0*	0*
NW	Kurunegala	BHB	Nikawaratiya	4*	10*	1*	0*
NW	Kurunegala	BHB	Dambadeniya	-	-	-	-
NW	Kurunegala	BHB	Galgamuwa	1*	4*	1*	0*
NW	Kurunegala	BHB	Polpitigama	-	2	1**	1**
NW	Puttalam	DGH	Chilaw	1*	1*	1	0*
NW	Puttalam	BHA	Puttalam	6*	4	1*	0

Province/ District		Cat.	Hospital Name	Number of Existing Quarters			
				Consultants	MO	Nurses	Others
NW	Puttalam	BHB	Marawila	-	-	0*	-
NC	Anuradhapura	BHB	Padaviya	0*	7**	2**	20**
NC	Anuradhapura	BHB	Tambuttegama	2*	6*	2*	3*
NC	Anuradhapura	BHB	Kebitigollewa	1*	4*	1*	0*
NC	Polonnaruwa	DGH	Polonnaruwa	13*	2*	2	2
NC	Polonnaruwa	BHB	Medirigiriya	5	4**	2	16**
NC	Polonnaruwa	BHB	Welikanda	-	2	6	30
U	Badulla	BHA	Diyatalawa	5	1	-	-
U	Badulla	BHA	Mahiyangana	4*	4*	1*	8*
U	Badulla	BHB	Welimada	0*	0*	0*	-
U	Moneragala	DGH (LM)	Moneragala	5**	9**	3**	3**
U	Moneragala	BHB	Wellawaya	0*	4*	2*	0*
U	Moneragala	BHB	Siyambalanduwa	-	4	1	1
Sa	Kegalle	DGH (LM)	Kegalle	5*	8*	3	19
Sa	Kegalle	BHB	Karawanella	3	6	1	0
Sa	Kegalle	BHB	Warakapola	1*	0*	0*	0*
Sa	Kegalle	BHB	Mawanella	5	8	9	19
Sa	Ratnapura	BHA	Embilipitiya	9*	28*	8*	12*
Sa	Ratnapura	BHB	Balangoda	5	9*	1*	1
Sa	Ratnapura	BHB	Kahawatta	2	5	1	2
Sa	Ratnapura	BHB	Kalawana	-	1**	0*	3**

Remarks: * Hospital needs more quarters - No comments from the hospital
** Existing quarters need renovation LM: Line Ministry
*** Existing quarters are not adequate

Source: MoH JICA Health Care Facility Survey for Secondary-Level Institutions

3.2.7 Availability and maintenance of essential equipment

The survey looked at how the facilities (building, electrical and mechanical issues) and medical equipment are maintained at each institution. Since few hospitals have their own maintenance department, the maintenance and/or repairs are done with the assistance of MoH or Provincial Director of Health Services. Maintenance arrangements of each surveyed hospital are summarised in Annex 9.

(a) Maintenance at Line Ministry hospitals:
Concerning the maintenance and/or repairs of facilities, the Line Ministry provides financial assistance and the hospitals need to find local technicians, etc. for the repairs. Maintenance and repairs related to electricity are undertaken by the Ceylon Electricity Board (CEB). In the case of medical equipment, the maintenance and repairs are carried out by the engineers and technicians of Biomedical Engineering Services (BES), which is under the Ministry of Health.

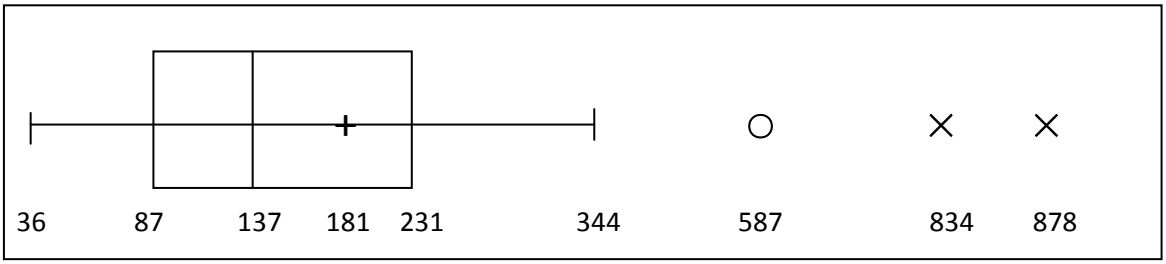
(b) Maintenance at provincial hospitals:
Maintenance of facilities is carried out almost in the same way as the Line Ministry hospitals. Regarding the maintenance and repair of medical equipment, the Engineering Department in each province provides the services for it. Also the hospitals have maintenance agreements with the private companies from which the equipment was purchased, and maintenance of the equipment is done by them.

3.2.8 Referral situations

As mentioned earlier, the numbers of transfers to higher institutions by ambulance were used to observe the referral trends in this survey. The number of patients (outdoor, indoor and clinics combined) per transfer was calculated to find out the frequency for each hospital. The results are

presented as a box plot in Figure 3-4[42]. The highest transfer rate was one for every 36 patients at Cheddikulam BHB in Northern Province, and the lowest transfer rate was one for every 344 patients at Kuliyapitiya BHA in North Western province. The median transfer rate was one in every 137 patients. Three upper outliers were Vavunia and Kegalle DGHs and Marawila BH.

Figure 3-4: Box plot of the number of patients for one ambulance dispatch 2010



Source: MoH JICA Health Care Facility Survey for Secondary-Level Institutions

Table 3-17 shows the 17 hospitals for which transfer rates were more than one per 100 patients. They were relatively small hospitals, with the average bed strength of 108 and BOR of 52 per cent as against the overall average of 242 and 69 per cent respectively. The average number of consultants for the 17 hospitals was 1.1 while the overall average was 5.7, indicating a correlation between the availability of consultants and frequency of transfer. In fact, out of 12 hospitals that did not have a single consultant (see Table 3-7), 10 are listed here.

Table 3-17: Institutions with one outward transfer for every 100 patients or less 2010

Province	Category	Institutions	Pt/Transfer-out	Journey to referral hosp.(min.)	Population (000)	No. of beds	BOR	No. of Consultants	No. of MOs	No. of Nurses	No. of Ambulances
N	BHB	Cheddikulam	36	40	38	222	na	1	17	24	1
N	DGH	Mullaitivu	38	130	85	139	80	7	16	42	1
NC	BHB	Welikanda	46	30	45	62	40	0	3	6	2
NW	BHB	Polpitigama	48	90	88	110	34	0	5	25	1
N	BHB	Kayts	49	45	48	59	40	0	3	2	1
C	BHB	Rikillagaskada	54	45	106	126	44	3	18	42	2
E	BHB	Mutur	54	150	80	92	130	1	9	23	2
N	BHB	Mankulam	56	30	10	40	10	0	1	0	1
N	BHB	Chavakachcheri	59	30	71	104	66	0	10	12	2
E	BHB	Kaluwanchikudy	62	50	280	150	80	0	5	34	2
C	BHB	Teldeniya	67	35	304	87	39	0	11	20	1
NW	BHB	Galgamuwa	67	90	300	131	22	2	16	40	2
C	BHA	Dickoya	78	90	300	100	95	3	17	44	2
E	BHB	Mahaoya	84	90	40	100	35	0	20	26	2
U	BHB	Siyambalanduwa	90	60	61	117	39	0	8	22	1
U	BHB	Wellawaya	95	45	150	112	46	1	10	28	2
Sa	BHB	Kalawana	100	90	120	82	38	0	8	23	1

Source: MoH JICA Health Care Facility Survey for Secondary-Level Institutions

[42] Data for one hospital was not available.

Most of these hospitals are underutilised as indicated by their low BOR. On the other hand, Mutur BHB, Dickoya BHA, Kaluwanchikudy BHB and Mullaitivu DGH have high BOR. They may be able to reduce the transfer rate by increasing their bed strengths.

Table 3-18 shows the main reasons for transfers obtained through telephone interviews with a relevant MO at each hospital[43]. Each hospital gave one to five reasons, and in total 215 different answers were obtained. They were classified into two categories, i.e. "fair" and "unwarranted" in view of the services that secondary hospitals are supposed to offer[44].

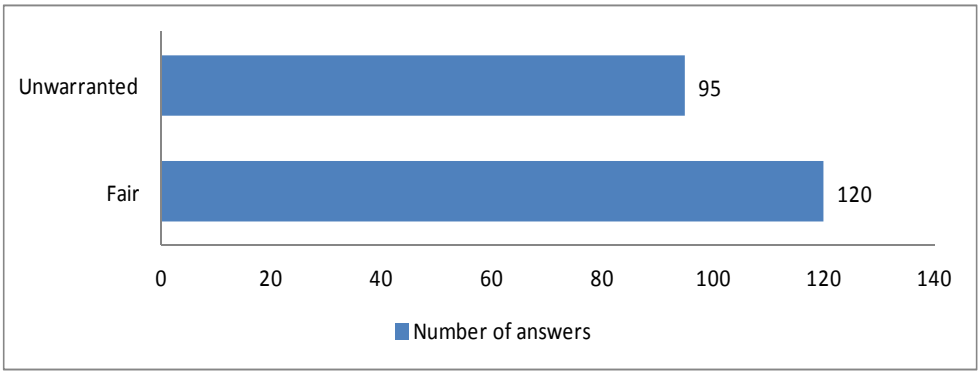
Table 3-18: Reasons for transfers from secondary to tertiary hospitals

Fair referral reasons	No.	Unwarranted referral reasons	No.
Tertiary level specialist care	48	Secondary-level specialist care	14
Dialysis	2	Lack of ICU & monitoring equipment	28
Lack of accident service	2	Lack of ETU	1
CT/MRI	37	Lack of PBU	5
Echocardiogram / USS	18	Lack of operation theatre	7
Other advanced investigation	4	Lack of blood bank	1
Temporary manpower shortage	13	Basic investigation	21
		Chronic manpower shortage	11
		Lack of training (skill)	1
		Lack of drugs	5
		Security purpose	1
Total	N = 120 (56%)	Total	N = 95 (44%)

Source: MoH JICA Health Care Facility Survey for Secondary-Level Institutions

More than a half responses fell into the "fair" category, but 95 (44 per cent) were rather unwarranted in view of the functions and services that secondary hospitals should have. The most frequently cited "unwarranted" reason was the lack of an ICU and related equipment, followed by the lack of a basic blood test facility and a stationary X-ray machine. There were nine hospitals that gave fair reasons only, namely Moneragala DGH and Diyatalawa BH in Uva, Dambadeniya BH and Marawila BH in North West, Nuwaraeliya DGH and Polonnaruwa DGH in North Central, Kalmunai South BH in East, Vavuniya DGH in North, and Karawanella BH in Sabaragamuwa.

Figure 3-5: Reasons for transfers from secondary hospitals



Source: MoH JICA Health Care Facility Survey for Secondary-Level Institutions

[43] This was a multiple-answer and open-ended question.

[44] In view of the chronic nation-wide shortages of manpower, temporary unavailability of personnel such as "weekend manpower shortage" and "consultant on leave" were classified as fair

3.2.9 Health Information Management System

As mentioned earlier, this survey was constrained by the limited availability of standardised data. Many hospitals do not know their own BOR (they only record the mid-night patient counts) and referrals or transfers are not recorded in a standardised manner, if recorded at all. A circular was apparently sent out some time ago urging the hospital managers to institute an appropriate system for transfer-related data collection. Further centralised effort may be needed to establish a standardised system.

On the other hand, it was observed during the visits that most of the registry books are neatly kept and the data required to be reported periodically are manually extracted from them. Currently all the reports that the hospitals generate are on a paper basis.

In Northern and Eastern provinces, the HIMS had to be re-established after the civil war, during which some hospitals were completely destroyed and most others out of contact with MoH. Progress has not been as swift as desired, affected by shortages of human resources among other factors. However, according to the Medical Statistics Unit (MSU) of MoH, the last two districts, namely Kilinochchi and Mullaitivu, finally started to send "Indoor Mortality and Morbidity Return (IMMR)" reports to MSU from the year 2010.

3.2.10 External assistance to the secondary-level Institutions

As mentioned earlier, the World Bank supported the "Health Sector Development Programme (HSDP)", providing funds for, among other activities, the development of health care institutions for several years. Since the project ended in 2010, the capital development budgets of the provinces have reportedly dropped quite drastically in 2011. UNICEF and UNFPA are also providing funds to improve the services related to maternal and child health, including gender-based violence (GBV) and capacity building. Assistance from these development partners is inclusive of the secondary facilities, rather than specifically targeting them.

Table 3-19: Amount of funding to PCs by World Bank, UNICEF and UNFPA in 2009 (actual) & 2010 (revised budget) (Rs. million)

	Central		East		N. West		N. Central		North		Uva		Sabaragamuwa	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
HSDP	137	149	187	499	104	113	108	116	536	880	56	164	52	118
UNICEF	20	53	76	153	0	0	2	3	146	200	15	46	0	0
UNFPA	38	48	37	93	0	0	24	50	16	48	0	0	0	0

Source: MoFP Expenditure Estimate 2011 for Ministry of Local Government and provincial councils

Fourteen (14) secondary-level hospitals reported having externally funded projects either ongoing or confirmed for 2012. PDHS of Northern province also provided us with a list of hospitals which have confirmed funding by the Chinese government in 2012. The information was put together and presented in Table 3-20 as provided.

Table 3-20: Ongoing/confirmed external assistance to secondary hospitals

Province	Institution		Facilities to be improved	Amount (Rs. million)	Partner	When
C	BHA	Dickoya	Construction and equipment	1200	Indian Gov.	2011-12
E	DGH	Trincomalee	New ETU, Wards, OT Renovation of wards, equipment & furniture	350 120	Americare ADB	2011
E	BHA	Kanthalai (LM)	Trauma care unit	NA	Chinese Gov.	2012
E	BHA	Kalmunai South (LM)	Construction, equipment	150	NA	2012

Province	Institution		Facilities to be improved	Amount (Rs. million)	Partner	When
E	BHB	Samanthurai	OT, ICU, PCU	NA	Chinese Gov.	2012
E	BHB	Mutur	Renovation and construction of buildings	100	NA	2012
N	DGH	Mullaitivu	Renovation of OPD complex	20	Americare	2010-11
N	DGH	Vavuniya	Construction of surgical theatre, equipment, wards	300	Chinese Gov.	2012
N	DGH	Mannar	Construction of 4-storied ward complex	250	Chinese Gov.	2012
N	DGH	Kilinochchi	Construction of ward and administrative block	280	Chinese Gov.	2012
N	BHA	Point Pedro	Construction of mental health complex	70	Chinese Gov.	2012
N	BHB	Chavakachcheri	Wards (surgical & medical), doctors quarters	450	Finland Red Cross	2010-11
N	BHB	Tellipalai	Construction of blood bank	20	Chinese Gov.	2012
N	BHB	Kayts	Construction of doctors' quarters	30	Chinese Gov.	2012
NC	BHB	Padaviya	Construction of OPD complex, isolation ward, public toilet	400	EU, German Red Cross	2011
NW	BHB	Dambadeniya	Renovation of SBCU	1.9	SAARC	2011
NW	BHB	Marawila	Physiotherapy unit, and surgical theatre	20	WHO	2011
U	BHA	Diyatalawa	Construction of paediatric unit	2.8	World Bank	2011
U	BHB	Wellawaya	Construction, renovation, equipment	NA	Chinese Gov.	2012

Source: MoH JICA Health Care Facility Survey for Secondary-level Institutions

The information on external assistance obtained in this survey may not be exhaustive. Some of the secondary-level hospitals are reportedly receiving regular GoSL funds (around Rs. 40-50 million each) for facility improvements in 2012. As the situation is dynamic, further consultations with NPD and other relevant parties are necessary to avoid duplications when selecting the target hospitals.

CHAPTER 4 State Pharmaceutical Manufacturing Corporation

4.1 Background

Sri Lanka has a total of 81 state owned enterprises (SOEs) in various fields, and the State Pharmaceutical Manufacturing Corporation (SPMC) is one of such SOEs under MoH. SPMC was established in 1987 through the Grant Aid of Japan, equipped for manufacturing, processing, stocking and packing essential medicinal drugs, with a capacity of 550 million tablets/capsules per year, on the basis of 8 working hours per day. While its board members are appointed by the Health Minister, SPMC is financially independent from the government.

SPMC was at its foundation an essential medicine manufacturing department of the State Pharmaceutical Corporation of Sri Lanka (SPC). SPC is also a SOE, which was started in 1971 with a mission to provide safe, effective and affordable medicines to all government health institutions[45]. Though SPC and SPMC were separated by a cabinet decision in 1997, all SPMC products are today bought either by SPC or the Medical Supply Department (MSD) of MoH without being subjected to competition from cheaper Indian and Chinese products. SPMC and SPC remain two separate entities but a merger plan has already been authorised by the present cabinet.

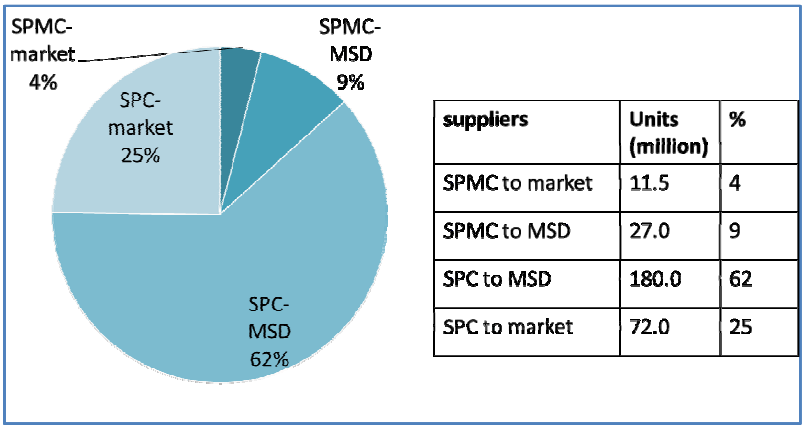
All SPMC products comply with the United States Pharmacopoeia (USP) as well as the British Pharmacopoeia (BP) standards. In addition, the Japanese official standards for microbial limits for oral preparations are also used. The control of temperature, humidity, microbial count and particulate matters are strictly applied. Furthermore the quality control department tests samples every day, and Drug Regulatory Authority (DRA) is regularly inspecting the manufacturing facilities and product quality. Currently all the SPMC products come in the forms of tablets and capsules. SPMC also has the capacity to produce dry syrup but other forms such as oral liquids, external medicines and injections are not possible.

4.2 SPMC and its position in National Drug Security

In Sri Lanka, it is difficult to obtain accurate data on the market share of individual products. However, by way of example, Figure 4-1 and 4-2 roughly depict the market share of two NCD drugs, Metformin 500mg tablets and Atenolol 50mg tablets. Although there are more importing agents than SPC, this analysis does not consider the small and private importers, because SPC dominates the share of imported drugs. These two figures reveal that SPMC products occupy less than a quarter of the national share including private sector sales of these two common NCD drugs. However, if SPMC achieves the goal of meeting MSD needs as planned, the SPMC share will exceed more than half of total market share.

[45] Today SPC supplies medical products to the private sector as well. It also has its own retail outlets.

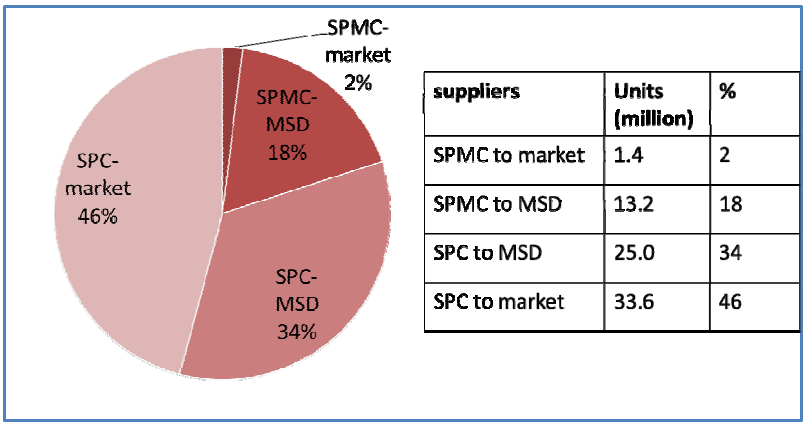
Figure 4-1: Annual production and imports of Metformin 500mg tablets in 2010



suppliers	Units (million)	%
SPMC to market	11.5	4
SPMC to MSD	27.0	9
SPC to MSD	180.0	62
SPC to market	72.0	25

Source: MSD, SPMC and SPC

Figure 4-2: Annual production and imports of Atenolol 50mg tablets in 2010



suppliers	Units (million)	%
SPMC to market	1.4	2
SPMC to MSD	13.2	18
SPC to MSD	25.0	34
SPC to market	33.6	46

Source: MSD, SPMC and SPC

As described in Chapter 2.4.3 and Table 2-13, MSD requires SPMC to expand the production capacity to better meet MSD needs, at least in terms of SPMC producing sufficient quantaties to ensure a stable stock management and to decrease the heavy dependence on drug imports. Table 4-1 shows the recent trend of demand-supply ratio between MSD and SPMC. This ratio is described in greater detail in Chapter 7. In this Table, "MSD demand" presents annual requirements for distribution to all governmental health institutions. Although SPMC products for MSD comprise a mere 30 items among the hundreds of drugs in the national essential drug list, SPMC succeeded in doubling this ratio between 2009 and 2011.

Table 4-1: Trend of demand-supply ratio between MSD and SPMC, 2009-2011

Items	MSD demand (million units)			Supply from SPMC (million units)			Demand-Supply ratio (%)		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Aluminium hydro.tab. BP 500mg.	56.0	59.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0
Amoxicillin tab. USP 125mg.	21.0	18.0	19.0	2.0	3.0	4.0	9.5	16.7	21.1
Amoxicillin cap. BP 250mg.	186.0	198.0	205.0	126.0	186.0	206.0	67.7	93.9	100.5
Amoxicillin cap. BP 500mg.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ascorbic acid tab. BP 100mg.	164.0	183.0	196.0	38.0	32.0	50.0	23.2	17.5	25.5
Atenolol tab. BP 50 mg (Blister)	46.0	57.0	54.0	0.0	13.0	15.5	0.0	22.8	28.7
Benzhexol tab. BP 2mg.	30.0	29.0	35.0	0.0	23.0	18.5	0.0	79.3	52.9
Bisacodyl tab. BP 5mg.	5.0	6.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbamazepine tab. BP 200mg	22.0	27.0	30.0	9.0	21.0	23.5	40.9	77.8	78.3
Chloramphenicol cap. BP 250mg.	0.4	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Chloroquine phos. tab. BP 250mg.	5.0	4.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0
Cloxacillin cap. BP 250mg.	77.0	82.0	90.0	57.0	42.5	82.0	74.0	51.8	91.1
Co-trimoxazole tab. BP 480mg. (Adult)	12.0	11.0	11.0	0.0	5.0	5.0	0.0	45.5	45.5
Diclofenac Sodium tab.USP 50mg.	117.0	112.0	118.0	7.5	34.0	40.5	6.4	30.4	34.3
Diethylcarbamazine tab. BP 50mg.	3.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Diltiazem HCL tab 60 mg (Blister)	22.0	27.0	32.0	0.0	15.0	23.0	0.0	55.6	71.9
Erythromycin stearate tab. BP 250mg.	39.0	40.0	37.0	0.0	15.0	14.5	0.0	37.5	39.2
Enalapril Maleate tab USP 5 mg	73.0	92.0	104.0	0.0	7.5	13.0	0.0	8.2	12.5
Folic acid tab. BP 5mg.	133.0	273.0	151.0	0.0	33.0	49.0	0.0	12.1	32.5
Frusemide tab. BP 40mg.	35.0	43.0	49.0	0.0	0.0	14.5	0.0	0.0	29.6
Famotidine tab. USP 20mg (Blister)	91.0	91.0	109.0	0.0	0.0	44.0	0.0	0.0	40.4
Indometacin cap. BP 25mg.	22.0	18.0	18.0	0.0	17.0	6.0	0.0	94.4	33.3
Mebendazole tab. USP 100mg.	43.0	44.0	46.0	42.0	13.0	0.8	97.7	29.5	1.7
Metformin tab. BP 500mg.	189.0	239.0	280.0	58.5	27.0	26.0	31.0	11.3	9.3
Pae.cotrim tab. 120 mg	3.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Paracetamol tab. BP 500mg.	550.0	538.0	572.0	63.5	121.0	196.0	11.5	22.5	34.3
Phenoxymethylpenicillin tab. BP 125mg.	11.0	10.0	9.0	10.0	1.0	6.5	90.9	10.0	72.2
Phenoxymethylpenicillin tab. BP 250mg.	30.0	31.0	32.0	0.0	7.0	18.0	0.0	22.6	56.3
Prednisolone tab.BP 5mg.	69.0	85.0	87.0	12.0	79.5	77.0	17.4	93.5	88.5
Primaquine Phos. Tab. 7.5mg	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Propranolol tab. BP 40mg.	14.0	12.0	14.0	0.0	18.0	16.0	0.0	150.0	114.3
Propranolol tab. BP 10mg.	0.6	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Rifampicin cap. BP 150mg.	0.7	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Salbutamol tab. BP 2mg.	36.0	41.0	44.0	9.0	40.0	40.0	25.0	97.6	90.9
Salbutamol tab. BP 4mg.	80.0	86.0	86.0	20.0	57.5	93.0	25.0	66.9	108.1
Theophylline (ER) tab. 125mg.	22.0	82.0	92.0	13.5	23.0	17.0	61.4	28.0	18.5
Trifluoperazine tab. BP 5mg.	14.0	12.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Verapamil tab. BP 40mg.	22.0	25.0	25.0	17.0	33.0	11.0	77.3	132.0	44.0
Vitamin B complex tab.	208.0	225.0	227.0	49.0	89.0	142.5	23.6	39.6	62.8
Total	**2,452.1**	**2,806.1**	**2,873.0**	**534.0**	**956.0**	**1252.8**	**21.8**	**34.1**	**43.6**

Source: MSD

Table 4-2 shows that SPMC has been selling their products to the private sector though SPC and other retailers. Thus, the total production capacity of SPMC is considered greater than the quantities described in Table 4-1.

Table 4-2: Annual sales of SPMC

Buyers		2009	%	2008	%
MSD		723.1	63	536.8	60
SPC	*	33.6	3	72.5	8
Other private retailers		363.3	32	263.9	30
export		23.6	2	17.0	2
total		1152.7	100	890.2	100

Source: SPMC Annual report 2009 (million Rs.)
*all private retailers have been unified with the SPC since 2011

Table 4-3 shows the trend of total production over the last 11 years. With the goal of increasing the production capacity to cater for the needs of MSD (2.9 billion units in 2011) and SPC (0.7 billion units), SPMC made every effort: expansion of manufacturing and store areas, renovation of machinery and facilities and most importantly, increasing factory operation hours from 8 hours (one shift) to 16 hours (two shifts) per day in March 2007. As a result, the output has increased gradually every year and annual production in 2011 reached 1,796 million tablets/capsules, which was more than 3 times greater than the facilities were originally designed to produce. Both MoH and SPMC recognise the needs of more significant and extensive investment to reinforce the original facilities to achieve further production increases.

Table 4-3: Annual production of tablets and capsules over the past 10 years (million units)

Year of Production	2001	2002	2003	2004	2005	2006	2007[(1)]	2008	2009	2010	2011
Annual production of tablets/capsules	904	909	811	723	837	752	1,025	1,032	1,195	1,625	1,796

Source - SPMC

4.3 Current Production Capacity

4.3.1 Facilities

To increase the production capacity, SPMC started to expand the production facilities in the early 2000s. In 2004, the construction of the first building of two stories for packaging and storage was completed. The construction of the second building, which is an extension of the production area for general drugs in the original building constructed in 1987, was completed in 2011. A two-storied third building is now almost completed, of which ground floor is designed to house a part of the penicillin production and the first floor offices. The Table below summarises the buildings that SPMC owns today.

Table 4-4: Buildings constructed through the Japanese Grant Aid and buildings constructed by SPMC

Year of construction	Name of Building	Total Floor Area (approx. m^2)	Remarks
By Japanese Grant Aid			
1987	Main Building (production area, laboratories, offices, etc.)	4,200	
	Utility Building (boiler room, water supply system, etc.)	300	
	Guard House	15	
	Sub-Total Floor Area	4,515	
By SPMC			
2004	1st Building (packing area, storage, etc.)	935	
2011	2nd Building (production area of general drugs, storage, etc.)	785	
2011	3rd Building (production area of penicillin and offices)	625	90% completed in August 2011
	Sub-Total Floor Area	2,345	
Total Constructed Floor Area		6,860	

Source – Basic Design Study Report 185 Building Plan by SPMC

All the facilities mentioned above are very well maintained by the technicians of the SPMC maintenance department. The manufacturing facilities of SPMC comply with the requirement of the Good Manufacturing Practices (GMP) by the World Health Organization (WHO) and the products comply with the United States Pharmacopoeia (USP) and British Pharmacopoeia (BP) standards as stated earlier.

4.3.2 Equipment

SPMC started the production of essential medicinal drugs with the machinery and ancillary items supplied through Japanese Grant Aid in 1987. Almost all of the major equipment used in the production facilities is Japanese, except for one item from Germany, as shown in Table 4-5.

Even after 24 years of installation, almost all the equipment listed below that was supplied by Japan is very well maintained. Moreover, it is still in very good condition and could be used for many more years. However, some of the equipment is inevitably out-dated, which hinders optimisation of the SPMC's potential production capacity. In addition, the maintenance cost of the old equipment has gone up significantly due to the high cost of spare parts.

Table 4-5: Major production equipment supplied through Japanese Grant Aid by 1987

No.	Name of Equipment	Manufacturer	Model	Country of Origin
1	Bottle Washing Machine	Shibuya Kogyo Co. Ltd.	JBB	Japan
2	Bottle Drying Oven	Satake Chemical Equipment Mfg. Ltd.	80	Japan
3	Multi Milling Machine	Showa Giken Ltd.	P-3S	Japan
4	Sifting Machine	San-EI-Seisakusho Ltd.	1001 / 701	Japan
5	Pneumatic Powder Conveyer	Fuji Paudal Co. Ltd.	HFO-10-PD	Japan
6	Fine Milling Machine	Fuji Paudal Co. Ltd.	AIIW-5 / KII -1	Japan
7	Planetary Mixer	Shinagawa Machinery works	250 DM-QR	Japan
8	Oscillating Granulator	Hata Iron Works Ltd.	HRG 125Y-II	Japan
9	Fluidised Bed Dryer	Freund Flow Coater	FLO-120EX	Japan
10	Tray Drying	Satake Chemical Equipment Mfg. Ltd.	ST - 80	Japan
11	Double Cone Blender	Fuji Paudal Co. Ltd.	3M 700 (1500 L)	Japan
12	Double Cone Blender	Fuji Paudal Co. Ltd.	CM-300 (650L)	Japan
13	Granulator	Turbo Kogyo Co.Ltd	WP160x60B	Japan
14	Drum Mixer	Nishida Doko Co. Ltd.	DM 200	Japan
15	Tablet Compressing Machine	Hata Iron Works Ltd.	HT-AP 45MS-U	Japan
16	Tablet Compressing Machine	Hata Iron Works Ltd.	HT-AP38MS-U	Japan
17	Tablet Compressing Machine	Hata Iron Works Ltd.	HT-B29NM	Japan
18	Capsule Milling Machine	Bosch	GKF 800	Germany
19	Film Coating Machine	Hata Iron Works Ltd.	HC -200	Japan
20	Capping Machine	OGT Kaikai Seisakusyo Co. Ltd.	OA 03	Japan
21	Appearance Inspection Machine	Hayashi Pharmaceutical Machine Ltd.	TCI - 200	Japan
22	Paste Preparation Agitation Tank	Nishida Doko	PAT 300	Japan
23	SGS Modification Agitation Tank	Nishida Doko	MAT 200	Japan

Source: SPMC documents

With the increased demands for drugs and expansion of its facilities, SPMC has started to purchase some additional production equipment since 2004, details of which are found in Table 4-6 below. However, even with this newly acquired equipment, SPMC is not able to meet the

domestic demands as seen in Table 4-1. SPMC is now requesting, through the Government of Sri Lanka, a soft loan of 10 million US dollars from any funding source.

Table 4-6: Major production equipment purchased by SPMC in 2000s

No.	Name of Equipment	Manufacturer	Model	Country of Origin	Year of Purchase
1	Film Coating Machine	Glatt Company Ltd.	GCM-350	Switzerland	2004
2	Automatic Filling Machine	Countec Co. Ltd.	DMC 120	Korea	2006
3	Labelling Machine	BRB Globus	UNO- WA -CW	Italy	2008
4	Automatic Capsule Filling Machine	Smajin Pharma Tech Co. Ltd.	SF-135	Korea	2009
5	Automatic Filling Machine(1)	Samjin PMS Korea Ltd.	SJ-1201	Korea	2009
6	Homo Mixer	Primix Co. Ltd	T.K. Auto Mixer 40	Japan	2009
7	Tablet Compressing Machine(1)	Samjin PMS Korea Ltd.	ST -49	Korea	2010
8	Blister Packing Machine(1)	Pam-Pac Machine Ltd.	BP102	India	2010

(1) Production equipment for penicillin Source: SPMC document

4.4 Proposed Capacity Strengthening of SPMC

4.4.1 Proposed capacity

SPMC produced 1,796 million tablets/capsules in 2011, and is increasing the annual production by about 100 million units every year, aiming to reach an annual production of 2,100 million tablets/capsules in 2014. Furthermore, SPMC proposes to purchase and install the new equipment listed in the Table 4-7 below by 2014, in order to increase the production capacity to 2,800 and 3,200 million tablets/capsules in the following years (2015 and 2016 respectively), and reach a production capacity of up to 3,500 in the following years. The table below shows the planned and projected annual production from 2011 to 2016.

Table 4-7: Projected annual production quantity of tablets and capsules in 2011 - 2016 (million units)

Year of Production	2011	2012	2013	2014	2015	2016
Annual production of tablets/capsules	1,796	1,900(1)	2,000(1)	2,100(1)	2,800(2)	3,200(2)

Source - SPMC
(1) Planned by SPMC (2) Target (in case the extension is over in 2014)

4.4.2 Justifications

Due to low production capacity of most of the equipment supplied in 1987 and also to the increasing maintenance costs due to high cost of spare parts, SPMC cannot achieve the annual production targets mentioned above. At the same time, in order to reduce the production cost per tablet, manufacturing capacity must be enhanced by adding new production lines and replacing some out-dated equipment. The manufacturing equipment that needs to be replaced includes tableting equipment and packaging line equipment.

Based on the above factors, the Government of Sri Lanka has developed and subsequently revised the “Project Proposal Rehabilitation & Expansion of Production Capacity of State Pharmaceuticals Manufacturing Corporation of Sri Lanka-2009” (Project Proposal-2009). The list of equipment mentioned in the Project Proposal-2009 has been revised as SPMC purchased several items of equipment in 2009 and 2010, as shown in Table 4-6 above. Table 4-8 shows the equipment listed in the Project Proposal of 2009 and the subsequent revisions.

Table 4-8: Comparison between the Equipment List in the Project Proposal-2009 and its revision

List of Equipment in the Project Proposal – 2009			Revised List of Equipment		
Name of Equipment, etc.			Name of Equipment, etc.		Major Reasons for Revision
1	Weighing Equipment		1	Weighing Equipment	
2	Fluid Bed Processor, Dry Mixing of Powder, Wet Kneading, Oscillating, Wet Sieving, Fluid Bed Drying, Spray Granulating, Milling and Blending		2	High Shear Mixing Granulator	Revised the item because some of the equipment has been already purchased by SPMC.
3	Tablet press – B type		3	Tablet Compression Machine	Revision of the name of item
—	—		4	Punches and Dies	Additional
4	Film Coating Machine		5	Film Coating Machine	
5	Binder/Paste Preparation Equipment		—	—	Deleted. Manufacturer that manufactured this equipment in 1987 does not exist anymore
6	Homo Mixer		6	Homo Mixer	
7	Bottle Washer and Dryer		—	—	Deleted. It is not indispensable
8	Automatic Filling Machine		7-1	Automatic Filling, Capping and Labelling Machine (1)	3 items merged together in one because it is one line of packaging
9	Labelling Machine				
12	Capping Machine				
			7-2	Automatic Filling, Capping and Labelling Machine (2)	As above
10	Appearance Inspection Machine	⇨	8	Appearance Inspection Machine	
11	Laboratory Type Tablet Press		—	—	Deleted. Existing equipment can be used.
13	HPLC System		9	HPLC System	
14	Dissolution Apparatus		10	Dissolution Apparatus	
15	Forklift		11	Forklift	
16	Air Compressor		12	Air Compressor	
—	—		13	Double Cone Blender (1)	Additional
—	—		14	Double Cone Blender (2)	Additional
—	—		15	Ancillary Items	"Stainless Steel Container" is included in "Ancillary Items"
17	Stainless Steel Container for Past Preparation		—	—	The item is deleted because it is not equipment. The cost of transportation and installation is included in the cost of the equipment.
18	Ancillary Equipment				
19	Clearing, Transport, Handling, and Installation		—	—	Already purchased by SPMC
20	Stand-by Generator		—	Refurbishing of Facilities	Revision of name of the item
21	Building Alterations		—	Construction of Storage	Additional

The proposed final equipment, facilities and other relevant items, major technical specifications and main purposes are shown in the Table below.

Table 4-9: Proposed equipment

No.	Description (name of equipment, etc.)	Qty.	Major Specifications	Main Purpose	Prio-rity
01	Weighing Equipment	2	Stand-type scale: 60kg, 300kg, 600kg; Table-top type scale: 5kg	For weighing materials for production of drugs	A
02	High Shear Mixing Granulator	1	Container volume: 400L approx. Agitating revolutions: 18 to 180 rpm Provided with material transfer device	For granulating and mixing materials for production of drugs	A
03	Tablet Compression Machine	5	Capacity: approx. 460,000 tabs/hr Provided with pneumatic power conveyer	For making tablets from grains	A
04	Punches and Dies	1	6.5mm double concave, 6.5mm flat bevelled, 8mm double concave, 7mm deep concave, 11.5mm double concave	To be used for tablet compression machines	A
05	Film Coating Machine	1	Type: fully automated Capacity: 550L approx.	For tablet film coating	A
06	Homo Mixer	1	Capacity: 50 litres Provided with stainless container	For preparation of coating solution	B
7-1	Automatic Filling, Capping and Labelling Machine (1)	2	Main composition of the line: bottle drawing machine and turntable, automatic air cleaner, silica gel supply machine, automatic tablet filling and counting machine, tablet supply turning lift, automatic filling machine for polyethylene tube and capper, cap supply turntable, automatic labeller, cap sealer Capacity: approx. 2,000 to 3,600 tablets/min	For filling tablets into bottles, capping and labelling	A
7-2	Automatic Filling, Capping and Labelling Machine (2)	1	Main composition of the line: bottle drawing machine and turntable, automatic air cleaner, automatic tablet filling and counting machine, tablet supply turning lift, capping machine, cap supply turntable, buffer turntable, automatic labeller, cap sealer Capacity: approx. 2,000 to 3,600 tablets/min	For filling tablets into bottles, capping and labelling	A
8	Appearance Inspection Machine	1	Type: Automatic Capacity: 350,000 tablets/hr Equipped with camera	For tablet inspection and sorting	B
9	HPLC System	1	Main composition: Quaternary pump with online degasser, injector, controller, auto-sampler, multi-wave length UV visible detector, thermostat column oven with heating device, etc.	For Quality Control (QC), Quality Assurance (QA) and R&D of drugs	B
10	Dissolution Apparatus	1	Complying with both BP and USP specifications Vessels: 8 for samples Provided with an on line sample collection facility	For performing dissolution testing including dissolution profile testing of solids dosage forms for QC, QA and R&D of drugs	B
11	Forklift	1	Capacity: 1500kg Lifting height: not less than 3000mm	For carrying, lifting and lowering drug material containers from shelves	C
12	Air Compressor	1	Capacity: 8 cubic meter/min at 8 bar Oil-free type Provided with dryer	For supplying compressed air to the production equipment	B
13	Double Cone Blender (1)	1	Capacity: 1,000 L approx. Rotation speed: 18 rpm approx.	For dry powder milling and mixing materials	A
14	Double Cone Blender (2)	1	Capacity: 440 L approx. Rotation speed: 22 rpm approx.	Used for mixing of materials	A

No.	Description (name of equipment, etc.)	Qty.	Major Specifications	Main Purpose	Prio-rity
15	Ancillary Items	1	Total number of items: 15 Composition: humidity/temperature recorder, vacuum cleaner, pallet truck, scale, friability tester, hardness tester, drum porter, portable dehumidifier, carrying cart, stainless steel drum, pallet, laboratory scale	To carry materials, to store materials, etc.	B

Priority: A – Highly needed B – Can be altered/adjusted C – Can be purchased later by SPMC
Source: SPMC

Most of the items purchased by SMPC shown in Table 4-6 are not made in Japan. However, since the technicians and operators of SPMC are already familiar with the equipment supplied from Japan and Germany, and for ease of maintenance and durability, SPMC proposes to purchase Japanese, German or compatible equipment to minimise the switching and operational costs.

"SPMC – Production Flow Chart for General Drugs" (Annex 10) shows the places where the production equipment listed in the Table above are utilised. The details of proposed items listed in Table 4-9 are presented below.

With regard to the outline specification of proposed equipment, please refer to Annex 11.

a) The expansion of the facilities where the production equipment will be installed has already been completed by SPMC, as described above. However, complementary work on the facilities shown in Table 4-10 will be necessary.

Table 4-10: Proposed items for facilities

No.	Description	No.	Description
1	**Refurbishing of existing facilities:** Repair work on floors, walls, ceilings; electrical work and mechanical work required for the installation of production equipment	2	**Expansion of storage facilities:** Construction of a building of two stories for storing the raw materials

b) In order to increase the manufacturing lines, the items below are the new equipment that should be added. Item 12 ("Compressor") is required to supply the compressed air needed to operate the equipment.

Table 4-11: Additional new equipment to increase production capacity

No.	Name of Equipment	No.	Name of Equipment
01	Weighing Equipment	08	Appearance Inspection Machine
02	High Shear Mixing Granulator	11	Forklift
03	Tablet Compression Machine	12	Air Compressor
05	Film Coating Machine	13	Double Cone Blender (1)
06	Homo Mixer	14	Double Cone Blender (2)
07	Automatic Filling, Capping and Labelling Equipment	15	Ancillary Items

c) In order to increase the production capacity, the item below is proposed.

Table 4-12: Accessories, etc. for the existing equipment

No.	Name of Equipment
04	**Punches and Dies:** Accessories for the existing Tablet Compression Machine. It is preferable to purchase these from the same manufacturer as the existing Tablet Compression Machine.

d) The items below for “Quality Control” are proposed.

Table 4-13: Equipment for formulation, R&D and quality control

No.	Name of Equipment	No.	Name of Equipment
09	HPLC System	10	Dissolution Apparatus

The HPLC System and Dissolution Apparatus are equipment used for quality control. Both pieces of equipment will be replacements for the equipment supplied in 1987 by Japanese Grant Aid.

4.4.3 Organizational arrangements

The Organization Structure of SPMC is attached as Annex 12. The procurement and installation of the equipment, in principle, will be managed by the engineers and technicians of the Production Department and the Maintenance Department. The Maintenance Department will be responsible for the design and construction of the new facility and also for the refurbishing of the existing facilities.

1) Staffing

The actual number of staff of SPMC is 205 and the proposed total additional number of staff when the expansion is over is 115. Table 4-14 shows staff numbers by the departments.

From the staff list shown in Table 4-14, it is clear that the number of staff in production and maintenance will be almost doubled when the expansion is completed in 2014. SPMC has a staff training program for production. This 18-month training programme is approved by MoH and only trainees who have completed this programme are contracted. In 2011, 8 have completed training, and 10 to 12 trainees will be enrolled by the end of the year. With regard to the maintenance staff, 6 more technicians will be added by the end of 2011.

Table 4-14: Existing number of staff and proposed cadre by the end of 2014

Destination	Existing No.	To be Added By 2014	Total by 2014
ADMINISTRATION			
Chairman/MD	1		1
General Manager	1		1
Personal Secretary	2		2
Data Entry Operator	1		1
HUMAN RESOURCES			
Assistant Manager	1		1
Administrative Officer	1		1
Rec./Typist/Tele op/Clerk	7	2	9
Labourers	10	2	12
ACCOUNTS DEPT.			
Management Accountant	1		1
Factory Accountant	1		1
Accounts Executive	1		1
Accounts Assistant	2		2
Accounts Clerk	6		6
Data Entry Operator	1		1
AUDIT DEPT.			
Internal Auditor	1		1
Audit Clerk	2		2
PLANNING & PROCUREMENT DEPT.			
Manager	1		1
Assistant Manager	0		0
Pharm. Technologist	3		3
Planning/Procurement Asst.	4		4
Stores Assistant	6	3	9
Data Entry Operator	1		1
Labourers	3	2	5
FORMULATION RESEARCH DEVELOPMENT DEPT.			
Manager	1		1
Asst. Manager	0		0
Assistant Chemist	2		2
Technical Assistant	1		1

Destination	Existing No.	To be Added By 2014	Total by 2014
QUALITY CONTROL DEPT.			
Manager	1		1
Assistant Manager	0		0
Quality Control Officer	4	1	5
Quality Control Assistant	9	5	14
MAINTENANCE DEPT.			
Manager	1		1
Assistant Manager	1	1	2
Assistant Engineer	1		1
Engineering Assistant	2	3	5
Maintenance Technician	12	10	22
Stores Assistant	1	1	2
Data Entry Operator	1		1
Driver	11	2	13
Labourer	2	1	3
MARKETING DEPT.			
Manager	0		0
Assistant Manager	0		0
Pharmaceutical Tech.	1		1
Marketing Assistant	2		2
Stores Assistant	1		1
Data Entry Operator	1		1
Labourer	2		2
PRODUCTION DEPT.			
Manager	1		1
Assistant Manager	1	2	3
Pharmaceutical Tech.	7	5	12
Production Assistants	**80**	**75**	**155**
IT DEPT.			
Systems Analyst	1		1
Programme Analyst	1		1
TOTAL	205	115	320

Source - SPMC

2) Maintenance

The basic maintenance of the facilities is carried out by the maintenance technicians of SPMC and major maintenance work is outsourced. With regard to the maintenance and repair of equipment of production area and quality control is carried out by the SPMC technicians.

3) Construction of new facilities and the refurbishment of existing facilities

SPMC may appoint a company such as the State Engineering Corporation (SEC) as the Consultant for preparation of drawings and supervision of the construction. Tendering and evaluation will be done by SPMC.

4) Procurement of equipment

Preparation of technical specifications, tendering evaluation and procurement will be carried out by SPMC. The installation work and commissioning will be carried out by the equipment supplier.

In SPMC, there are three types of evaluation committees, depending on the engineer's estimation of the cost of construction and procurement. The three types of evaluation committees are as follows.

Table 4-15: Three types of evaluation committees

Name	Amount	Members
Minor Evaluation Committee	Less than 2 Million Rupees	➢ Production Manager (SPMC) ➢ Executive from Accounting Department (SPMC) ➢ Executive from relevant Department (SPMC)
Department Evaluation Committee	Between 2 and 25 Million Rupees	➢ Director of MoH ➢ General Manager (SPMC) ➢ Production Manager (SPMC) ➢ Executive from Accounting Department (SPMC) ➢ Formulation and Development Manager (SPMC)
Ministry Evaluation Committee	Between 25 and 150 Million Rupees	➢ Director of MoH ➢ Director of Ministry of Treasury ➢ Medical Doctor ➢ General Manager (SPMC) ➢ Manager from relevant Department (SPMC)

Source - SPMC

4.5 Financial Analysis

4.5.1 Financial highlights of SPMC in the past 5 years

Table 4-16 below shows past 5 years' financial results of SPMC.

Table 4-16: Financial results of SPMC (Unit: Rs.000)

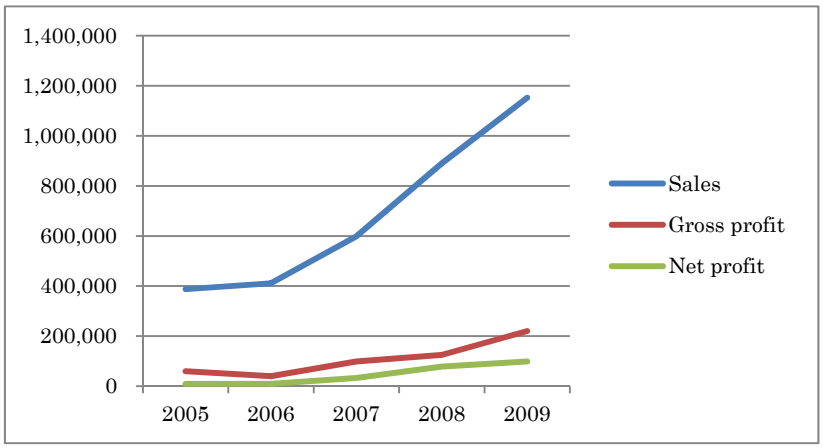
		2005	2006	2007	2008	2009
1	Sales	387,696	411,194	599,035	890,244	1,152,684
2	Cost of sales	328,536	371,315	500,444	765,247	932,212
3	Gross profit (1-2)	59,160	39,879	98,591	124,997	220,472
4	Overheads[1]	64,558	60,348	61,450	61,594	99,049
5	Operational profit (3-4)	-5,398	-20,469	37,141	63,403	121,423
6	Non-operational income	20,111	30,282	41,462	60,904	33,479
7	Tax and other costs	5,486	654	45,696	45,935	56,214
8	Net profit (5+6-7)	9,227	9,159	32,907	78,372	98,688
Gross profit ratio		15.3%	9.7%	16.5%	14.0%	19.1%
Net profit ratio		2.38%	2.23%	5.49%	8.80%	8.56%

*1: Overheads include Administration expenses, sales & distribution expenses etc.
Source: Annual Report 2009, SPMC

In 2005 and 2006, the operational profit was negative. In this regard, SPMC explained that the decline in profit was caused by institutional factors. Before 1997, SPMC was a wing of the State Pharmaceuticals Corporation (SPC) and SPC bought all products produced by SPMC and distributed them to MSD and private markets. In 1997, however SPMC became independent from SPC and SPC started international competitive bidding to purchase drugs, so SPMC had to compete with other manufacturers to sell the products. Facing severe price competition with cheap drug manufacturers in India, SPMC was making a loss in sales and the volume of imported drugs was increasing. To improve financial condition of SPMC and to ensure a stable supply of drugs from domestic suppliers, the Government of Sri Lanka decided to buy 29 SPMC products directly in 2008. As can be seen in the above Table, sales volume in 2008 was Rs. 890,244 thousand, an increase of 48% from 2007.

The financial results of SPMC over the past 5 years show the operation of SPMC has resulted in a net profit of Rs. 98,688 thousand (2009), as compared with Rs. 9,227 thousand (2005) thus indicating increasing profits during the past 5 years.

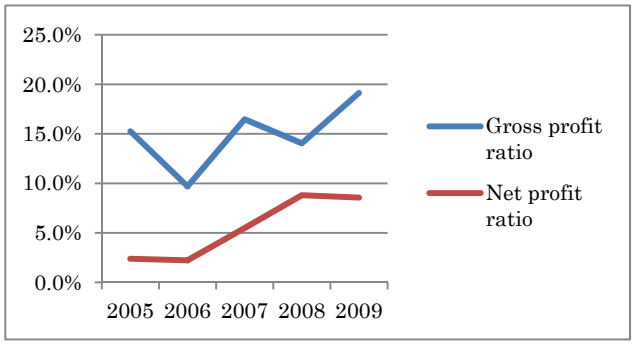
Figure 4-3: Trends in sales, gross profit and net profit



Source: Annual Report 2009, SPMC

Gross profit ratio and net profit ratio are 19.1% and 8.56% respectively in 2009. Compared with the ratio in 2008, gross profit ratio increased by 5.09% while net profit ratio decreased by -0.24%. Generally profit ratios have tended to increase over the past 5 years.

Figure 4-4: Shift of gross profit ratio and net profit ratio



Source: Annual Report 2009, SPMC

4.5.2 Financial analysis of SPMC

(1) Profitability

1) Return on assets (ROA)

Based on the balance sheet (B/S) and profit/loss statement (P/L) of SPMC, return on assets (ROA) is calculated as 6.65% in 2009 and 6.62% in 2008.

Table 4-17: Return on assets (ROA) of SPMC

Unit: Rs	2008	2009
Net profit	78,382,032	98,688,176
Total asset current	1,117,587,000	1,251,026,999
Total asset previous	1,251,026,999	1,718,461,288
ROA	6.62%	6.65%

Source: Annual Report 2009, SPMC

According to the Performance Report (2009) issued by the Department of Public Enterprises of the Ministry of Finance and Planning in Sri Lanka, ROAs of similar scale companies[46] were 4.33% and -3.18. Compared with these ratios, the efficiency of capital for SMPC is relatively high, so SPMC is considered to have a good profit performance.

2) Return on equity (ROE)

Based on B/S and P/L of SPMC, return on equity (ROE) is calculated as 2.84% in 2009 and 3.58% in 2008.

Table 4-18: Return on equity

Unit: Rs.	2008	2009
Net profit	78,382,032	98,688,176
Equity capital current	690,079,000	690,079,000
Equity capital previous	690,079,000	690,079,000
ROE	2.84%	3.58%

Source: Annual Report 2009, SPMC

According to the Performance Report (2009), ROEs of similar scale companies were 1.98% and -4.22. As the ration of SMPC is higher than these ratios, SMPC management is considered to be efficient and profitable.

(2) Stability analysis

1) Short-term solvency analysis

a) Current ratio

Table 4-19 shows the current ratio of SPMC calculated based on the B/S.

Table 4-19: Current ratio

Unit: Rs.	2008	2009
Current assets	577,004,345	701,588,556
Current liability	67,353,229	46,951,145
Current ratio	857%	1,494%

Source: Annual Report 2009, SPMC

Generally speaking, a current ratio of more than 200% indicates the ability of an organisation to pay back short-term debt. The current ratio of SPMC has been remarkable at 1,494% in 2009 and 873% in 2008. This higher ratio is likely to be underpinned by the lower current liability and one of possible reasons is that SPMC does not need to borrow any funds from banks.

[46] The annual turnover of the State Development and Construction Corporation (SD&CC) is Rs. 1,466 million with 531 employees. The annual turnover of the Sri Lanka Cement Corporation (SLCC) is Rs. 1,071 million with 75 employees.

b) Quick ratio

The quick ratio of SPMC is shown in Table 4-20.

Table 4-20: Quick ratio

Unit: Rs.	2008	2009
Quick asset	179,852,881	250,642,432
Current liability	67,353,229	46,951,145
Quick ratio	267%	534%

Source: Annual Report 2009, SPMC

A quick ratio of more than 100% is generally desired. Based on the B/S, the ratio is calculated as 267% in 2008 and 534% in 2009. The same factors mentioned for the current ratio are likely to be behind this performance.

As there is no weakness found in the short-term stability of SPMC in terms of current ratio and quick ratio, it could be concluded that SPMC has a sound short-term financial stability.

2) Long term stability analysis

a) Equity ratio

According to B/S, SPMC's equity ratio is estimated as per Table 4-21.

Table 4-21: Equity Ratio

Unit: Rs.	2008	2009
Total assets	1,251,026,999	1,718,461,288
Equity capital	690,079,000	690,079,000
Equity ratio	55.2%	40.2%

Source: Annual Report 2009, SPMC

With an equity ratio of 40% or higher, a firm could be considered financially stable. With an Equity ratio of 55.2% in 2008 and 40.2% in 2009, SPMC is unlikely to run into financial problems in the near future.

b) Fixed asset to equity ratio

Generally speaking, a firm with a fixed asset to equity ratio of less than 100% is financially stable. Based on the B/S, fixed assets to equity ratio of SPMC are shown in Table 4-22.

Table 4-22: Fixed assets to equity ratio

Unit: Rs.	2008	2009
Fixed assets	674,022,654	1,016,872,732
Equity capital	690,079,000	690,079,000
Assets to equity ratio	97.7%	147.4%

Source: Annual Report 2009, SPMC

In 2008, fixed assets to equity ratio was less than 100%, however it reached 147.4% in 2009. According to the SPMC Annual Report 2009, SPMC started constructing new buildings and purchasing plant and machinery to strengthen production capacity. This investment is likely to be a factor behind the increase in fixed assets between 2008 and 2009. Since SPMC did not borrow any funds from banks, this investment was executed using its own funds from accumulated profits. Hence the high ratio in 2009 is not a serious issue.

All the above figures indicate that SPMC has a sound long-term financial stability.

CHAPTER 5 Selection of Target Institutions

5.1 Selection Criteria

5.1.1 Gaps between the standard and the current conditions

For selection of the target secondary hospitals, MoH suggested the selection be primarily based on the needs of the individual institutions rather than the socio-economic status of their catchment populations, even though the project aims to benefit the poor. The rationale given was that the concept of catchment population does not have much significance under the current "open system" where people can and do visit other hospitals of according to their preferences.

The needs of the institutions were assessed through the secondary hospital survey, in terms of how far away they are from "the standards" prescribed by MoH. The survey found that almost all of the 57 hospitals are lagging behind, albeit to different extents, as already discussed in Chapter 3.

For a fair and objective selection of the target institutions, the 57 hospitals were systematically scored using the following indicators that were determined in discussions with MoH:

Criteria 1: Frequency of outward transfers (10 points);
Criteria 2: Bed Occupancy Rate (BOR) (10 points);
Criteria 3: Availability of consultants (10 points);
Criteria 4: Catchment population per doctor (10 points); and
Criteria 5: Availability of the standard facilities that DGH or BH are supposed to have

Table 5-1: Selection criteria and scoring methods

No.	Criteria	Calculation	
		Data /Formula used	Scoring
1	Frequency of outward transfers	Total number of patients (OPD + Clinics + admission) divided by the number of transfers per month.	Hospital • with the most frequent transfers: 10 points • with the least frequent transfers: 0 points • in between: 0.01 – 9.99 points depending on the frequency
2	BOR	BOR as reported by each institution	Hospital • with the lowest BOR: 10 points • with the highest BOR: 0 points • in between: 0.01 – 9.99 points depending on the BOR
3	Availability of consultants	Number of consultants as reported by each institution	Hospital with • no consultants: 10 points • 1 consultant: 7.5 points • 2 consultants: 5 points • 3 consultants: 2.5 points • 4 or more consultants: 0 point
4	Population per doctor (Pop/Doc)	Catchment population divided by number of MOs including consultants, RMOs, AMOs and intern MOs as reported by each institution	Hospital • with the largest population: 10 points • with the smallest population: 0 points • in between: 0.01 - 9.99 points depending on the population size per doctor
5	Availability of standard facilities	Data provided by each institution on availability of the standard facilities (more details in Table 5-2)	Hospital • with the largest gaps to the standard: 20 points • with the smallest gaps to the standard: 0 points • in between: 0.01 - 19.99 points depending on the gaps

Table 5-2: Scoring methods used for standard facilities

Facilities	Calculation
ETU	Yes: 0 points No: 10 points
Exclusive spaces for clinics	Yes: 0 points No: 5 points
Medical, Surgical, Paediatrics and Obstetric wards	For each of the speciality wards: Yes: 0 No: 10
Wards for other specialities	For each of the ENT, Eye, Anaesthetic, Dermatology, Rheumatology Orthopaedic, Neonatal wards: Yes: 0 points No: 5 points * Adjustments were made so that the full scores for DGH and BH are equal.
Operation Theatres	Yes + sufficient in number: 0 points
	Yes + insufficient in number: 5 points
	No OT: 10 points
Intensive Care Units (ICU) – Medical and Surgical	Have MICU & SICU + both sufficiently equipped: 0 points
	Have MICU & SICU + only one sufficiently equipped: 2 points
	Have MICU & SICU + both not sufficiently equipped: 5 points
	Have MICU or SICU + sufficiently equipped: 3 points
	Have MICU or SICU + not sufficiently equipped: 7 points
	No ICU: 10 points

The result of this scoring exercise (List A) are presented in Annex 13.

5.1.2 Population size

To maximise the benefits of the project, the catchment population size was used as a secondary criteria. The top 20 hospitals were taken from the list A, and re-organised in order of the catchment population size as shown in Table 5-3 (“List B”) .

5.1.3 Priority within a province

The development priorities of each province were used as the third criteria, as aligning the project with the local plan is important in view of maximising and sustaining the effects of the planned project. Moreover, provincial health authorities are in a good position to factor in other important criteria such as the recent investment histories, other resources already earmarked for particular institutions, as well as the transfer networks in their provinces. For this purpose, the health authorities of the seven provinces were asked to name institutions of their highest priority amongst those in the list B[47].

[47] Letters from the Additional Secretary, MoH are attached in Annex 14.

Table 5-3: 20 Institutions of highest needs in order of catchment population size (List B)

					points					numerical data							
Ranking	List A positions	Province	category	Institutions	1. Patients / Transfer-out	2.BOR	3.Consultants	4.Pop/MO	5.Facility	Total points (out of 60)	Catchment population (000)	# Beds	Patients / Transfer-out	BOR (%)	Journey to referral hosp. (min)	# Consultants	pop/MO
1	6	C	BHB	Teldeniya	9.63	7.77	10	4.87	8.50	40.77	304	87	67.0	39	35	0	27,636
2	13	NW	BHB	Galgamuwa	9.63	9.09	5	2.89	8.50	35.10	300	131	67.4	22	90	2	16,667
3	2	E	BHB	Kaluwanchikudy	9.69	4.62	10	10.00	10.14	44.45	280	150	62.0	80	50	0	56,000
4	12	Sab	BHB	Warakapola	9.03	6.68	10	1.61	8.50	35.82	250	138	117.7	53	30	0	9,615
5	16	U	BHB	Welimada	7.55	6.15	5	1.60	11.78	32.09	200	114	242.1	60	90	2	9,524
6	17	E	BHB	Samanthurai	8.79	5.12	7.5	1.98	6.85	30.24	186	175	138.2	73	30	1	11,625
7	9	U	BHB	Wellawaya	9.30	7.23	7.5	2.34	11.78	38.15	150	112	95.2	46	45	1	13,636
8	19	N	BHA	Point Pedro	9.04	6.85	7.5	1.11	5.21	29.70	150	264	116.8	51	25	1	6,818
9	5	Sab	BHB	Kalawana	9.24	7.85	10	2.59	11.78	41.46	120	82	99.9	38	90	0	15,000
10	7	NW	BHB	Polpitigama	9.86	8.15	10	3.06	8.50	39.57	88	110	47.5	34	90	0	17,600
11	15	E	BHB	Mutur	9.79	0.74	7.5	1.32	13.43	32.78	80	92	53.7	130	150	1	8,000
12	14	N	BHB	Chavakachcheri	9.73	5.68	10	1.16	8.50	35.06	71	104	58.9	66	30	0	7,100
13	10	U	BHB	Siyambalanduwa	9.36	7.76	10	1.25	7.84	36.21	61	117	90.0	39	60	0	7,625
14	20	NC	BHB	Padaviya	8.83	6.92	7.5	0.90	5.21	29.36	51	195	134.5	50	195	1	5,667
15	3	N	BHB	Kayts	9.85	7.69	10	2.77	13.43	43.73	48	59	49.0	40	45	0	16,000
16	4	NC	BHB	Welikanda	9.89	7.69	10	2.59	13.43	43.59	45	62	45.6	40	30	0	15,000
17	7	E	BHB	Mahaoya	9.43	8.11	10	0.24	11.78	39.57	40	100	83.7	35	90	0	2,000
18	18	C	BHB	Hettipola	7.11	NA	10	1.32	11.78	30.21	32	58	279.8	NA	40	0	8,000
19	11	NC	BHB	Kebitigollewa	8.54	7.69	7.5	0.38	11.78	35.90	25	83	158.6	40	75	1	2,778
20	1	N	BHB	Mankulam	9.76	10.00	10	1.68	20.00	51.45	10	40	55.8	10	30	0	10,000

Source: JICA-MoH Survey on Secondary-Level Institutions Long List

5.2 Long List

A long list as is shown in Table 5-4 was compiled with the priority confirmed by the seven provinces in consideration with the List B ranking. As it turned out, the provinces' priorities generally conformed to the ranks in the List B.

Table 5-4: Long list

	List B rank	Province	District	Category	Institution
1	1	C	Kandy	BHB	Teldeniya
2	2	NW	Kurunegala	BHB	Galgamuwa
3	3	E	Batticaloa	BHB	Kaluwanchikudy
4	4	Sab	Kegalle	BHB	Warakapola
5	5	U	Badulla	BHB	Welimada
6	14	NC	Anuradhapura	BHB	Padaviya
7	16	N	Jaffna	BHB	Kayts

5.3 Short List

The estimated costs of upgrading the long-listed hospitals were calculated using the model floor plans and unit costs prepared by the Study Team (Annex 15 & 16). In view of the availability of the resources, the top four hospitals in the long list, namely BHB Teldeniya in Central province, BHB Galgamuwa in North Western province, BHB Kaluwanchikudy in Eastern province and BHB Warakapola in Sabaragamuwa province were shortlisted for upgrading under the planned Japanese assistance.

CHAPTER 6 Proposed Framework of the Project

6.1 Rationale of the Project

6.1.1 Background and justifications

Sri Lanka has made good progress in terms of universal access to education and health care. At the government health institutions all basic health care from the primary to tertiary levels is provided free of charge. There is a well-established primary health care network with trained field workers organised around the Medical Offices of Health (MOH), which have been instrumental in bringing down the morbidity and mortality related to maternal & child health (MCH) and communicable diseases.

With economic growth and one of the fastest ageing populations in the world, non-communicable diseases (NCDs) have overtaken communicable diseases in terms of mortality and become a major health concern. At the same time, the increase in NCD cases, which generally require long-term and individual care, is placing a financial burden on a government that is committed to the provision of free healthcare to its population. The government health care systems, which have been rightly geared toward communicable diseases and MCH in the past, need to adjust their functions and systems to cater for the changing needs of the population.

The GoSL has adopted a slogan “healthy life for all” and is now in the process of implementing its strategy of awareness creation and early detection of NCDs with assistance from JICA and other development partners. This naturally creates fresh demands for diagnostic and treatment facilities and as such, curative service delivery also deserves due attention.

The secondary health institution survey undertaken jointly by MoH and JICA as a part of this preparatory study, revealed that many secondary hospitals were not meeting the expected level of services. They are generally underutilised due to the lack of appropriate facilities, equipment and/or human resources. Resources needed to improve services are often not forthcoming, as more popular institutions, most of which are better equipped, require greater resources to cope with the ever-increasing patient load. In order to end this vicious circle, and thereby to attain optimal use of hospitals at different levels of services, a sizable investment to improve the currently sub-standard facilities of the underutilised hospitals would be needed to regain the confidence of people. Accompanied by deployment of necessary human resources, this would not only bring necessary health services closer to the people but also contribute to normalisation of the curative service networks by reducing the excessive demand now seen at tertiary-level institutions.

Needless to say, a steady supply of essential drugs is crucial for quality health services. This is another major challenge that the Sri Lanka’s health system is today facing. As roughly 80% of essential drugs are currently imported, disruptions to drug supplies occur due to unforeseen factors somewhere between the overseas manufacturers and the MDS, causing occasional shortages of drugs at hospitals. GoSL aims to increase national production of generic drugs at SPMC to reduce the current dependency on importations.

6.1.2 Relevance of the project

“*Mahinda Chintana*” (2010-2016), the guiding document for national development, identifies “formation of healthy society” as an important agenda item. This project is directly in line with some of the future strategies mentioned therein, namely (i) improving efficiency of health care delivery through, among other priorities, reduction of unwarranted use of tertiary level hospitals, (ii) controlling growing incidence and mortality from NCDs through preventive and curative actions

and (iii) increasing local drug production capacity. The project would also contribute to operationalisation of the National Policy & Strategic Framework for Prevention and Control of Chronic Non-Communicable Diseases (2009), which specifically mentions strengthening of early detection and curative care of NCDs as a strategic intervention to be implemented.

This project is also well in line with the Japan's overall commitment to improvement of the health sector with particular focus on strengthening of health systems. Japan also has a long history of cooperation in Sri Lanka's health sector since 1970s, through which numerous experiences and good understanding of the country's system have been accumulated. In recent years, besides upgrading the facilities at the teaching hospitals in Jaffna and Anuradhapura, Japan has been working with MoH and provincial health authorities in formulation and operationalisation of the Health Master Plan, prevention of NCDs as well as improvement of service quality at hospitals through total quality management.

6.2 Project Scope and Components

6.2.1 Project overview

(1) Project title

The title of the project is "Project for the Improvement of Basic Social Services Targeting the Emerging Regions".

(2) Project objective

The objective of the project is to enhance Non-Communicable Diseases management through improvement in facilities in secondary-level hospitals and drug security.

(3) Project components and sites

The project has four components with different implementing sites as shown in Table 6-1.

Table 6-1: Project components and sites

	Components	Sites
1	Strengthening of State Pharmaceutical Manufacturing Corporation (SPMC)	Colombo
2	Strengthening of secondary hospitals	North Western Province, Central Province, Sabaragamuwa Province and Eastern Province
3	Provision of ambulances	North Western Province, Central Province, Uva Province, Sabaragamuwa Province, Eastern Province, Northern Province and North Central Province
4	Consulting service	

Details of each component are described in the following section.

6.2.2 Project components

(1) Strengthening of the State Pharmaceutical Manufacturing Corporation (SPMC)

Procurement of equipment for production of generic drugs and construction/refurbishment of the buildings where the proposed equipment will be installed are proposed.

The proposed equipment to be procured is listed in Table 6-2.

Table 6-2: Proposed equipment for SPMC

	Name of Equipment	Qty.	Unit	Main Purpose
1	Weighing Equipment	8	units	For weighing materials for production of drugs
2	High Shear Mixing Granulator	1	unit	For granulating and mixing materials for production of drugs
3	Tablet Compression Machine	5	units	For making tablets from grains
4	Punches and Dies	1	set	To be used for tablet compression machines
5	Film Coating Machine	1	unit	For tablet film coating
6	Homo Mixer	1	unit	For preparation of coating solution
7-1	Automatic Filling, Capping and Labelling Machine (1)	2	sets	For filling tablets into bottles, capping and labelling
7-2	Automatic Filling, Capping and Labelling Machine (2)	1	set	As above
8	Appearance Inspection Machine	1	unit	For tablets inspection and sorting
9	HPLC System	1	set	For Quality Control (QC), Quality Assurance (QA) and R&D of drugs
10	Dissolution Apparatus	1	unit	For performing dissolution testing including dissolution profile testing of solid dosage forms for QC, QA and R&D of drugs
11	Forklift	1	unit	For carrying, lifting and lowering drug material containers from shelves
12	Air Compressor	1	set	For supplying compressed air to the production equipment
13	Double Done Blender (1)	1	unit	Used for mixing of materials
14	Double Cone Blender (2)	1	unit	-Idem-
15	Ancillary Items	1	set	To carry materials, to store materials, etc.

With regard to the construction/refurbishment of the buildings, the proposed items are shown in Table 6-3.

Table 6-3: Proposed construction/refurbishment at SPMC

Item No.	Item	Qty.	Unit	Description
1	Construction of Storage	1	bldg.	Construction of a 2-story building of approximately 540m^2 (floor area), for storing raw materials for production of drugs.
2	Refurbishing of Existing Facility	1	bldg.	Repairing works of floor, wall, ceiling, etc. required for the installation of production equipment.

(2) Strengthening of secondary hospitals

For improvement of secondary-level health facilities, the project aims to enable selected hospitals to offer services in line with the standard indicated in the “Recategorization of Hospitals” document by MoH. The list of the targeting hospitals is shown in Table 6-4.

Table 6-4: Selected secondary hospitals

No.	Name of Hospital	Province
1	Teldeniya Base Hospital Type B (BHB)	Central Province
2	Galgamuwa BHB	North Western Province
3	Kaluwanchikudy BHB	Eastern Province
4	Warakapola BHB	Sabaragamuwa Province

These hospitals will be strengthened through provision of medical equipment and construction and/or refurbishment of buildings/facilities, which may include the items listed in Table 6-5. MoH will be responsible for allocating the necessary human resources necessary for effective utilisation of the improved facilities.

The proposed facilities shall be selected according to the exact needs of the selected hospitals.

Table 6-5: Facilities that may be strengthened at the selected secondary institutions

No.	Item
1	Outpatient Department Facility
2	Preliminary Care Unit and Emergency Care Unit
3	Clinics
4	Medical, Surgical, Gynaecology & Obstetric and/or Paediatric wards
5	Intensive Care Units
6	Operation Theatres
7	Diagnostic Services (laboratory, X-ray)
8	Blood Bank
9	Staff Quarters

The project shall furnish the above-mentioned facilities with appropriate medical equipment. The existing equipment and facilities should also be retained/utilised to the maximum extent.

(3) Ambulances

To enhance the transfer system in emerging regions, 124 ambulances will be provide for the 7 emerging regions excluding South and Western Province.

(4) Consulting services

The consultants will assist in procurement, supervision of construction/installation, operation and maintenance, management of capacity development and training, and monitoring and evaluation. Consultants will be hired in accordance with the two components below:

Consulting services Part A: Component 1 (SPMC) and overall management
Consulting services Part B: Component 2 (Secondary-level hospitals)

A proposed TOR is attached as Annex 17.

6.3 Project Implementation Structure

6.3.1 Organizational information

The organizational information is shown in Table 6-6 below.

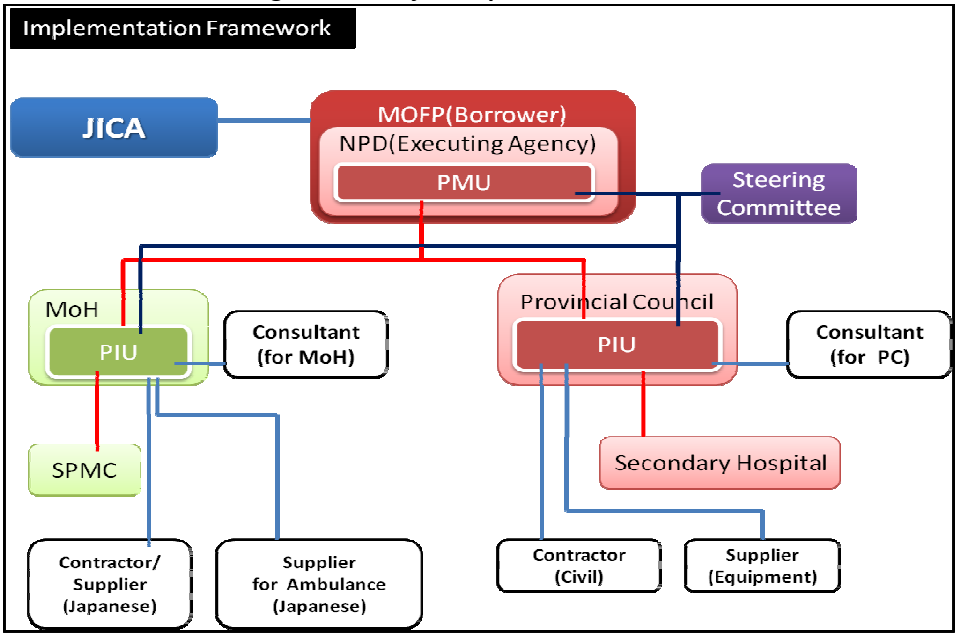
Table 6-6: Organizational information

Function	Detail	
Borrower	**Government of the Democratic Socialist Republic of Sri Lanka (GOSL)**	
	Person in Charge: Contact Addresses: Phone/FAX: Email:	Secretary, Ministry of Finance and Planning, 1) Ministry of Finance and Planning, P.O. Box 277, The Secretariat, Colombo 01, Sri Lanka. 2) Department of External Resources, Ministry of Finance and Planning, P.O. Box 277, The Secretariat, Colombo 01, Sri Lanka. +94 11 2484693 / +94 11 2447633 info@erd.gov.lk
Executing Agency (PMU)	**Ministry of Finance and Planning** (Department of National Planning)	
	Person in Charge: Contact Address: Phone/FAX:	Dr. B.M.S Batagoda, Director General, NPD Ministry of Finance and Planning, Colombo 01, Sri Lanka. +94 11 2484693 / +94 11 2447633
Implementing Agency	**Ministry of Health**	
	Person in Charge: Contact Address: Phone/FAX:	Dr. T.R.C Ruberu (Secretary) Ministry of Health, Suwasipripaya 385, Baddegama, Wimalawansa-Thero MW, Colombo 10, Sri Lanka. +94 11 2693175/ +94 11 2691605
	Ministry of Local Government and Provincial Councils	
	Person in Charge: Contact Address: Phone/FAX:	Dr. Nihal Jayathilake (Secretary) Ministry of Local Government and Provincial Councils No. 330, Union Place, Colombo, Sri Lanka. +94 11 2399673/ +94 11 2329725

6.3.2 Project implementation structure

The overall project implementation structure has been agreed as according to Figure 6-1 during the Appraisal Mission in November 2011.

Figure 6-1: Project Implementation Structure

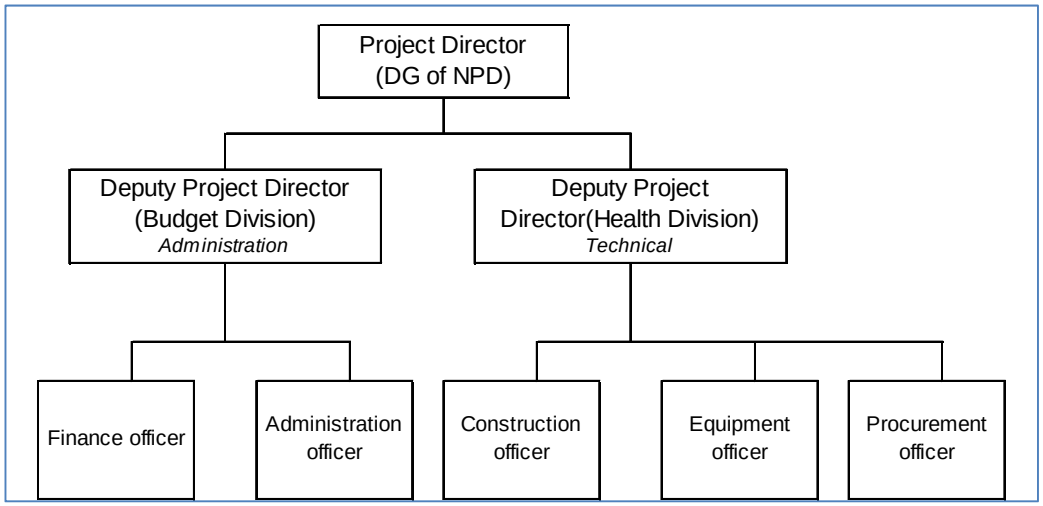


The roles and responsibilities of each party are described below.

(1) Executing Agency and PMU

MoFP, as the borrower, assumes the overall responsibility of the project. MoFP/NPD, as the Executing Agency, is to handle the loan proceeds and be the focal point of the GoSL for JICA. NPD will establish a Project Management Unit (PMU) within the organisation to handle tasks related to fund disbursement, reporting and overall project coordination. The organization structure is illustrated in Figure 6-2.

Figure 6-2: Proposed organizational structure of PMU (NPD)



(2) Steering committee

A steering committee may be formulated involving such parties as Treasury of the Ministry of Finance and Planning, DG of NPD, Ministry of Health, Provincial Secretaries (4 Provinces), Secretary or a nominee of the Ministry of Local Government and Provincial Council, and a representative of the Finance Commission. A steering committee meeting will be held quarterly to discuss following issues.

- Overall coordination
- Monitoring of progress
- Technical advice
- Dispute management

(3) Implementing agencies and Project Implementation Unit (PIU)

MoH and 4 provincial councils will be the implementing agencies, responsible for implementation of the respective components as shown in Table 6-5.

Table 6-5: Responsibilities of the implementing agencies

Implementing Agency	Responsibility
Ministry of Health	Component of SPMC, ambulances and consulting services
Provincial Councils	Component of secondary hospitals and consulting services

The organizational structure of MoH is attached as Annex 18. For provincial councils, the organogramme of the Northern Provincial Council is shown in Annex 19. There may be slight variations in organisational structure of different provinces.

A Project Implementation Unit (PIU) will be established within each implementing agency. Tasks undertaken by a PIU established within MoH and a Provincial Council may include:

- To ensure appropriateness of the project proposal prepared and submitted by the selected hospital in terms of objectives, components, specifications and quantities of equipment to be procured, facility renovation/construction plans, costs and operation and maintenance plans;
- To prepare necessary documents for public tenders;
- To support bid evaluations and contracts;
- To monitor the progress of project implementations, and coordinate the parties involved:
- To conduct inspections of facilities and equipment;
- To manage the implementation schedule;
- To support implementing agencies with preparation of necessary request letters to JICA;
- To support the implementing agencies to execute payments to contractors/suppliers in accordance with JICA guidelines and the Loan Agreement as well as managing evidence and/or supporting documents for payments, such as invoices and receipts; and
- To support implementing agencies with preparation of necessary documents to be submitted to JICA including Project Status Reports (PSR), Project Completion Reports (PCR) and other documents in response to inquiries from JICA as applicable.

Organization structures for MoH and provincial councils are illustrated in Figure 6-3 and 6-4 respectively.

Figure 6-3: Organizational structure of PIU for MoH

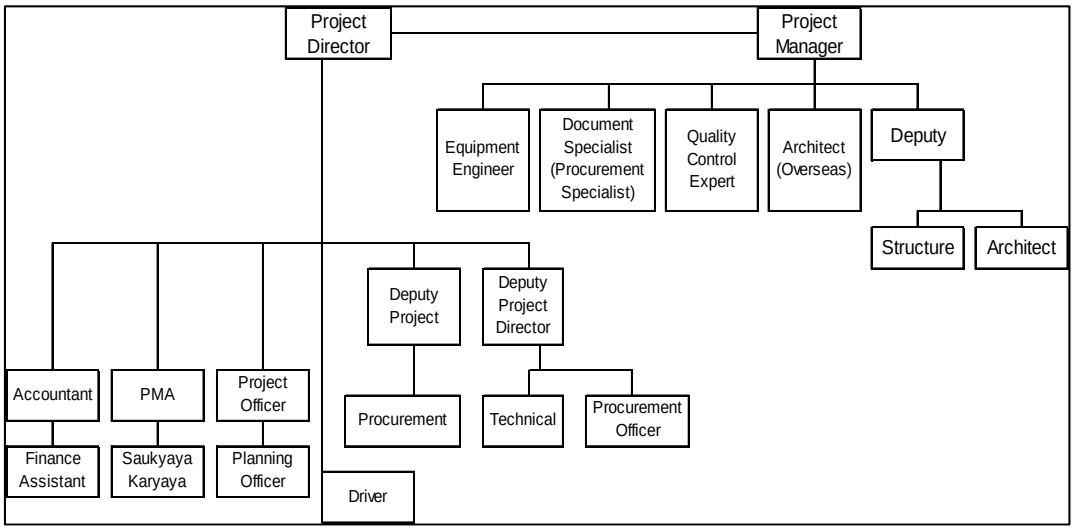
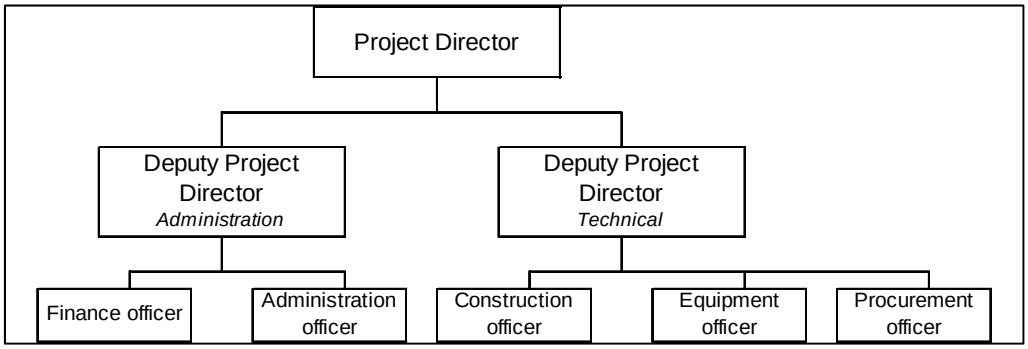


Figure 6-4: Organizational structure of PIU for Provincial Council, MOH



6.3.3 Roles and responsibilities of related organizations

This section presents the general tasks expected from each organisations involved in project implementation.

(1) MoFP/NPD

MoFP/NPD, as the executing agency, will undertake the responsibilities stipulated in the Loan Agreement and other related documents. Major tasks for MoFP/NPD include:

- To manage the proceeds of the loan and monitor appropriateness of the use of the loan by implementing agencies;
- To check and confirm the relevancy of requests from implementing agencies for fund disbursement;
- To submit request letters related to procurement to JICA;
- To arrange necessary disbursement processes in close consultation with JICA;
- To maintain all documents related to disbursement including invoices and supporting documents;
- To furnish JICA (in cooperation with MoH and provincial councils as appropriate) with Project Status Reports (PSR) on a quarterly basis during project implementation and a Project Completion Report (PCR) upon Project completion, in such form and including such details as JICA may reasonably request;
- To prepare and submit necessary documents including supporting documents related to payment for audit and JICA's inspections; and
- To organise the Steering Committee.

(2) MoH

MoH, as one of the implementing agencies, will manage the component of strengthening of SPMC and procurement and distribution of ambulances. Major tasks to be undertaken by MoH include:

- To review and approve detailed project design, such as components of sub-projects, costs, the schedule, equipment specifications, building construction/renovation plans and operation and maintenance plans prepared by SPMC;
- To approve documents related to procurement such as tender documents, bid evaluation reports and contract documents;
- To organise necessary committees such as the Tender Evaluation Committee as per the "Procurement Guidelines" and "Procurement Manual" issued by the National Procurement Agency of Sri Lanka;
- To organise and process public tenders as per the relevant guidelines;
- To conclude procurement contracts with contractors/suppliers;
- To execute payments to contractors/suppliers in accordance with the JICA guidelines and the Loan Agreement;
- To ensure timely project implementation as per the agreed schedule;
- To prepare and submit necessary request letters to NPD as stipulated in the Loan Agreement ;
- To submit NPD the Project Status Reports (PSR) on a quarterly basis during the project implementing and the Project Completion Report (PCR) upon the Project completion, in such form and including details as JICA may reasonably request;
- To recruit and deploy health personnel necessary for the optimum operation of the upgraded facilities, including medical officers (including specialists), nursing officers, technicians, in cooperation with provincial councils;
- To ensure the upgraded facilities are well supplied with medical consumables and materials for their optimum operations; and

- To recruit consultants for the component of SPMC and overall management.

(3) Provincial councils

Provincial councils, as the implementing agencies of the project, will manage the component of strengthening of secondary hospitals. In addition, as the equipment and facilities to be procured/constructed under the project will be owned and maintained by the respective PCs, major tasks to be undertaken will include the following:

- To ensure that the components of the sub-project are in line with the agreed project scope;
- To review and approve detailed design such as sub-project components, costs, the schedule, equipment specifications, building renovation plans, and operation and maintenance plans;
- To approve documents for procurement such as bidding documents, bid evaluation reports and contract documents;
- To organise necessary committees such as Tender Evaluation Committee as required by the "Procurement Guidelines" and "Procurement Manual" issued by National Procurement Agency of Sri Lanka;
- To organise and process public tenders as per the relevant guidelines;
- To conclude procurement contracts with contractors/suppliers;
- To execute payment to contractors/suppliers in accordance with the JICA guidelines and the Loan Agreement;
- To ensure timely project implementation as per the agreed schedule;
- To prepare and submit necessary request letters to NPD as stipulated in the Loan Agreement;
- To submit Project Status Reports (PSR) on a quarterly basis to NPD during the project implementing and a Project Completion Report (PCR) upon project completion, in such form and including details as JICA may reasonably request;
- To ensure appropriate maintenance of medical equipment through timely procurement and supply of necessary spare parts and consumables; and
- To recruit consultants for the secondary hospital component.

(4) SPMC

- To establish a detailed design for the sub-project including costing;
- To make preparations for calling for public tenders in cooperation with PIU;
- To negotiate with contractors/suppliers on the schedule, construction and procurement methodologies and necessary activities in cooperation with PIU;
- To check the invoices submitted by the contractors/suppliers for financial aspects (financial check);
- To check the invoices submitted by the contractors/suppliers for technical aspects (technical check);
- To prepare and submit necessary documents related to disbursement/payment to MoH;
- To prepare and submit periodic Progress Reports to MoH;
- To produce necessary drugs using procured equipment and facilities; and
- To maintain the procured equipment and improved facilities in good condition.

(5) Selected Secondary-level Hospitals

- To establish a detailed design for the sub-project including costing and preparation for calling for public tenders in cooperation with PIU;
- To negotiate with contractors/suppliers on the schedule, construction and procurement methodologies and necessary activities in cooperation with PIU;

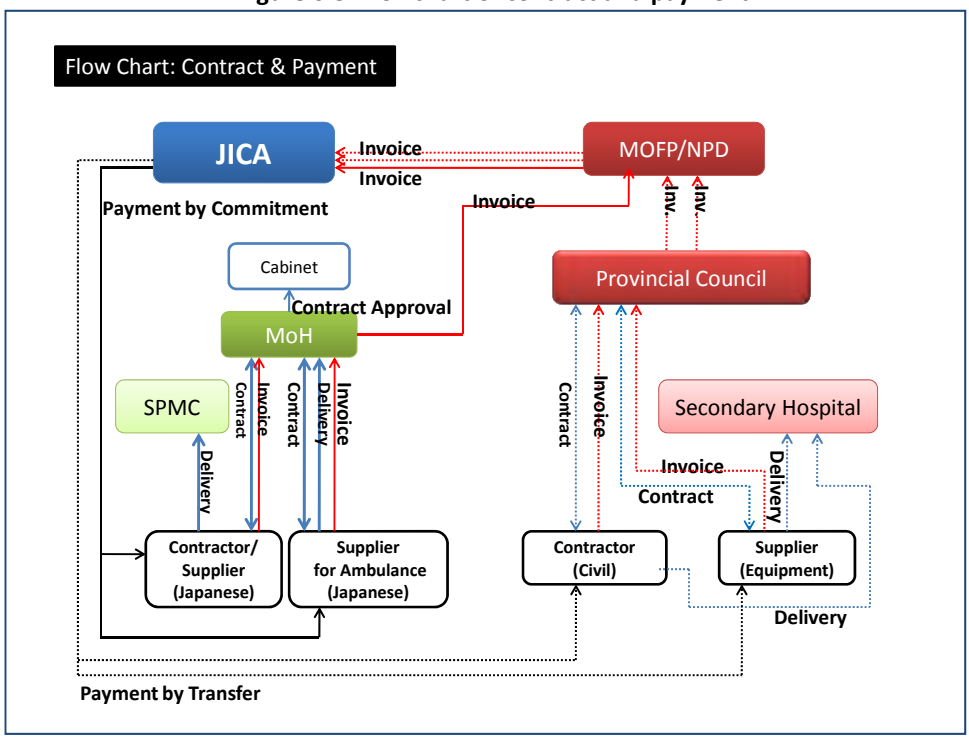
- To manage and supervise the construction work;
- To ensure timely completion of each component of the sub-project;
- To prepare and submit necessary documents related to disbursements/payments to provincial councils;
- To prepare and submit periodic progress reports to provincial councils;
- To deliver medical services using procured equipment and facilities; and
- To maintain the procured equipment and improved facilities in good condition.

6.3.4 Procurement arrangement

(1) Contract and payment mechanism

MoH and provincial councils are likely to be the contracting parties with contractors/suppliers for contracts related to the Project. A proposed mechanism of contract and payment flow is shown below.

Figure 6-5: Flowchart of contract and payment



(a) Contract arrangement

- After obtaining JICA's concurrence on the outcome of a tender, MoH and provincial councils will enter into a contract negotiation with the identified contractor/supplier.
- It is recommended that all contract documents drafted be checked and cleared by MoFP or a relevant authority before signing them.
- All contracts should be concurred by JICA in accordance with the Loan Agreement.

(b) Payment arrangement

- ODA Loan proceeds will be handled by MoFP.
- MoH and Provincial councils will make requests to MoFP for payment.
- Payments to contractors/suppliers and consultants will be done through disbursements by JICA under the commitment procedure and/or transfer procedure upon requests made by MoFP.

6.4 Procurement Method Including Contract Package

6.4.1 Contract package

In formulating bidding packages, besides technical aspects, the following issues should be considered for the sake of timely and efficient implementation of the project. Considering the necessary administrative procedures that often cause delays in project implementations, simplified packaging, such as those shown in Table 6-6, is recommended.

Table 6-6: Suggested contracting packages

Package	Content of Package	Bidding Method
Consultant 1 (Part A: SPMC and overall coordination)	Consulting service (SPMC)	Short-list with Quality-Cost Based Selection (QCBS) (under JICA guideline)
Consultant 2 (Part B: BH Teldeniya)	Consulting service	Local Competitive Bidding (LCB) with QCBS (under Sri Lanka rule), tentative
Consultant 2 (Part B: BH Galgamuwa)	Consulting service	As above
Consultant 2 (Part B: BH Kaluwanchikudy)	Consulting service	As above
Consultant 2 (Part B: BH Warakapola)	Consulting service	As above
Package-1	Procurement for SPMC (Equipment and Construction)	As above
Package-2	Procurement for Ambulances	To be discussed (TBD)
Package-3	Renovation and procurement for BH Teldeniya (Civil Work)	TBD
Package-4	Renovation and procurement for BH Teldeniya (Equipment)	TBD
Package-5	Renovation and procurement for BH Galgamuwa (Civil Work)	TBD
Package-6	Renovation and procurement for BH Galgamuwa (Equipment)	TBD
Package-7	Renovation and procurement for BH Kaluwanchikudy (Civil Work)	TBD
Package-8	Renovation and procurement for BH Kaluwanchikudy (Equipment)	TBD
Package-9	Renovation and procurement for BH Warakapola (Civil Work)	TBD
Package-10	Renovation and procurement for BH Warakapola (Equipment)	TBD

6.4.2 Selection of consultants

Consultants for SPMC shall be selected in accordance with the “Guidelines for the Employment of Consultants under Japanese ODA Loans”, dated March 2009. International consultants experienced in JICA projects, in addition to local consultants, are to be selected in accordance with JICA Guidelines for the employment of consultants. “Sample Request for Proposals under Japanese ODA Loan” prepared by JICA on September 2009 is a good reference for preparing appropriate Requests for Proposals (RFP). Consultants for the secondary-level hospitals will be selected in accordance with Sri Lankan rules.

Quality-Cost Based Selection (QCBS) will be adopted for consultant selection. The ratio of quality and cost should be 80% and 20% at the stage of evaluation. The results of the quality evaluation (= technical evaluation) must be concurred by JICA, followed by evaluation of the cost proposals and then the final selection. It is recommended that the “Guide for Evaluation Procedures for Employment of Consultants under Japanese ODA Loans”, dated December 2006 and amended on December 2009 be referred to for appropriate evaluation of the proposals.

6.4.3 Selection of contractors and suppliers

Contractor(s)/supplier(s) for Package-1 shall be selected by the following procedure in accordance with the "Guideline for Procurement under Japanese ODA Loans" (March 2009). As "The Standard Option of Special Term for Economic Partnership: STEP" is applied, contractor(s)/supplier(s) for Package-1, including the leading partner of a joint venture, shall be Japan-tied.

Procurement methods for packages other than Package-1 yet to be will be determined, however, it is necessary to follow the JICA guidelines and LA stipulations.

6.4.4 STEP conditions and procurement arrangements

(1) Principle conditions on procurement (As of April 2012)

1) Contractor
   - Prime contractors are tied to Japanese firms
   - Joint ventures (JV) with recipient countries are also accepted on condition that Japan is a leading partner
   - Sub-contractors are untied and opened to all countries.

2) Country of origin of goods and services procured under STEP

The total cost of goods and services procured from Japan shall be not less than 30% of the total amount of contract(s) (except consulting services) financed by STEP Loan.

3) Coverage ratio

STEP covers up to 100% of total project cost that includes the non-eligible portion. In any case, JICA will not finance the non-eligible portion.

(2) Packaging policy

- The equipment of SPMC is procured through International Competitive Bidding (ICB), primarily Japan-tied.
- Upon approval of the Government of Japan, other packages in which Japanese firms do not participate in bidding can be procured through Japan-Sri Lanka bilateral-tied.

(3) Procurement framework

With respect to the approved procurement plan, GoSL will prepare bidding documents and technical specifications of equipment. GoSL will submit these documents to JICA for review and approval.

6.5 Project Implementation Schedule

A schedule for project implementation is presented on the following page. The project implementation schedule is drawn up on the assumption that the Loan Agreement will be signed in March 2012.

The project period starts upon the signing of the Loan Agreement and ends at the completion of the disbursement. The project period is set for five years in order to ensure sufficient time to respond to unexpected issues that may arise during implementation of the Project.

Table 6-7: Project Implementation Schedule

		2012												2013												2014												2015												2016												2017		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
	Pledge	▼																																																																		
	Signing of Loan Agreement			▼																																																															
1	**Selection of Consultant**																																																																	
2	**Design Stage**																																																																
	Design documents / Detail Design																																																																
3	**Tendering Stage**																																																															
	Preperation of construction / procurement schedule																																																														
	Bids floating																																																															
	Bids evaluation																																																														
	Concurrence by JICA on Bids evaluation results																																																													
	Contract negotiation																																																													
	Concurrence by JICA																																																													
	L/C establishment and L/Com issue																																																													
4	**Construction Stage of SPMC**																																																													
	SPMC Construction																																																													
	SPMC Refurbishment																																																													
	SPMC Procurement of Equipment																																																													
5	**Construction Stage of Health Facility**																																																													
	Selection of Consultant																																																													
	Engeering works																																																													
	Procurement & Construction																																																													
6	**Procurement of Ambulance**																																																													
7	**Retention**																																																													

6.6 Project Cost[48]

6.6.1 Methodology of cost estimation

(1) SPMC

The needs of SPMC were assessed through site visits and discussions between SPMC staff and the Study Team. Based on the identified needs, prevailing local prices and the price estimates for the equipment from their manufacturers Japan were obtained, to serve as the basis for the costing.

(2) Secondary-level hospitals

To estimate the cost for Secondary-level hospitals, the Study Team prepared "unit costs" for the hospital component based on a "model floor plan" also developed by the Team. They include an OPD and administration unit, a PCU/ECU unit, clinic unit, standard ward unit, gynaecology/obstetric unit, MICU/SICU unit, operation theatre unit, radiology unit, blood bank unit and staff quarters. "Equipment Unit Costs for Secondary-Level Institutions" can also be found in Annex 20.

6.6.2 Cost estimation

(1) Component 1: SPMC

The costs for strengthening SPMC consist of building construction and equipment purchases. An estimated cost summary is shown in Table 6-8.

Table 6-8: Cost summary of SPMC

Item	Foreign currency (JPY million)	Local currency (Rs. million)	Total (JPY million)
Construction of Storage	0	61.1	42.7
Refurbishment of production area	0	20.5	14.4
Equipment	1,186.9	0	1,186.9
Total	1,186.9	81.6	1,244

Note: Costs for equipment include: equipment price, transportation, installation, commissioning and training fee.

(2) Component 2: Secondary-level hospitals

Costs for the strengthening of secondary-level hospitals consist of building construction/renovation and procurement of equipment and ambulances. Table 6-9 shows sample costing for some short-listed hospitals, calculated by the Study Team based on their needs gathered through the "Secondary-level Hospital Survey" using the unit costs and a model floor plan developed also by the Study Team as mentioned earlier.

[48] Preconditions are as follows:
Base year for cost estimation: November 2011
Exchange rage: US$1=Rs. 110=¥76.8 (Rs. 1=¥0.7)

Table 6-9: Sample cost summary for secondary hospitals

Item	Foreign currency (JPY million)	Local currency (Rs. million)	Total (JPY million)
1.BHB Teldeniya Hospital			
1-1. Construction	0	437.6	306.3
1-2. Medical Equipment	0	171.6	120.1
Sub total	**0**	**609.2**	**426.4**
2. BHB Galgamuwa Hospital			
2-1. Construction	0	524.9	367.4
2-2. Medical Equipment	0	177.9	124.5
Sub total	**0**	**702.8**	**491.9**
3. BHB Kaluwanchikudy Hospital			
3-1. Construction	0	266.8	186.7
3-2. Medical Equipment	0	50.7	35.5
Sub total	**0**	**317.5**	**222.2**
4. BHB Warakapola Hospital			
4-1. Construction	0	510.2	357.2
4-2. Medical Equipment	0	164.5	115.2
Sub total	**0**	**674.7**	**472.4**
Total	**0**	**2,304.2**	**1,612.9**

Note: Costs for equipment include: equipment price, transportation, installation, commissioning and training fees.

It is noted that the cost shall be re-calculated in light of actual needs, based on a needs assessment and/or a thorough examination of development plans during the detailed design process.

(3) Component 3: Ambulances

Ambulances will be procured according to necessity in each province. A total of 124 ambulances will be procured with an estimated cost of 464 million yen.

(4) Component 4: Consulting services

Costs for consulting services consist of remuneration and reimbursable expenses. The estimated cost summary is shown in Table 6-10.

Table 6-10: Cost summary of consulting services

Item	Foreign currency (JPY million)	Local currency (Rs. million)	Total (JPY million)
Consulting service (A)	132	24	149
Consulting service (B)	0	150	105

The cost breakdown and MM schedule for consulting services is shown in Annex-21**.**

(5) Total cost

The envisaged total costs of the project are summarised in the Table below.

Table 6-11: Envisaged project costs

Item	Foreign Currency (JPY million)	Local Currency (Rs. million)	Total (JPY million)
1. SPMC construction of storage	0	61	43
2. SPMC refurbishment of production area	0	20	14
3. SPMC procurement of equipment	1,187	0	1,187
4. Ambulances	44	33	465
5. BH Teldeniya construction	0	438	306
6. BH Teldeniya procurement of medical equipment	0	172	120
7. BH Galgamuwa construction	0	525	367
8. BH Galgamuwa procurement of medical equipment	0	178	125
9. BH Kaluwanchikudy construction	0	267	187
10. BH Kaluwanchikudy procurement of medical equipment	0	51	36
11. BH Warakapola construction	0	510	357
12. BH Warakapola procurement of medical equipment	0	165	115
13. Price escalation	86	141	185
14. Physical contingency	86	128	175
15. Consulting service (A)	132	24	149
16. Consulting service (B)	0	150	105
17. Land Acquisition	0	0	0
18. Administration costs	0	337	236
19. VAT	0	376	263
20. Import Tax	0	386	270
21. Interest during construction	31	0	31
22. Commitment charge	24	0	24
TOTAL	1,987	3,961	4,760

(6) Cost sharing

The works implemented under the Japanese ODA Loan include the following components:

- Building construction for SPMC and secondary-level hospitals
- Equipment procurement and installation for SPMC, ambulances and secondary-level hospitals
- Consulting services

The costs for the following components are to be covered by GoSL:

- Land acquisition, if necessary
- Administration expenses
- Taxes and duties
- Interest during construction
- Commitment charge

(7) Components in the cost estimation

(a) Proportion of foreign currency portion (FCP) and local currency portion (LCP)

The Foreign Currency Portion (FCP) covers contracts paid in foreign currency. The Local Currency Portion (LCP) covers contracts paid in local currency.

(b) Price escalation

Price escalations are allocated for an annual rate of 1.6% on foreign currency and 2.5% on local currency.

(c) Physical contingency

A physical contingency amount of 5.0% of the local and foreign currency portions of the project costs has been allocated in order to cope with unexpected needs beyond the budget.

(d) Taxes

Government tax shall be categorised separately. On the supposition that all eligible costs (including price escalation, physical contingency etc.) are taxable, those items shall be multiplied by a VAT rate of 12% and the Nation Building Tax (NBT) rate of 2%.

(e) Fund requirements

The project costs have been demarcated into the finance of the Japanese ODA Loan portion and the GoSL portion.

a) Financed by a Japanese ODA Loan portion; 3,935 million yen, (82.6% of the total project cost), including the following components (eligible items):

- 100% of the cost of building construction for the strengthening of SPMC and secondary hospitals
- 100% of the cost for equipment procurement and installation for the strengthening of SPMC, secondary hospitals and Ambulance
- 100% of the costs of consulting services

b) Financed by GoSL: Rs. 824 million (12.1% of the total project cost), including the following components (non-eligible items):

- Administration
- Taxes and duties
- Interest during construction
- Commitment charges

6.7 Financial Arrangements and Appropriation

The funds for the project will be financed by Japanese ODA Loans and the GoSL counterpart budget. The appropriation of the loan and counterpart budget with yearly disbursement projections was determined by the appraisal mission of JICA in November 2011.

6.7.1 Annual disbursement schedule

A tentative disbursement schedule of the funds for the implementation of the project, including building construction/renovation, equipment procurement and consulting services is prepared based on the implementation schedule. The estimated annual fund requirement is shown in the following Table.

Table 6-11: Estimated annual disbursement schedule

Calendar Year	JICA Loan (JPY million)	GoSL counterpart (JPY million)	Total (JPY million)
2012	538	111	650
2013	1,415	275	1,690
2014	821	167	988
2015	820	180	1,000
2016	337	80	417
2017	3	12	15
Total	3,935	824	4,760

6.7.2 Counterpart budget

As the components of the project are managed by provincial councils and MoH, counterpart budgets may be prepared by each entity. It is suggested that MoFP, MoH, provincial councils and the Finance Commission discuss and agree on budget arrangements and demarcation.

6.7.3 Fund flow

The modality of fund disbursement is to be discussed and agreed upon between JICA and GoSL during the Appraisal Mission planned in November 2011. As the results of the discussion, the commitment procedure for the foreign contractors and the transfer procedure for local contractors may be applicable as the disbursement procedure, although this will be determined at the time that the Project Memorandum is concluded.

The explanatory document for the commitment procedure is available at the JICA website. As for the transfer procedure concerned, an explanatory document is not available because it is difficult to prepare a standardised document for disbursement. Detailed transfer procedure arrangements shall be discussed between JICA and NPD.

6.8 Terms of Reference for Consulting Services

At the appraisal of the Project, JICA and relevant GoSL officials discussed the need for consulting services. As a result of this discussion, ToRs for Consulting Services Part A and B were developed. They are including in Annex 17.

6.9 Operation and Maintenance

6.9.1 SPMC

The manager of the maintenance department is primarily responsible for the maintenance of the equipment and facilities including the buildings. The SPMC facilities are maintained and repaired by outside companies while the technicians of the production department are responsible for maintaining SPMC equipment.

6.9.2 Secondary-level hospitals

Although most of the base hospitals do not have a maintenance department, the medical superintendents of four base hospitals are primarily responsible for the maintenance of newly constructed buildings and supplied equipment. Doctors (consultants and MOs) and technicians are usually well trained to operate most of the medical equipment.

6.10 Issues

6.10.1 Component 1: SPMC

The detailed specifications of the machinery to be procured must be once again be discussed and finalised within SPMC when the detailed design of the project is drawn up following the finalization of the loan agreement. This is particularly important for such equipment as the high shear mixing granulator, tablet compression machine, film coating machine, automatic filling, capping and labelling machine, and the appearance inspection machine, of which manufacturers must know the exact requirements of SPMC. A large quantity of sample bottles, caps, tablets, labels, etc. used by SPMC may be needed for the manufacturer to produce the machinery that meets the required specifications.

The manufacturers should also be consulted in regard to the optimal placement of the film coating machine and the automatic filling, capping and labelling machine in relation to the existing equipment and facilities. In addition, the automatic filling, capping and labelling machine must be assembled and pre-tested/adjusted at the manufacturer using the varieties of tablets currently produced by SPMC prior to shipment to Sri Lanka.

6.10.2 Component 2: Secondary-level hospitals

The costing presented in this report is indicative only as it is based on an assumption that all the facilities are to be newly constructed as per the model plan (Annex 15). As the actual needs of the selected hospitals will no doubt be different, the cost must be recalculated based on an individual plan that should be established after a proper needs assessment of each hospital. It will be critical for the project to contract consultants who are highly experienced in construction/renovation of hospitals for drawing up the detailed plans for the selected institutions.

Similarly, it will be necessary to carry out a proper needs assessment for medical equipment at each of the selected hospitals in order to determine what exactly is needed at each hospital in relation to the existing equipment.

When new equipment are supplied and installed, the technicians of local agents who will supply the equipment shall be responsible for the trainings of doctors, nurses and technicians such as ragiographer, MLT, etc., to operate the equipment. The importance of maintenance cannot be overemphasised. It will be crucial to have sufficient human and financial resources for maintenance - particularly at the provincial and district levels (PDHS and RDHS). Further strengthening of pro-active and re-active maintenance including training of the staff at PDHS, RDHS and the hospitals is recommended.

CHAPTER 7 Operation and Effect Indicators

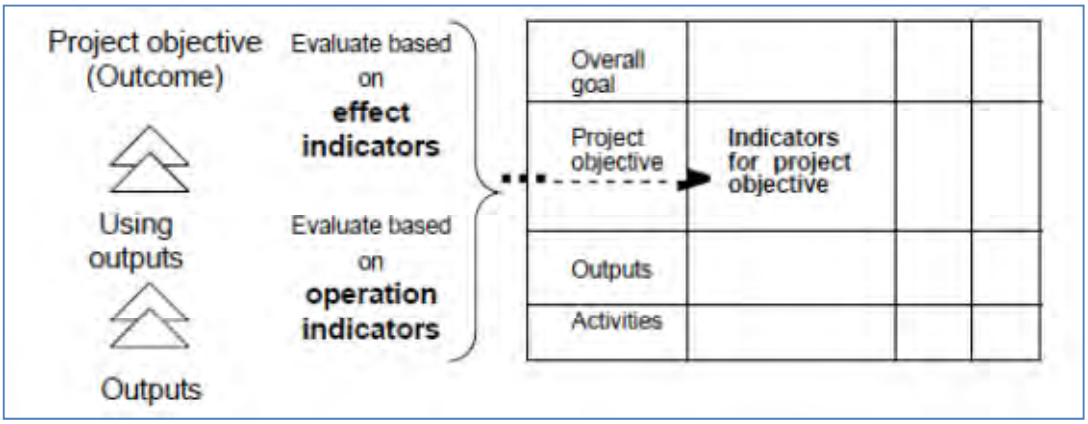
7.1 Definitions

According to the "New JICA Guidelines for Project Evaluation (2010)", ODA loan projects will have a different set of indicators called "Operation and Effect Indicators". The definitions of these indicators are stated below:

- Operation Indicators: Quantitative indicators to measure how appropriately the facilities and equipment (outputs) are being utilised after completion.
- Effect Indicators: Quantitative indicators to measure direct effects on the beneficiaries and target areas after completion of the facilities and equipment (outputs).

Both indicators correspond to outcome indicators, as shown in Figure 7-1.

Figure 7-1: The logframe and operation and effect indicators



Source: New JICA Guidelines for Project Evaluation (2010), page 37.

The project objective level is often described as having two stages. They are (1) appropriate operation and usage of outputs, and (2) effects produced by stage (1) to benefit beneficiaries and the target area, as a result of the development of facilities and equipment (outputs) in the project. Operation indicators measure (1), and effect indicators (2), respectively.

Ex-ante evaluation has been carried out and publicised for all ODA loan projects that have been through appraisal. As a process of such evaluation, actual (baseline) values at the time of appraisal, target values, and their achievement deadlines are supposed to be recorded on the ex-ante evaluation sheet. JICA and implementing agencies agree on the establishment of these indicators as part of the appraisal process. After the start of the project, the implementing agency is expected to monitor the progress of indicators (JICA 2010).

7.2 Proposed Indicators

Once the project framework was agreed between MoH and JICA, the draft indicators were discussed and agreed as shown in Table 7-1.

Table 7-1: Draft indicators for baseline survey

Components	Category	Indicators	Assumptions
Component 1: Production capacity of SPMC is strengthened.	Operation	Amount of essential drugs produced annually by SPMC	If SPMC can produce 3,200 million units, the provided equipment is being fully utilised.
	Effects	Nationalization index of SPMC produced drugs against MSD annual demands	If the nationalization index of SPMC products increase, the contribution of this component to national drug security is high.
Component 2: Four secondary-level hospitals are upgraded to the required level and function as the core hospitals in the region	Operation	Number of hospitals that can conduct X-rays, total cholesterol tests and abdominal ultrasonography on the premises.	If the hospitals are upgraded up to the level of "Recategorization", hospitals should be able to at least conduct X-rays, total cholesterol tests and do abdominal ultrasonography. Whether the hospitals are conducting tests in a regular, sufficient and satisfactory manner is evaluated in total.
	Effects	Number of hospitals with DM clinics that are regularly operating.	Usually, patients with DM complications are sent to DM clinics from medical clinics. So if the DM clinics are established in the target hospitals and are held weekly or bi-weekly bases, this component will contribute to the establishment of an NCD screening and treatment centre in the districts.
Component 3: Patient transportation system is improved by additional ambulances	Operation	Allocated-required ratio of ambulances in 7 provinces	There are currently 365 ambulances available, however 217 ambulances are required in 7 provinces. This means the current allocated-required ratio is 62% (=365/582). In 2012, 124 ambulances will be provided so the allocated-required ratio will increase to 84% (=489/582) This ratio should at least be maintained at the time of ex-post evaluation.
Qualitative Indicator		Commitment from the directors of 4 target hospitals to become model secondary hospitals, especially for NCD prevention	If the hospital directors show stronger commitment to improve hospital management and NCD prevention in the upgraded facilities, the benefits for patients will be greater.

7.3 Baseline Survey Methodology

Based on the indicators and assumptions stated in above, the following survey questions were prepared with the methodologies shown in Table 7-2.

Table 7-2: Survey questions and methodologies

Components	Indicators	Survey Questions	Methodology
Component 1: Production capacity of SPMC is strengthened.	Amount of essential drugs produced annually by SPMC	➢ How many units (tablets and capsules) did you produce during the last year?	Interviewed SPMC GM and cross-checked with production record
	Nationalization index of SPMC produced drugs against MSD annual demands	➢ For the items listed in the attached table, how many units did MSD require for 2009, 2010, and 2011? ➢ For the items listed in the attached table, how many units did MSD request SPMC to	Questionnaire sent from the Additional Secretary (MoH) to Director MSD[49].

[49] Questionnaire from MoH to MSD is attached as Annex 22.

		produce for 2009, 2010, and 2011? ➢ For the items listed in the attached table, how many units did SPMC supply to MSD?	
Component 2: Four secondary-level hospitals are upgraded to the required level and function as the core hospitals in the region	Number of hospitals that can conduct X-ray, total cholesterol tests and abdominal ultrasonography within the premises.	➢ Are X-ray machines, auto or semi-auto analyser and abdominal ultrasonography available in the hospital? ➢ Are there skilled personnel assigned for X-rays, total cholesterol tests and abdominal ultrasonography? ➢ How many X-rays, total cholesterol and abdominal ultrasonography tests have been conducted at this hospital during past 3 months? ➢ Have you experienced the stock-out of consumables such as X-ray film and reagents/gel for total cholesterol tests and ultrasonography?	Questionnaire[50] sent from the survey team to 4 hospitals and confirmed by direct interview and hospital visit.
	Number of hospitals with DM clinics that are regularly operating.	➢ Do you have a DM clinic separate from the medical clinic in your hospital? ➢ How many outpatients have attended the DM clinic during past 3 months?	Questionnaire sent from the survey team to 4 hospitals and confirmed by direct interview and hospital visit.
Component 3: Patient transportation system is improved by additional ambulances	Allocated-required ratio of Ambulance in 7 provinces	➢ How many ambulances exist in your province? ➢ Among the existing ambulances, how many are in working order? ➢ In your province, how many drivers are assigned for ambulance operation? ➢ How many drivers' positions are currently vacant? ➢ Do you have sufficient fuel to operate ambulances?	Questionnaire sent from the Additional Secretary (MoH) to Provincial Health Secretaries[51].
Qualitative indicator	Commitment from the medical superintendent of 4 target hospitals to become model secondary hospitals especially for NCD prevention	➢ Knowing that your hospital will be upgraded in a few years time, what do you plan to do for improved management of this hospital? ➢ What kind of activities do you plan to implement to strengthen NCD prevention in your hospital?	Questionnaire sent from the survey team to 4 hospitals and confirmed by direct interview and hospital visit.

The hospital survey was conducted from 11 January to 13 January 2012 by the following members.

Table 7-3: Base hospital surveys

Date	Hospital	Survey Members
11 January 2012	BH Warakapola (Sabaragamuwa Province)	Ms. Kishani Tennakoon, Ms. Keiko Nishino, Dr. Reiko Sata, Mr. Makoto Suzuki
	BH Teldeniya (Central Province)	
12 January 2012	BH Galgamuwa (North Western Province	Mr. Daisuke Fukumori, Ms. Kishani Tennakoon, Dr. Reiko Sata, Mr. Makoto Suzuki
13 January 2012	BH Kaluwanchikudy (Eastern Province)	

[50] Questionnaire to 4 base hospitals is attached as Annex 23.

[51] Questionnaire to provincial health secretaries is attached as Annex 24.

7.4 Baseline Survey Results

7.4.1 Component 1 (Operation): Increase of SPMC production

As already stated in Chapter 4, SPMC produced 1,796 million units of tablets/capsules in 2011. In order to contribute to national drug security, SPMC aims to increase its production capacity to 3,200 million units by 2018 after installation of equipment through the project.

Table 7-4: Operation indicator, proposed baseline and target for Component 1

Indicator	Baseline (2011)	Target (2018)
Amount of essential drugs produced annually by SPMC	1,796 (million units)	3,200 (million units)

7.4.2 Component 1 (Effects): Nationalisation index

SPMC is a major domestic company (SOE) that supplies essential drugs to MSD. Therefore, if SPMC increases its production capacity though this input from project, the nationalization index for SPMC produced drugs from among the selected items should increase. During the baseline survey, the JICA team obtained data on annual demand for the selected essential drugs from MSD, including MSD order quantities from SPMC and the extent to which SPMC could fulfil these requirements.

The data of MSD demand and SPMC supply ratio on the SPMC produced drugs is summarised in Table 4-1 of Chapter 4. As no other domestic company is producing the listed drugs, the demand-supply ratio has been considered as part of the nationalisation index, as defined below.

$$\text{Nationalisation index of SPMC products} = \frac{\text{[sum of annual supplies from SPMC to MSD in units (tablets/ capsules)]}}{\text{[sum of annual MSD demands of particular items which can be produced by SPMC in units]}}$$

With above formula, the nationalization index in 2011 is calculated as 43.6% as a baseline. Although SPMC aims to increase its production capacity by 80 %, it would be reasonable to set the target as 70% (60% increment) for 2018. This adjustment is recommended in consideration of potentially influential factors such as, 1) increases in national drug demand, 2) increase of SPMC's sales through SPC, and 3) the establishment of other domestic manufacturers.

Table 7-5: Effect indicator, proposed baseline and target for Component 1

Indicator	Baseline (2011)	Target (2018)
Nationalization index of SPMC produced drugs against MSD annual demands	43.6 %	70 %

7.4.3 Component 2 (Operation): upgrading secondary-level hospitals

As a result of the site survey of the four hospitals; BH Teldeniya, BH Galgamuwa, BH Kaluwanchikudy and BH Warakapola, the Table below describes the current situation of four target hospitals.

Table 7-6: Current situation of the facilities and equipment and major improvement needs

		Facility		Equipment	
		Current situation	Major improvement needs	Current situation	Major improvement needs
BH Teldeniya	X-ray	There is no X-ray room or dark room.	X-ray room and dark room should be constructed.	There is no equipment for X-ray examinations.	X-ray unit and automatic film processor should be supplied and installed.
	Ultras.	There is no ultrasound room.	Ultrasound room should be constructed.	There is no equipment for ultrasound diagnosis.	Stationary ultrasound scanner and examination table should be supplied.
	Bioch.	There is only one room for all kinds of investigations.	Laboratory facilities should be improved.	There is no semi-automatic biochemistry analyser.	Semi-automatic biochemistry analyser, centrifuge, pipettes, etc. should be supplied.
BH Galgamuwa	X-ray	X-ray room and dark room are available.	-	X-ray unit and automatic film processor are available.	-
	Ultras.	There is no ultrasound room.	Ultrasound room should be constructed.	There is no equipment for ultrasound diagnosis.	Stationary ultrasound scanner and examination table should be supplied.
	Bioch.	There is only one room for all kinds of investigations.	Laboratory facilities should be improved.	There is one semi-automatic biochemistry analyser.	One additional semi-automatic biochemistry analyser should be supplied.
BH Kaluwanchikudy	X-ray	The existing X-ray room is very small and does not comply with the standard required for X-ray room.	Appropriate X-ray room and dark room should be constructed.	The existing automatic film processor is not working properly.	A new automatic film processor should be supplied.
	Ultras.	There is an ultrasound room in maternity.	One room in OPD or in another department should be constructed.	One portable ultrasound scanner for maternity is available.	One stationary ultrasonic scanner and one examination table should be supplied.
	Bioch.	There is only one room for all kinds of investigations.	Laboratory facilities should be improved.	One semi-automatic biochemistry analyser is available.	-
BH Warakapola	X-ray	The X-ray room and dark room are under renovation.	Renovation of X-ray room and dark room should be finished.	A new X-ray unit has been supplied.	X-ray unit should be installed. Supply of automatic film processor should be confirmed.
	Ultras.	There is one ultrasound room available.	-	One stationary ultrasound unit with one convex probe is available.	Supply of one linear probe for blood vessel diagnosis, etc. is recommended.
	Bioch.	There is only one room for all kinds of investigations.	Laboratory facilities should be improved.	There is one semi-automatic biochemistry analyser available.	-

By analysing the above current condition and in view of potential investment into the target hospitals, the proposed baseline for 2011 and targets for 2018 are shown in the table below. However, these figures must be very carefully examined in consideration of the attached remarks.

Table 7-7: Operation indicators, proposed baseline and targets for Component 2

Indicator	Baseline (2011)	Target (2018)
Number of hospitals that can conduct X-ray, abdominal ultrasonography tests and total cholesterol within the premises.	X-ray = 2 AU = 1 TC = 0	X-ray = 4 AU = 4 TC = 4
Existing equipment used to carry out tests and investigations	Remarks	
X-ray BH Teldeniya = 0 BH Galgamuwa = 1 BH Kaluwanchikudy = 1 BH Warakapola = 0[1] AU BH Teldeniya = 0 BH Galgamuwa = 0 BH Kaluwanchikudy = 1[2] BH Warakapola = 1 TC BH Teldeniya = 0 BH Galgamuwa = 1[3, 4] BH Kaluwanchikudy = 1[3] BH Warakapola = 1[3]	[1]A new X-ray unit has been supplied but it is not installed yet. [2]A portable ultrasound scanner supplied by UNFPA is being used for maternity. Supply of a stationary ultrasound scanner for other diagnosis of other organs such as liver, etc. is proposed. [3]There is one semi-automatic biochemistry analyser in the hospital. However this equipment is not used for TC investigations due to shortage of reagents. [4]It will be necessary to install an additional semi-automatic biochemistry analyser as the number of investigations is expected to increase to more than 150 cases per day.	

It should be noted that in order to be fully operational in conducting necessary examinations and investigations, each hospital should secure capable human resources and supply consumables and reagents. The major issues to be confirmed are described in the table below.

Table 7-8: Current situation and recommendations for human resources, reagents and consumables

		Human Resources		Reagents and Consumables	
		Current situation	Recommendations	Current situation	Needs
BH Teldeniya	X-ray	-	Radiographer will be necessary.	-	X-ray films and developing fluid for film processor will be necessary.
	Ultras	Consultant is available.	Additional consultant(s) will be necessary.	-	Gel and paper for printer will be necessary.
	Bioch.	One (1) MLT is available.	Additional MLT(s) will be necessary.	-.	Reagents for total cholesterol and for other investigations will be necessary.
BH Galgamuwa	X-ray	Radiographer is available.	-	X-ray films and developing fluid are available.	-
	Ultras.	Consultants are available.	Additional numbers of consultants will be necessary.	-	Gel and paper for printer will be necessary.
	Bioc	Three (3) MLTs are available.	Additional numbers of MLTs will be necessary.	There is no reagent for total cholesterol investigations.	Supply of reagents for total cholesterol investigations will be necessary.
Kaluwanchikudy	X-ray	Radiographer is available.	-	X-ray films and developing fluid are available.	-
	Ultras.	MOs for maternity are available.	MOs and consultants for diagnosis other than obstetrics will be necessary.	Gel and paper for printer for existing portable ultrasound scanner are available.	Gel and paper for printer for additional stationary ultrasound scanner will be necessary.

		Human Resources		Reagents and Consumables	
		Current situation	Recommendations	Current situation	Needs
	Bioch.	There is one (1) MLT.	Additional MLT(s) will be necessary.	There are no reagents for investigations.	Reagents, including also for total cholesterol investigations, will be necessary.
BH Warakapola	X-ray	Radiographer is not available.	Radiographer will be necessary.	-	X-ray films and developing fluid for film processor will be necessary.
	Ultras.	Consultant and MO are available.	Training of Consultant and MOs for ultrasound examinations is recommended.	Gel and paper for printer are available.	-
	Bioc	Three (3) MLTs are available.	Additional MLT(s) is recommended.	There is no reagent for cholesterol investigations.	Reagents for total cholesterol investigations will be necessary.

7.4.4 Component 2 (Effects): DM clinics

During the baseline survey of January 2012, the survey team realised there were drastic changes and advancement taking place in this field. The assumption in this component is "if DM clinics become fully operational in the target hospitals, this component will contribute to the establishment of NCD screening and treatment centres in the districts". At the time of the first survey conducted in August 2011, none of the four hospitals had a specialised DM clinic with a consultant. However, medical consultants (visiting physicians: VP) have been appointed and all of the four hospitals have started to operate independent DM clinics.

Table 7-9: Effect indicator, proposed baseline and target for Component 2

Indicator			Baseline (2011)	Target (2018)
Number of hospitals with DM clinics that are regularly operating			4	4
Relevant information				
Number of DM clinics to be held per annum			**BH Teldeniya**: Recently commenced a separate DM clinic every other Thursday (from August 2011). One VP and 2 MOs take care of DM patients. **GH Galgamuwa**: Recently commenced a separate DM clinic every Tuesday (from October 2011). One VP, 4 MOs and 2 DM NOs attend DM patients. They need to send patients or blood sample to private laboratories or Kurunegala TH for total cholesterol and HbA1c tests. Regarding NCDs, they have been providing an obesity clinic once a month for more than a year, and screening urine for community and patients as needed. **BH Kaluwanchikudy**: DM patients have been separately registered from other medical clinic patients for some time. In November 2011, established a DM clinic every Thursday in addition to the existing medical clinic that has been held twice a week. As a result, both non-DM and DM patients have been coming to all the three clinics. One VP, 2 MOs and 2 DM NOs take care of DM patients. Many patients skip this hospital and go directly to the general hospital due to its primary level facilities. **BH Warakapola**: Recently commenced a separate DM clinic every Monday under one VP with 4 MOs. MSD has not allocated enough reagents for NCD patients, so they regularly send blood samples to Kegalle GH.
Teldeniya	26			
Galgamuwa	52			
Kaluwanchikudy	52			
Warakapola	52			
Attendance	per session	per 3 months		
Teldeniya	150	900		
Galgamuwa	70	910		
Kaluwanchikudy	70	912		
Warakapola	350	4,550		
Consultants (VP)				
Teldeniya	1			
Galgamuwa	1			
Kaluwanchikudy	1			
Warakapola	1			

Note: A **clinic** is for chronic outpatients who need regular visits to hospital. A **medical clinic** is for general medicine and a **DM clinic** is specifically for diabetic patients

As all four hospitals have already established DM clinics, this survey team suggests using the established number of NCD clinics to determine the effect indicators. The definition of an NCD clinic is the establishment of a model and core healthy lifestyle centre (HLC), which is able to provide specialised examination and treatment for patients who are referred from primary institutions in the region.

Table 7-10: Suggested effect indicator, proposed baseline and target for component 2

Indicator	Baseline (2011)	Target (2018)
Number of hospitals with NCD clinic that are regularly* operating	0	4

Note: To hold NCD clinic on weekly or bi-weekly bases.

7.4.5 Component 3 (Operation): Ambulances

According to the agreement between MoH and JICA, a total of 124 ambulances will be provided to all provinces except for Western and Southern province. The allocation is based on a project proposal of "Strengthening Patient Care Services of Hospitals in Sri Lanka by Providing Ambulances with Standard Equipment" (MoH, October 2010) as shown in Table 7-11. The estimated demand-supply ratio in column 5) is expected to be the target indicator.

Table 7-11: Ambulances allocation plan for 7 provinces

Province	1) No. of ambulances available	2) No. of additional ambulances required	3) Required total number of ambulances [1 + 2]	4) No. of additional ambulances to be allocated	5) Estimated Allocated/required ratio (%) [(1 + 4)/3]
North Central	64	16	80	14	98
North Western	51	51	102	7	57
Sabaragamuwa	31	18	49	16	96
Central	94	32	126	32	100
Northern	57	51	108	35	85
Eastern	44	25	69	17	88
Uva	24	24	48	3	56
Total	365	217	582	124	84

Data source: From a project proposal "Strengthening Patient Care Services of Hospitals in Sri Lanka by Providing Ambulances with Standard Equipment", MoH, submitted October 2010.

Table 7-12: Effect indicator, proposed baseline and target for Component 3

Indicator	Baseline (2011)	Target (2018)
Allocated-required ratio of ambulances in 7 provinces	63	84

Note: Baseline data is calculated as [number of ambulances available]/ [Required total number of ambulances] (=1)/3))

However, through this baseline survey, the study team obtained the most recent information on ambulance services as shown in Table 7-13 below. It revealed that the number of ambulances has increased in all 7 provinces during the last 15 months. The situation of manpower needs to be improved in several provinces, while that of fuel is good. Based on the current situation of ambulances, the study team suggests that the ambulance allocation plan (Table 7-11) should be re-examined during the L/A negotiations, and the baseline number should be re-calculated.

Table 7-13: Recent situation of ambulance operation in 7 provinces as of January 2012

Province	No. of existing ambulances	No. of ambulances in working order	Cadre of ambulance drivers	No. of vacancies of ambulance drivers	Availability of fuel for ambulance operation
North Central	78	69	82	35	YES
North Western	94	87	94	0	YES
Sabaragamuwa	67	63	67	9[1]	YES
Central	117	107[2]	117 (134)[3]	2 (19)[3]	YES
Northern	81	66	92	0	YES
Eastern	100	80	66	34	YES
Uva	76	56	67	28	YES
Total	613	528			

[1]: including drivers for other types
[2]: ten are under repair temporarily.
[3]: including additional cadre

7.4.6 Quality indicator

All four medical superintendents were interviewed during the hospital visits and their answers were summarised in Table 7-14. By the time of ex-post evaluation, questions to assess the level of fulfilment of those plans and commitments should be asked to assess achievement level.

Table 7-14: Commitments of hospital directors

Teldeniya	Galgamuwa	Kaluwanchikudy	Warakapola
Dr. P.G.P.S. Karunarathna	Dr. L.D.P. Wickramasinghe	Dr. G. Sukunan	Dr. Upul Wijenayake
Q1: What do you plan to improve in terms of management of this hospital?			
➢ Strengthen discipline and punctuality of staff. ➢ Introduce productivity quality concepts. ➢ Strengthen supervision and training of staff. ➢ Monitor and evaluate hospital services from a cost-benefit and cost-effectiveness point of view.	➢ Establish management committee and meet every 3 months. ➢ Improve OPD, ward and laboratory services. ➢ Increase staff through PDHS and RDHS. ➢ Improve electricity, drainage, sewerage, security, and maintenance systems though community contributions.	➢ Implement M&E system. ➢ Take necessary action if hospital does not reach expected outcomes.	➢ Improve OPD care. ➢ Reduce patient waiting times. ➢ Support NCD prevention. ➢ Improve internal hospital environment.
Q2: What kind of activities will you plan to implement to strengthen NCD prevention in your hospital?			
➢ Start NCD clinic to screen vulnerable population. ➢ Health education programme in and outside of hospital to increase awareness of community. ➢ Create an "NCD prevention-friendly hospital" by introducing healthy canteen and environment. ➢ Provide treatment and management for NCD patients.	➢ Expand the obesity clinic that was introduced 1-year ago. ➢ Strengthen urine test for screening CKD patients. ➢ Introduce NCD screening for community.	➢ Establish NCD unit and introduce over-forty screening by a specialist nurse. ➢ Introduce appointment system for newly diagnosed NCD patients for treatment. ➢ Establish referral system from OPD, clinic, to outside resources. ➢ Establish HLC in due course.	(For internal staff) ➢ Health education. ➢ Regular screening. ➢ Aerobic exercises. ➢ Meditation programme. ➢ Music programme (Community). ➢ Screening. ➢ Health education though public address system.

7.5 Conclusions and recommendations based on indicators

7.5.1 Suggested indicators and baseline/target figures

As a result of baseline survey, the survey team suggests the following indicators and baseline/target figures for the "Project for Improvement of Basic Social Services Targeting Emerging Regions".

Table 7-15: Suggested operation and effect indicators

	Indicator	Baseline (2011)	Target (2018)
1	Amount of essential drugs produced annually by SPMC	1,796 (million units)	3,200 (million units)
2	Nationalization index of SPMC-produced drugs against MSD annual demands	43.6 %	70 %
3	Number of hospitals that can conduct X-rays, abdominal ultrasonography tests and total cholesterol within the premises.	X-ray = 2 AU = 1 TC = 0	X-ray = 4 AU = 4 TC = 4
4	Number of hospitals with NCD clinics that are regularly operating	0	4
5	Allocated-required ratio of ambulances in 7 provinces	(63)*	(84)*

Note: * The figures should be recalculated.

7.5.2 Recommendations

1) Although baseline and target figures are stated in Table 7-15, at the time of ex-post evaluation, a careful review of actual conditions is necessary, especially for indicator 3.

2) Availability of reagents, consumables and skilled manpower are crucial for achieving the target for indicator 3. Therefore, assurances regarding the supply of consumables and assigning skilled manpower from MoH and PC must be discussed during the L/A negotiations.

3) A purpose of indicator 4 is to encourage the selected 4 base hospitals to become core NCD screening and treatment centres for the region. Therefore, during the detailed survey for construction and equipment, allocation of a special room for an NCD clinic (or HLC) with necessary equipment is strongly recommended.

4) As already stated in 7.4.5, the allocated-required ratio for ambulances must be re-calculated based on the current situation.

ANNEXES

Annex 1: Mahinda Chintana (Health Objectives)

Development Initiatives by Time Horizon

Short term (by 2013)

1) Expand OPD facilities at primary care institutions
2) Introduce Health Record Card for each citizen
3) Develop and implement an intensified NCD prevention programme
4) Establish Centres of Excellence in Cardiology NHSL Colombo
5) Establish Centres of Excellence in Oncology at TH Batticaloa
6) Establish Centres of Excellence in Neuro-trauma NHSL Colombo
7) Selective upgrading of National and Provincial health facilities
8) Introduce legislation to promote medical research
9) Strengthen mobile healthcare services
10) Ambulatory care unit at NHSL.
11) Provide necessary facilities for doctors in the rural areas
12) Strengthen the existing cancer treatment units.
13) OPD & Clinical complex -Castle Hospital,
14) Theatre Complex TH Kegalle
15) Clinical building GDH Kalutara
16) Ward Complex TH Kalubowila
17) Development of TH Kurunegala
18) Development of Estate Sector Hospitals
19) Theatre complex GH Kandy
20) Theatre complex Ragama
21) Accident service DGH Ratnapura
22) Ward Complex GH Hambantota
23) Emergency & trauma centre Karapitiya
24) Development of Jaffna TH
25) Maternal & child hospital Beliatta
26) National HIV/AIDS prevention programme
27) Nutritional intervention programmes to cover all undernourished expectant mothers
28) Rehabilitation/ improvement of selected MoH offices, MCHs, & other health clinics, provision of necessary equipment & vehicles (New)
29) Recruit and train staff necessary for preventive services in estate sector
30) Recruit and train necessary staff for the hospitals which are being developed in the estate sector as well as in other areas
31) Implement revised drug policy
32) Establish disaster and accident prevention and response programme established
33) Community based programmes for care of elders and disabled

Medium term (by 2016)

34) Establish Centres of Excellence in Cardiology at TH Anuradhapura and Jaffna
35) Establish Centres of Excellence in Oncology TH Kurunegala
36) Establish Epilepsy Center at NHSL Colombo
37) Introduce electronic health record card for every citizen
38) Selective upgrading of National and Provincial health facilities in order to make curative services more accessible to the rural poor
39) Introduce tele-health services to public hospitals
40) Development of Dental Hospital,
41) Development of Panadura Hospital
42) Development of peripheral Blood bank.
43) Development of Moneragala hospital
44) Development of Army Hospital
45) Strengthen maternity care services by providing village level maternity clinics, medical advice and related services
46) Provide necessary facilities for nursing training schools
47) Increase intake of medical students
48) Alternative programmes including increasing scholarships to produce specialist doctors to meet requirements
49) Manufacture locally drugs with a relatively high demand
50) Strengthen the SPMC
51) Malaria, Dengue and Rabies control.
52) Develop a Health Information policy, IT enabled Health Information System connected with all hospitals and strengthen the capacity among managers and users of information

Long term (by 2020)

53) Popularize tele-health services
54) Epidemiological services (on-going)
55) School health programmes (on-going)
56) Oral Health Service Management Project (New)
57) Programmes for total eradication of Malaria, Dengue & Rabies (on-going)

Annex 2: Questionnaires (DGH & BH)

Japan International Cooperation Agency

Health Care Facility Survey for Secondary-Level Institutions

August 2011

This questionnaire consists of 3 parts:

(1) This cover page with the Section 1: Contact details (1 page),
(2) Section 2: Profile (2 pages) and
(3) Section 3: Facilities for Base Hospital as per the "Recategorization of Hospitals" (4 pages).

Kindly fill all the three sections and email or fax it back to us, together with your latest staffing list, by 26 August 2011.

JICA Health Survey Team
Team Leader: Ms. Keiko Nishino
email: nishino.keiko@glm.co.jp
Fax: 11-2369971
Tel: 11-2369970

Section 1: Contact Details

Name of the Hospital			
Province		District	
Contact person		Designation	
Tel			
Fax			
e-mail			

Section 2: Profile

Survey Item		Answer		Answering criteria
1. General Information	1. Catchment area population (latest)			persons
	2. Number of hospital beds (as of end July 2011)			beds
	3. Bed occupancy rate (2010)			%
	4. OPD attendance (2010)			2010 total
	5. Number of admissions (2010)			2010 total
	6. Number of deliveries (2010)			2010 total
	7. Clinics conducted	Clinic	Frequency per month	Average number of patients per session
	8. Staffing	Please attach a latest staffing list showing the approved posts and actual deployment.		
2. Referral / Transfers	1. How many ambulances does your hospital have?			units
	2. Average number of ambulance transfers to hospitals of higher level			cases per month
	3. To which hospital do you transfer your patients mostly?			name of hospital
	4. Distance to the above mentioned hospital			km
	5. Length of one-way trip to the above-mentioned hospital			minutes
	6. Average number of ambulance transfers to your hospital (if available)			cases per month
3. Drug supplies	1. How well are your needs for drugs covered by the MSD supplies?	□ 100% □ 90% □ 80% □ 70% □ 60% □ ≤ 50%		
	2. Number of items that went out of stock in 2010	□none □1～10 □11～20 □21～30 □ ≥ 31		
	3. Items that faced most serious stock-out in 2010			

Section 2: Profile

4. Construction and/or renovation in the recent years	1. When did your hospital have major construction/renovation last?		year
	2. Name of constructed/renovated buildings (eg. OPD, operation theatre, etc.)		
	3. Name of major equipment supplied (eg. X-ray, monitor, operation table, etc.)	Items	Year supplied
5. Current construction and/or renovation needs	1. Most urgent construction and/or renovation needs, for which funding sources are <u>not yet</u> identified (list up to 3 items in order of your priority)	1.	
		2.	
		3.	
	2. Availability of land for expansion	Yes / No	
6. External assistance for physical improvements (i.e. buildings, equipment, etc.)	1. Do you have any development project with foreign funds either on-going or earmarked for the near future?	Yes / No	
	2. If yes, who is funding?		Name(s) of organization(s)
	3. What is (to be) improved and how (eg. renovation, construction, supply of equipment, etc.)?		Building or function
	4. The cost of the above-mentioned intervention(s):		Rs.
	5. For which year?		year

Section 3: Facilities for Base Hospital as per the "Recategorization of Hospitals"

This section will identify the gaps, if any, between the current condition of your hospital and the standard of DGH prescribed by the Central Ministry of Health. Kindly fill in the table below with relevant information.

A. Standard Facilities

1 Out Patient Department

	Total number of:		
	Rooms	Doctors' desks	Examination tables
1. Consultation rooms			

Do you have these facilities?		If you have, are they sufficiently equipped? If no, please list items missing.	
2. Dressing room	Yes/No	Yes/ No	
3. Injection room	Yes/No	Yes/ No	
4. Dispensary	Yes/No	Yes/ No	
5. ECG room	Yes/No	Yes/ No	
6. Dental clinic	Yes/No	Yes/ No	
7. Others (Please specify)	Yes	Yes/ No	
8.	Yes	Yes/ No	
9.	Yes	Yes/ No	
10.	Yes	Yes/ No	
11. A separate Preliminary Care Unit	Yes/No	Yes/ No	
12. A separate Emergency Care Unit	Yes/No	Yes/ No	
13. Screening facilities	Yes/No		Cardio Vascular Diseases
	Yes/No		Cancer
	Yes/No		Diabetis
	Yes/No		Respiratory Diseases

2 Clinic facilities

1. Number of rooms exclusively used for clinics (may be shared by several clinics but separate from the OPD)	
2. Number of doctors' desks in the above-mentioned clinic rooms	

Section 3 (Base Hospital)

3 In-patient facilities

	Number of:				Are they sufficiently equipped? If not, please list the major items missing.	
	wards	beds	consultants	MOs		
1. 2 x Medical units					Yes/ No	
2. 2 x Surgical units					Yes/ No	
3. 2 x Gynaecology & Obstetric units					Yes/ No	
4. 2 x Paediatric units					Yes/ No	
5. 1 x ENT surgical unit					Yes/ No	
6. 1 x Eye surgical unit					Yes/ No	
7. Anaesthesia Unit					Yes/ No	
8. Others (specify)					Yes/ No	
9.					Yes/ No	
10.					Yes/ No	
11.					Yes/ No	

4. Intensive Care units

Are there these facilities?		If not	If yes	
		why not (prohibiting factors)?	any major equipment needed but missing?	number of beds
1. Medical Intensive Care Unit (MICU)	Yes/ No			
2. Surgical Intensive Care Unit (SICU)	Yes/ No			

5. Operation Theatres (only those with operation tables)

1. Number of OT rooms you currently have:	
2. Number of OT tables in the above-mentioned rooms:	
3. Is the above number sufficient to meet the needs?	Yes/No
4. Issues related to OT, if any.	

Section 3 (Base Hospital)

6. Diagnostic services

Are there these facilities?		If not	If yes
		why not (prohibiting factors)?	are they well equipped? If not, what are missing?
1. Radiology Department	Yes/ No		
2. Pathology Dept. with Histopathology, Haematology and Microbiology Units	Yes/ No		

7. Other services

1. Medico-legal Department	Yes/ No			
2. Maxillo Facial Surgical Unit	Yes/ No			Number of beds:
3. Medical Record Unit	Yes/ No			

8.	Total number of beds for in-patient care	

B Additional Facilities

Are there these facilities?		Are they well equipped? If not, what are missing?	Number of beds:
1. Psychiatry Unit	Yes/ No		
2. Rheumatology Unit	Yes/ No		
3. STD/AIDS Unit	Yes/ No		
4. Others (pls. specify)	Yes		
5.	Yes		
6.	Yes		

C Infrastructure and peripheral facilities

Are there these facilities?		Total number	Issues, if any
1. Staff quarters			
1a. For consultants	Yes/ No		
1b. For MOs	Yes/ No		
1c. For Nurses	Yes/ No		
1d. For other categories of staff	Yes/ No		

	Are there these facilities?		Issues, if any
2.	Electricity		
3.	Generator number of units:		
4.	Water supply		Source: □ city water □ deep well water □ rain water □other: Quality: □satisfactory □ unsatisfactory (pls elaborate)
5.	Sewage (toxic waste water management)	Yes/ No	
6.	Incinerator (toxic medical waste management)	Yes/ No	

D Maintenance of the facilities and medical equipment

Description	Do you have in-house maintenance dept.? If yes, how many engineers/technicians do you have?			Maintenance provided by Engineering Dept. of the Province or Line Ministry?	Maintenance outsourced?
1. Building Maintenance Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No
2. Electrical maintenance Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No
3. Mechanical Maintenance Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No
4. Bio-Medical Equipment Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No

Japan International Cooperation Agency

Health Care Facility Survey for Secondary-Level Institutions

August 2011

This questionnaire consists of 3 parts:

(1) This cover page with the Section 1: Contact details (1 page),
(2) Section 2: Profile (2 pages) and
(3) Section 3: Facilities for District General Hospital as per the "Recategorization of Hospitals" (5 pages).

Kindly fill all the three sections and email or fax it back to us, together with your latest staffing list, by 26 August 2011.

JICA Health Survey Team
Team Leader: Ms. Keiko Nishino
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Tel: 11-2369970

Section 1: Contact Details

Name of the Hospital			
Province		District	
Contact person		Designation	
Tel			
Fax			
e-mail			

Section 2: Profile

Survey Item		Answer		Answering criteria
1. General Information	1. Catchment area population (latest)			persons
	2. Number of hospital beds (as of end July 2011)			beds
	3. Bed occupancy rate (2010)			%
	4. OPD attendance (2010)			2010 total
	5. Number of admissions (2010)			2010 total
	6. Number of deliveries (2010)			2010 total
	7. Clinics conducted	Clinic	Frequency per month	Average number of patients per session
	8. Staffing	Please attach a latest staffing list showing the approved posts and actual deployment.		
2. Referral / Transfers	1. How many ambulances does your hospital have?			units
	2. Average number of ambulance transfers to hospitals of higher level			cases per month
	3. To which hospital do you transfer your patients mostly?			name of hospital
	4. Distance to the above mentioned hospital			km
	5. Length of one-way trip to the above-mentioned hospital			minutes
	6. Average number of ambulance transfers to your hospital (if available)			cases per month
3. Drug supplies	1. How well are your needs for drugs covered by the MSD supplies?	□ 100% □ 90% □ 80% □ 70% □ 60% □ ≤ 50%		
	2. Number of items that went out of stock in 2010	□none □1～10 □11～20 □21～30 □ ≥ 31		
	3. Items that faced most serious stock-out in 2010			

Section 2: Profile

4. Construction and/or renovation in the recent years	1. When did your hospital have major construction/renovation last?		year
	2. Name of constructed/renovated buildings (eg. OPD, operation theatre, etc.)		
	3. Name of major equipment supplied (eg. X-ray, monitor, operation table, etc.)	Items	Year supplied
5. Current construction and/or renovation needs	1. Most urgent construction and/or renovation needs, for which funding sources are <u>not yet</u> identified (list up to 3 items in order of your priority)	1.	
		2.	
		3.	
	2. Availability of land for expansion	Yes / No	
6. External assistance for physical improvements (i.e. buildings, equipment, etc.)	1. Do you have any development project with foreign funds either on-going or earmarked for the near future?	Yes / No	
	2. If yes, who is funding?		Name(s) of organization(s)
	3. What is (to be) improved and how (eg. renovation, construction, supply of equipment, etc.)?		Building or function
	4. The cost of the above-mentioned intervention(s):		Rs.
	5. For which year?		year

Section 3: Facilities for District General Hospital as per the "Recategorization of Hospitals"

This section will identify the gaps, if any, between the current condition of your hospital and the standard of DGH prescribed by the Central Ministry of Health. Kindly fill in the table below with relevant information.

A. Standard Facilities

1 Out Patient Department

	Total number of:		
	Rooms	Doctors' desks	Examination tables
1. Consultation rooms			

Do you have these facilities?		If you have, are they sufficiently equipped? If no, please list items missing.	
2. Dressing room	Yes/No	Yes/ No	
3. Injection room	Yes/No	Yes/ No	
4. Dispensary	Yes/No	Yes/ No	
5. ECG room	Yes/No	Yes/ No	
6. Dental clinic	Yes/No	Yes/ No	
7. Others (Please specify)	Yes	Yes/ No	
8.	Yes	Yes/ No	
9.	Yes	Yes/ No	
10.	Yes	Yes/ No	
11. A separate Preliminary Care Unit	Yes/No	Yes/ No	
12. A separate Emergency Care Unit	Yes/No	Yes/ No	
13. Screening facilities	Yes/No		Cardio Vascular Diseases
	Yes/No		Cancer
	Yes/No		Diabetis
	Yes/No		Respiratory Diseases

2 Clinic facilities

1. Doo you have rooms exclusively used for clinics (may be shared by several clinics but separate from the OPD)	Yes/No
2a. If yes, how many such rooms do you have?	
2b. how many doctors' desks do you have in these rooms?	

Section 3 (DGH)

3 In-patient facilities

	Number of:				Are they sufficiently equipped? If not, please list the major items missing.	
	wards	beds	consultants	MOs		
1. 2 x Medical units					Yes/ No	
2. 2 x Surgical units					Yes/ No	
3. 2 x Gynaecology & Obstetric units					Yes/ No	
4. 2 x Paediatric units					Yes/ No	
5. 1 x Dermatology unit					Yes/ No	
6. 1 x Rheumatology unit					Yes/ No	
7. 1 x STD/AIDS Unit					Yes/ No	
8. 1 x Orthopaedic surgery unit					Yes/ No	
9. 1 x ENT surgical unit					Yes/ No	
10. 1 x Eye surgical unit					Yes/ No	
11. 1 x Neo-natology unit					Yes/ No	
12. Anaesthesia Unit					Yes/ No	
13. Others (specify)					Yes/ No	
14.					Yes/ No	
15.					Yes/ No	
16.					Yes/ No	

4. Intensive Care units

Are there these facilities?		If not	If yes	
		why not (prohibiting factors)?	any major equipment needed but missing?	number of beds
1. Medical Intensive Care Unit (MICU)	Yes/ No			
2. Surgical Intensive Care Unit (SICU)	Yes/ No			

5. Operation Theatres (only those with operation tables)

1. Number of OT rooms you currently have:	
2. Total number of OT tables in the above-mentioned rooms:	
3. Is the above sufficient to meet the needs?	Yes/No
4. Issues related to OT, if any.	

6. Diagnostic services

Are there these facilities?		If not	If yes
		why not (prohibiting factors)?	are they well equipped? If not, what is missing (ECG, X-ray, operation table, etc)?
1. Radiology Department	Yes/ No		
2. Pathology Dept. with Histopathology, Haematology and Microbiology Units	Yes/ No		

7. Other services

1. Medico-legal Department	Yes/ No			
2. Maxillo Facial Surgical Unit	Yes/ No			Number of beds:
3. Public Health Unit	Yes/ No			
4. Medical Record Unit	Yes/ No			

8.

Total number of beds for in-patient care	

B Additional Facilities

Are there these facilities?		Issues related to facilities and/or equipment, if any	Number of beds:
1. Chest Medicine Unit	Yes/ No		
2. Neurology Unit	Yes/ No		
3. Cardiology Unit	Yes/ No		
4. Transfusion Medicine Unit	Yes/ No		
5. Others (pls. specify)	Yes		
6.	Yes		
7.	Yes		

C Infrastructure and peripheral facilities

Are there these facilities?		Total number	Issues, if any
1. Staff quarters			
1a. For consultants	Yes/ No		
1b. For MOs	Yes/ No		
1c. For Nurses	Yes/ No		
1d. For other categories of staff	Yes/ No		

Section 3 (DGH)

Are there these facilities?		Issues, if any
2. Electricity		
3. Generator number of units:		
4. Water supply		Source: □ city water □ deep well water □ rain water □other: Quality: □satisfactory □ unsatisfactory (pls elaborate)
5. Sewage (toxic waste water management)	Yes/ No	
6. Incinerator (toxic medical waste management)	Yes/ No	

D Maintenance of the facilities and medical equipment

Description	Do you have in-house maintenance dept.? If yes, how many engineers/technicians do you have?			Maintenance provided by Engineering Dept. of the Province or Line Ministry?	Maintenance outsourced?
1. Building Maintenance Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No
2. Electrical maintenance Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No
3. Mechanical Maintenance Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No
4. Bio-Medical Equipment Dept.	Yes/ No	# engineers /technicians:		Yes/No	Yes/No

Annex 3: List of surveyed medical institutions

List of the Secondary Hospitals Involved in the Survey

Prov.	Category	District & Hosp. Names	Q returned by 30 Sep
Central		**Kandy**	
	DGH	Nawalapitiya	✓
	BHB	Teldeniya	✓
	BHB	Gampola (Line M)	✓
		Nuwaraeliya	
	DGH	Nuwaraeliya (Line M)	✓
	BHA	Dickoya	✓
	BHB	Rikillagaskada	✓
		Matale	
	DGH	Matale	✓
	BHA	Dambulla	✓
	BHB	Hettipola	✓
Northern		**Jaffina**	
	BHA	Point Pedro	✓
	BHA	Telippalai	✓
	BHB	Chavakachcheri	✓
	BHB	Kayts	✓
		Kilinochchi	
	DGH	Kilinochchi	no
		Mannar	
	DGH	Mannar	✓
		Mullaitivu	
	DGH	Mullaitivu	✓
	BHB	Mankulam	✓
		Vavuniya	
	DGH	Vavuniya	✓
	BHB	Cheddikulam	✓
Eastern		**Batticaloa**	
	BHB	Valachchenai	no
	BHB	Kaluwanchikudy	✓
		Ampara	
	DGH	Ampara (Line M)	no
	BHA	Kalmunai North (Line M	✓
	BHA	Kalmunai South (Line M	✓
	BHB	Mahaoya	✓
	BHB	Samanthurai	✓
	BHB	Pothuvil	no
	BHB	Dehiattakandiya	✓
	BHB	Akkarapatthu (Line M)	✓
		Trincomalee	
	DGH	Trincomalee	✓
	BHA	Kanthalai (Line M)	✓
	BHB	Mutur	✓
	BHB	Kinniya	✓

Prov.	Category	District & Hosp. Names	Q returned
North Western		**Kurunegala**	
	BHA	Kuliyapitiya	✓
	BHB	Nikawaratiya	✓
	BHB	Dambadeniya	✓
	BHB	Galgamuwa	✓
	BHB	Polpitigama	✓
		Puttalam	
	DGH	Chilaw	✓
	BHA	Puttalam	✓
	BHB	Marawila	✓
North Central		**Anuradhapura**	
	BHB	Padaviya	✓
	BHB	Tambuttegama	✓
	BHB	Kebitigollewa	✓
		Polonnaruwa	
	DGH	Polonnaruwa	✓
	BHB	Medirigiriya	✓
	BHB	Welikanda	✓
Uva		**Badulla**	
	BHA	Diyatalawa	✓
	BHA	Mahiyangana	✓
	BHB	Welimada	✓
		Moneragala	
	DGH	Moneragala (Line M)	✓
	BHB	Wellawaya	✓
	BHB	Siyambalanduwa	✓
Sabaragamuwa		**Kegalle**	
	DGH	Kegalle (Line M)	✓
	BHB	Karawanella	✓
	BHB	Warakapola	✓
	BHB	Mawanella	✓
		Ratnapura	
	BHA	Embilipitiya	✓
	BHB	Balangoda	✓
	BHB	Kahawatta	✓
	BHB	Kalawana	✓

Summary

Category	Q sent	Returned
DGH	13	11
BHA	12	12
BHB	36	34
Total	61	57

Annex 4: Decentralised health administration

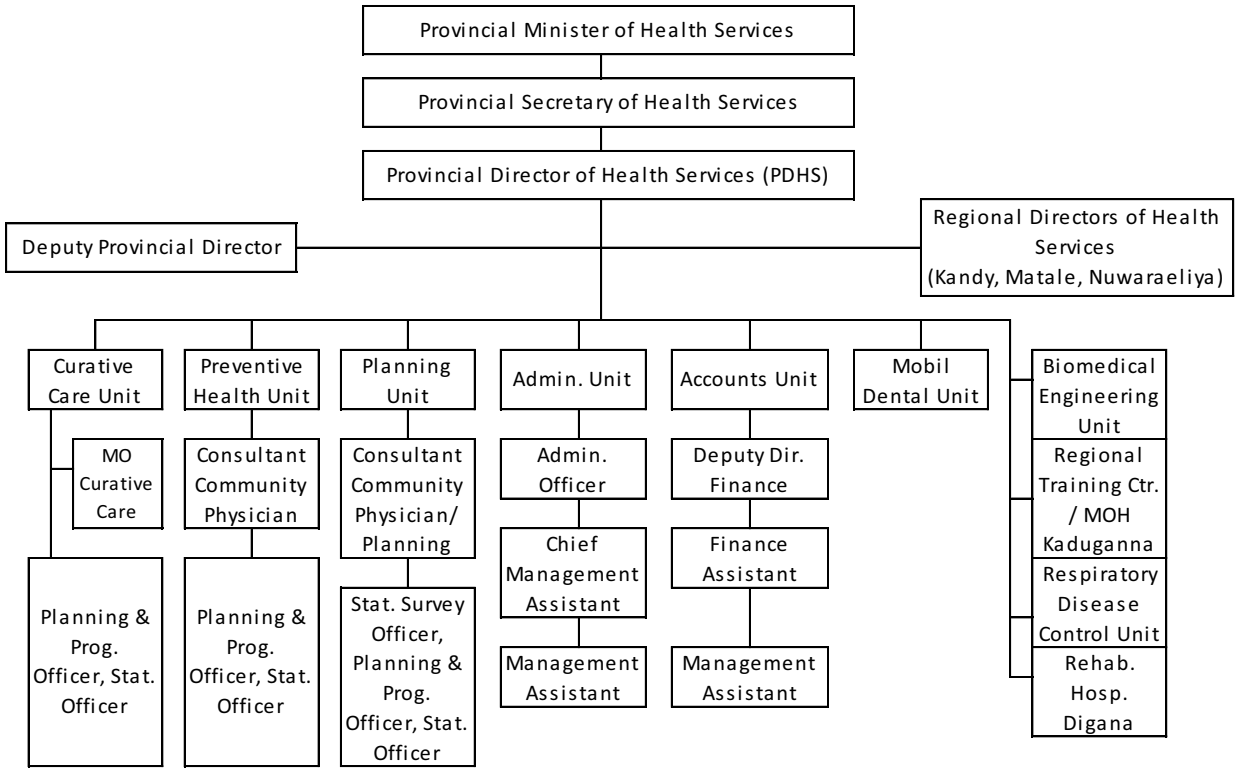
Responsibilities related to health care provision in Sri Lanka vested by decentralisation in 1987

List I: Provincial Council	List II: Central Government	List III: Concurrent (Central and Provincial)
Section 11: Health 1. The establishment and maintenance of public hospitals, rural hospitals, maternity homes, dispensaries (other than teaching hospitals and hospitals established for special purposes); 2. Public health services, health education, nutrition, family health, maternity and child care, food and food sanitation, environmental health; 3. Formulation and implementation of Health Development Plan and of the Annual Health Plan for the Province; 4. The provision of facilities for all institutions referred to in 1 above within the Province, excluding the procurement of drugs; 5. Awarding of scholarships for post-graduate education within Sri Lanka to personnel attached to the institutions specified in 1 above.	National policy on all subjects and functions Finance in relation to national revenue, monetary policy and external resources; customs Professional occupations and training including; (a) institutions such as universities, declared by Parliament by law to be institutions of national importance, (b) Institutions for scientific or technical education by the Government of Sri Lanka wholly or in part and declared by Parliament by law to be institutions of national importance; (c) Provincial agencies and institutions for (i) professional, vocational or technical training, including the training of police officers; (ii) the promotion of special studies or research; or (iii) scientific or technical assistance in the investigation or detection of crime; and (d) Co-ordination and determination of standards in institutions for higher education or research and scientific and technical institutions. * Teaching hospitals, Provincial General Hospitals and hospitals established for specified purposes as well as procurement of drugs come under the central MoH, for they are specifically excluded from List I.	Section 9: Health 1. Schools for training of auxiliary medical personnel; 2. The supervision of private medical acre, control of nursing homes and of diagnostic facilities within a province; 3. Population control and family planning 4. Constitution of provincial medical boards

Source: The 9th schedule to the constitution formulated under article 154A of the 13th Amendment
* World Bank "Prevention and Control of Selected Chronic NCDs in Sri Lanka" 2010

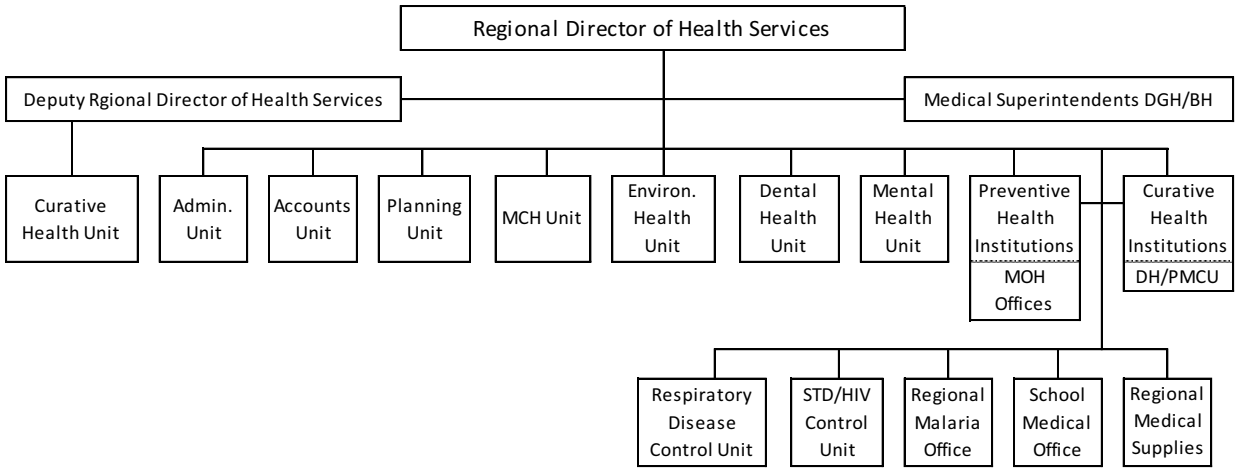
Annex 5: Structure of health administration in Central province

Health Administration - Central Province



Source: Central Province Annual Health Bulletin 2009

RDHS - Central Province



Source: Central Province Annual Health Bulletin 2009

Annex 6: Recategorization of hospitals

RECATEGORIZATION OF HOSPITALS

Management Development and Planning Unit
Ministry of Health Nutrition and Welfare

The Proposed Hospital Re-categorization

1. Introduction

The network of Government Hospitals is primarily responsible for carrying out the curative health care delivery system. The range of hospitals includes sophisticated teaching hospitals to maternity homes and central dispensaries, which are scattered in the rural areas. Teaching hospitals, Base hospitals, District General hospitals, District hospitals, Peripheral units, Rural Hospitals, Maternity homes provide in-patient care facilities for over 95 % of the patients who seek admission.

Keeping in line with the Health Policy of Sri Lanka it is essential that these hospitals be developed in-order to ensure equity of health care delivery system. It has been stipulated in the National Health Policy developed in 1996 and the 1998 Presidential Task Force report on Health Policy Implementation, that one District Hospital in every District will be upgraded into a District General Hospital. Presently hospitals are selected for development as a when funds are available. Sometimes opinion based, unorganized hospital development has caused problems such as unavailability of Human Resources and logistical problems leading to under utilization of these developed hospitals.

The door to successful user-friendly hospital system hinges on evidence based, planned hospital development system. Therefore it is proposed that a comprehensive need based, bottom up, hospital development plan to be developed using a participatory approach. This concept paper described the detailed steps in developing a National Hospital Development Plan.

As the first phase of the activity it is proposed to re-categorize the hospitals into four categories, which will provide the foundation for decision making in the hospital developmental process. Once approved it is proposed to workout finer details, the infra structure, human resources, equipment, drugs and supplies, and other logistics which will enable hospitals to be developed in a uniform manner. This proposal explicitly describes the proposed re-categorization of hospitals.

2. The Objective

To re-categorize the hospitals with a view to facilitate planned, organized hospital development mechanism.

3. The Process

- A working group was nominated to look into the hospital re-categorization process. The names of the members are given in Annexure I.
- A series of meetings were conducted with officials representing the Provincial Health and Line Ministry to discuss the re-categorization process.
- The findings were tabled and discussed at the Health Development Committee meeting held on 27th September 2001 at the Health Ministry Auditorium and were modified accordingly. Minutes of the meetings are given in Annexes 11.
- The modified proposal was tabled at the National Hospital Development Committee meeting held on 11th January 2002 at the Ministry auditorium and further discussed. Few additions were made on the requests of the members. Minutes are given in Annexes 111.

4. The Outcome

The issues agreed upon are given below.

4.1 The nomenclature of hospitals to be changed as follows.

The hospitals will be categorized under the following groups.

4.1.1 Teaching Hospitals/ Provincial Hospitals

Teaching Hospitals are those hospitals where Professorial Wards are established and are engaged in under-graduate and/or post-graduate training. In provinces, which does not have a teaching Hospital, the Provincial Hospital will be developed with similar facilities.

4.1.2 District General/ District Base Hospitals

All existing General and Base Hospitals will be renamed as District General Hospitals or District Base Hospitals. Each district will have one District General Hospital and one to two District Base Hospitals to fulfill the needs of the population.

4.1.3 Divisional Hospitals – All District Hospitals, Rural Hospitals and Peripheral Units will be renamed as Divisional Hospitals, irrespective of the number of beds.
Each DDHS area to be served by one divisional hospital according to availability of resources.

4.1.4 Primary Medical Care Units - (Central Dispensaries & Maternity Homes will be renamed as PCU.

The special hospitals such as Ragama Rehabilitation Hospital, Angoda and Mullariyawa Psychiatry Hospitals, Eye Hospital etc. will remain as it is

5. Facilities offered at different categories of Medical Care Institutions

Minimum facilities recommended to be made available at different levels of curative Medical Institutions in order maintain equity are as follows. However, additional facilities may be provided depending on specific needs.

5.1 Primary Medical Care Units

- Out patient care
- Limited emergency care: facilities for stabilization of patients before referring to secondary or tertiary care medical institutions.
- Facilities for a poly-clinic including Ante-Natal & Post-Natal, Family Planning, Child Health, Well Women etc..

Facilities of a Divisional Hospital

1. Out patient care with a ETU for limited emergency care and screening
2. Basic laboratory facilities
3. Minor operation facilities
4. Labour room
5. Wards:-
   One Maternity ward, One male and female Medical and Surgical wards each and one children's ward
6. Dental unit
7. Facilities for continuation of treatment of patients referred by secondary and tertiary medical institutions for a limited period of time
8. Facilities for a polyclinic including Ante-Natal, Post Natal, Family Planning, Child Health, Well Women clinic etc..
9. Ambulance
   (Services of visiting consultants will be available in some of these hospitals through out-reach clinics)

Facilities of a Primary Medical Care Unit

1. Out patient care
2. Limited emergency care: facilities for stabilization of patients before referring to secondary or tertiary care medical institutions.
   Facilities for a poly-clinic including Ante-Natal & Post-Natal, Family Planning, Child Health, Well Women etc..

Facilities of a District Base Hospital

Each District will have minimum of one to two functional District Base Hospitals.

The proposed facilities for District Base Hospitals are as follows:

1. Out Patient Department with separate Preliminary Care Unit, Emergency Care Unit and screening facilities
2. Clinic facilities
3. In ward facilities
    - 2 Medical unit
    - 2 Surgical unit
    - 2 Gynaecology & Obstetric unit
    - 2 Paediatric unit
    - 1 ENT surgical unit
    - 1 Eye surgical unit
    - Anaesthesia Unit
4. Intensive Care Units
    - Medical Intensive Care Unit (MICU)
    - Surgical Intensive Care Unit (SICU)
5. Operation Theatres
6. Diagnostic services
    - Radiology Dept.
    - Pathology Dept. with Histopathology, Haematology and Microbiology Units
7. Medico-legal Department
8. Maxillo Facial Surgical Unit
9. Medical Records Unit

Psychiatry, Rheumatology, STD/AIDS or any other relevant unit will be added according to the need

Facilities of a District General Hospital

Each District will have one functional District General Hospitals.

The proposed facilities for District General Hospitals are as follows:

1. Out Patient Department with separate Preliminary Care Unit, Emergency Care Unit and screening facilities
2. Clinic facilities
3. In ward facilities
    - 2 Medical units
    - 2 Surgical units
    - 2 Gynaecology & Obstetric units
    - 2 Paediatric units
    - 1 Dermatology unit
    - 1 Psychiatry unit
    - 1 Rheumatology unit
    - 1 STD/AIDS Unit
    - 1 Orthopaedic surgery unit
    - 1 ENT surgical unit
    - 1 Eye surgical unit
    - 1 Neo-natology unit
    - Anaesthesia Unit
4. Intensive Care Units
    - Medical Intensive Care Unit (MICU)
    - Surgical Intensive Care Unit (SICU)
5. Operation Theatres
6. Diagnostic services
    - Radiology Dept.
    - Pathology Dept. with Histopathology, Haematology and Microbiology Units
7. Medico-legal Department
8. Maxillo Facial Surgical Unit
9. Public Health Unit
10. Medical Records Unit

Chest Medicine, Neurology, Cardiology and Transfusion Medicine Units will be added according to the service requirements.

Facilities of a Teaching/ Provincial Hospital

The proposed facilities for Teaching Provincial Hospitals are as follows:

1. Out Patient Department (OPD) with separate Preliminary Care Unit, Emergency Care Unit and Screening Facilities
2. Clinic facilities
3. In ward facilities
   - 3 Medical units
   - 3 Surgical units
   - 3 Gynaecology & Obstetric units
   - 3 Paediatric units
   - 1 Neurology unit
   - 1 Cardiology unit
   - 1 Dermatology unit
   - 1 Psychiatry unit
   - 1 Rheumatology unit
   - 1 Oncology unit
   - 1 STD/AIDS Unit
   - 1 Neuro surgical unit
   - 2 Orthopaedic surgical units
   - 2 ENT surgical units
   - 2 Eye surgical units
   - 1 Genito urinary surgical unit
   - 1 Paediatric surgical unit
   - 1 Nephrology unit
   - 1 Neo-natology unit
   - Chest Medicine
   - Transfusion Medicine
4. Intensive Care Units
   - Medical Intensive Care Unit (MICU)
   - Surgical Intensive Care Unit (SICU)
   - Cardiac Intensive Care Unit (CICU)
   - Coronary Care Unit (CCU)
5. Operation Theatres
6. Diagnostic services
   - Radiology Dept.
   - Pathology Dept. with Histopathology, Haematology and Microbiology Units
7. Accident Service/ Trauma Surgery unit
8. Medico-legal Department
9. Maxillo Facial Surgical Unit
10. Orthodental Unit
11. Public Health Unit
12. Medical Statistic Unit
13. Dept of Anaesthesia

6. Proposed criteria for selecting hospitals for developing

Following are the criteria that were agreed upon that could be used to justify identification hospitals for upgrading over the next five years. Based on these criteria, the Provincial authorities will identify the hospitals and the scope of development. The Department of Health will provide technical guidance for the activity.

- Number of hospital beds
- OPD attendance
- Number of admissions
- Number of deliveries per month
- Bed occupancy rate
- Number of transfers
- Availability of supportive services such as quarters etc.
- Distance to the nearest tertiary care hospital
- Access to hospitals including availability of Public Transport facilities
- Availability of land for expansion
- Catchment area population and geographical location of the hospital
- Availability of resources (funds, manpower etc.)

Annexure I

The Working Group

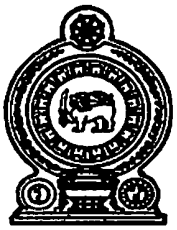
Dr. K. C. S. Dalpatadu	-	Deputy Director General (Planning)
Dr. Terrence de Silva	-	Deputy Director General (Medical Services)
Dr H. S. B. Tennakoon	-	Deputy Director General (Medical Services II)
Dr. Thushara Fernando	-	Director (Planning)
Dr S. M. Samarage	-	Director (Organization Development)
Dr Mahipala	-	Director (Tertiary Care Services)
Dr. Indrasiri	-	Provincial Director (Western Province)
Dr. Beneragama	-	Deputy Provincial Director (Kalutara District)
Dr. Lokki Wai	-	WHO Consultant

Annex 7: Job Description of MO/NCD

දුරකථන
தொலைபேசி
Telephone
2694033
2669192
2675011

ෆැක්ස්
பெக்ஸ்
Fax
2692913

විද්‍යුත් තැපෑල
இணையத்தளம்
e-mail
postmaster@health.gov.lk



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சுவசிரிபாய
SUWASIRIPAYA

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எனது இல
My No.
NCD/11a/2004

ඔබේ අංකය
உமது இல
Your No. :

දිනය
திகதி
Date
2011.02.01

සෞඛ්‍ය අමාත්‍යාංශය
சுகாதார அமைச்சு
MINISTRY OF HEALTH

Regional Directors of Health Services

Directors of Hospitals

Job Description of Medical Officers of Non Communicable Diseases

Herewith I am sending the job description of Medical Officers of Non Communicable Diseases.

You are kindly requested to give a copy of the relevant job description to all Medical Officers of Non Communicable Diseases and to ensure r elevant officers carry out duties mentioned in the job description.

Dr. R.W. Jayantha
Deputy Director General (Planning)

Dr. R. Wimal Jayantha
Deputy Director General (Planning)
Ministry of Health
385, Ven. Baddegama Wimalawansa Thero Mawatha,
Colombo - 10.

Signed
Dr. U.A. Mendis
Director General of Health Services

Copy: Provincial Directors of Health Services

Ministry of Health

Job Description

Designation : Medical Officer - Non Communicable Diseases

01	Introduction to the Job *Service Category* *Job Code / Service* *Date of Preparation*	 Grade Medical Officer Non Communicable Diseases (NCD) 04.01.2010
02	Summary of the Job	1. Focal point for all activities related to Non Communicable Diseases in the district 2. Preparation of District Plans for control of Non Communicable diseases 3. Establishment of Screening mechanisms in the district 4. To develop and carry out Health Promotion and Health Guidance for needy People in the district 5. Monitor and evaluate all programmes related to Non Communicable diseases in the district 6. Training and capacity building of health and other staff in the district related to Non Communicable diseases 7. Carry out research with regard to Risk Factors and related areas of Non Communicable diseases 8. Maintaining records and reporting with regard to NCD situation in the district to appropriate levels 9. To work and coordinate with other sectors through a District Steering Committee
03	Main areas of Responsibilities	▪ Coordinate all NCD activities in the district with all relevant stake holders and function as the main focal point for activities related to Non Communicable Diseases ▪ Responsible for preparation of Medium –Term and Annual Development Plans for activities related to Non Communicable Diseases ▪ Responsible for implementation ,monitoring and

		evaluation of the District Plan for control of Non Communicable Diseases
	Main areas of Responsibilities	▪ Liaise with all relevant stakeholders in the district for proper implementation of the activities related to Non Communicable Diseases including Health and other sectors (Public and Private sector, NGOs /CBOs of the area,) ▪ Establishment of a proper screening mechanism for Non Communicable Diseases in the relevant institutions of the district and to promote Health checkups in the district ▪ Establishment of a proper referral and back referral system within primary secondary and tertiary care institutions of the district for appropriate care of people affected with Non Communicable Diseases ▪ Provide leadership to organize health promotion activities at institutional, community and individual levels in the district related to Non Communicable Diseases ▪ Facilitate and monitor provision of essential drugs and equipments relevant to Non Communicable Diseases to primary and secondary care institutions by liaising with the Heads of Institutions, Divisional Pharmacists and other relevant officers. ▪ Participate in all Continuing Medical Education and service activities conducted by the Directorate of Non Communicable Diseases of the Ministry of Health ▪ Provide the leadership for training and educational activities of health workers and the community and to assist in capacity building with regard to Non Communicable Diseases ▪ Engage in research and evidence based data collection and analysis for better care of Non Communicable Diseases within the district

	Main areas of Responsibilities	▪ Responsible for establishment of NCD steering committees at district level and function as the Secretary to the committee and monitor through specific indicators. ▪ Responsible for development of health guidance and health promotion settings at different levels within the District in collaboration with other stake holders ▪ Responsible for establishing surveillance system at local level according to the national guide lines and carry out data collection, analysis, interpretation, dissemination, monitoring and evaluation of data related to Non Communicable Diseases in the preventive and curative sectors ▪ Coordination of activities related to Non Communicable Diseases within the Health sector and outside the Health sector in coordination with Medical Officers of Health, Health care delivery Institutions, Schools , Factories, Government offices etc. ▪ Monitoring activities carried out in medical clinics at primary and secondary care institutions in the district for improvement of the quality of care of services related to Non Communicable Diseases in coordination with all relevant officers ▪ Responsible for proper record keeping and sending returns such as quarterly annual NCD activity returns to the RDHS ,PDHS and NCD Directorate in time ▪ Any other duties assigned by the RDHS on service requirements
04	Main Functions	Functions related to control and prevention of Non Communicable Diseases in the respective district
05	Reporting to	Regional Director of Health Services Provincial Director of Health Services Director, Non Communicable Diseases of the Ministry of Health

06	Officers Reporting to Medical officer NCD	Programme and Planning Assistant Statistics Officer
07	Authorizing Officer	Regional Director of Health Services
08	Responsibility of Facilities and Resources	Office Belongings Official Vehicle
09	Facilities entitled	Separate NCD Unit within the Public Health Section Vehicle for NCD Activities Staff including PPO and statistics Officer
10	Special Circumstances Affecting the Job	Need to collaborate with other Health units in the region and the Health Department and specially with other organizations and agencies in the district including Non Governmental Organizations

Dr.U.A.Mendis

Director General of Health Services

Dr. U. A. Mendis
Director General of Health Services
Ministry of Health
Vin. Saddharma Wimalawansa Thera Mawatha,
385, 'Suwasiripaya'
Colombo 10.

Annex 8: Guidelines for management of NCDs in primary-level institutions

Annexure III

Guidelines for Management of NCDs in Primary Level Institutions (Multiple Risk Assessment Approach)

Ministry of Health

This guideline has been developed by the Ministry of Health for use by Medical Officers in Primary Level health institutions (district hospitals, peripheral units, rural hospitals, central dispensaries). The guideline will be used for opportunistic screening for those presenting for primary care and has adopted a multiple risk assessment approach. An individual's disease will be managed as per the risk assessment. The indications for referral to specialist clinic are also given. A life style modification guide is given separately. The clinic record and patient health record are to be used for documentations.

This guideline should be interpreted along with the Flow chart "Overview" (Refer to pg 2).

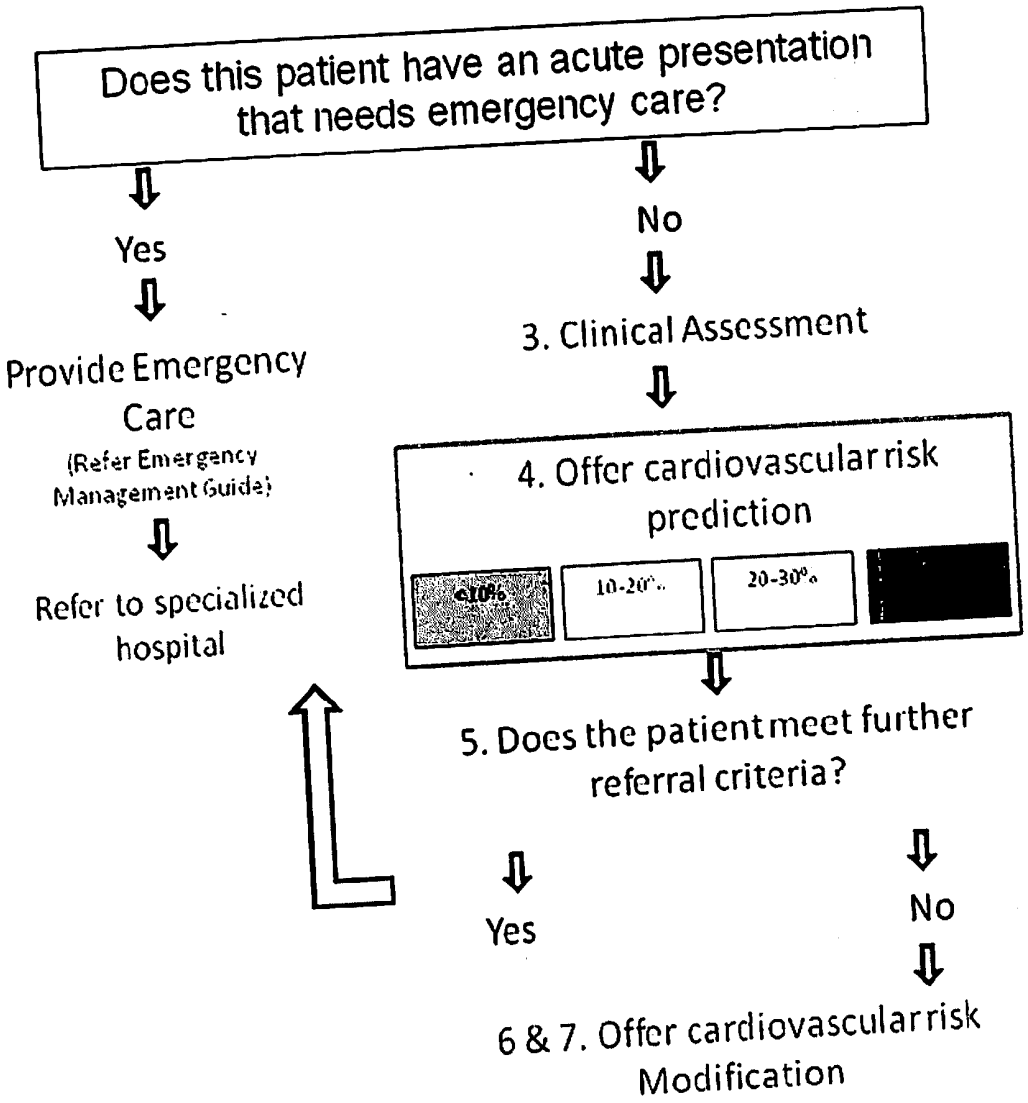
1. Use this guideline for persons with any of the following conditions:

a. Age >40
b. Smokers
c. Obesity (based on waist circumference / BMI)
d. Raised BP (140/90 in non diabetics, 130/80 in diabetics)
e. Diabetes or symptoms suggestive of diabetes (Refer to page 10, Fact box 1)
f. History of Premature Cardiovascular Disease in first degree relatives
g. History of Diabetes in first degree relatives

2. Check if the patient has an acute presentation.

If yes, provide emergency treatment according to the Guideline on Emergency Care Management at Primary Level (Under construction).
Refer the patient to a specialized unit if needed after stabilization.

OVERVIEW



3. Take a history, perform a clinical examination and do simple investigations.

At the end of the clinical encounter, you should be able to answer the following questions. The personal health record is to be used to document findings of history, examination and investigation.

History	Documentation
Does the patient have a history of heart disease, stroke, TIA, diabetes/ pre-diabetes or kidney disease but not being followed up by a specialist unit?	*Record under past medical history*
Does the patient have chest pain and or/breathlessness on exertion, pain in calf on walking?	*Record under past medical history*
What are the medicines that the patient is currently taking? (This is to ascertain if he/she is currently on medication suggestive of CVD or DM)	*Record under current medication section*
Does the patient currently smoke?	*Record under risk chart*
Does the patient consume alcohol?	*Record under risk chart*
Does the occupation of the patient involve sedentary lifestyle?	*Record under risk chart*
Is the patient engaged in regular (more than 30 minutes) of physical activity daily at least 5 days a week?	*Record under risk chart*

Examinations	Documentation
Is the waist circumference more than *94 cm* in males and *85 cm* in females?	*Record under risk chart*
Is there evidence of heart failure?	*Record under examination findings*
Is there altered sensation of feet and or reduced pulses in feet?	*Record under examination findings*
What is the blood pressure of the patient? **To identify hypertension (blood pressure above *140/90 mmHg*) repeat measurement at the same visit after 20 minutes.** **Blood pressure of *130/80 mmHg* in diabetics is considered as hypertension.**	RECORD?

Investigations	Documentation
Is FBS (capillary) > *7 mmol* (115 mg/dl) or RBS < *10.0 mmol* (180 mg/dl)?	*record under investigation findings*
Is there protein in urine? ***- test to be performed in the institution***	*record under investigation findings*
Is total cholesterol more than *200mg/dl*? *- sample of blood can be sent to closest Base hospital*	*record under investigation findings*

4. Predict the 10 year cardiovascular risk.

Document (record under risk chart) and **communicate** cardiovascular risk status of the patient.

- Use WHO/ISH Cardiovascular Risk Prediction Chart.
- Use age, gender, smoking status, systolic blood pressure, diabetes (yes or no) and blood cholesterol level (if available).
  If serum cholesterol level is not available use the mean value 5mmol/l (197- 227 mg/dl).
- *For ages 35-40 use age box 40-49*
- Categorize cardiovascular risk as <10%, 10-20%, 20-30% and > 30%.
- *(Ex. What does <10% risk mean, what does > 30 % risk mean, the adverse outcomes should be explained. This will be part of the training in use of the guidelines).*
  ***Note:** cardiovascular risk prediction cannot be applied to those who nave had a previous vascular event ex. ischemic heart diseases, stroke, and/or peripheral vascular disease.*
- Record the cardiovascular risk status in the Personal Health Record.
- Communicate to the patient the cardiovascular risk, the benefits of minimizing the risk and what could be done to minimize the risk.

5. Refer patient for specialist clinic if the history and examination points towards any one of the following :

- BP more than 140 / 90 in people less than 40 yrs
  - *to exclude secondary causes of hypertension*
- Known heart disease, stroke, TIA, diabetes or kidney disease who are not being followed up by specialist clinic
  - *this is to obtain a plan of management which can be continued at the primary level*
- Angina, claudication
- Worsening heart failure
- Raised BP (in DM >130/80 mm Hg) in spite of treatment with 2 or 3 drugs

- Any protein in urine
- Newly diagnosed lean patients with DM < 30 years
- DM with fasting blood glucose > 14 mmol/l despite Metformin with or without sulphonylurea
- DM with severe infection and/or foot ulcers
- DM with recent deterioration of vision or no eye examination in 2 years

6. Offer drug treatment to the following patients in spite of their risk category:

- All individuals with persistently raised BP > 160/100 mmHg – These patients are those >40 yrs
  - *Refer to notes on drug treatment.*
- All patients with established diabetes and cardiovascular disease who are being followed up by a specialist clinic
  - *Provide the treatment that the patient is already on.*
- All individuals who have a total cholesterol level at or above 8 mmol/l (320 mg/dl)
  - *Provide a statin.*
- All patients with diabetes who have target organ damage confirmed by a specialist
  - *Provide a statin*

7. Provide cardiovascular risk management as per the risk status.

The following apply to those without DM

Risk <10%

Risk <10% denotes the green areas of the WHO/ISH Risk Prediction Chart.

Level of risk: LOW

Those who are having blood pressure more than 140/90 mmHg but less than 160/100 mmHg should be offered lifestyle modifications. Repeat BP measurements every 6 months and treat accordingly

Review cardiovascular risk of the guideline. 2-5 yrs

Risk 10%-20%

Risk 10%-20% denotes yellow areas of the WHO/ISH Risk Prediction Chart.

Level of risk: MODERATE for fatal or non-fatal vascular events.

Lifestyle modifications are recommended (Refer guidelines on the lifestyle modification).

Review this patient according to the guideline every 12 months.

Risk 20%>30%

Risk 20%-30 denotes orange areas of the WHO/ISH Risk Prediction Chart.

Level of risk: HIGH for fatal or non-fatal vascular events.

Lifestyle modifications are recommended (See guide).
If patients in this category with BP more than 140/90 mmHg, are unable to achieve good control of hypertension within 4-6 months with professional support, start them on one of the following drugs: thiazide-like diuretic, ACE inhibitor, calcium channel blocker or beta blocker. (Consider thiazide like diuretic, ACE inhibitor, calcium channel blocker as first line drugs.)
Patients who develop cough with ACE inhibitor (Enalapril) can be substituted with Losarten potassium on the advice of a Consultant Physician

Caution: Women of reproductive age if given ACE inhibitors should be advised to discontinue as soon as they are pregnant and seek medical advice.

Review cardiovascular risk of this patient according to the guideline every 6 months.

Risk > 30%

Risk >30% denotes red and maroon areas of WHO/ISH Risk Prediction Chart.

Level of risk: VERY HIGH for fatal or non-fatal vascular events.

Lifestyle modifications are recommended (See guide).
If patients in this category have BP more than 130/80 mmHg, start them on one of the following drugs: thiazide-like diuretic, ACE inhibitor, calcium channel blocker or beta blocker. (Consider thiazide like diuretic, ACE inhibitor, calcium channel blocker as first line drugs.)
Patients who develop cough with ACE inhibitor (Enalapril) can be given substituted with Losarten potassium on the advice of a Consultant Physician

Add Statin (Atorvastatin 10-20 mg daily).

Review this patient according to the guideline every 3 months.
If risk is still >30% after 3-6 months of prescribed interventions at first visit, refer to specialist hospital.

8. In addition to the above interventions, consider the following for individuals with diabetes mellitus:

Fact Box 1

When should diabetes be suspected?

Patients presenting with symptoms of recent loss of weight, polyuria, polydypsia (this triad is typical of type 1) should be suspected. Confirmatory tests should be done.

The medical officers should know the wide variety of symptoms that a patient may come with in early stages of type 2 DM so that they test early to confirm the diagnosis.

They may present one or more symptoms at a given time. These symptoms may be due to DM or its complications.

Symptoms include:

- tiredness and fatigue
- joint pains
- tendency to get skin and genital infections (vaginal thrush)
- pruritus vulvae
- balanitis
- nocturia
- nocturnal enuresis (type 1) blurred vision /visual changes
- pain and or numbness in the feet and hands
- sexual dysfunction (impotence) or symptoms of arterial disease – myocardial and or peripheral ischemia in addition to thirst
- polyuria
- loss of weight.

Goals for Glycaemic Control

Test	Normal	Goal	Action
FBS capillary	<90 mg/dl	< 110 mg/dl	>110
FBS (venous)	<100 mg/dl	90- 130 mg/dl	>130
RBS capillary	100-150 mg/dl	<160 mg/dl	>160
RBS (venous)	<140 mg/dl	110-180 mg/dl	>180
Hb A1c	4-6	7-8	>8

**(divide by 18 to convert mg/dl to mmol/l)*

Oral hypoglycemic drugs:

All individuals with persistent fasting blood glucose > 6 mmol/l despite diet should be given metformin. Titrate according to blood glucose control.

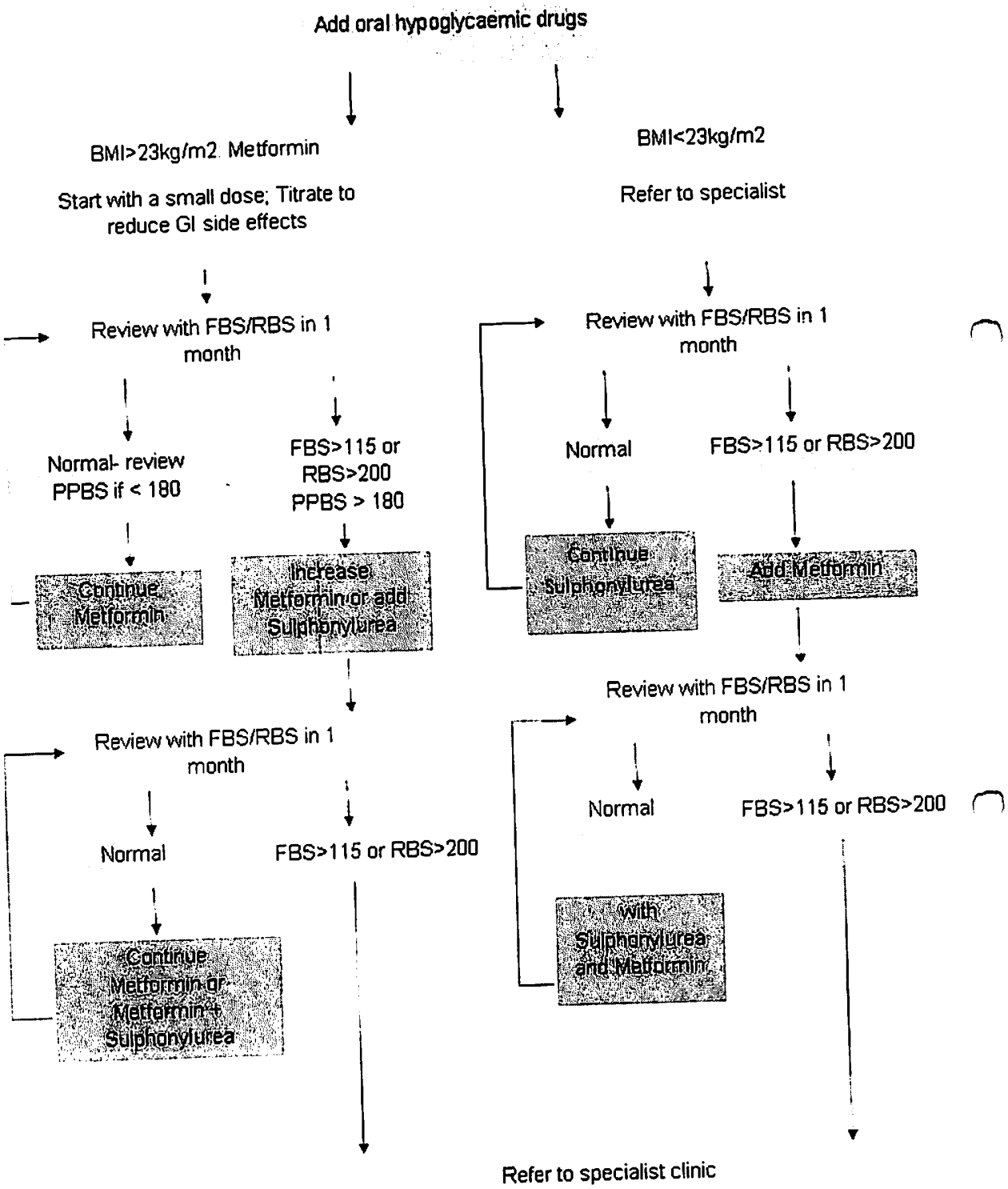
If unable to control on maximum doses of metformin and a sulphonylurea, refer to a specialist hospital.

- Give advice on foot care
- Follow up every three months
- Use flow sheet for follow up (use with clinic record)

Diabetes & Statins:

- For those with DM< 5 years if they fall into high CVD risk
- For those with DM > 5 years
- Satins are indicated for diabetics with target organ damage confirmed by a Specialist

Drug treatment of a newly diagnosed patient with diabetes

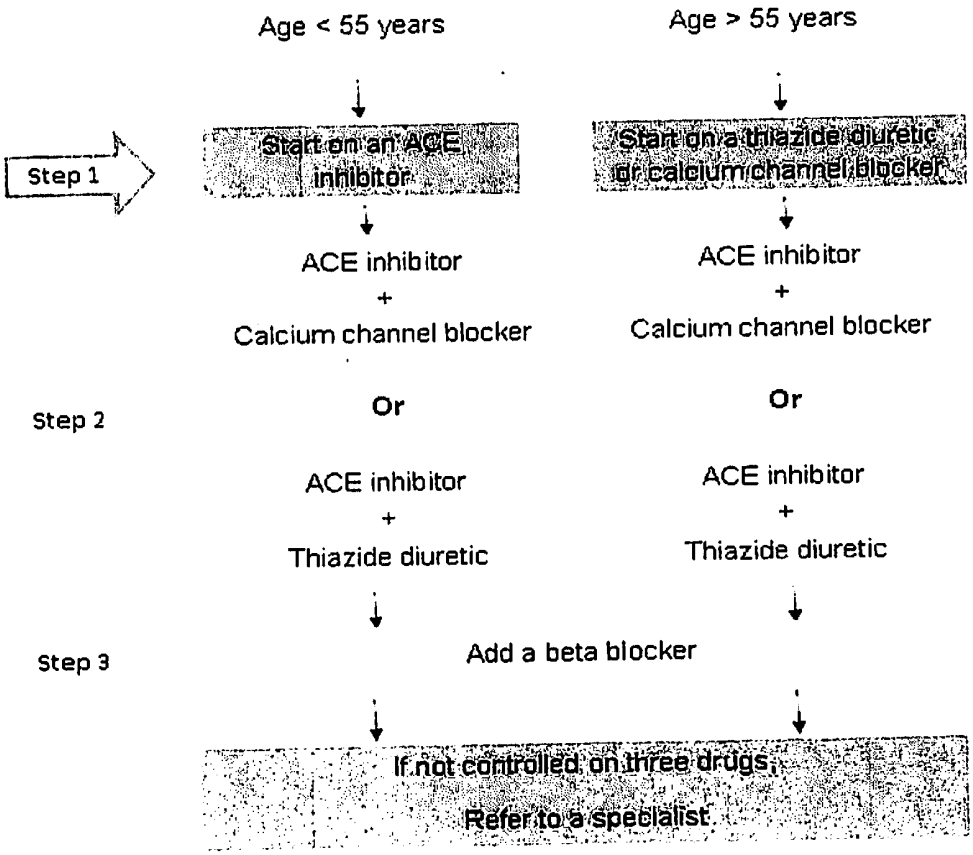


9. Advise the patient and family on the following:

- Importance of smoking cessation, healthy diet, physical activity, weight control, alcohol cessation and stress management.
- Importance of continued treatment (compliance).
- Motivate the patient and family to adhere to the treatment regimens.
- Educate the patient and the family on complications of NCDs with regards to the disease, complications, management and prognosis.
- Appropriate sticker to be pasted as and when each item is done-
- Provide written instructions on the patient health record

10. Select the appropriate antihypertensive drugs.

Drug management of hypertension



11. > 30% cardiovascular risk – Start on lipid lowering drug.

- Repeat risk assessment in one year.
  Step up statin dose as required.
  If cholesterol level is not controlled on full dose of statin, refer to specialist hospital.

- **Consider the possibility of hypothyroidism.**
  Check liver enzymes every year, stop treatment and refer to specialist if liver enzymes are more than 5 times normal.
  - *Blood samples can be collected and sent to closest Base hospital for liver enzymes and serum cholesterol*

12. Lifestyle modification.

Lifestyle modification will be carried out in 6 steps as appropriate for the patient's risk factors. A separate life style modification guide is available, please refer to it. This guide also contains key information that any healthcare worker should know before communicating to patients on life style modification.

Guidelines have been prepared by the Ministry of Health in collaboration with Colleges of Physicians, Community physicians, General Practitioners and WHO.

Annex 9: Maintenance arrangements for facilities and equipment of hospitals

Maintenance Arrangements for facilities and biomedical equipment

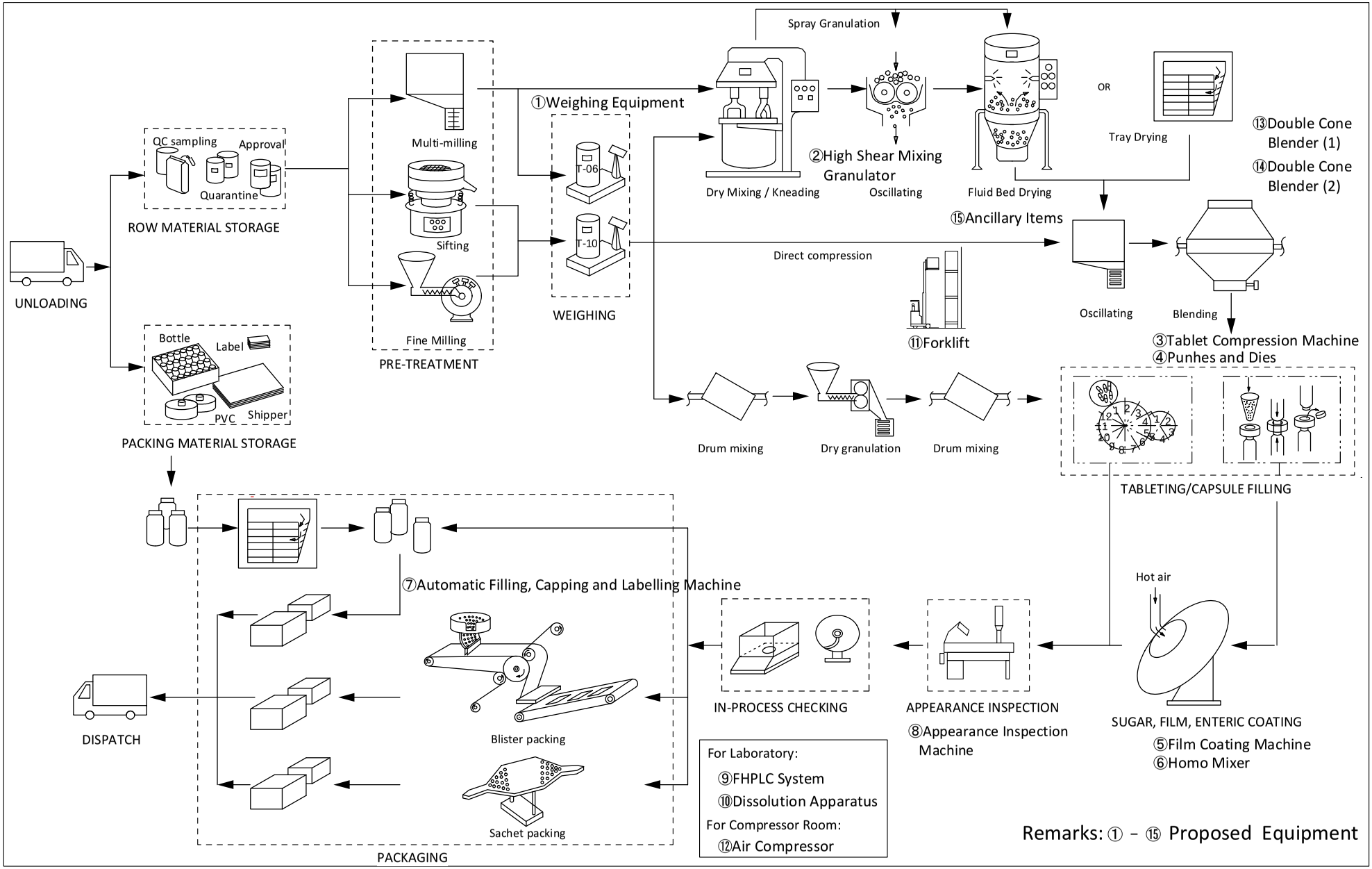
Province/ District		Cat.	Hospital Name	Building			Electrical			Mechanical			Equipment		
				IH	P/LM	OS	IH	P/LM	OS	IH	P/LM	OS	IH	P/LM	OS
C	Kandy	DGH	Nawalapitiya		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes
C	Kandy	BHB	Teldeniya		Yes			Yes			Yes			Yes	
C	Kandy	BHB (LM)	Gampola		Yes				Yes			Yes	Yes	Yes	Yes
C	Nuwaraeliya	DGH (LM)	Nuwaraeliya		Yes			Yes			Yes		Yes	Yes	
C	Nuwara Eliya	BHA	Dickoya			Yes			Yes			Yes		Yes	
C	Nuwara Eliya	BHB	Rikillagaskada		Yes			Yes			Yes			Yes	
C	Matale	DGH	Matale	Yes	Yes	Yes	Yes	Yes	Yes			Yes		Yes	Yes
C	Matale	BHA	Dambulla	Yes	Yes		Yes	Yes		Yes	Yes			Yes	
C	Matale	BHB	Hettipola		Yes				Yes		Yes			Yes	
N	Jaffna	BHA	Point Pedro			Yes			Yes			Yes			Yes
N	Jaffna	BHA	Telippalai		Yes			Yes			Yes			Yes	
N	Jaffna	BHB	Chavakachcheri		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes
N	Jaffna	BHB	Kayts		Yes		Yes	Yes			Yes			Yes	Yes
N	Mannar	DGH	Mannar		Yes			Yes				Yes		Yes	Yes
N	Mullaitive	DGH	Mullaitive		Yes			Yes			Yes			Yes	
N	Mullaitive	BHB	Mankulam		Yes			Yes			Yes			Yes	
N	Vavuniya	DGH	Vavuniya		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	Vavuniya	BHB	Cheddikulam	Yes			Yes					Yes	Yes		Yes
E	Batticaloa	BHB	Kaklawanchikudy		Yes			Yes			Yes			Yes	
E	Ampara	BHA (LM)	Kalmunai North		Yes			Yes			Yes	Yes		Yes	Yes
E	Ampara	BHA (LM)	Kalmunai South		Yes				Yes		Yes	Yes	Yes	Yes	Yes
E	Ampara	BHB	Mahaoya		Yes			Yes			Yes			Yes	
E	Ampara	BHB	Samanthurai		Yes			Yes			Yes		Yes		Yes
E	Ampara	BHB	Dehiattakandiya		Yes			Yes			Yes			Yes	
E	Ampara	BHB(LM)	Akkarapatthu			Yes			Yes			Yes		Yes	Yes
E	Tricomalee	DGH	Trincomalee		Yes			Yes			Yes			Yes	
E	Trincomalee	BHA(LM)	Kanthalai		Yes			Yes			Yes		Yes	Yes	Yes
E	Trincomalee	BHB	Mutur			Yes			Yes			Yes			Yes
E	Trincomalee	BHB	Kinniya		Yes			Yes			Yes			Yes	
NW	Kurunegala	BHA	Kuliyapitiya		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes
NW	Kurunegala	BHB	Nikawaratiya	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes
NW	Kurunegala	BHB	Dambadeniya		Yes		Yes	Yes			Yes			Yes	
NW	Kurunegala	BHB	Galgamuwa		Yes			Yes			Yes			Yes	
NW	Kurunegala	BHB	Polpitigama		Yes	Yes		Yes			Yes			Yes	
NW	Puttalam	DGH	Chilaw			Yes			Yes			Yes		Yes	Yes
NW	Puttalam	BHA	Puttalam		Yes	Yes		Yes			Yes			Yes	
NW	Puttalam	BHB	Marawila		Yes			Yes	Yes		Yes	Yes		Yes	Yes
NC	Anuradhapura	BHB	Padaviya		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes
NC	Anuradhapura	BHB	Tambuttegama		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes
NC	Anuradhapura	BHB	Kebitigollewa		Yes	Yes		Yes			Yes			Yes	
NC	Polonnaruwa	DGH	Polonnaruwa	Yes			Yes	Yes	Yes		Yes		Yes	Yes	
NC	Polonnaruwa	BHB	Medirigiriya		Yes	Yes		Yes			Yes			Yes	Yes
NC	Polonnaruwa	BHB	Welikanda		Yes			Yes			Yes			Yes	
U	Badulla	BHA	Diyatalawa		Yes			Yes			Yes			Yes	
U	Badulla	BHA	Mahiyangana		Yes			Yes			Yes			Yes	
U	Badulla	BHB	Welimada		Yes			Yes			Yes			Yes	
Uva	Moneragala	DGH (LM)	Moneragala		Yes			Yes			Yes		Yes	Yes	
Uva	Moneragala	BHB	Wellawaya		Yes			Yes			Yes			Yes	
Uva	Moneragala	BHB	Siyambalanduwa		Yes			Yes			Yes			Yes	
Sa	Kegalle	DGH (LM)	Kegalle	Yes	Yes	Yes	Yes		Yes		Yes		Yes	Yes	
Sa	Kegalle	BHB	Karawanella		Yes			Yes			Yes			Yes	
Sa	Kegalle	BHB	Warakapola		Yes			Yes			Yes			Yes	
Sa	Kegalle	BHB	Mawanella		Yes			Yes			Yes			Yes	
Sa	Ratnapura	BHA	Embilipitiya		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes
Sa	Ratnapura	BHB	Balangoda		Yes			Yes			Yes			Yes	
Sa	Ratnapura	BHB	Kahawatta		Yes			Yes			Yes			Yes	
Sa	Ratnapura	BHB	Kalawana		Yes			Yes			Yes			Yes	

Remarks: IH – Maintenance Dept. in Hospital OS – Outsourcing LM- Line Ministry

P/LM – Maintenance through Engineering Dept. of the Province / MOH

Annex 10: SPMC – Production flow chart for general drugs

SPMC - PRODUCTION FLOW CHART FOR GENERAL DRUGS



Annex 11: Outline specifications of equipment for SPMC

Annex 8: Outline Specifications for SPMC Equipment

OUTLINE SPECIFICATION SHEET

Code No. 1 Description: Weighing Equipment Quantity: 2 sets

1. Composition (of one set)

(1) Composition

1-1 Weighing scale, 600 kg	: 1 set
1-2 Weighing scale, 5 kg	: 1 set
1-3 Weighing scale, 300 kg	: 1 set
1-4 Weighing scale, 60 kg	: 1 set

2. Specifications

1-1 Weighing scale, 600 kg

1) Type	: Floor scale, standard separate type with cable connection
2) Capacity	: 600 kg
3) Resolution	: 0.1 kg
4) Indicator	
Indications	: Digital
Housing	: Stainless steel housing
Display	: Fluorescent tube display
5) Platform	
Dimensions	: Large size; W850 mm x D1,000 mm x H235+50mm
Material	: Mild iron
Note	: Buried-in possible
6) Power source	: AC230V, 50Hz, single phase

1-2 Weighing scale, 5 kg

1) Type	: Table-top scale, standard separate type with cable connection
2) Capacity	: 5 kg
3) Resolution	: 0.001 kg
4) Indicator	
Indications	: Digital
Housing	: Stainless steel housing
Display	: Fluorescent tube display
5) Platform	
Dimensions	: Table-top size; W350 mm x D300 mm x H80+15mm
Material	: Stainless steel
6) Power source	: AC230V, 50Hz, single phase

1-3 Weighing scale, 300 kg

1) Type	: Floor scale, standard separate type with cable connection
2) Capacity	: 300 kg
3) Resolution	: 0.05 kg
4) Indicator	
Indications	: Digital
Housing	: Stainless steel housing
Display	: Fluorescent tube display
5) Platform	
Dimensions	: Middle size; W500 mm x D750 mm x H148+20 mm
Material	: Stainless steel
6) Power source	: AC230V, 50Hz, single phase

1-4 Weighing scale, 60 kg

1) Type	: Floor scale, standard separate type with cable connection
2) Capacity	: 60 kg
3) Resolution	: 0.01 kg
4) Indicator	
Indications	: Digital
Housing	: Stainless steel housing
Display	: Fluorescent tube display
5) Platform	
Dimensions	: Small size; W350 mm x D550 mm x H112+20 mm
Material	: Stainless steel
6) Power source	: AC230V, 50Hz, single phase

OUTLINE SPECIFICATION SHEET

Code No. 2 Description: High Shear Mixing Granulator Quantity: 1 set

1. Composition

(1) Composition

1-1 High shear mixing granulator : 1 set

2. Specifications

1-1 High shear mixing granulator

1) Type	: Single vessel type granulator mixer
2) Control	: Independent analog and digital control for parameters of granulation
3) Vessel	
Inner diameter	: 1,000 mm
Container volume	: 400 L
Charging volume	: 240 L
4) Agitator	
Motor capacity	: 15 kW
Revolutions	: 18 – 180 rpm
5) Chopper	
Motor capacity	: 7.5 kW
Revolutions	: 360 – 3,600 rpm
6) Structure	
Design	: Designed as water proof structure, and for allowing little powder remained on its outside including LCD panel, switch, etc.
Contact parts material	: SUS 304
Overall dimensions	: W2,000 mm x D1,900 mm x H2,400 mm
7) Power source	: AC400V, 50Hz, 3-phase

OUTLINE SPECIFICATION SHEET

Code No. 3 Description: Tablet Compression Machine Quantity: 5 sets

1. Composition (of one set)

(1) Composition

1-1 Tableting machine	: 1 set
1-2 Raw material powder feeding system	: 1 set
1-3 Tablet cleaner	: 1 set
1-4 Vacuum cleaner	: 1 set

2. Specifications

1-1 Tableting machine

1) Type	: High speed tableting machine for big size tablets
2) Motor	: Inverter type, 11 kW
3) Control	: With touch panel control; safety monitoring device equipped; computerized tablet weight control system built-in
4) Tableting pressure	: Pre pressure of 49 KN and main pressure of 58.1 KN
5) Max. output	: 462,000 tablets / hour
6) Number of stations	: 77 stations as standard
7) Tablet diameter	: 12 mm as standard
8) Tablet thickness	: 0 – 6 mm as standard
9) Main body dimensions	: W1,233 mm x D1,233 mm x H1,900 mm

1-2 Raw material powder feeding system

1) Type	: With one powder conveyor, two hoppers and two powder distribution control units
2) Powder conveyer	: By air vacuuming method from a material can to the hopper
3) Hopper	: 30 L
4) Powder distribution control unit	: For filling bad fluidity powders into dies in stable, by stirring powders in order to improve its fluidity

1-3 Tablet cleaner

1) Type	: Cylinder cage rotating type, made of stainless steel

1-4 Vacuum cleaner

1) Type	: For dust collection and clean air supply

OUTLINE SPECIFICATION SHEET

Code No. 4 Description: Punches and Dies Quantity:1 set

1. Composition for 1 set
(1) Composition
1-1 Punches and dies : 1 set

2. Specifications
1-1 Punches and dies
The sizes, shapes and quantities of the punches and dies included in one set are as follows:

1) Set for 6.5 mm, double concave x 1 set
- Upper punch with letters : 56 pcs. / set
- Lower punch with score mark : 56 pcs. / set
- Die : 56 pcs. / set

2) Set for 6.5 mm, flat beveled x 2 sets
- Upper punch with letters : 56 pcs. / set
- Lower punch with score mark : 56 pcs. / set
- Die : 56 pcs. / set

3) Set for 8.0 mm, double concave x 1 set
- Upper punch with letters : 56 pcs. / set
- Lower punch with score mark : 56 pcs. / set
- Die : 56 pcs. / set

4) Set for 8.0 mm, double concave x 1 set
- Upper punch without letters : 56 pcs. / set
- Lower punch without letters : 56 pcs. / set
- Die : 56 pcs. / set

5) Set for 7.0 mm, deep concave x 1 set
- Upper punch without letters : 56 pcs. / set
- Lower punch without letters : 56 pcs. / set
- Die : 56 pcs. / set

6) Set for 11.5 mm, double concave x 1 set
- Upper punch without letters : 56 pcs. / set
- Lower punch without letters : 56 pcs. / set
- Die : 56 pcs. / set

7) Set for caplet shape
- Upper punch : 56 pcs. / set
- Lower punch : 56 pcs. / set
- Die : 56 pcs. / set

OUTLINE SPECIFICATION SHEET

Code No. 5 Description: Film Coating Machine Quantity: 1 set

1. Composition

(1) Composition

1-1 Film coating machine	: 1 set
1-2 Peripheral equipment for coating	: 1 set
1-3 Peripheral equipment for inlet air and exhaust air	: 1 set
1-4 Control system	: 1 set

2. Specifications

1-1 Film coating machine

1) Type	: Fully automatic film and sugar coating machine
2) Control system	: By computerized control board, specially customized possible
3) Brim volume	: 550 L
4) Spray gun	: 4 sets of spray guns supplied, for film coating and sugar coating
5) Suction vent drying type	: Selectable, mouth ring type, parallel flow type and contra-flow type
6) Mixing mechanism of tablets	: By boomerang type baffle
7) Rotation speed	: 3 – 12 rpm
8) Product discharge system	: Automatic charging and discharging of pills, tablets, etc. possible
9) Overall dimensions	: W2,200 mm x D2,500 mm x H2,700 mm
10) Power source	: AC400V, 50Hz, 3-phase

1-2 Peripheral equipment for coating

1) Continuous flow pump unit	
Type	: Rotary pump, for sugar coating
Capacity	: 3.0 – 20 L/min.
2) Solution tank	
Type	: For film and sugar coating
Effective volume	: 150 L

1-3 Peripheral equipment for inlet air and exhaust air

1) Primary air handling unit	
Conditioning capacity	: 25 – 50 m^3 / min.
Output temperature	: 25 ^{o}C +/- 2 ^{o}C
Output humidity	: 50 % +/- 5 %
2) Secondary air handling unit	
Heat exchange capacity	: 25 – 50 m^3 / min.
Output temperature	: 100 ^{o}C +/- 2 ^{o}C (max.)
3) Inlet blower	
Type	: Turbo fan
Capacity	: 55 m^3 / min.
4) HAPA filter box	
Material	: SUS 304
Capacity	: 99.97 %
5) Exhaust blower	
Type	: Turbo fan
Capacity	: 65 m^3 / min.
6) Dust collector	
Type	: Dry type with polyester filter
Area of polyester filter	: 26.4 m^2

1-4 Control system

1) Automatic control board	
Type	: Independent, non-explosion proof with PID control system
Control parameters	: Inlet air temperature, inlet air volume, pan revolutions, hydrostatic pressure in pan, exhaust air temperature, film solution speed, film tank temperature, sugar solution speed, sugar solution tank temperature
2) Power board for air handling unit	
Type	: Independent, non-explosion proof with PID control system
Control parameters	: For temperature and humidity of air handling units
3) Sensors	
Types	: For inlet air temperature, exhaust air temperature, inlet air volume, hydrostatic pressure in pan, pan revolution, film solution tank temperature, solution speed, air humidity, air temperature

OUTLINE SPECIFICATION SHEET

Code No. 6 Description: Homo Mixer Quantity: 1 set

1. Composition
(1) Composition
1-1 Homo mixer : 1 set

2. Specifications
1-1 Homo mixer

1) Type	: Homo mixer with stand and controller
2) Motor	: Brushless motor, 1.5 kW
3) Drive method	: Direct drive through coupling
4) Speed change	: By electronics controlled controller
5) Indicators	: AM meter, tachometer, time counter
6) Control parameters and items	: Revolutions, direction of rotation, mixing time
7) Mixing rotation	
Forward	: 500 – 8,000 rpm (with water)
Reverse	: 500 – 7,200 rpm (with water)
8) Working capacity	: 50 L
9) Structure	
Contact parts material	: SUS 304
10) Power source	: AC230V, 50Hz, single phase

OUTLINE SPECIFICATION SHEET

Code No. 7-1 Description: Automatic Filling, Capping and Labeling Machine (1) Quantity: 1 set

1. Composition

(1) Composition

1-1 Bottle drawing machine, turntable	: 1 set
1-2 Automatic air cleaner	: 1 set
1-3 Silica gel supply machine	: 1 set
1-4 Automatic tablet filling and counting machine	: 1 set
1-5 Tablet supply turning lift	: 1 set
1-6 Automatic filling machine for polyethylene tube and capper	: 1 set
1-7 Cap supply turntable	: 1 set
1-8 Buffer turntable	: 1 set
1-9 Automatic labeler	: 1 set
1-10 Cap sealer	: 1 set

2. Specifications

1-1 Bottle drawing machine, turntable

1) Type	: Turning

1-2 Automatic air cleaner

1) Capacity	: 10 – 70 pcs. / min.
2) Nozzle	: 6 nozzles
3) Blower	: Built-in

1-3 Silica gel supply machine

1) Type	: Automatic

1-4 Automatic tablet filling and counting machine

1) Counting lane	: 12 lanes
2) Capacity	: 3 - 5 tablets / sec. x 12 lanes (2,160 – 3,600 tablets / min.)
3) Counting item	
Applicable material	: Tablets
Form	: Round, triangle, oval, rugby ball, cylindrical, etc.
Size	: 6 – 12 mm diameter
Range	: 10 – 5,000 pcs.

1-5 Tablet supply turning lift

1) Type	: Turning

1-6 Automatic filling machine for polyethylene tube and capper

1) Type	: Integrated of tube filling function and capping function
2) Applicable vessel	
Material	: Pharmaceutical glass / resin vessels
Size	: 20 – 60 mm diameter x H40 – 120 mm
3) Capacity	: 20 – 50 pcs. / min.
4) Polyethylene tube	: 30 μ, W120 – 250 mm
5) Cutting size	: 100 – 250 mm, selectable by units of 1 mm
6) Capping capacity	: 20 – 50 pcs. / min.
7) Cap squeezing torque	: Digital control by servo motor method

1-9 Automatic labeler

1) Type	: For sticking labels on whole side of bottles
2) Capacity	: 20 labels / min.
3) Accuracy	: +/- 1.0 mm

1-10 Cap sealer

1) Capacity	: 400 bottles / min.
2) Applicable vessel	
Diameter	: 30 – 120 mm
Height	: 50 – 350 mm
Cutting length of labels	: 35 – 220 mm

OUTLINE SPECIFICATION SHEET

Code No. 7-2 Description: Automatic Filling, Capping and Labeling Machine (2) Quantity: 1 set

1. Composition

(1) Composition

1-1 Bottle drawing machine, turntable	: 1 set
1-2 Automatic air cleaner	: 1 set
1-3 Automatic tablet filling and counting machine	: 1 set
1-4 Tablet supply turning lift	: 1 set
1-5 Capping machine	: 1 set
1-6 Cap supply turntable	: 1 set
1-7 Buffer turntable	: 1 set
1-8 Automatic labeler	: 1 set
1-9 Cap sealer	: 1 set

2. Specifications

1-1 Bottle drawing machine, turntable

1) Type	: Turning

1-2 Automatic air cleaner

1) Capacity	: 10 – 70 pcs. / min.
2) Nozzle	: 6 nozzles
3) Blower	: Built-in

1-3 Automatic tablet filling and counting machine

1) Counting lane	: 12 lanes
2) Capacity	: 3 - 5 tablets / sec. x 12 lanes (2,160 – 3,600 tablets / min.)
3) Counting item	
Applicable material	: Tablets
Form	: Round, triangle, oval, rugby ball, cylindrical, etc.
Size	: 6 – 12 mm diameter
Range	: 10 – 5,000 pcs.

1-4 Tablet supply turning lift

1) Type	: Turning

1-5 Capping machine

1) Type	: Automatic capping machine
2) Capping capacity	: 20 – 50 pcs. / min.
3) Cap squeezing torque	: Digital control by servo motor method

1-8 Automatic labeler

1) Type	: For sticking labels on whole side of bottles
2) Capacity	: 20 labels / min.
3) Accuracy	: +/- 1.0 mm

1-9 Cap sealer

1) Capacity	: 400 bottles / min.
2) Applicable vessel	
Diameter	: 30 – 120 mm
Height	: 50 – 350 mm
Cutting length of labels	: 35 – 220 mm

OUTLINE SPECIFICATION SHEET

Code No. 8 Description: Appearance Inspection Machine Quantity: 1 set

1. Composition
(1) Composition
1-1 Appearance inspection machine : 1 set

2. Specifications
1-1 Appearance inspection machine

1) Type	: Automatic
2) Applicable tablet	: Uncoated, film-coated, sugar-coated tablets; tablets with printed mark on one or both sides; scored tablets; tablets with engraved mark
3) Applicable tablet size	
Round tablet	: 5 – 12 mm in diameter and 2 – 8 mm thickness
Shaped tablet	: 5 – 12 mm in width, 2 – 8 mm thickness, 5 – 21 mm in length
4) Inspected surfaces	: Face, back and side
5) Processing capacity	: 350,000 tablets / hour (actual value; dia. 6mm)
6) Inspected items	: Dirt, scratch, adherence of foreign particle, crack, chip, deformation, different color, discoloration, scratchy print, blurred print, hair, mottled tablet, etc.
7) Inspection system	: Six (6) optical units, four (4) color CCD line sensor cameras, two(2) CMOS cameras
8) Hopper capacity	: 12 L
9) Defective tablet collection bin	: Capacity 25 L
10) Uninspected tablet collection bin	: Capacity 8 L
11) External dimensions	: W1,413 x D1,210 x H1720 mm
12) Power source	: AC230V, 50Hz, single phase

OUTLINE SPECIFICATION SHEET

Code No. 9 Description: HPLC System Quantity: 1 set

1. Composition

(1) Composition

1-1 HPLC system control unit	: 1 set
1-2 Solvent delivery unit	: 1 set
1-3 Online degasser	: 1 set
1-4 Auto sampler	: 1 set
1-5 Manual injector	: 1 set
1-6 Mixer	: 1 set
1-7 Column oven	: 1 set
1-8 UV detector	: 1 set

(2) Accessories

2-1 Sample vial, 1.5 mL	: 100 pcs.
2-2 Sample loop, 200 µL	: 1 pc.
2-3 Solvent tray	: 1 pc.
2-4 LC solution single	: 1 pc.
2-5 Column 250 mm x 4.6 mm	: 2 pcs.
2-6 Guard column holder	: 1 pc.
2-7 Guard column	: 10 pcs.
2-8 Maintenance kit	: 1 set

2. Specifications

1-1 HPLC system control unit

1) Connection unit	: Solvent delivery unit, auto sampler, column oven, detector, etc.
2) Number of connection units	: 8
3) Data buffering	: Approx. 24 hours for one analysis
4) Output and input	: 4 inputs, 4 outputs
5) Power source	: AC230V, 50Hz, single phase

1-2 Solvent delivery unit

1) Solvent delivery method	: Parallel-type double plunger
2) Plunger capacity	: 10 µL
3) Flow rate	: 0.0001 mL/min. – 10.0000 mL/min. with +/-1% accuracy
4) Typical pulsation	: 0.03 MPa

1-3 Online degasser

1) Number of online degasser	: 3
2) Degassed flow-line capacity	: 380 µL

1-4 Auto sampler

1) Injection method	: Total-volume sample injection, variable injection volume
2) Injection volume	: 01 µL – 100 µL, with 1% accuracy
3) Number of processed samples	: 175 (1 ml vial), 70 (1.5 ml vial), etc.
4) Sample cooler	: Provided

1-5 Manual injector

1) Type	: For general analysis

1-6 Mixer

1) Type	: Used with solvent delivery unit
2) Mixing volume	: 0.5 – 2.6 mL

1-7 Column oven

1) Temperature control method	: Forced-air circulation
2) Temperature	: 4 – 85 ºC, with 0.1 ºC precision
3) Storage capacity	: W220 x D95 x H365 mm

1-8 UV detector

1) Light source	: Deuterium lamp (D2) lamp, tungsten (W) lamp
2) Wavelength	: 190 – 900 nm, with +/-1nm accuracy
3) Bandwidth, slit width	: 8 nm

OUTLINE SPECIFICATION SHEET

Code No. 10 Description: Dissolution Apparatus Quantity: 1 set

1. Composition

(1) Composition

1-1 Dissolution apparatus	: 1 set

(2) Accessories

2-1 Glass vessel	: 8 pcs.
2-2 Mixing paddle	: 8 pcs.
2-3 Basket with joint	: 8 pcs,.
2-4 Capsule sinker	: 8 pcs.
2-5 Printer for temperature monitoring	: 1 pc.

2. Specifications

1-1 Dissolution apparatus

1) Type	: With water bath
2) Number of channels	: 8
3) Driving method	: Independent or simultaneous
4) Rotation speed range	: 25 – 200 rpm
5) Accuracy	: +/- 2% or +/- 2 rpm, whichever larger
6) Water bath heater	: 250W x 4
7) Water bath temperature	: Room temperature +5 ºC to 45 ºC
8) Test media temperature measuring	: Individual
9) Auto-probe mechanism	: Equipped
10) Elapsed time indicator	: Equipped
11) Safety mechanism	: Equipped, against electric leakage, temperature, boiling in empty
12) Overall dimensions	: W1,200 mm x D400 mm x H560 mm
13) Power source	: AC230V, 50Hz, single phase

OUTLINE SPECIFICATION SHEET

Code No. 11 Description: Forklift Quantity: 1 set

1. Composition
(1) Composition
1-1 Forklift : 1 set

2. Specifications
1-1 Forklift

1) Type	: Rechargeable battery driven, electric reach truck
2) Operator position	: Stand-up
3) Load capacity	: 1,500 kg
4) Load center	: 500 mm
5) Mast height	: 3,000 mm
6) Fork length	: 1,070 mm
7) Overall width	: 1,090 mm
8) Turning radius	: 1,560 mm
9) Overhead guard height	: 2,250 mm
10) Length to fork face	: 1,155 mm
11) Battery voltage and capacity	: 48 V / 280 AH
12) Motor drive	: 4.9 kW
13) Other equipments	: Turn signal light, rear view mirror, back-up lights, head lights, back-up buzzer, tool set, battery charger

OUTLINE SPECIFICATION SHEET

Code No. 12 Description: Air Compressor Quantity: 1 set

1. Composition

(1) Composition

1-1 Air compressor : 1 set

2. Specifications

1-1 Air compressor

1) Type	: Oil-free type with air tank
2) Staring method	: Inverter starting
3) Discharging pressure	: 0.83 MPa
4) Discharging air volume	: 11.5 m^3/min.
5) Dryer	: Provided
6) Refrigerant	: R407C
7) Noise level	: 65 dB
8) Line filter	: For 13 m^3 / min., 1 μm
9) Micro filter	: For 13 m^3 / min. , 0.01 μm
10) Allover dimensions	: W2,600 mm x D1,200 mm x H1,500 mm
11) Power source	: AC400V, 50 Hz, 3-phase

OUTLINE SPECIFICATION SHEET

Code No. 13 Description: Blister Packing Machine Quantity: 1 set

1. Composition

(1) Composition

1-1 Blister packing machine : 1 set

2. Specifications

1-1 Blister packing machine

1) Type	: PTP packaging machine
2) Applicable material	: Tablet, capsule
3) Capacity	: 500 – 3,000 tablets / min.
4) Packing material	: PP, PVC film, aluminum foil, and others
5) Size of sheets	: L85 – 130 mm, W30 – 80 mm
6) Max. width of film	: 150 mm max.
7) Overall dimensions	: W3,300 mm x D1,725 mm x H1,950 mm
8) Power source	: AC 400V, 50 Hz, 3-phase

OUTLINE SPECIFICATION SHEET

Code No. 14 Description: Double Cone Blender (1) Quantity: 1 set

1. Composition

(1) Composition

1-1 Double cone blender : 1 set

2. Specifications

1-1 Double cone blender

1) Type	: Stainless steel made for pharmaceutical use
2) Total volume	: 1,110 L
3) Working volume	: 500 L
4) Rotation speed	: 18 rpm
5) Motor	: 3.7 kW, non-explosion proof motor
6) Timer	: 60 min.
7) Control panel	: Start / stop button, pilot lamp, timer
8) Inlet port diameter	: 450 mm
9) Outlet port diameter	: 300 mm
10) Discharge valve	: Butterfly valve, manual
11) Safety fence	: Equipped in the front and behind of blender
12) Material	: SUS 304
13) External finish	: #200 buff polish
14) Overall dimensions	: W2,700 mm x 1,960 mm x 2,460 mm
15) Power source	: AC400V, 50Hz, 3-phase

OUTLINE SPECIFICATION SHEET

Code No. 15 Description: Double Cone Blender (2) Quantity: 1 set

1. Composition

(1) Composition

1-1 Double cone blender : 1 set

2. Specifications

1-1 Double cone blender

1) Type	: Stainless steel made for pharmaceutical use
2) Total volume	: 440 L
3) Working volume	: 200 L
4) Rotation speed	: 22 rpm
5) Motor	: 1.5 kW, non-explosion proof motor
6) Timer	: 30 min.
7) Control panel	: Start / stop button, pilot lamp, timer
8) Inlet port diameter	: 350 mm
9) Outlet port diameter	: 200 mm
10) Discharge valve	: Butterfly valve, manual
11) Safety fence	: Equipped in the front and behind of blender
12) Material	: SUS 304
13) External finish	: #200 buff polish
14) Overall dimensions	: W2,000 mm x 1,440 mm x 1,890 mm
15) Power source	: AC400V, 50Hz, 3-phase

OUTLINE SPECIFICATION SHEET

Code No. 16 Description: Ancillary Items Quantity: 1 set

1. Composition

(1) Composition

1-1 Humidity / temperature recorder	: 5 sets
1-2 Vacuum cleaner (1)	: 4 sets
1-3 Vacuum cleaner (2)	: 5 sets
1-4 Pallet truck, small	: 1 set
1-5 Pallet truck, large	: 1 set
1-6 Scale, 60 kg	: 6 sets
1-7 Scale, 620 g	: 5 sets
1-8 Friability tester	: 1 set
1-9 Hardness tester	: 1 set
1-10 Drum porter	: 1 set
1-11 Portable dehumidifier	: 1 set
1-12 Carrying cart	: 10 sets
1-13 Stainless steel drum	: 50 sets
1-14 Pallet	: 50 sets
1-15 Laboratory scale	: 1 set

2. Specifications

1-1 Humidity / temperature recorder

1) Type	: Automatic recording type
2) Temperature range	: -20 ºC - +50 ºC
3) Humidity range	: 0 – 100 %

1-2 Vacuum cleaner (1)

1) Type	: Industrial vacuum cleaner with tablet power cleaning attachment hose
2) Output	: 2.2 kW
3) Air capacity	: 2.5 m^3 / min.

1-3 Vacuum cleaner (2)

1) Type	: Industrial vacuum cleaner
2) Output	: 1,050W
3) Air capacity	: 2.2 m^3 / min.

1-4 Pallet truck, small

1) Type	: Manual
2) Loading capacity	: 2,000 kg
3) Fork	: 520 mm x 1,070 mm

1-5 Pallet truck, large

1) Type	: Manual
2) Loading capacity	: 2,000 kg
3) Fork	: 685 mm x 2,220 mm

1-6 Scale, 60 kg

1) Type	: Floor scale, standard separate type with cable connection
2) Capacity	: 60 kg
3) Resolution	: 0.01 kg

1-7 Scale, 620 g

1) Type	: Table-top electronic balance
2) Capacity	: 620 g
3) Resolution	: 0.01 g

1-8 Friability tester

1) Type	: USP, EP confirming
2) Number of drums	: 2
3) Revolutions	: 1 – 99 rpm
4) Drop number	: 1 – 9,999

1-9 Hardness tester

1) Type	: Tablet hardness tester with built-in printer
2) Pressurizing system	: Weight sliding system
3) Measuring range	: 10 – 300N or 1.0 – 30.0 kgf

1-10 Drum porter

1) Type	: Manual
2) Capacity	: 200 L drum, 300 kg
3) Lifting	: Hydraulic system

1-11 Portable dehumidifier

1) Type	: Industrial use dehumidifier with casters
2) Dehumidifying capacity	: 2.05 L / hour
3) Air volume	: 12 m^3 / min. max.

1-12 Carrying cart

1) Type	: Stainless steel cart
2) Loading capacity	: 300 kg
3) Wheel	: 130 mm diameter, rubber made

1-13 Stainless steel drum

1) Type	: Open type, closed by bolt, for pharmaceutical use
2) Material	: SUS 304
3) Capacity	: 200 L

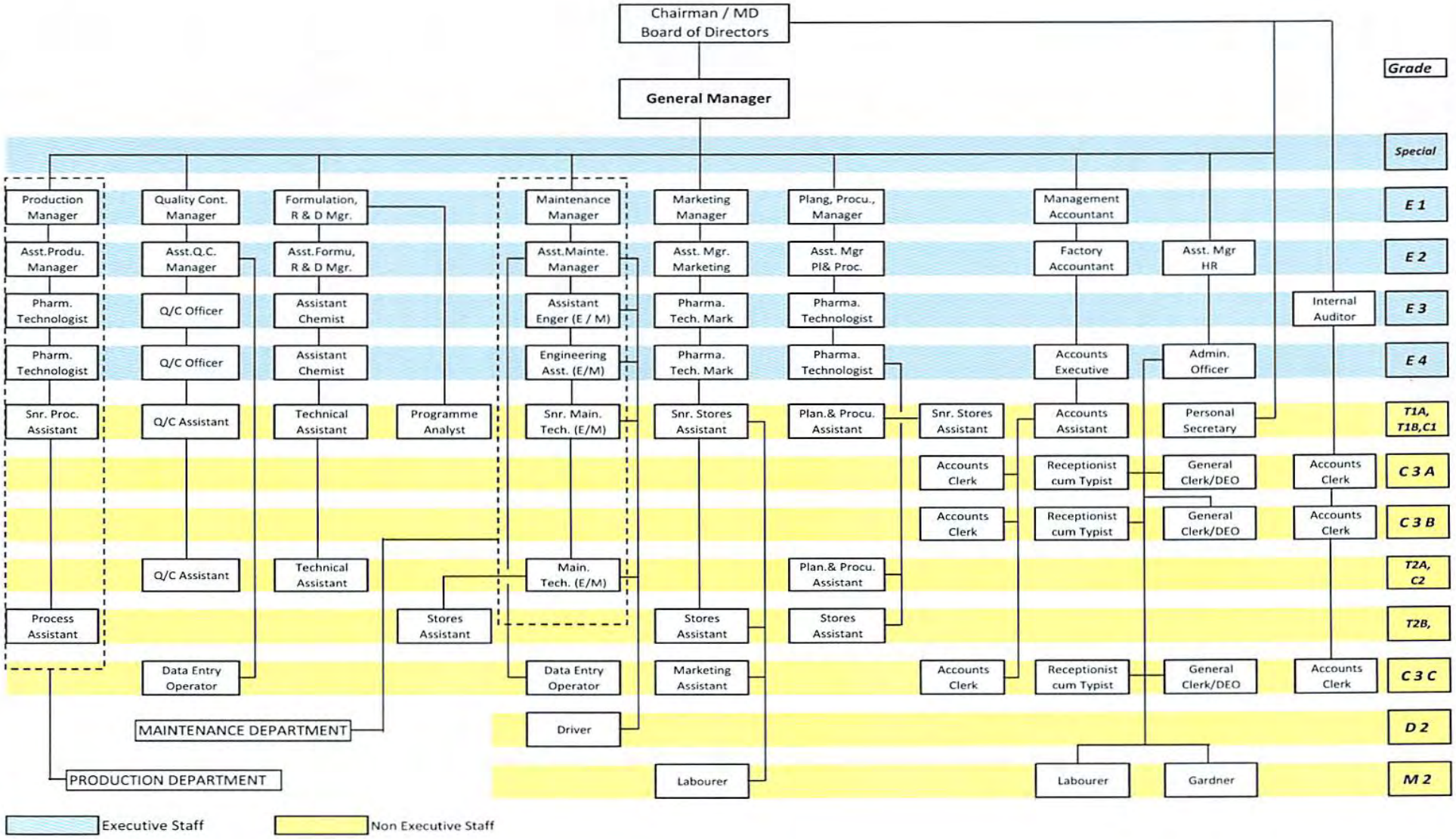
1-14 Pallet

1) Type	: Ideal for handling with hand forks
2) Material	: High density polyethylene
3) Loading capacity	: 1,000 kg

1-15 Laboratory scale

1) Type	: Portable electronic balance for laboratory
2) Capacity	: 200 g
3) Resolution	: 0.01 g

Annex 12: SPMC organisational structure


Chairman / MD
Board of Directors
General Manager
Grade
Special
E 1
E 2
E 3
E 4
T1A, T1B,C1
C 3 A
C 3 B
T2A, C2
T2B,
C 3 C
D 2
M 2
Production Manager
Asst.Produ. Manager
Pharm. Technologist
Pharm. Technologist
Snr. Proc. Assistant
Process Assistant
Quality Cont. Manager
Asst.Q.C. Manager
Q/C Officer
Q/C Officer
Q/C Assistant
Q/C Assistant
Data Entry Operator
Formulation, R & D Mgr.
Asst.Formu, R & D Mgr.
Assistant Chemist
Assistant Chemist
Technical Assistant
Technical Assistant
Programme Analyst
Stores Assistant
MAINTENANCE DEPARTMENT
PRODUCTION DEPARTMENT
Maintenance Manager
Asst.Mainte. Manager
Assistant Enger (E / M)
Engineering Asst. (E/M)
Snr. Main. Tech. (E/M)
Main. Tech. (E/M)
Data Entry Operator
Driver
Marketing Manager
Asst. Mgr. Marketing
Pharma. Tech. Mark
Pharma. Tech. Mark
Snr. Stores Assistant
Stores Assistant
Marketing Assistant
Labourer
Plang, Procu., Manager
Asst. Mgr Pl& Proc.
Pharma. Technologist
Pharma. Technologist
Plan.& Procu. Assistant
Plan.& Procu. Assistant
Stores Assistant
Snr. Stores Assistant
Accounts Clerk
Accounts Clerk
Accounts Clerk
Management Accountant
Factory Accountant
Accounts Executive
Accounts Assistant
Receptionist cum Typist
Receptionist cum Typist
Receptionist cum Typist
Labourer
Asst. Mgr HR
Admin. Officer
Personal Secretary
General Clerk/DEO
General Clerk/DEO
General Clerk/DEO
Gardner
Internal Auditor
Accounts Clerk
Accounts Clerk
Accounts Clerk
Executive Staff
Non Executive Staff

Annex 13: Ranking of the surveyed hospitals

(1) Scoring methods used for the selected indicators

No.	indicators	Computation	
		Data /Formula used	Scoring
1	Frequency of outward transfers	Total number of patients (OPD + Clinics + admission) divided by the number of transfers per month.	Hospital • with the most frequent transfers: 10 points • with the least frequent transfers: 0 points • in between: 0.01 – 9.99 points depending on the frequency
2	BOR	BOR as reported by each institution	Hospital • with the lowest BOR : 10 points • with the highest BOR : 0 points • in between: 0.01 – 9.99 points depending on the BOR
3	Availability of consultants	Number of consultants as reported by each institution	Hospital with • no consultants: 10 points • 1 consultant: 7.5 points • 2 consultants: 5 points • 3 consultants: 2.5 points • 4 or more consultants: 0 point
4	Population per doctor (Pop/Doc)	Catchment population divided by number of MOs including consultants, RMOs, AMOs and intern MOs as reported by each institution	Hospital • with the largest population : 10 points • with the smallest population : 0 points • in between: 0.01 - 9.99 points depending on the population size per doctor
5	Availability of standard facilities	Data provided by each institution on availability of the standard facilities	Hospital • with the largest gaps to the standard: 20 points • with the smallest gaps to the standard: 0 points • in between: 0.01 - 19.99 points depending on the gaps

(2) The standard facilities and the scoring methods

Facilities	Computation
ETU	Yes: 0 points No: 10 points
Exclusive spaces for clinics	Yes: 0 points No: 5 points
Medical, Surgical, Paediatrics and Obstetric wards	For each of the speciality wards: Yes: 0 No: 10
Wards for other specialities	For each of the ENT, Eye, Anaesthetic, Dermatology, Rheumatology Orthopaedic, Neonatal wards: Yes: 0 points No: 5 points * Adjustments are made so that the full scores for DGH and BH are equal.
Operation Theatres	Yes + sufficient in number: 0 points Yes + insufficient in number: 5 points No OT: 10 points
Intensive Care Units (ICU) – Medical and Surgical	Have MICU & SICU + both sufficiently equipped: 0 points Have MICU & SICU + only one sufficiently equipped: 2 points Have MICU & SICU + both not sufficiently equipped: 5 points Have MICU or SICU + sufficiently equipped: 3 points Have MICU or SICU + not sufficiently equipped: 7 points No ICU: 10 points

List A:

Secondary hospitals ranking

					points						numerical data						
Ranking	Sr. No.	Province	category	Institutions	1. Patients / Transfer-out	2.BOR	3.specialist	4.pop/MO	5.facility	Total points (out of 60)	Pop (000)	# beds	1. Patients / Transfer-out	BOR (%)	Journey to referral hosp.	# Consultants	pop/MO
1	17	N	BHB	Mankulam	9.76	10.00	10	1.68	20.00	51.45	10	40	55.8	10	30	0	10,000
2	21	E	BHB	Kaluwanchikudy	9.69	4.62	10	10.00	10.14	44.45	280	150	62.0	80	50	0	56,000
3	13	N	BHB	Kayts	9.85	7.69	10	2.77	13.43	43.73	48	59	49.0	40	45	0	16,000
4	47	NC	BHB	Welikanda	9.89	7.69	10	2.59	13.43	43.59	45	62	45.6	40	30	0	15,000
5	61	Sab	BHB	Kalawana	9.24	7.85	10	2.59	11.78	41.46	120	82	99.9	38	90	0	15,000
6	2	C	BHB	Teldeniya	9.63	7.77	10	4.87	8.50	40.77	304	87	67.0	39	35	0	27,636
7	38	NW	BHB	Polpitigama	9.86	8.15	10	3.06	8.50	39.57	88	110	47.5	34	90	0	17,600
7	25	E	BHB	Mahaoya	9.43	8.11	10	0.24	11.78	39.57	40	100	83.7	34.5	90	0	2,000
9	52	U	BHB	Wellawaya	9.30	7.23	7.5	2.34	11.78	38.15	150	112	95.2	46	45	1	13,636
10	53	U	BHB	Siyambalanduwa	9.36	7.76	10	1.25	7.84	36.21	61	117	90.0	39.1	60	0	7,625
11	44	NC	BHB	Kebitigollewa	8.54	7.69	7.5	0.38	11.78	35.90	25	83	158.6	40	75	1	2,778
12	56	Sab	BHB	Warakapola	9.03	6.68	10	1.61	8.50	35.82	250	138	117.7	53.2	30	0	9,615
13	37	NW	BHB	Galgamuwa	9.63	9.09	5	2.89	8.50	35.10	300	131	67.4	21.8	90	2	16,667
14	12	N	BHB	Chavakachcheri	9.73	5.68	10	1.16	8.50	35.06	71	104	58.9	66.2	30	0	7,100
15	32	E	BHB	Mutur	9.79	0.74	7.5	1.32	13.43	32.78	80	92	53.7	130	150	1	8,000
16	50	U	BHB	Welimada	7.55	6.15	5	1.60	11.78	32.09	200	114	242.1	60	90	2	9,524
17	26	E	BHB	Samanthurai	8.79	5.12	7.5	1.98	6.85	30.24	186	175	138.2	73.5	30	1	11,625
18	9	C	BHB	Hettipola	7.11	NA	10	1.32	11.78	30.21	32	58	279.8	NA	40	0	8,000
19	10	N	BHA	Point Pedro	9.04	6.85	7.5	1.11	5.21	29.70	150	264	116.8	51	25	1	6,818
20	42	NC	BHB	Padaviya	8.83	6.92	7.5	0.90	5.21	29.36	51	195	134.5	50	195	1	5,667
21	11	N	BHA	Telippalai	9.16	4.21	7.5	1.96	6.20	29.03	80.6	102	106.7	85.2	25	1	11,514
22	43	NC	BHB	Tambuttegama	8.61	6.44	0	3.50	10.14	28.69	441	146	152.9	56.3	35	4	20,045
23	5	C	BHA	Dickoya	9.50	3.48	2.5	2.59	10.14	28.21	300	100	78.28	94.7	90	3	15,000
24	6	C	BHB	Rikillagaskada	9.79	7.38	2.5	0.79	6.85	27.32	106	126	53.62	44	45	3	5,048
25	46	NC	BHB	Medirigiriya	9.17	6.20	0	0.59	10.14	26.10	71	155	106.2	59.4	60	4	3,944
26	60	Sab	BHB	Kahawatta	8.29	5.54	5	1.17	5.21	25.21	200	195	179.6	68	30	2	7,143
27	19	N	BHB	Cheddikulam	10.00	NA	7.5	0.26	6.85	24.61	38	222	35.99	NA	40	1	2,111
28	36	NW	BHB	Dambadeniya	8.47	5.92	0	2.59	6.85	23.83	300	206	164.9	63	45	4	15,000
29	23	E	BHA	Kalmunai North LM	8.84	8.23	0	1.68	3.57	22.32	480	413	134	33	60	5	10,000
30	29	E	BHB	Akkarapatthu LM	9.00	4.69	0	0.60	6.85	21.14	250	216	120.5	79.1	600	4	4,032
31	35	NW	BHB	Nikawaratiya	7.72	5.38	0	0.65	6.85	20.61	244	355	227.7	70	30	6	4,281
32	51	U	DGH	Moneragala LM	8.03	3.38	0	0.59	8.45	20.45	501	370	202.3	96	150	17	3,976
33	16	N	DGH	Mullaitivu	9.98	4.62	0	0.54	5.21	20.35	85	139	38	80	130	7	3,696
34	55	Sab	BHB	Karawanella	8.54	4.87	0	1.45	5.21	20.07	565	305	158.5	76.7	45	6	8,692
35	58	Sab	BHA	Embilipitiya	8.57	2.92	0	1.05	7.51	20.05	637	370	156.5	102	105	11	6,500
36	40	NW	BHA	Puttalam	6.43	5.15	0	0.78	7.51	19.87	325	328	336.5	73	50	11	5,000
37	39	NW	DGH	Chilaw	7.52	5.95	0	0.00	6.34	19.81	115	532	244.9	62.6	120	18	697
38	28	E	BHB	Dehiattakandiya	8.96	3.46	0	0.13	6.85	19.41	70	136	123.5	95	60	4	1,429
39	31	E	BHA	Kanthalai LM	8.45	6.43	0	0.39	3.57	18.83	150	210	166.6	56.4	60	8	2,830
40	15	N	DGH	Mannar	9.12	4.62	0	0.48	4.46	18.67	160	350	110.2	80	120	7	3,333
41	30	E	DGH	Trincomalee	7.65	6.08	0	0.59	3.10	17.42	450	446	233.8	61	270	15	3,982
42	3	C	BHB	Gampola LM	7.88	4.39	0	0.51	4.55	17.34	350	358	214.4	82.9	30	9	3,535
43	24	E	BHA	Kalmunai South LM	8.25	4.54	0	1.46	2.91	17.16	500	328	183.1	81	30	6	8,772
44	8	C	BHA	Dambulla	7.66	2.38	0	1.12	5.21	16.38	380	266	233.2	109	45	12	6,909
45	45	NC	DGH	Polonnaruwa LM	6.94	4.82	0	0.35	3.99	16.10	400	601	293.4	77.4	90	21	2,632
46	1	C	DGH	Nawalapitiya	6.55	5.44	0	0.65	3.15	15.78	500	526	326.9	69.3	45	16	4,274
47	34	NW	BHA	Kuliyapitiya	6.34	5.30	0	0.09	3.57	15.30	140	475	344.2	71.1	40	11	1,207
48	49	U	BHA	Mahiyangana	8.17	2.69	0	1.37	2.91	15.14	481	261	190.3	105	120	8	8,293
49	59	Sab	BHB	Balangoda	8.82	3.54	0	0.48	1.92	14.76	177	258	135.6	94	60	7	3,340
50	33	E	BHB	Kinniya	9.15	0.00	2.5	1.08	1.92	14.65	120	160	107.8	140	40	3	6,667
51	7	C	DGH	Matale	7.35	6.05	0	0.39	0.75	14.55	515	729	258.8	61.3	20	17	2,877
52	4	C	DGH	Nuwaraeliya LM	8.00	3.85	0	1.50	0.80	14.14	816	426	204.5	90	150	17	8,967
53	48	U	BHA	Diyatalawa	8.55	3.47	0	0.74	0.28	13.04	350	268	158.3	94.9	45	6	4,795
54	57	Sab	BHB	Mawanella	NA	3.08	0	0.49	9.15	12.73	250	230	NA	100	30	6	3,425
55	41	NW	BHB	Marawila	0.53	5.62	0	0.33	4.55	11.02	200	315	833.6	67	67	6	2,500
56	18	N	DGH	Vavuniya	3.45	3.62	0	0.43	3.05	10.56	220	593	587.2	93	60	20	3,099
57	54	Sab	DGH	Kegalle LM	0.00	4.31	0	0.60	0.00	4.91	826	747	877.8	84	50	21	3,990

Annex 14: Letters from MoH to PC Secretaries (priority)

දුරකථන
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ෆැක්ස්
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විද්‍යුත් තැපෑල,
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සුවසිරිපාය
சுவசிரிபாய
SUWASIRIPAYA

මගේ අංකය
எனது இல
My No

ඔබේ අංකය
உமது இல
Your No.

දිනය
திகதி
28 October 2011

සෞඛ්‍ය අමාත්‍යාංශය
சுகாதார அமைச்சு
Ministry of Health

Mrs. Shirani Weerakoon,
Health Secretary, Central Province

Re: Development priority among the selected secondary hospitals

Reference is made to our request for your cooperation to the health care facility survey by JICA in August 2011. We are pleased to inform you that, with your facilitation, the survey obtained very informative responses from 9 secondary hospitals in your province. Subsequently the information received was analysed by the survey team with close consultations with MoH using internationally accepted criteria, and the following three hospitals have been identified as having high needs for further development in Central province:

1. **Teldeniya Base Hospital (Category B)**
2. **Hettipola Base Hospital (Category B)**
3. **Dickoya Base Hospital (Category A)**

At this juncture, we would like to seek the views of the provincial council regarding the development priorities among the above-mentioned hospitals. Please be informed, however, this does not guarantee any funding at this stage, as the needs across the provinces are high while the resources are limited.

Kindly send your response by 9 November 2011 either by fax or e-mail to:
JICA health sector study team (Contact persons: Ms. Naomi Imani, Dr. Reiko Sata,)
Tel: 11-2369970, Fax: 11-2369971,
Email: nishino.keiko@glm.co.jp; sata.reiko@glm.co.jp; imani.naomi@glm.co.jp

Thanking you for your understanding and continued cooperation.

Dr. P.G.Mahipala
Addl.Secretary (Medical Services)
Ministry of Health

c.c. 1. Hon.Tikiri Kobbekaduwa/Governor, Central Province
2. Hon. Sarath Ekanayake/Chief Minister, Central Province
3. Hon. S.K. Sunil Amarathunga,/Health Minister, Central Province
4. Dr. K.S. Shanthi Samarasingha/PD, Central Province

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28 October 2011

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சுவசிரிபாய
SUWASIRIPAYA

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சுகாதார அமைச்சு
Ministry of Health

Mrs. G.A.M.S.P. Ambanwala
Health Secretary, Uva Province,

Re: Development priority among the selected secondary hospitals

Reference is made to our request for your cooperation to the health care facility survey by JICA in August 2011. We are pleased to inform you that, with your facilitation, the survey obtained very informative responses from 6 secondary hospitals in your province. Subsequently the information received was analysed by the survey team with close consultations with MoH using internationally accepted criteria, and the following three hospitals have been identified as having high needs for further development in ~~Central~~ Uva province:

1. Welimada Base Hospital (Category B)
2. Wellawaya Base Hospital (Category B)
3. Siyambalanduwa Hospital (Category B)

At this juncture, we would like to seek the views of the provincial council regarding the development priorities among the above-mentioned hospitals. Please be informed, however, this does not guarantee any funding at this stage, as the needs across the provinces are high while the resources are limited.

Kindly send your response by 9 November 2011 either by fax or e-mail to:
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Tel: 11-2369970, Fax: 11-2369971,
Email: nishino.keiko@glm.co.jp; sata.reiko@glm.co.jp; imani.naomi@glm.co.jp

Thanking you for your understanding and continued cooperation.

Dr. P.G.Mahipala
Addl.Secretary (Medical Services)
Ministry of Health

c.c. 1. Hon.C. Nanda Mathew, Governor, Uva Province
2. Hon. Shasheendra Rajapaksa, Chief Minister , Uva Province
3. A.M. Buddhadasa, Health Minister, Uva Province
4. Dr. N.S.R. Hewageegana, PD, Uva Province

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சுகாதார அமைச்சு
Ministry of Health

Mr. U.L.A. Azeeze,
Health Secretary, Eastern Province,

Re: Development priority among the selected secondary hospitals

Reference is made to our request for your cooperation to the health care facility survey by JICA in August 2011. We are pleased to inform you that, with your facilitation, the survey obtained very informative responses from 11 secondary hospitals in your province. Subsequently the information received was analysed by the survey team with close consultations with MoH using internationally accepted criteria, and the following three hospitals have been identified as having high needs for further development in ~~Central~~ Eastern province:

1. **Kalawanchikudy Base Hospital (Category B)**
2. **Samanthurai Base Hospital (Category B)**
3. **Mutur Base Hospital (Category B)**

At this juncture, we would like to seek the views of the provincial council regarding the development priorities among the above-mentioned hospitals. Please be informed, however, this does not guarantee any funding at this stage, as the needs across the provinces are high while the resources are limited.

Kindly send your response by 9 November 2011 either by fax or e-mail to:
JICA health sector study team (Contact persons: Ms. Naomi Imani, Dr. Reiko Sata,)
Tel: 11-2369970, Fax: 11-2369971,
Email: nishino.keiko@glm.co.jp; sata.reiko@glm.co.jp; imani.naomi@glm.co.jp

Thanking you for your understanding and continued cooperation.

Dr. P.G.Mahipala
Addl.Secretary (Medical Services)
Ministry of Health

c.c. 1. Hon. Rear Admiral Mohan Wijewickrama/Governor , Eastern Province
2. Hon. Sivanesathurai Chandrakanthan/Chief Minister, Eastern Province
3. Hon. M.S.Subair /Health Minister, Eastern Province
4. Dr. M. Thevarajan/PD, Eastern Province

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சுகாதார அமைச்சு
Ministry of Health

Mr. R.Raveenthiran,
Health Secretary, Northern Province,

Re: Development priority among the selected secondary hospitals

Reference is made to our request for your cooperation to the health care facility survey by JICA in August 2011. We are pleased to inform you that, with your facilitation, the survey obtained very informative responses from 9 secondary hospitals in your province. Subsequently the information received was analysed by the survey team with close consultations with MoH using internationally accepted criteria, and the following three hospitals have been identified as having high needs for further development in ~~Central~~ Northern province:

1. **Point Pedro Base Hospital (Category A)**
2. **Chavakachcheri Base Hospital (Category B)**
3. **Kayts Base Hospital (Category B)**

At this juncture, we would like to seek the views of the provincial council regarding the development priorities among the above-mentioned hospitals. Please be informed, however, this does not guarantee any funding at this stage, as the needs across the provinces are high while the resources are limited.

Kindly send your response by 9 November 2011 either by fax or e-mail to:
JICA health sector study team (Contact persons: Ms. Naomi Imani, Dr. Reiko Sata,)
Tel: 11-2369970, Fax: 11-2369971,
Email: nishino.keiko@glm.co.jp; sata.reiko@glm.co.jp; imani.naomi@glm.co.jp

Thanking you for your understanding and continued cooperation.

Dr. P.G.Mahipala
Addl.Secretary (Medical Services)
Ministry of Health

c.c 1. Major General GA Chandrasiri/Governor, Northern Province
2. Mr. A. Sivaswami/Chief Secretary, Northern Province
3. Dr. J.S.R Jude/PD, Northern Province

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சுகாதார அமைச்சு
Ministry of Health

Mr. P.M.B.Sirisena,
Health Secretary, North Western Province,

Re: Development priority among the selected secondary hospitals

Reference is made to our request for your cooperation to the health care facility survey by JICA in August 2011. We are pleased to inform you that, with your facilitation, the survey obtained very informative responses from 8 secondary hospitals in your province. Subsequently the information received was analysed by the survey team with close consultations with MoH using internationally accepted criteria, and the following three hospitals have been identified as having high needs for further development in ~~Central~~ North Western province:

1. **Galgamuwa Base Hospital (Category B)**
2. **Polpitigama Base Hospital (Category B)**
3. **Dambadeniya Base Hospital (Category B)**

At this juncture, we would like to seek the views of the provincial council regarding the development priorities among the above-mentioned hospitals. Please be informed, however, this does not guarantee any funding at this stage, as the needs across the provinces are high while the resources are limited.

Kindly send your response by 9 November 2011 either by fax or e-mail to:
JICA health sector study team (Contact persons: Ms. Naomi Imani, Dr. Reiko Sata,)
Tel: 11-2369970, Fax: 11-2369971,
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Thanking you for your understanding and continued cooperation.

Dr. P.G.Mahipala
Addl.Secretary (Medical Services)
Ministry of Health

c.c. 1. Hon. Tissa R. Balalla/Governor, North Western Province
2. Hon. Athula Sarath Kumara Wijesinghe/Chief Minister, North Western Province
3. Hon. Ashoka Wadigamangawa /Health Minister, North Western Province
4. Dr. R.S.M.K. Rathnayake/PD North Western Province

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சுகாதார அமைச்சு
Ministry of Health

Mr. Keerthi Gamage,
Health Secretary, North Central Province,

Re: Development priority among the selected secondary hospitals

Reference is made to our request for your cooperation to the health care facility survey by JICA in August 2011. We are pleased to inform you that, with your facilitation, the survey obtained very informative responses from 6 secondary hospitals in your province. Subsequently the information received was analysed by the survey team with close consultations with MoH using internationally accepted criteria, and the following three hospitals have been identified as having high needs for further development in ~~Central~~ North Central province:

1. **Padaviya Base Hospital (Category B)**
2. **Welikanda Base Hospital (Category B)**
3. **Kebitigollewa Base Hospital (Category B)**

At this juncture, we would like to seek the views of the provincial council regarding the development priorities among the above-mentioned hospitals. Please be informed, however, this does not guarantee any funding at this stage, as the needs across the provinces are high while the resources are limited.

Kindly send your response by 9 November 2011 either by fax or e-mail to:
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Thanking you for your understanding and continued cooperation.

Dr. P.G.Mahipala
Addl.Secretary (Medical Services)
Ministry of Health

c.c. 1. Hon. Karunaratne Divulagane /Governor, North Central Province
2. Hon. Berty Premalal Dissanayake/Chief Minister, North Central Province
3. Hon. Peshala Jayarathne Bandara/Health Minister, North Central Province
4. Dr. W.Atapattu/PD, North Central Province

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சுகாதார அமைச்சு
Ministry of Health

Mr. J.A. Ranjith
Health Secretary, Sabaragamuwa Province,

Re: Development priority among the selected secondary hospitals

Reference is made to our request for your cooperation to the health care facility survey by JICA in August 2011. We are pleased to inform you that, with your facilitation, the survey obtained very informative responses from 8 secondary hospitals in your province. Subsequently the information received was analysed by the survey team with close consultations with MoH using internationally accepted criteria, and the following three hospitals have been identified as having high needs for further development in ~~Central~~ Sabaragamuwa province:

1. **Warakapola Base Hospital (Category B)**
2. **Kalawana Base Hospital (Category B)**
3. **Kahawatta Base Hospital (Category B)**

At this juncture, we would like to seek the views of the provincial council regarding the development priorities among the above-mentioned hospitals. Please be informed, however, this does not guarantee any funding at this stage, as the needs across the provinces are high while the resources are limited.

Kindly send your response by 2 November 2011 either by fax or e-mail to:
JICA health sector study team (Contact persons: Ms. Naomi Imani, Dr. Reiko Sata,)
Tel: 11-2369970, Fax: 11-2369971,
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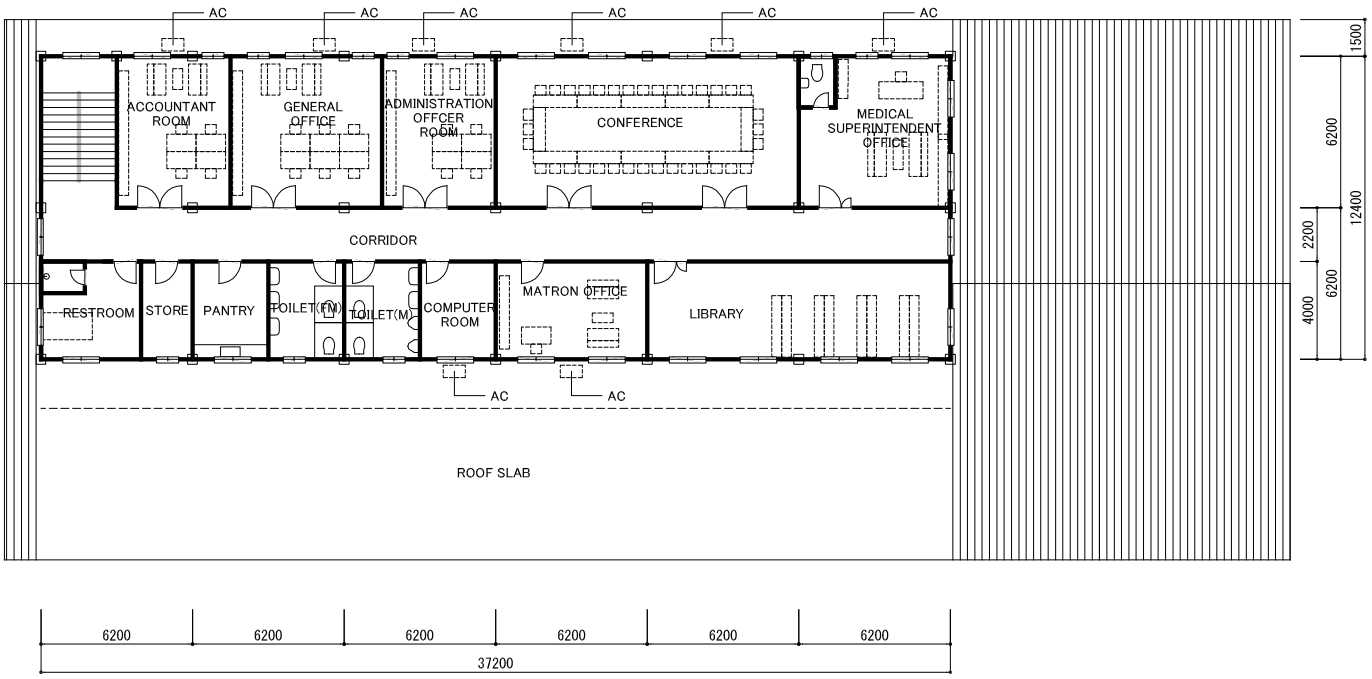
Thanking you for your understanding and continued cooperation.

Dr. P.G.Mahipala
AddlSecretary (Medical Services)
Ministry of Health

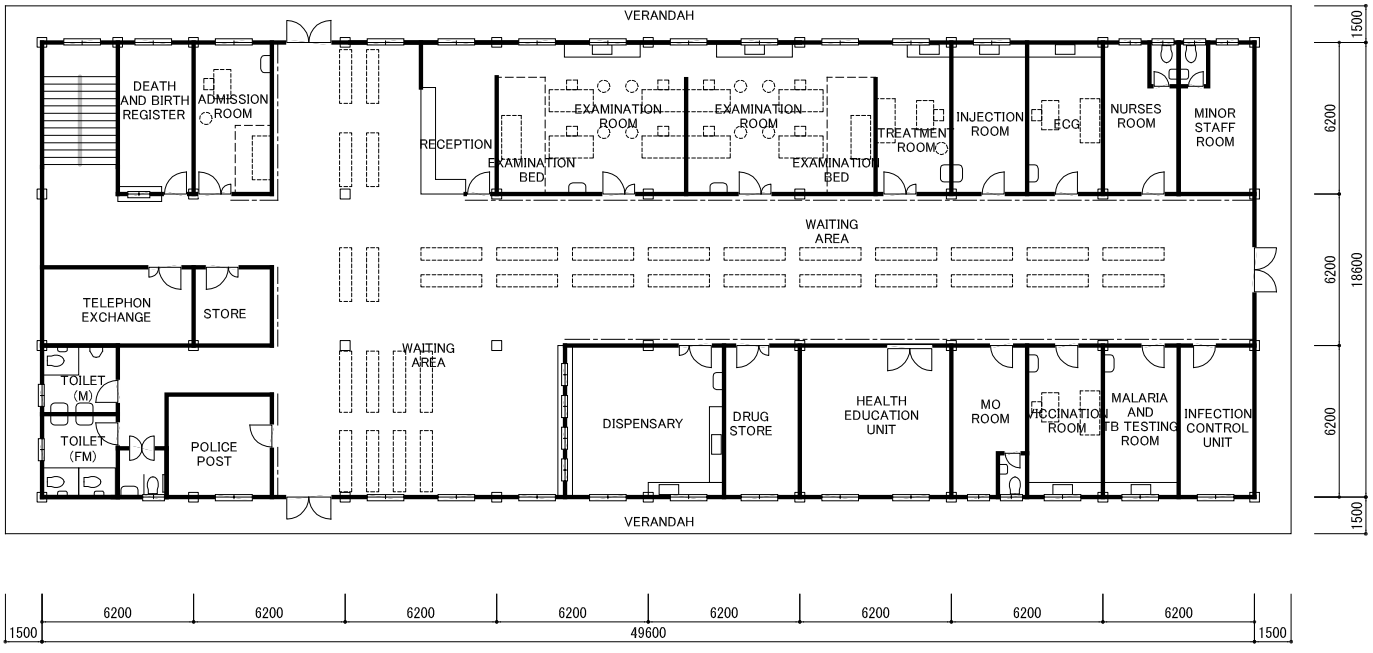
c.c. 1. ~~Hon~~. W.J.M. Lokubandara/Governor, Sabaragamuwa Province
2. Hon. Mahiepala Hearath /Chief Minister, Sabaragamuwa Province
3. Hon. Bhanu Munipriya/Health Minister, Sabaragamuwa Province
4. Dr. Kapila Bimal Kannangara/PD, Sabaragamuwa Province

Annex 15: Model floor plans for hospitals

1-a OPD UNIT and ADMINISTRATION UNIT



ADMINISTRATION UNIT(1F) PLAN SCALE:1/300(A4)



OPD UNIT(GF) PLAN SCALE:1/300(A4)

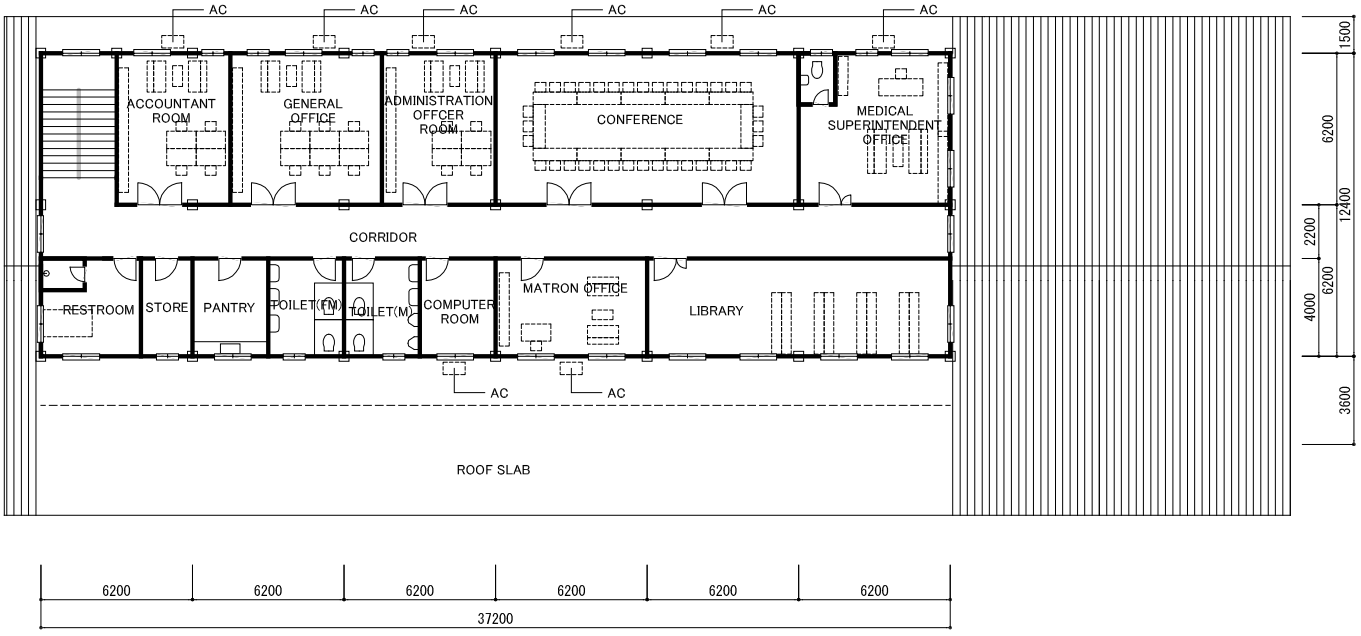
FLOOR AREA (㎡)

	Interior	Exterior	Total
1F	461.28	74.40	535.68
GF	922.56	213.60	1136.16
TOTAL	1383.84	288.00	1671.84

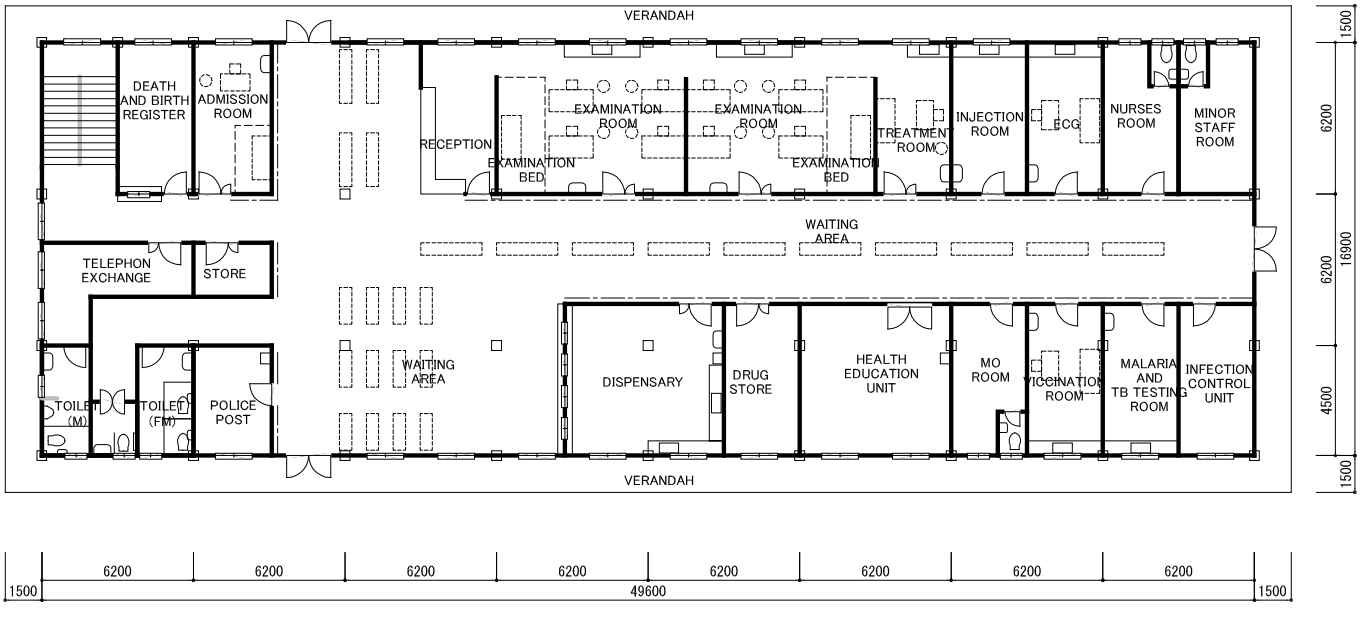
UNIT COST

	Cost(Rs)
Construction	87,274,360
Medical equipment	2,376,600
Total	89,623,960

1-b OPD UNIT and ADMINISTRATION UNIT



ADMINISTRATION UNIT(1F) PLAN SCALE:1/300(A4)



OPD UNIT(GF) PLAN SCALE:1/300(A4)

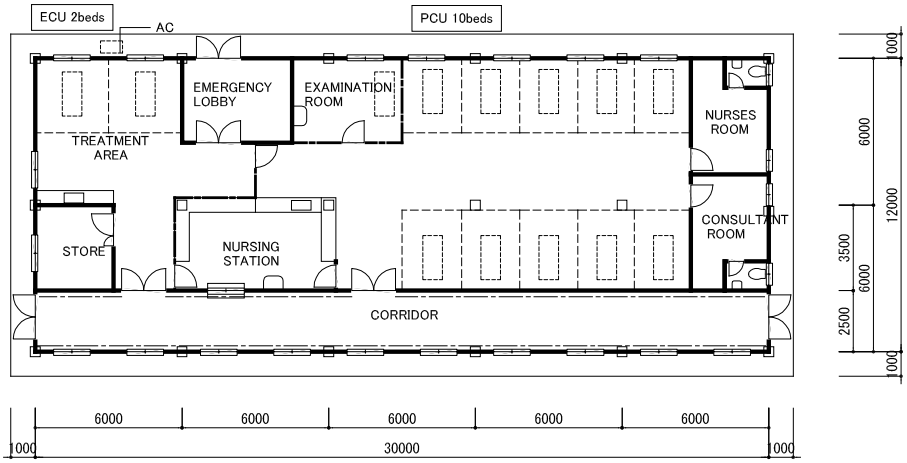
FLOOR AREA (㎡)

	Interior	Exterior	Total
1F	461.28	74.40	535.68
GF	838.24	208.50	1046.74
TOTAL	1299.52	282.90	1582.42

UNIT COST

	Cost(Rs)
Construction	82,580,850
Medical equipment	2,376,600
Total	84,957,450

2-a PCU/ECU UNIT



PCU/ECU UNIT PLAN SCALE:1/300(A4)

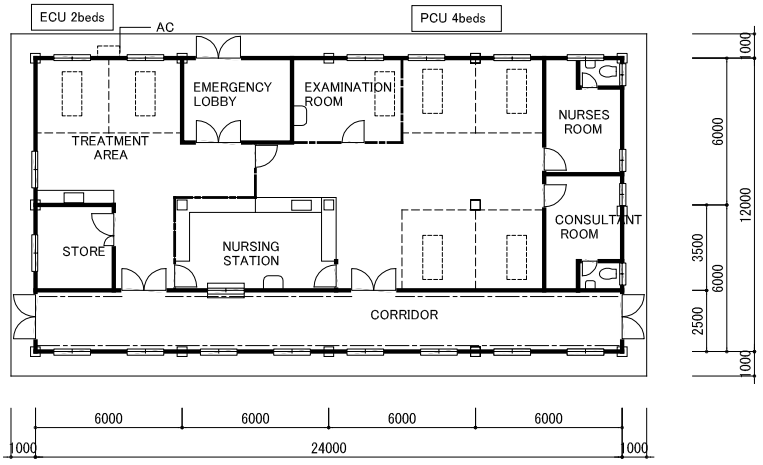
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	360.00	88.00	448.00
TOTAL	360.00	88.00	448.00

UNIT COST

	Cost(Rs)
Construction	23,935,706
Medical equipment	9,999,550
Total	33,935,256

2-b PCU/ECU UNIT



PCU/ECU UNIT PLAN SCALE:1/300(A4)

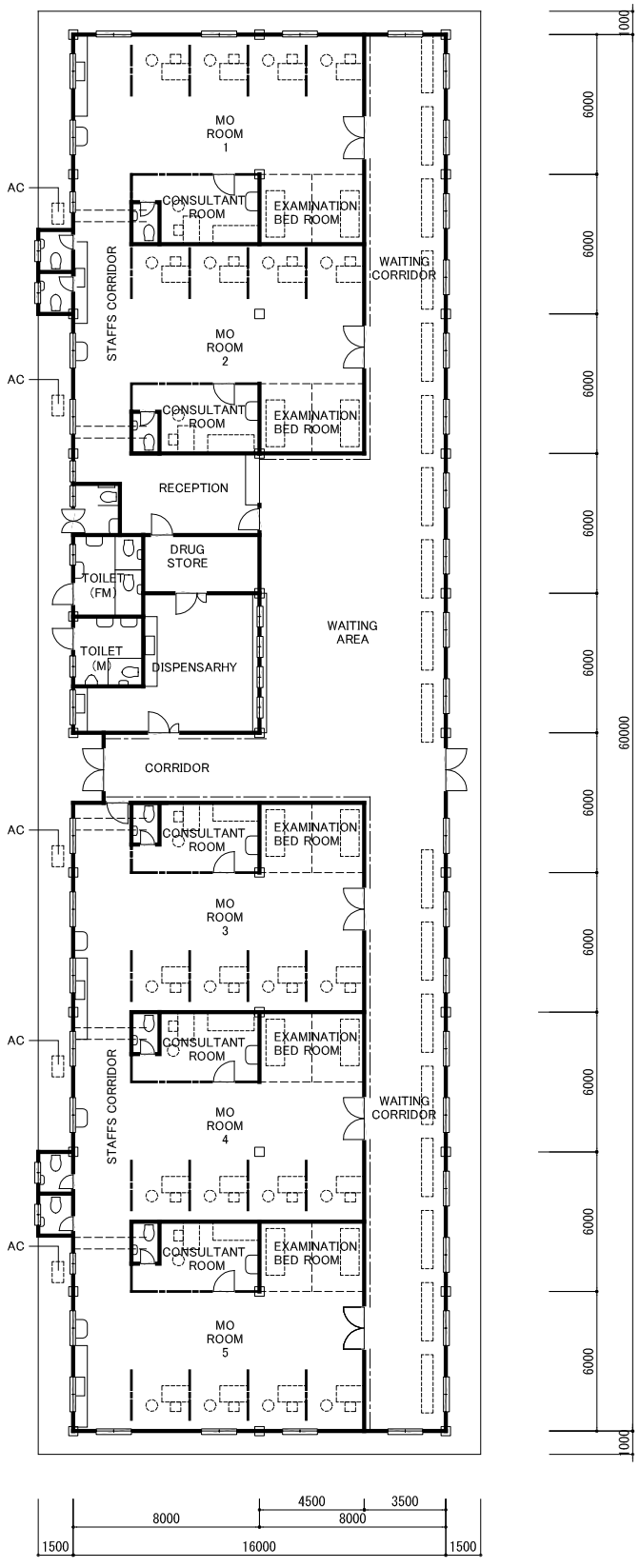
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	288.00	76..00	364.00
TOTAL	288.00	76..00	364.00

UNIT COST

	Cost(Rs)
Construction	19,447,761
Medical equipment	9,285,650
Total	28,733,411

3-a CLINIC UNIT



CLINIC UNIT PLAN SCALE:1/300(A4)

(5 CLINICS)

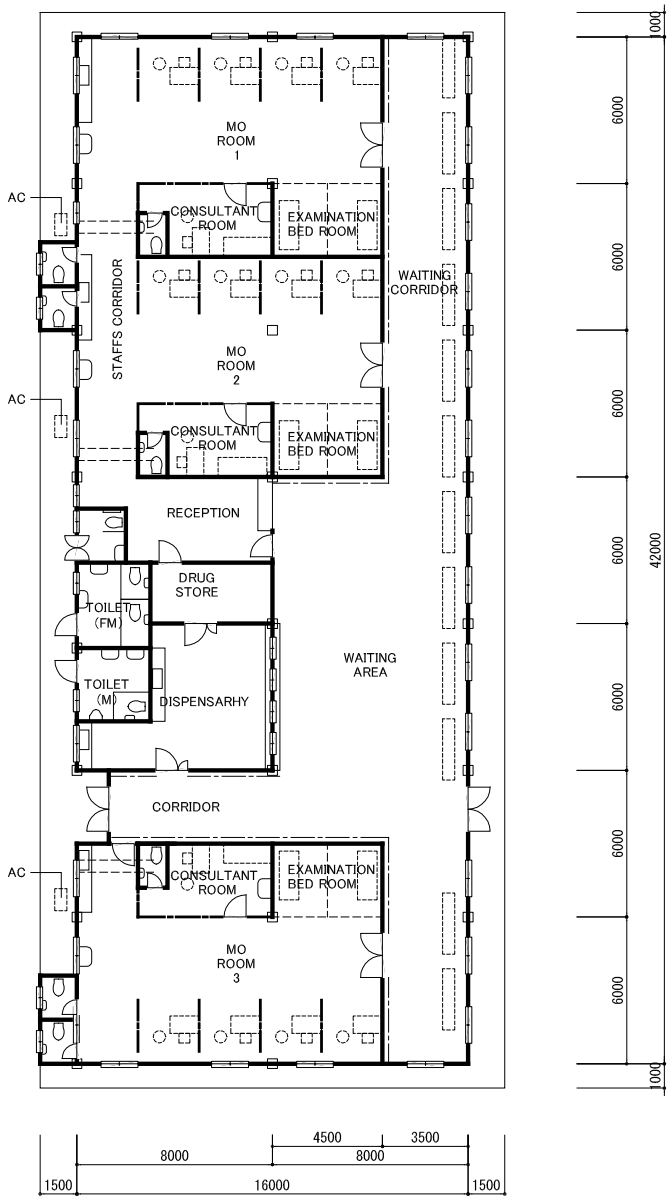
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	966.90	211.10	1178.00
TOTAL	966.90	211.10	1178.00

UNIT COST

	Cost(Rs)
Construction	62,015,620
Medical equipment	4,567,750
Total	66,583,370

3-b CLINIC UNIT



CLINIC UNIT PLAN SCALE:1/300(A4)

(3 CLINICS)

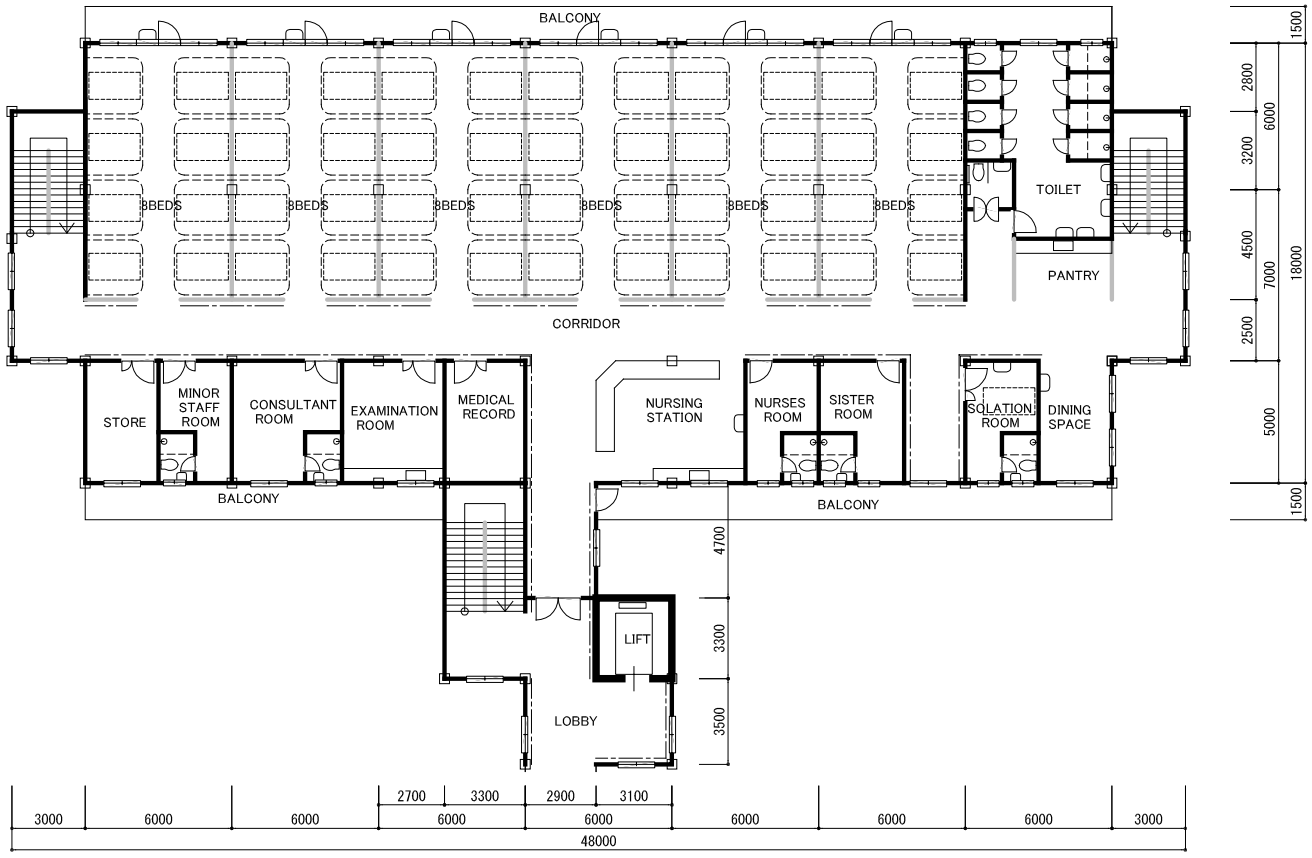
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	678.90	157.10	836.00
TOTAL	678.90	157.10	836.00

UNIT COST

	Cost(Rs)
Construction	44,011,085
Medical equipment	2,745,050
Total	46,756,135

4-a～c STANDARD WARD UNIT



STANDARD WARD UNIT (GL-3F) SCALE:1/300(A4)

(Total 48BEDS × 4STOREY=192BEDS)

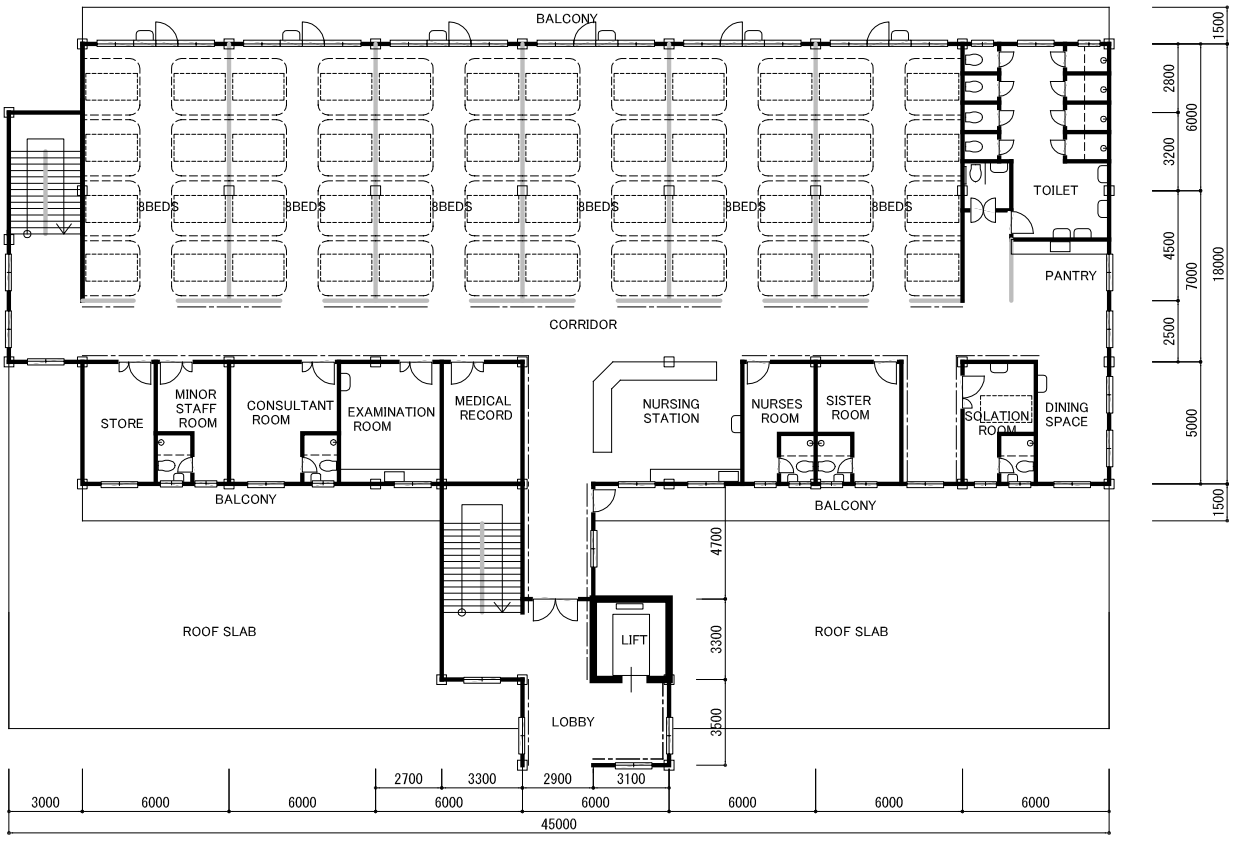
FLOOR AREA (㎡)

	Interior	Exterior	Total
3F	898.03	116.70	1014.73
2F	898.03	116.70	1014.73
1F	898.03	116.70	1014.73
GF	898.03	116.70	1014.73
TOTAL	3592.12	466.80	4058.92

UNIT COST

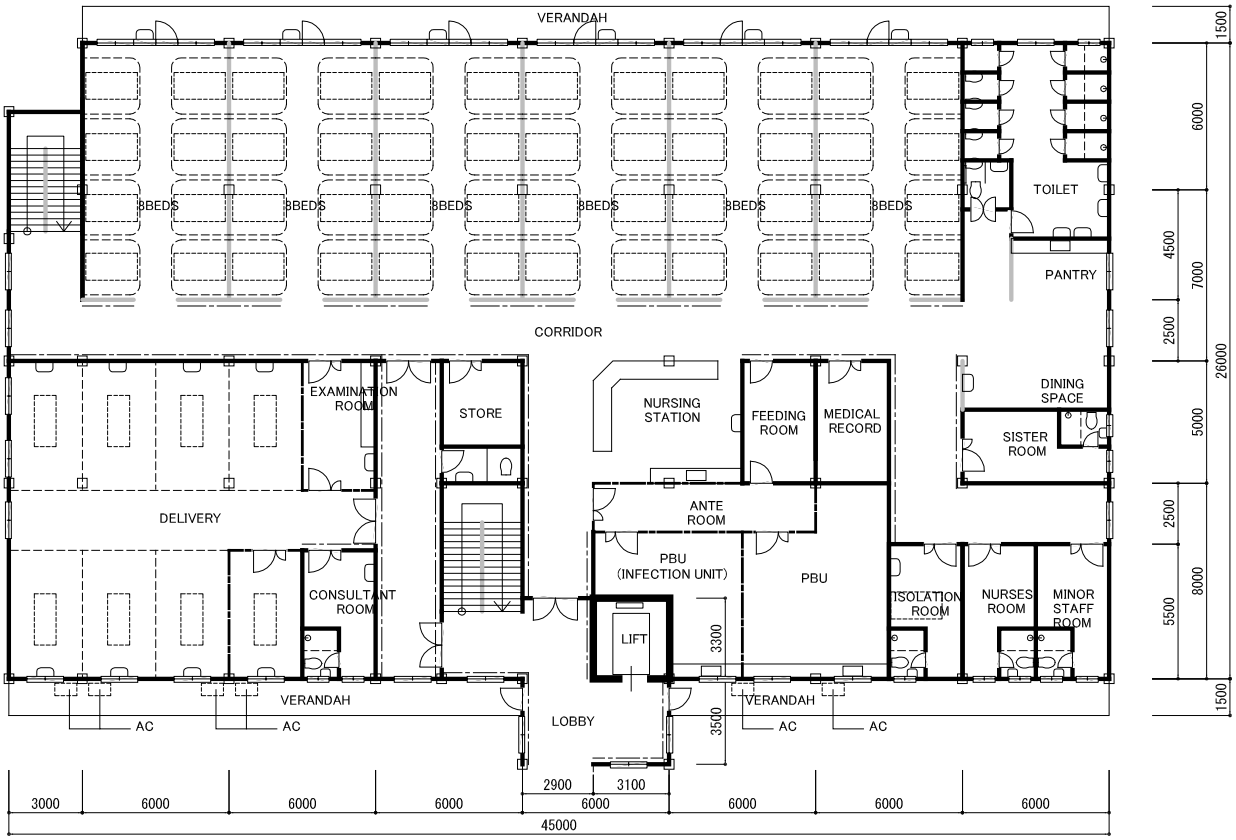
	Cost(Rs)
4-a Medical ward unit(1storey 48beds)	
Construction	53,936,564
Medical equipment	5,799,950
Total	59,736,514
4-b Surgical ward unit(1storey 48beds)	
Construction	53,936,564
Medical equipment	9,445,450
Total	63,382,014
4-c Pediatric ward unit(1storey 48beds)	
Construction	53,936,564
Medical equipment	6,646,950
Total	60,583,514

5-a GYNECOLOGY/OBSTETRIC WARD UNIT



GYNECOLOGY/OBSTETRIC WARD UNIT (1F) PLAN SCALE:1/300(A4)

(Total 48BEDS)



GYNECOLOGY/OBSTETRIC WARD UNIT (GF) PLAN SCALE:1/300(A4)

(Total 48BEDS)

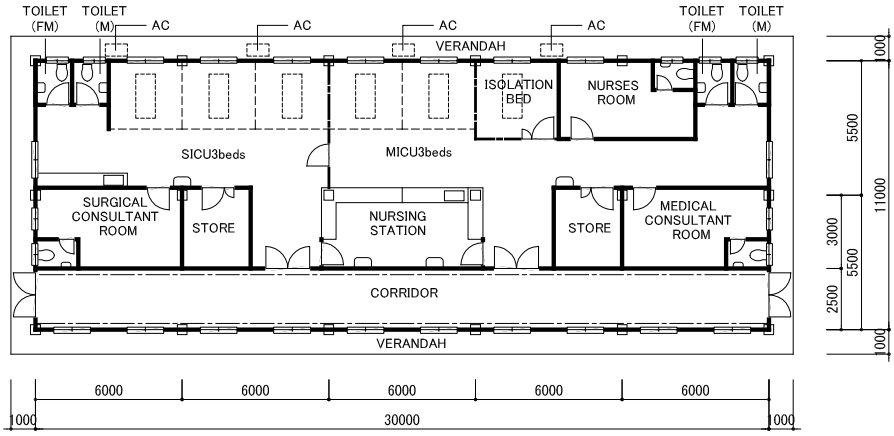
FLOOR AREA (㎡)

	Interior	Exterior	Total
1F	867.43	116.70	984.13
GF	1182.54	121.50	1304.04
TOTAL	2049.97	238.20	2288.17

UNIT COST

	Cost(Rs)
Construction	128,060,254
Medical equipment	35,956,900
Total	164,017,154

6-a MICU/SICU UNIT



MICU/SICU UNIT PLAN SCALE:1/300(A4)

(Total 6BEDS)

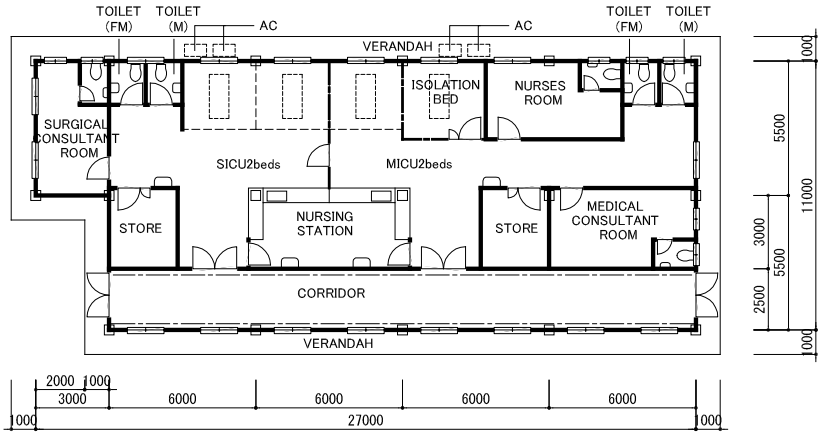
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	330.00	86.00	416.00
TOTAL	330.00	86.00	416.00

UNIT COST

	Cost(Rs)
Construction	27,388,075
Medical equipment	20,258,000
Total	47,646,075

6-b MICU/SICU UNIT



MICU/SICU UNIT PLAN SCALE:1/300(A4)

(Total 4BEDS)

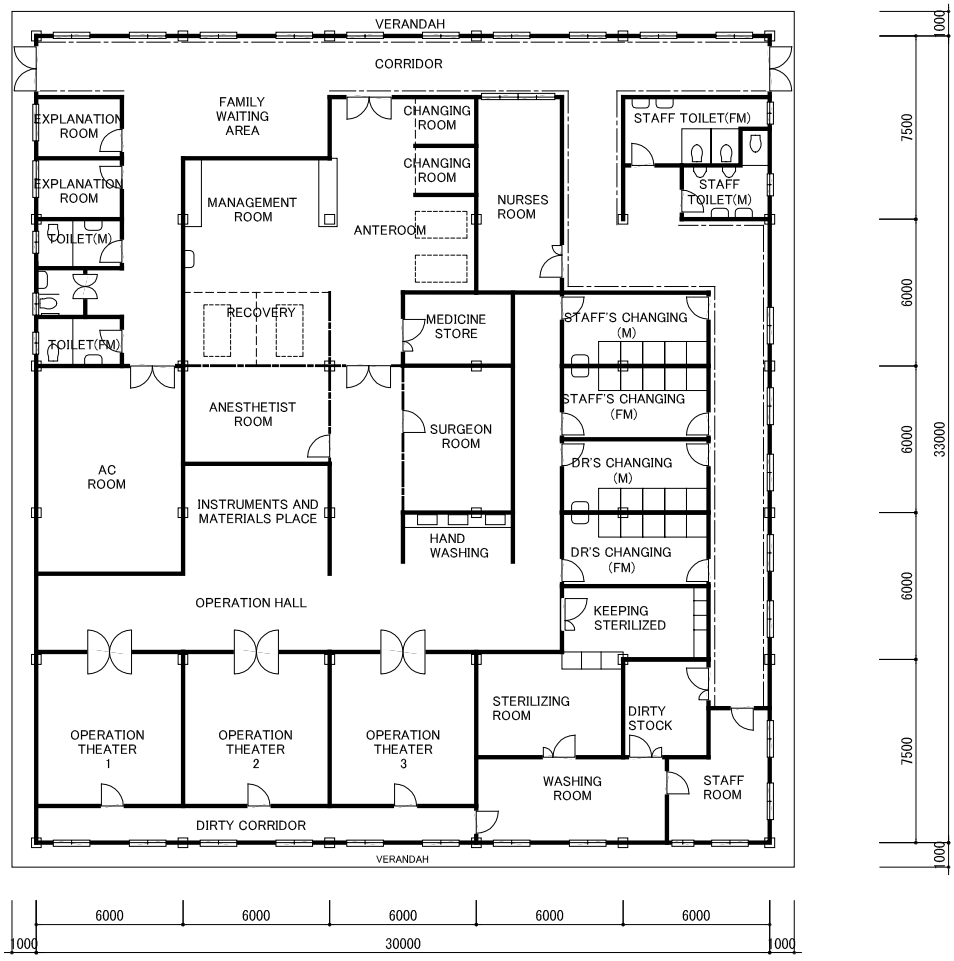
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	280.50	80.00	360.50
TOTAL	280.50	80.00	360.50

UNIT COST

	Cost(Rs)
Construction	23,737,137
Medical equipment	13,578,000
Total	37,312,137

7-a OPERATION THEATRE UNIT



OPERATION THEATRE UNIT PLAN SCALE:1/300(A4)

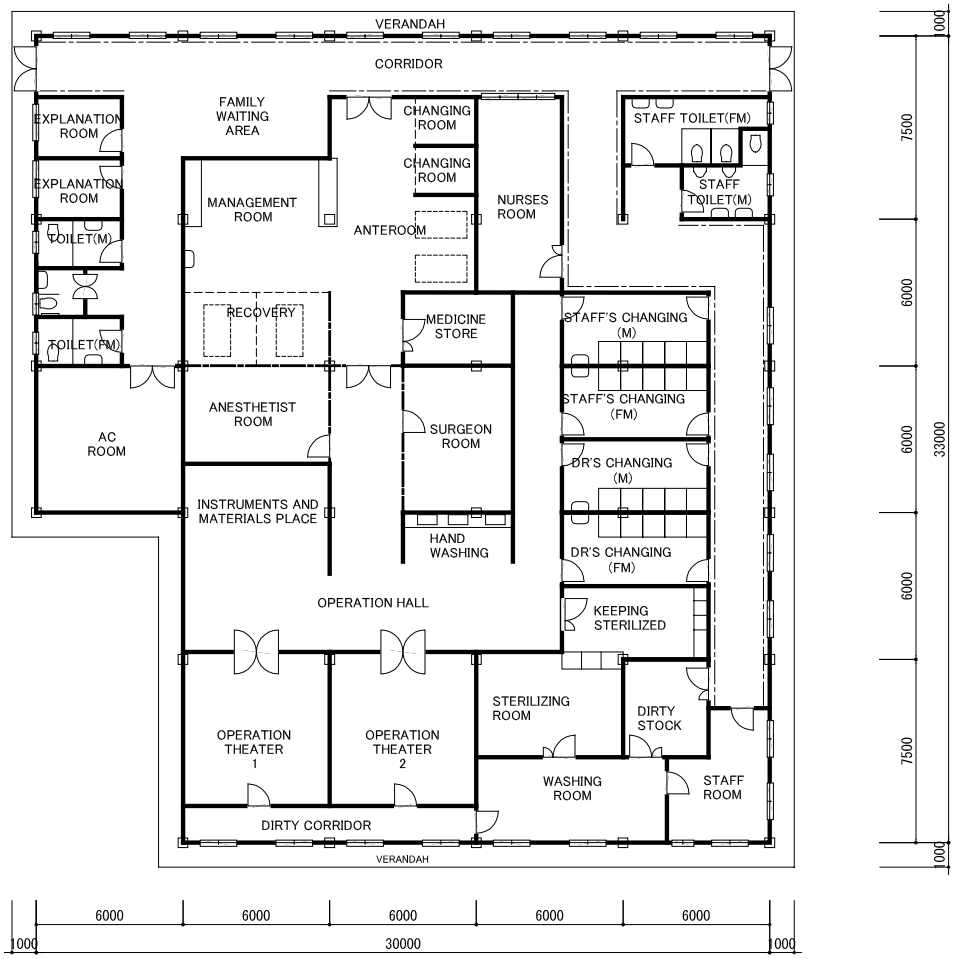
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	990.00	130.00	1120.00
TOTAL	990.00	130.00	1120.00

UNIT COST

	Cost(Rs)
Construction	78,916,453
Medical equipment	90,514,400
Total	169,430,853

7-b OPERATION THEATRE UNIT



OPERATION THEATRE UNIT PLAN SCALE:1/300(A4)

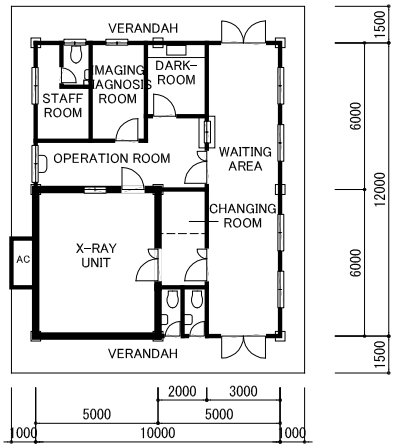
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	909.00	130.00	1039.00
TOTAL	909.00	130.00	1039.00

UNIT COST

	Cost(Rs)
Construction	73,209,102
Medical equipment	69,384,800
Total	142,593,902

8 RADIOLOGY UNIT



RADIOLOGY UNIT PLAN SCALE:1/300(A4)

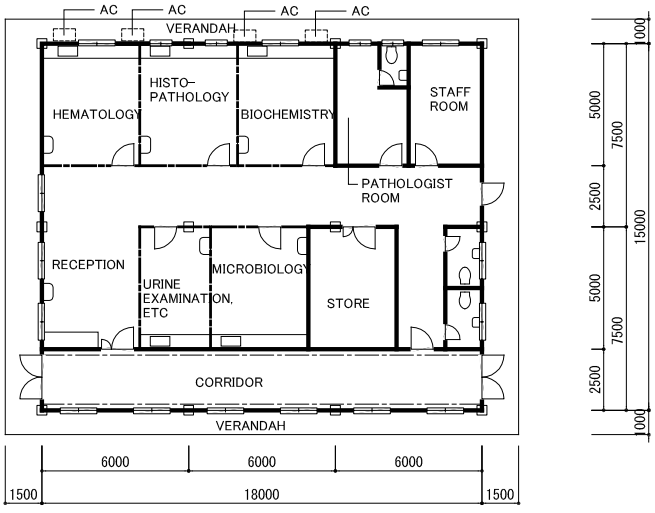
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	122.00	58.00	180.00
TOTAL	122.00	58.00	180.00

UNIT COST

	Cost(Rs)
Construction	10,422,595
Medical equipment	8,444,000
Total	18,866,595

9-a PATHOLOGY UNIT



PATHOLOGY UNIT PLAN SCALE:1/300(A4)

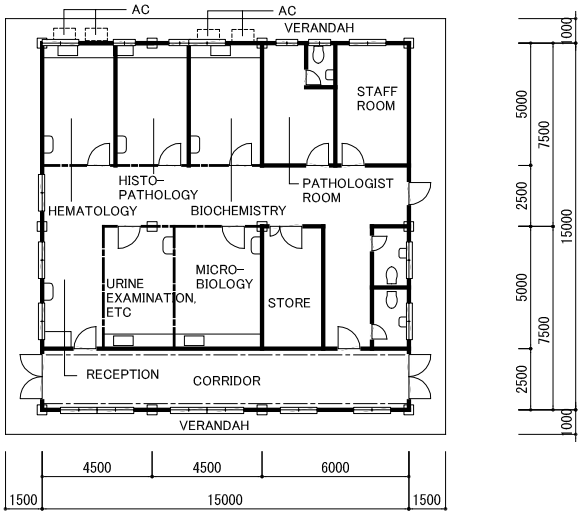
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	270.00	87.00	357.00
TOTAL	270.00	87.00	357.00

UNIT COST

	Cost(Rs)
Construction	21,955,049
Medical equipment	8,523,000
Total	30,478,049

9-b PATHOLOGY UNIT



PATHOLOGY UNIT PLAN SCALE:1/300(A4)

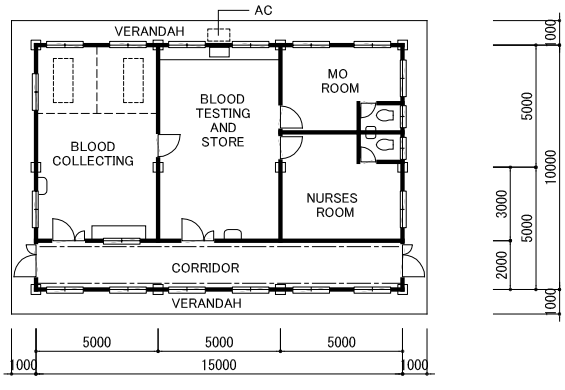
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	225.00	81.00	306.00
TOTAL	225.00	81.00	306.00

UNIT COST

	Cost(Rs)
Construction	18,818,613
Medical equipment	8,523,000
Total	27,341,613

10 BLOOD BANK UNIT



BLOOD BANK UNIT PLAN SCALE:1/300(A4)

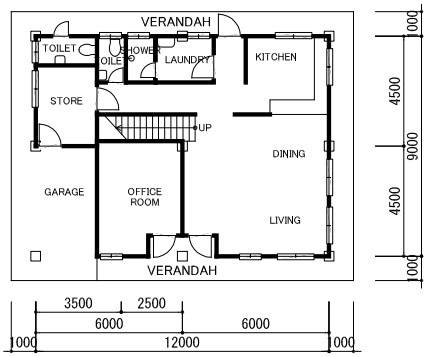
FLOOR AREA (㎡)

	Interior	Exterior	Total
GF	150.00	54.00	204.00
TOTAL	150.00	54.00	204.00

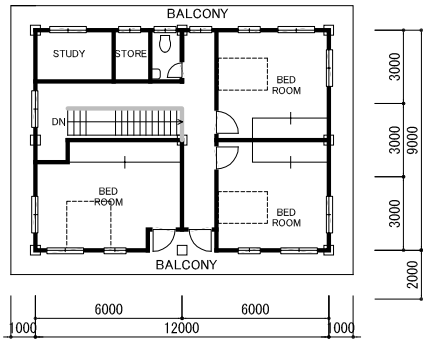
UNIT COST

	Cost(Rs)
Construction	11,076,974
Medical equipment	4,761,900
Total	15,838,874

11-a QUARTER for family



QUARTER for family (GF) PLAN SCALE:1/300(A4)



QUARTER for family (1F) PLAN SCALE:1/300(A4)

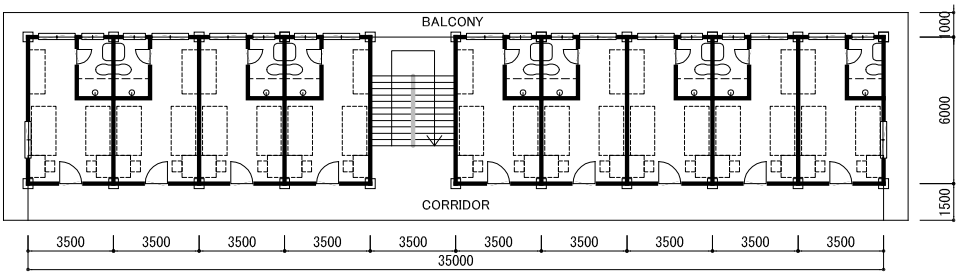
FLOOR AREA (㎡)

	Interior	Exterior	Total
1F	105.62	48.38	154.00
GF	94.38	59.62	154.00
TOTAL	200.00	108.00	308.00

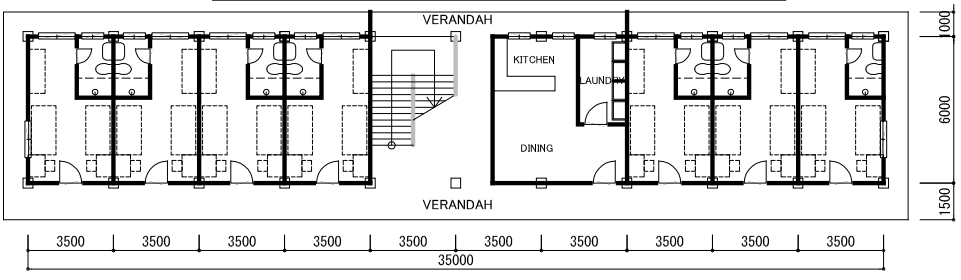
UNIT COST

	Cost(Rs)
Construction	15,529,993

12 QUARTER for bachelors



QUARTER for bachelors (1F) PLAN SCALE:1/300(A4)



QUARTER for bachelors (GF) PLAN SCALE:1/300(A4)

Total:32RESIDENTS(16ROOMS)

FLOOR AREA (㎡)

	Interior	Exterior	Total
1F	189.00	125.50	314.50
GF	180.00	134.50	314.50
TOTAL	369.00	260.00	629.00

UNIT COST

	Cost(Rs)
Per 32 residents	
Construction	31,715,473
Per 1 residents	
Construction	991,109

Annex 16: Unit costs of facilities for secondary hospitals

Unit Cost of Facilties of Secondary Level

Unit			Floor Area (㎡)			Construction Unit Cost	
			Interior	Exterior	Total	COEFFICIENT	Local (Rs)
1	OPD and administration unit						
	1-a	2 storey:OPD unit(major) + Administration unit	1383.84	288.00	1671.84	1.000	87,247,360
	1-b	2 storey:OPD unit(minor)+ Administration unit	1299.52	282.90	1582.42	0.947	82,580,850
	1-c	1 storey:OPD unit(major)	922.56	213.60	1136.16	0.680	59,292,134
	1-d	1 storey:OPD unit(minor)	838.24	208.50	1046.74	0.626	54,625,623
	1-e	1 storey:Administration unit	461.28	74.40	535.68	0.320	27,955,227
2	PCU/ECU unit						
	2-a	PCU10beds/ECU2beds	360.00	88.00	448.00	1.000	23,935,706
	2-b	PCU 4beds/ECU2beds	288.00	76.00	364.00	0.813	19,447,761
3	Clinic unit						
	3-a	5clinics	966.90	211.10	1178.00	1.000	62,015,620
	3-b	3clinics	678.90	157.10	836.00	0.710	44,011,085
4	Standard ward unit						
	4-0	4 storey:48beds×4unit=192beds	3592.12	466.80	4058.92	1.000	215,746,255
	4-a	1 storey:48beds×1unit= 48beds (Medical)	898.03	116.70	1014.73	0.250	53,936,564
	4-b	1 storey:48beds×1unit= 48beds (Surgical)	898.03	116.70	1014.73	0.250	53,936,564
	4-c	1 storey:48beds×1unit= 48beds (Pediatric)	898.03	116.70	1014.73	0.250	53,936,564
5	Gynecology/obstetric ward unit						
	5-a	2 storey:48beds×2unit=96beds	2049.97	238.20	2288.17	1.000	128,060,254
	5-b	1 storey:48beds×1unit=48beds	1182.54	121.50	1304.04	0.570	72,982,206
6	MICU/SICU unit						
	6-a	MICU 3beds+SICU 3beds	330.00	86.00	416.00	1.000	27,388,075
	6-b	MICU 2beds+SICU 2beds	280.50	80.00	360.50	0.867	23,734,137
7	Operation theatre unit						
	7-a	3 operation theatres	990.00	130.00	1120.00	1.000	78,916,453
	7-b	2 operation theatres	909.00	130.00	1039.00	0.928	73,209,102
8	Radiology unit						
	8	Radiology unit	122.00	58.00	180.00	1.000	10,422,595
9	Pathology unit						
	9-a	Pathology unit (major)	270.00	87.00	357.00	1.000	21,955,049
	9-b	Pathology unit (minor)	225.00	81.00	306.00	0.857	18,818,613
10	Blood bank unit						
	10	Blood bank unit	150.00	54.00	204.00	1.000	11,076,974
11	Quarter for family						
	11-a	Grade Ⅰ Max200㎡ : for consultants or directors	200.00	108.00	308.00	1.000	15,529,993
	11-b	Grade Ⅱ Max160㎡(=Ⅰ×0.800) :for MO	160.00	-	-	0.800	12,423,995
	11-c	Grade Ⅲ Max130㎡(=Ⅰ×0.650) :for nurses	130.00	-	-	0.650	10,094,496
	11-d	Grade Ⅳ Max100㎡(=Ⅰ×0.500) :for clerks	100.00	-	-	0.500	7,764,997
	11-e	Grade Ⅴ Max 80㎡(=Ⅰ×0.400) :for minor staffs	80.00	-	-	0.400	6,211,997
	11-f	Grade Ⅵ Max 55㎡(=Ⅰ×0.275) :for minor staffs	55.00	-	-	0.275	4,270,748
12	Quarter for bachelor						
	12-0	32 residents(16 rooms)	369.00	260.00	629.00	32.000	31,715,473
	12	Per 1 resident	-	-	-	1.000	991,109
13	Breezway unit						
	13	Radiology unit(W3m×L15m)		45.00	45.00	1.000	856,213

Annex: 17: TOR for consultants

Tentative Terms of Reference (TOR)
for
Consulting Services Part A

1. BACKGROUND

The Government of Sri Lanka (hereinafter referred to as "GoSL") has adopted a slogan "healthy life for all" and now in the process of implementing its strategy of awareness creation on and early detection of NCDs. With the view to meet increasing demands for diagnostic and treatment facilities and drug security, GoSL intends to implement the "Improvement Health and Medical Systems in Emerging Regions (The Project)" to upgrade for secondary level hospitals and to increase production capacity of the State Pharmaceutical Manufacturing Corporation (SPMC).

GoSL as the Borrower wishes to source consulting services to obtain expertise and technical assistance necessary for effective and efficient management of the Project.

2. PROJECT OUTLINE

The Project consists of following components and will be implemented by the relevant authorities/agencies.

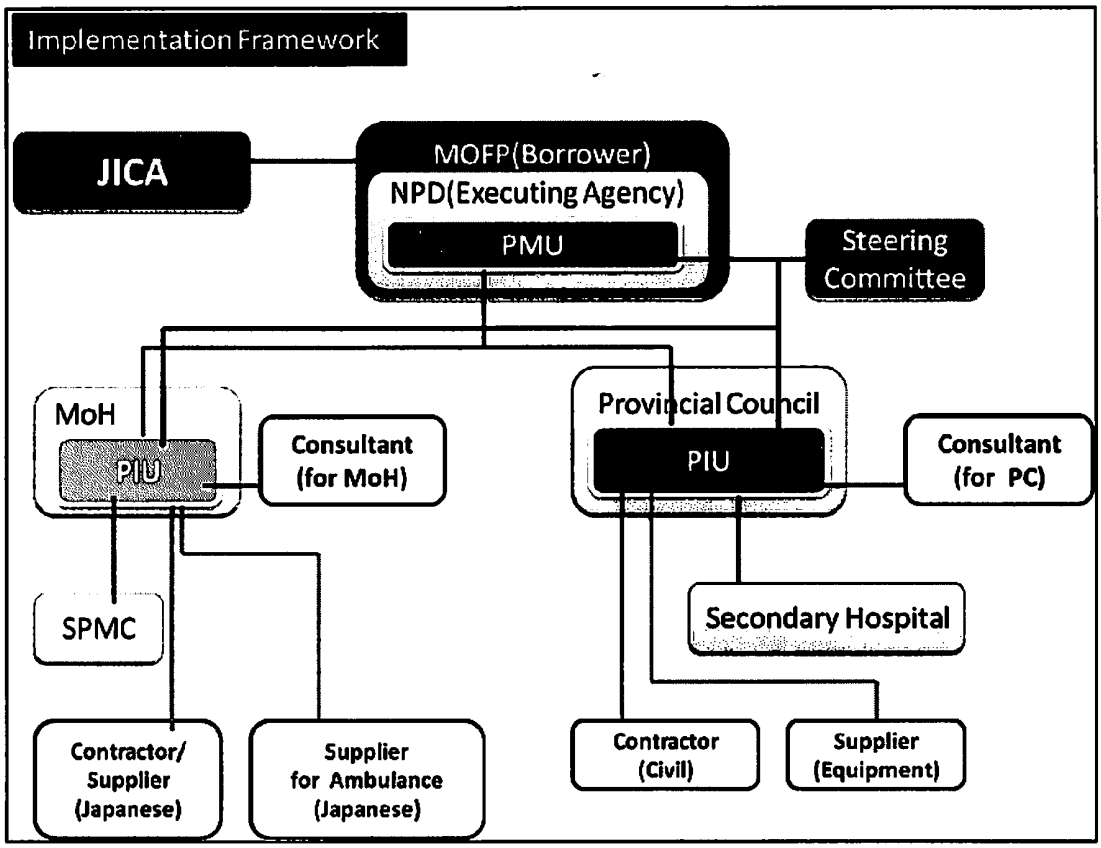
Table 1.

	Component	Works	PIU	Concerned Agency
01	SPMC Facility Strengthening	· Procurement of equipment · Construction of storage · Refurbishing existing Production Facilities	Ministry of Health (MoH)	SPMC
02	Procurement of Ambulances	· Procurement and delivery of ambulances for hospitals in 7 provinces	MoH	MoH
03	Secondary Hospital Enhancement	· Procurement of equipment · Refurbishing facilities	Provincial Councils (PC)	Targeted Secondary Hospitals

Although implementation of the Project will be carried out by each PIU, the Executing Agency, the responsible agency representing the Government of Sri Lanka is National Planning Department (NPD) of the Ministry of Finance and Planning. NPD will establish the Project Management Unit (PMU) and will supervise and monitor progress of project implementation. The Steering Committee (SC) will also be

established to take roles of coordination and advisory, since the several agencies are involved in the Project. The Project Implementation Framework is as per Figure 1.

Figure 1: Project Implementation Framework



The Consultant Part A will be engaged by the Ministry of Health ("MoH") and will provide technical assistance for PIU-MoH. Involvement of the Consultant for each component is as shown in Table 2.

Table 2. Scope of Works by Component

	Component	PIU/Concerned Agency	Scope of Works for Consultant Part A
01	SPMC Facility Strengthening	MoH/SPMC	· Detail design · Procurement assistance · Supervision · Reporting
02	Procurement of Ambulances	MoH	· Reporting
03	Secondary	PC/Secondary	· Monitoring

	Hospital Enhancement	Hospitals	· Reporting

3. SCOPE OF CONSULTING SERVICES

3.1 SPMC Facility Strengthening

3.1.1 Detail Design

The Consultant Part A will carry out the following detail designing works:

- Review existing production capacity;
- Review existing strengthening plans;
- Revise and finalize the strengthening plan, and its implementation schedule;
- Conduct detail designing works for refurbishing the existing production facilities, prepare for drawings, bill of quantities and cost estimates;
- Define specification of equipment, prepare bill of quantities and cost estimates;
- Conduct detail designing works for construction of storage, prepare for drawings, bill of quantities and cost estimates;

3.1.2 Procurement Assistance

The Consultant Part A will carry out the following procurement assistance works. Procurement will be executed in accordance with JICA's procurement guidelines of "Procurement under Japanese ODA Loans March 2009"

- Prepare for bid documents based on detail designing works;
- Conduct bidding arrangements for the project including bid announcements, pre-bid meetings, and reply to questionnaires from bidders;
- Conduct technical evaluation of bidding and preparation of technical evaluation report;
- Conduct financial bids evaluation and evaluate overall result of bidding;
- Assist PIU in negotiations with the selected bidder;
- Arrangement of contract signing and approval and concurrence procedures.

3.1.3 Construction and Procurement Supervision

The Consultant will carry out the supervising works:

General

- Check and certify the advance payment and progress payment claimed by the contractor for approval of PIU-MoH;
- Attend the regular meetings to check and confirm the construction method, work performance, work progress, status of equipment and materials, work schedule, and problems to be solved,
- Monitor all of the environmental issues that pertain to the contractor's work

and to enforce any applicable regulations;

- Keep proper records necessary for preparation of the project completion report; and,
- Perform the final inspection of the works together with PIU-MoH and recommend to issue the completion certificate

Equipment Procurement and Fabrication Works

- Check equipment specification and quality standard;
- Check and approve layout drawing of equipment and necessary utility arrangement prepared by contractor;
- Prepare inventory list of equipment for inspection and storing;
- Check operation and maintenance manuals of equipment submitted;
- Arrange instruction of usage of equipment to technical staff of sub-projects;
- Carry out inspection and performance test of equipment when necessary

Construction Works

- Prepare the quality control manuals for construction works and to apply such manual for quality control in the field;
- Check and approve construction drawings and shop drawings to be prepared by the contractor,
- Check and approve the construction statement proposed by the contractor which includes construction materials, equipment, construction method and other related matters required for the works,
- Supervise field tests, sampling and laboratory tests to be carried out by the contractor,
- Inspect the construction method, equipment use, workmanship at the site, and to attend shop inspection and manufacturing test in accordance with the technical specifications,
- Issue a site instruction or other instruction to the contractor, as the necessity arises, on the way of clarification of construction drawings and technical specifications, and the construction supervision,
- Check as-built drawings prepared by the contractor

3.1.4 Reporting

- Inception Report: to be submitted in 1 month after commencement of the Service, containing overall work plan, administrative arrangement, findings from review of existing designs during the inception period, and other matters to be informed;
- Quarterly Progress Report: to be prepared at the end of every quarter, containing detailed information of physical and financial progress the component, issues and problems, the Consultant's input and activities, result of environmental monitoring (monitoring form) and schedule of works for the

next period. Quarterly Progress Report is prepared in the form of Project Status Report (PSR).

- Design Review Reports: to be prepared and submitted at completion of design review works. In the reports, results of additional investigations and analysis should be incorporated;
- Bid Documents: to be prepared at completion of detail designing works;
- Bid Evaluation Report: to be prepared after the evaluation;
- Operation and Maintenance Manuals: to be prepared at completion of the Construction & Supply Contract
- Project Completion Report: to be prepared within 6 months after completion of Construction & Supply Contract

3.2 Procurement of Ambulance

Procurement of Ambulance will be carried out by PIU-MoH. PIU-MoH will prepare for the bid documents in accordance with JICA's guideline of "Procurement under Japanese ODA Loans March 2009" and conclude the contract with the supplier. Ambulances delivered by the supplier will be forwarded by PIU-MoH to the designated hospital in 7 (seven) Provinces: Northern; North-Central; North-Western; Eastern; Central; Uva; and Sabaragamuwa. Delivery will be completed by the end of August 2012.

The Consultant Part A will conduct the following reporting work:

- Conduct documentary confirmation that the designated number of ambulances have been delivered to the designated hospital in the 7 (seven) Provinces;
- Prepare Delivery Confirmation Report and submit to PIU-MoH

3.3 Enhancement of Secondary Hospital

Enhancement of the designated 4 (four) Secondary Hospitals will be carried out by PIU-PC. Enhancement consists of refurbishment/betterment/construction of hospitals' buildings and procurement of equipments. With technical and administrative assistance of the local consultant attached to each PC, PC will implement enhancement of the secondary hospitals. Enhancement of Secondary Hospitals will be started from February 2012, and completed by the end of April 2014.

The Consultant Part A will carry out the following consulting services:

- Monitoring: i) to monitor physical progress as well as disbursement progress of the enhancement work; ii) to review Quarterly Progress Reports; iii) to review Completion Report; iv) to provide technical and/or administrative advice to expedite progress of works when necessary;
- Reporting: to compile Quarterly Progress Reports and submit to PIU-MoH; to compile Completion Report and submit to PIU-MoH

4. EXPERTISE REQUIRED FOR CONSULTING SERVICES

The Consultants are represented by Project Manager who is responsible for executing the consulting services as a whole, and the following expertise in total are required for the Project.

4.1 Experts Required

International Consultants (number)	Local Consultants (number)
Project Manager (1)	Deputy Project Manager/Engineer (1)
Equipment Engineer/SPMC (1)	Structure Engineer (1)
Document Specialist (1)	Architect (1)
Quality Control Expert (1)	
Architect (1)	

In addition to above one Accountant and one Secretary will be hired as service staff.

4.2 Person Months Requirements

The total Person Months or Man-Month (M/M) required for the Services are estimated as 42 M/M for International Consultants, 211 M/M for Local Consultants and 63 M/M for Local Supporting Staff.

4.3 Responsibilities of Experts

01 SPMC Strengthening	
International Consultants	**Major Tasks**
Project Manager	➢ Management of overall consulting services ➢ Preparation of bid documents and evaluation ➢ Evaluation of bid result/Contract negotiation ➢ Supervision of construction and procurement ➢ Preparation of regular report ➢ Management of disbursement process ➢ Final and defect liability inspection ➢ Supervision of construction SPMC ➢ Final inspection and instruction of construction ➢ Preparation of Completion Report
Equipment Engineer/SPMC	➢ Detailed design of equipment ➢ Preparation of specification & bid documents ➢ Bid evaluation ➢ Final inspection ➢ Defect liability inspection
Document Specialist	➢ Preparation of tender documents

	➢ Preparation of contract documents
Quality Control Expert	➢ Quality control on production line
Architect	➢ Detailed design of refurbishment and construction ➢ Preparation of bid specification and drawings ➢ Bid evaluation
Local Consultants	**Major Tasks**
Deputy Project Manager/Civil Engineer	➢ Supporting Project Manager ➢ Management and supervision of local consultants ➢ Construction Supervision ➢ Quarterly Reporting
Structure Engineer	➢ Preparation of drawings & bid documents
Architect	➢ Preparation of drawings & bid documents
02 Procurement of Ambulance	
International Consultants	**Major Tasks**
Project Manager	➢ Document check for confirmation of delivery of ambulances ➢ Reporting
National Consultants	**Major Tasks**
Deputy Project Manager/Civil Engineer	➢ Supporting Project Manager ➢ Reporting
03 Secondary Hospitals Enhancement	
International Consultants	**Major Tasks**
Project Manager	➢ Monitoring physical and disbursement progress ➢ Technical and administrative advising ➢ Compiling Quarterly Progress Reports ➢ Compiling Completion Report
National Consultants	**Major Tasks**
Deputy Project Manager/Civil Engineer	➢ Supporting Project Manager ➢ Reporting

Tentative Terms of Reference (TOR)
for
Consulting Services Part B

2. BACKGROUND

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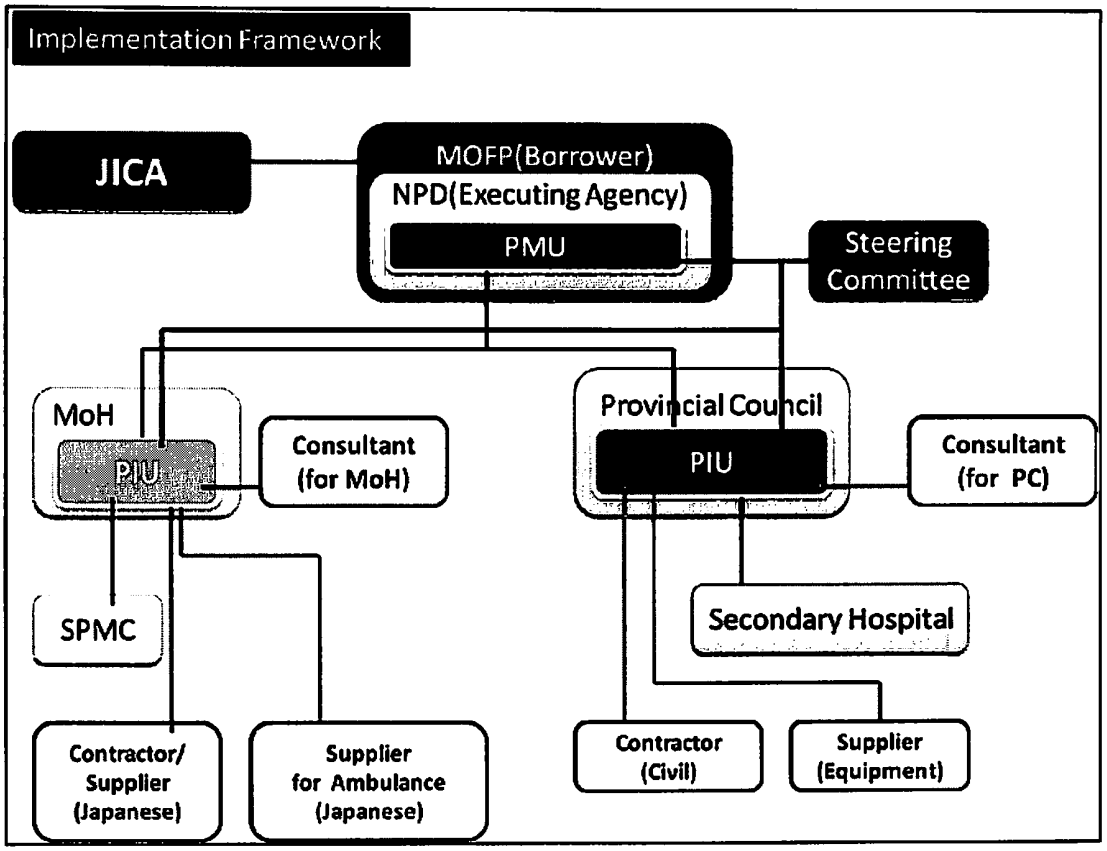
Figure 1: Project Implementation Framework



The Consultant Part B will be engaged by the Provincial Council and will provide technical assistance for PIU-PC. Involvement of the Consultant Part B is for 03 Secondary Hospital Enhancement as shown in Table 2.

Table 2. Scope of Works by Component

	Component	PIU/Concerned Agency	Scope of Works for Consultant Part A
03	Secondary Hospital Enhancement	PC/Secondary Hospitals	- Detail Design - Procurement assistance - Supervision - Reporting

3. SCOPE OF THE CONSULTING SERVICES

The Consultant Part B will conduct the following consulting services for enhancement of Secondary Hospital. Name of the Hospital will be informed by the designated Provincial Council.

Enhancement of the Secondary Hospital consists of the following scope works:

- to equip the designated Secondary Hospital with the standard medical

equipment stipulated in "Recategorization of Hospitals" prepared by Ministry of Health; and

- to refurbish/betterment of the existing facilities/buildings of the designated Hospital

In order to complete such scope of works, the Consultant Part B will conduct the following services:

3.1 Detail Design

The Consultant Part B will carry out the following detail designing works:

(Medical Equipment Procurement)

- Review existing equipments
- Identify equipments to procure to fulfill the standard condition under "Recategoraization of Hospitals;"
- Prepare specification for equipment, bill of quantities; and cost estimates

(Building/Construction Work)

- Review condition/layouts/floor plan of existing buildings;
- Design and modify layouts/floor plan to accommodate the equipment to be procured
- Prepare for drawings, bill of quantities and cost estimates;

3.2 Procurement Assistance

The Consultant Part B will carry out the following procurement assistance works. Procurement will be executed in accordance with procurement guidelines of Provincial Council

- Prepare for bid documents based on detail designing works;
- Conduct bidding arrangements for the project including bid announcements, pre-bid meetings, and reply to questionnaires from bidders;
- Conduct technical evaluation of bidding and preparation of technical evaluation report;
- Conduct financial bids evaluation and evaluate overall result of bidding;
- Assist PIU in negotiations with the selected bidder;
- Arrangement of contract signing and approval and concurrence procedures.

3.3 Construction and Procurement Supervision

The Consultant will carry out the following supervising works:

<u>General</u>

- Check and certify the advance payment and progress payment claimed by the contractor for approval of PIU-PC;

- Attend the regular meetings to check and confirm the construction method, work performance, work progress, status of equipment and materials, work schedule, and problems to be solved,
- Monitor all of the environmental issues that pertain to the contractor's work and to enforce any applicable regulations;
- Keep proper records necessary for preparation of the project completion report; and,
- Perform the final inspection of the works together with PIU-PC and recommend to issue the completion certificate

Equipment Procurement

- Check equipment specification and quality standard;
- Check and approve layout drawing of equipment and necessary utility arrangement prepared by contractor;
- Prepare inventory list of equipment for inspection and storing;
- Check operation and maintenance manuals of equipment submitted;
- Arrange instruction of usage of equipment to Hospital's staff;
- Carry out inspection and performance test of equipment when necessary

Construction Works

- Prepare the quality control manuals for construction works and to apply such manual for quality control in the field;
- Check and approve construction drawings and shop drawings to be prepared by the contractor,
- Check and approve the construction statement proposed by the contractor which includes construction materials, equipment, construction method and other related matters required for the works,
- Inspect the construction method, equipment use, and workmanship at the site in accordance with the technical specifications,
- Issue a site instruction or other instruction to the contractor, as the necessity arises, on the way of clarification of construction drawings and technical specifications, and the construction supervision,
- Check as-built drawings prepared by the contractor

3.4 Reporting

- Inception Report: to be submitted in 1 month after commencement of the Service, containing overall work plan, administrative arrangement, findings from review of existing designs during the inception period, and other matters to be informed;
- Quarterly Progress Report: to be prepared at the end of every quarter, containing detailed information of physical and financial progress the component, issues and problems, the Consultant's input and activities, result

of environmental monitoring (monitoring form) and schedule of works for the next period. Quarterly Progress Report is prepared in the form of Project Status Report (PSR).

- Design Review Reports: to be prepared and submitted at completion of design review works. In the reports, results of additional investigations and analysis should be incorporated;
- Bid Documents: to be prepared at completion of detail designing works;
- Bid Evaluation Report: to be prepared after the evaluation;
- Operation and Maintenance Manuals: to be prepared at completion of the Construction & Supply Contract
- Project Completion Report: to be prepared within 6 months after completion of Construction & Supply Contract

5. EXPERTISE REQUIRED FOR CONSULTING SERVICES

The Consultants are represented by Project Manager who is responsible for executing the consulting services, and the following expertise is required for the Project.

4.1 Experts Required (Number of Experts)

Project Manager (1)
Civil Engineer (1)
Structure Engineer (1)
Architect (1)
Bio Medical Engineer (1)
Documentation and Procurement Specialist (1)

4.2 Person Months Requirements

The total Person Months or Man-Month (M/M) required for the Services are estimated as 38 M/M

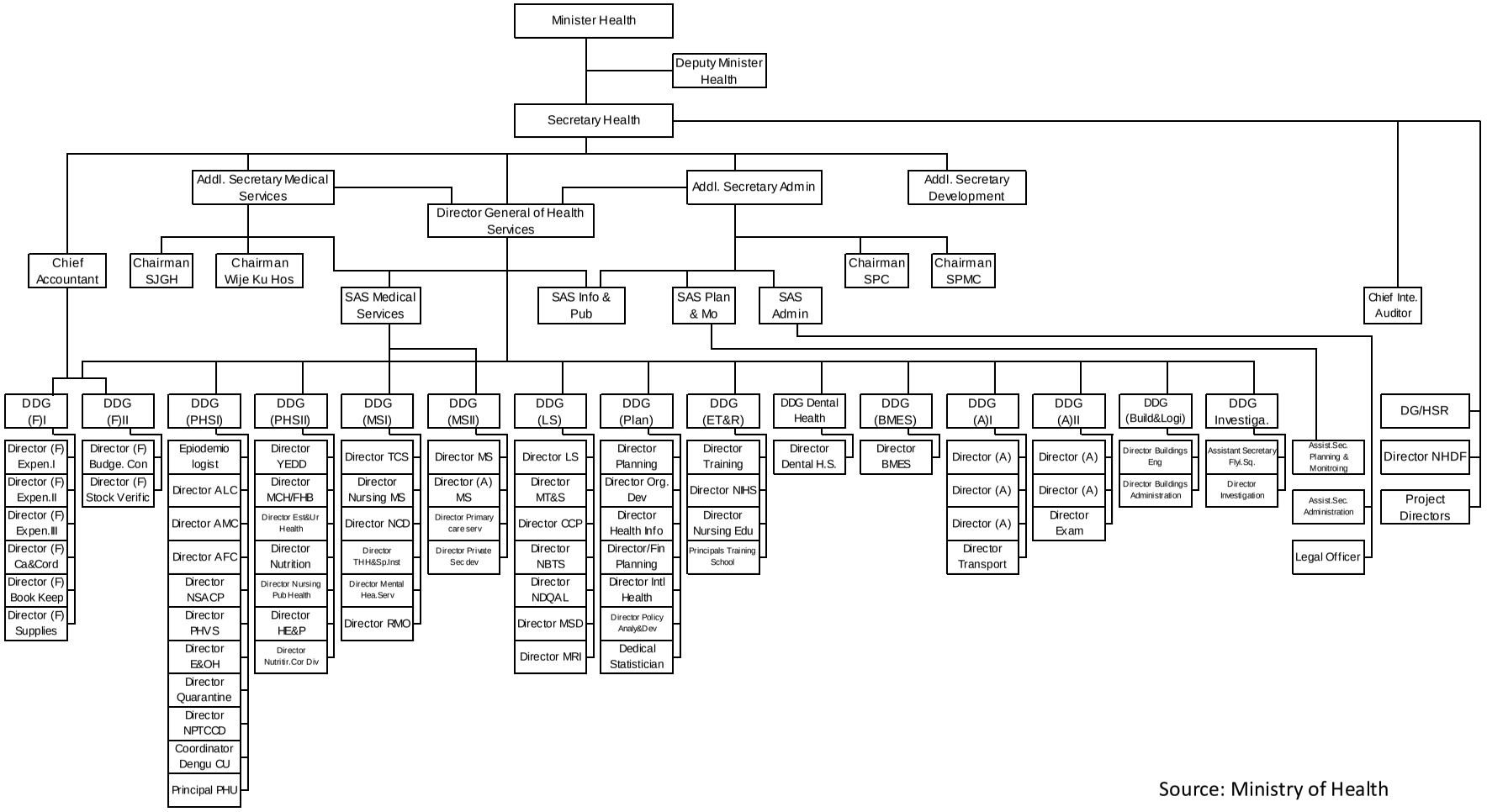
4.3 Responsibilities of Experts

Local Consultants	Major Tasks
Project Manager	➢ Management of overall consulting services ➢ Preparation of bid documents and evaluation ➢ Evaluation of bid result/Contract negotiation ➢ Supervision of construction and

	procurement ➢ Preparation of regular report ➢ Management of disbursement process ➢ Final and defect liability inspection ➢ Supervision of construction and equipment procurement ➢ Final inspection and instruction of construction ➢ Preparation of Completion Report
Civil Engineer	➢ Detailed design of construction works ➢ Preparation of bid documents ➢ Bid evaluation ➢ Construction supervision
Structure Engineer	➢ Detailed design of structural works ➢ Preparation of bid documents
Architect	➢ Detailed design of refurbishment and architectural works ➢ Preparation of bid specification and drawings ➢ Bid evaluation
Bio Medical Engineer	➢ Detailed design of equipment ➢ Preparation of specification & bid documents ➢ Bid evaluation ➢ Supervision of equipment procurement ➢ Final inspection
Document and Procurement Specialist	➢ Preparation of tender documents ➢ Preparation of contract documents

Annex 18: MoH organisational structure

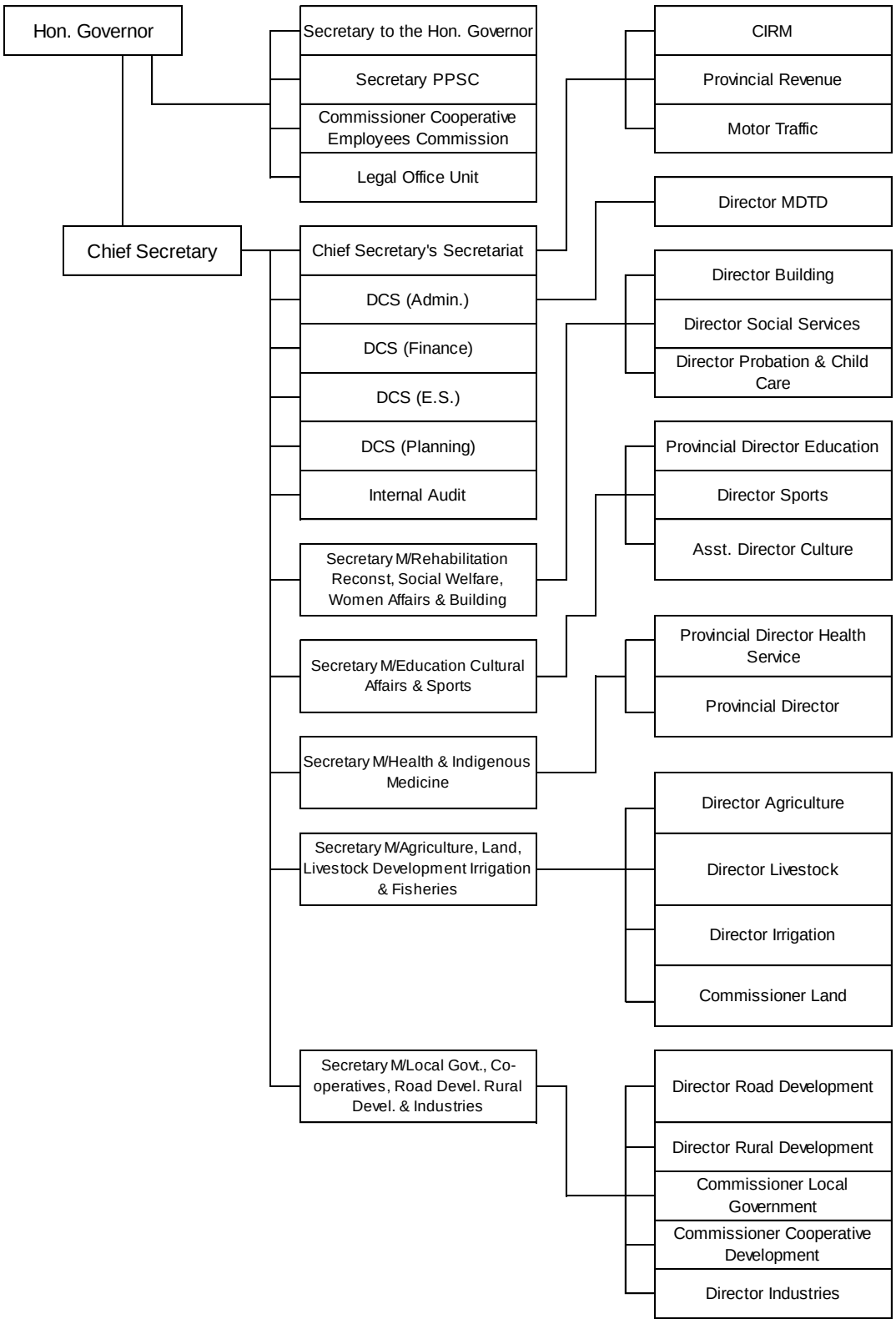
(a) Organisational structure of Ministry of Health



Source: Ministry of Health

Annex 19: Northern Provincial Council's organisational structure

Organisaional Structure of Northern Provincial Council



Source: Northern Provincial Council

Annex 20: Unit cost of equipment for secondary hospitals

Equipment Unit Cost for Secondary Level Institutions

Unit			Equipment Price (Rs.)
1	OPD and Administration Unit		
	1	Equipment for OPD Unit	2,376,600
2	PCU/ECU Unit		
	2-a	Equipment for PCU/ECU Unit (Major)	9,999,550
	2-b	Equipment for PCU/ECU Unit (Minor)	9,285,650
3	Clinic Unit		
	3-a	Equipment for Clinic Unit (Major)	4,567,750
	3-b	Equipment for Clinic Unit (Minor)	2,745,050
4	Standard Ward Unit		
	4-a	Equipment for Meical Ward Unit	5,799,950
	4-b	Equipment for Surgical Ward Unit	9,445,450
	4-c	Equipment for Pediatric Ward Unit	6,646,950
5	Gynecology/Obstetric Ward Unit		
	5-a	Equipment for Gyn. & Obs. Unit	35,956,900
	5-b	Equipment for Gyn. & Obs. Unit (Ward)	6,713,050
6	MICU/SICU Unit		
	6-a	Equipment for MICU/SICU Unit (02 ICU & 04 HDU Beds) (Major)	20,258,000
	6-b	Equipment for MICU/SICU Unit (02 ICU & 02 HDU Beds) (Minor)	13,578,000
7	Operation Theatre Unit		
	7-a	Equipmnet for Operation Theatre Unit (3 Operation Tables)	90,514,400
	7-b	Equipmnet for Operation Theatre Unit (2 Operation Tables)	69,384,800
8	Radiology Unit		
	8	Equipment for Radiology Unit	8,444,000
9	Pathology Unit		
	9	Equipment for Pathology Unit	8,523,000
10	Blood Bank Unit		
	10	Equipment for Blood Bank Unit	4,761,900

Unit	Equipment Price (Yen)
Ambulance	3,559,815

1 Equipment for OPD Unit

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	-		11	10,000	**110,000**
2	Glucometer	-		2	4,000	**8,000**
3	Specula	-		2	13,000	**26,000**
4	Electronic Weighing Scale With Height	-		3	164,000	**492,000**
5	Weighing Scale Baby	-		3	100,000	**300,000**
6	Opthalmascope	-		2	16,000	**32,000**
7	X-Ray Illuminators	-	Double panel	2	60,000	**120,000**
8	Spot Lamps	-		3	50,000	**150,000**
9	Doppler Detector	-		2	205,000	**410,000**
10	Examination bed	-		7	22,500	**157,500**
11	Instrument deressing table	-		7	25,000	**175,000**
12	Others (20%)	-				**396,100**
				TOTAL		**2,376,600**

2-a Equipment for PCU/ECU Unit (Major)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	ICU Bed	-		2	125,000	**250,000**
2	Hospital Bed	-		10	25,000	**250,000**
3	Monitor,Multifunctional	-		2	500,000	**1,000,000**
4	Nebulizers	-		2	20,000	**40,000**
5	Blood Presure App.	-		5	10,000	**50,000**
6	Glucometers	-		2	4,000	**8,000**
7	Transport Ventilator	-		1	3,725,000	**3,725,000**
8	Diagnostic Set	-		3	22,000	**66,000**
9	X-Ray Illuminators	-		1	60,000	**60,000**
10	Spot Lamps	-		4	50,000	**200,000**
11	Suction Apparatus	-		2	150,000	**300,000**
12	Resuscitator Trolley*	-		1	1,699,000	**1,699,000**
13	Pulse Oximeter	-		2	200,000	**400,000**
14	ECG Recorder	-		2	160,000	**320,000**
15	Syringe Pump	-		3	100,000	**300,000**
16	Infusion Pump	-		3	100,000	**300,000**
17	Examination bed	-		1	22,500	**22,500**
18	Instrument deressing table	-		4	25,000	**100,000**
19	Others (10%)	-				**909,050**
				TOTAL		**9,999,550**

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2-b Equipment for PCU/ECU Unit (Minor)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	ICU Bed	-		2	125,000	**250,000**
2	Hospital Bed	-		4	25,000	**100,000**
3	Monitor,Multifunctional	-		2	500,000	**1,000,000**
4	Nebulizers	-		1	20,000	**20,000**
5	Blood Presure App.	-		3	10,000	**30,000**
6	Glucometers	-		1	1,369,000	**4,000**
7	Transport Ventilator	-		1	3,725,000	**3,725,000**
8	Diagnostic Set	-		2	22,000	**44,000**
9	X-Ray Illuminators	-		1	60,000	**60,000**
10	Spot Lamps	-		3	50,000	**150,000**
11	Suction Apparatus	-		2	150,000	**300,000**
12	Resuscitator Trolley*	-		1	1,699,000	**1,699,000**
13	Pulse Oximeter	-		2	200,000	**400,000**
14	ECG Recorder	-		1	160,000	**187,000**
15	Syringe Pump	-		2	100,000	**200,000**
16	Infusion Pump	-		2	100,000	**200,000**
17	Examination bed	-		1	22,500	**22,500**
18	Instrument deressing table	-		2	25,000	**50,000**
19	Others (10%)	-				**844,150**
				TOTAL		**9,285,650**

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3-a Equipment for Clinic Unit (Major)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		26	10,000	**260,000**
2	Glucometer	01		5	4,000	**20,000**
3	Peakflow Meter	01		5	3,000	**15,000**
4	Specula	01		5	13,000	**65,000**
5	Featal Stethascope	04		5	20,000	**100,000**
6	Electronic Weighing Scale With Height	01		5	164,000	**820,000**
7	Weighing Scale Baby	01		5	100,000	**500,000**
8	Opthalmascope	01		5	16,000	**80,000**
9	Proctoscope	01		5	13,000	**65,000**
10	Plaster Cutter	01		5	13,000	**65,000**
11	X-Ray Illuminators	01	Double panel	5	60,000	**300,000**
12	Spot Lamps	01		5	50,000	**250,000**
13	Doppler Detector	01		5	205,000	**1,025,000**
14	Examination bed	-		15	22,500	**337,500**
15	Instrument deressing table	-		10	25,000	**250,000**
16	Others (10%)	-				**415,250**
				TOTAL		**4,567,750**

3-b Equipment for Clinic Unit (Minor)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		16	10,000	**160,000**
2	Glucometer	01		3	4,000	**12,000**
3	Peakflow Meter	01		3	3,000	**9,000**
4	Specula	01		3	13,000	**39,000**
5	Featal Stethascope	04		3	20,000	**60,000**
6	Electronic Weighing Scale With Height	01		3	164,000	**492,000**
7	Weighing Scale Baby	01		3	100,000	**300,000**
8	Opthalmascope	01		3	16,000	**48,000**
9	Proctoscope	01		3	13,000	**39,000**
10	Plaster Cutter	01		3	13,000	**39,000**
11	X-Ray Illuminators	01	Double panel	3	60,000	**180,000**
12	Spot Lamps	01		3	50,000	**150,000**
13	Doppler Detector	01		3	205,000	**615,000**
14	Examination bed	-		9	22,500	**202,500**
15	Instrument deressing table	-		6	25,000	**150,000**
16	Others (10%)	-				**249,550**
				TOTAL		**2,745,050**

4-a Equipment for Medical Ward Unit

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01	01 Reserve	5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Nebulizers	01	Disposible/mecha	1	50,000	**50,000**
4	Spot Lamps	01		1	50,000	**50,000**
5	X-Ray Illuminators	01	Double panel	1	60,000	**60,000**
6	Suction Apperatus	02		2	150,000	**300,000**
7	ESR Rack	01		1	13,000	**13,000**
8	Opthalmascope	01		1	16,000	**16,000**
9	Peakflow Meter	01		1	3,000	**3,000**
10	Electronic Weighing Scale	01		1	68,000	**68,000**
11	Resuscitator Trolley*	01		1	1,699,000	**1,699,000**
12	Pulse Oximeter	01	As a backup	1	200,000	**200,000**
13	Syringe Pumps	01		1	100,000	**100,000**
14	Defibrillators	**01	With trolley	1	1,100,000	**1,100,000**
15	ECG Recorder	**01		1	160,000	**160,000**
16	Monitor,Multifunctional, ECG	01	ECG,SPO2,NIBP	1	500,000	**500,000**
17	Others (15%)	-		1		**655,950**
				TOTAL		**5,028,950**

** Per Unit
*Annexture I

Clinic (Common)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Peakflow Meter	01		1	3,000	**3,000**
4	Specula	01		1	13,000	**13,000**
5	Featal Stethascope	04		4	20,000	**80,000**
6	Electronic Weighing Scale With Height	01		1	164,000	**164,000**
7	Weighing Scale Baby	01		1	100,000	**100,000**
8	Opthalmascope	01		1	16,000	**16,000**
9	Proctoscope	01		1	13,000	**13,000**
10	Plaster Cutter	01		1	13,000	**13,000**
11	X-Ray Illuminators	01	Double panel	1	60,000	**60,000**
12	Spot Lamps	01		1	50,000	**50,000**
13	Doppler Detector	01		1	205,000	**205,000**
				TOTAL		**771,000**

Grand Total	**5,799,950**

4-b Equipment for Surgical Ward Unit

No	Equipment	Suggested Qty. for 01 Ward	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 + 01	01 Reserve	5	10,000	**50,000**
2	Nebulizers	01		1	20,000	**20,000**
3	Opthalmascope	**01		1	16,000	**16,000**
4	Plaster Cutter	**01		1	13,000	**13,000**
5	Spot Lamps	01		1	50,000	**50,000**
6	Suction Apperatus	02		2	150,000	**300,000**
7	Glucometers	01		1	4,000	**4,000**
8	X-Ray Illuminators	01	Double Panel	1	60,000	**60,000**
9	Sigmoidoscope (rigid)	01		1	3,650,000	**3,650,000**
10	Resuscitator Trolley*	01		1	1,699,000	**1,699,000**
11	Proctoscope	01		1	13,000	**13,000**
12	Electronic Weighing Scale(Adult)	01		1	68,000	**68,000**
13	Vescular Doppler	**01		1	1,000,000	**1,000,000**
14	Syringe Pumps	01		1	100,000	**100,000**
15	Monitor,Multifunctional	01	SPO2, ECG,NIBP	1	500,000	**500,000**
16	Others (15%)	-		1		**1,131,450**
				TOTAL		**8,674,450**

** Per Unit

*Annexture I

Clinic (Common)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Peakflow Meter	01		1	3,000	**3,000**
4	Specula	01		1	13,000	**13,000**
5	Featal Stethascope	04		4	20,000	**80,000**
6	Electronic Weighing Scale With Height	01		1	164,000	**164,000**
7	Weighing Scale Baby	01		1	100,000	**100,000**
8	Opthalmascope	01		1	16,000	**16,000**
9	Proctoscope	01		1	13,000	**13,000**
10	Plaster Cutter	01		1	13,000	**13,000**
11	X-Ray Illuminators	01	Double panel	1	60,000	**60,000**
12	Spot Lamps	01		1	50,000	**50,000**
13	Doppler Detector	01		1	205,000	**205,000**
				TOTAL		**771,000**

Grand Total	**9,445,450**

4-c Equipment for Pediactric Ward Unit

No	Equipment	Suggested Qty. for 01 Ward	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01	01 Reserve	5	10,000	**50,000**
2	Nebulizers	01		1	20,000	**20,000**
3	Spot Lamp	01		1	50,000	**50,000**
4	X-Ray Illuminators	01	Double Panel	1	60,000	**60,000**
5	Glucometers	01		1	4,000	**4,000**
6	Suction Apperatus	02		2	150,000	**300,000**
7	Weighing Scale (Electronic)	01		1	68,000	**68,000**
8	Weighing Scale (Height & Weight)	01		1	164,000	**164,000**
9	Infusion Pumps	01		1	100,000	**100,000**
10	Syringe Pumps	02		2	100,000	**200,000**
11	Multipara Monitors	01	SPO_2, ECG,NIBP	1	500,000	**500,000**
12	Resuscitator Trolley*	01		1	1,594,000	**1,594,000**
13	Diagnostic Set	01		1	22,000	**22,000**
14	Phototherapy Units	01		1	321,000	**321,000**
15	Pulse Oximeter	01		1	200,000	**200,000**
16	Incubators, Infant	01		1	1,500,000	**1,500,000**
17	Others (15%)	-		1		**772,950**
				TOTAL		**5,875,950**

*Annexture II

Clinic (Common)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Peakflow Meter	01		1	3,000	**3,000**
4	Specula	01		1	13,000	**13,000**
5	Featal Stethascope	04		4	20,000	**80,000**
6	Electronic Weighing Scale With Height	01		1	164,000	**164,000**
7	Weighing Scale Baby	01		1	100,000	**100,000**
8	Opthalmascope	01		1	16,000	**16,000**
9	Proctoscope	01		1	13,000	**13,000**
10	Plaster Cutter	01		1	13,000	**13,000**
11	X-Ray Illuminators	01	Double panel	1	60,000	**60,000**
12	Spot Lamps	01		1	50,000	**50,000**
13	Doppler Detector	01		1	205,000	**205,000**
				TOTAL		**771,000**

Grand Total	**6,646,950**

5-a Equipment for Gyn. & Obs. Unit

Equipment for Gyn. & Obs. (Ward)

No	Equipment	Suggested Qty. for 01 Ward	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood pressure Apparatus	04 + 01	01 Reserve	5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Spot Lamp	01		1	50,000	**50,000**
4	X-Ray Illuminators	01	Double Panel	1	60,000	**60,000**
5	Suction Apperatus	02		2	150,000	**300,000**
6	Weighing Scale	01		1	68,000	**68,000**
7	Resuscitator Trolley*	01		1	880,000	**880,000**
8	Syringe pump	01		1	100,000	**100,000**
9	CTG	01		1	450,000	**450,000**
10	Detectors Doppler	01		1	205,000	**205,000**
11	Ultra Sound Scaner	01		1	3,000,000	**3,000,000**
12	Others (15%)	-		1		**775,050**
					TOTAL	**5,942,050**

*Annexture III

Clinic (Common)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Peakflow Meter	01		1	3,000	**3,000**
4	Specula	01		1	13,000	**13,000**
5	Featal Stethascope	04		4	20,000	**80,000**
6	Electronic Weighing Scale With Height	01		1	164,000	**164,000**
7	Weighing Scale Baby	01		1	100,000	**100,000**
8	Opthalmascope	01		1	16,000	**16,000**
9	Proctoscope	01		1	13,000	**13,000**
10	Plaster Cutter	01		1	13,000	**13,000**
11	X-Ray Illuminators	01	Double panel	1	60,000	**60,000**
12	Spot Lamps	01		1	50,000	**50,000**
13	Doppler Detector	01		1	205,000	**205,000**
					TOTAL	**771,000**
					Sub-Total 1	**6,713,050**

Equipments for Gyn. & Obs.

No	Equipment	Suggested Qty. for 01 Ward	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood pressure Apparatus	04 + 01	01 Reserve	5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Spot Lamp	01		1	50,000	**50,000**
4	X-Ray Illuminators	01	Double Panel	1	60,000	**60,000**
5	Suction Apperatus	02		2	150,000	**300,000**
6	Weighing Scale	01		1	68,000	**68,000**
7	Resuscitator Trolley*	01		1	880,000	**880,000**
8	Syringe pump	01		1	100,000	**100,000**
9	CTG	01		1	450,000	**450,000**
10	Detectors Doppler	01		1	205,000	**205,000**
11	Ultra Sound Scaner	01		1	3,000,000	**3,000,000**
12	Others (15%)	-		1		**775,050**
					TOTAL	**5,942,050**

*Annexture III

Clinic (Common)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Peakflow Meter	01		1	3,000	**3,000**
4	Specula	01		1	13,000	**13,000**
5	Featal Stethascope	04		4	20,000	**80,000**
6	Electronic Weighing Scale With Height	01		1	164,000	**164,000**
7	Weighing Scale Baby	01		1	100,000	**100,000**
8	Opthalmascope	01		1	16,000	**16,000**
9	Proctoscope	01		1	13,000	**13,000**
10	Plaster Cutter	01		1	13,000	**13,000**
11	X-Ray Illuminators	01	Double panel	1	60,000	**60,000**
12	Spot Lamps	01		1	50,000	**50,000**
13	Doppler Detector	01		1	205,000	**205,000**
				TOTAL		**771,000**

Equipments for Labour Room

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood pressure Apparatus	04 + 01	01 Reserve	5	10,000	**50,000**
2	Spot Lamp	02		2	50,000	**100,000**
3	Suction Apperatus	02		2	150,000	**300,000**
4	Suction Apperatus Low Pressure	01		1	200,000	**200,000**
5	Weighing Scale (Electronic) Baby	01		1	109,000	**109,000**
6	Resuscitator Trolley*	01		1	880,000	**880,000**
7	Delivary Tables	08		8	95,000	**760,000**
8	CTG	01		1	450,000	**450,000**
9	Detectors Doppler	01		1	205,000	**205,000**
10	Pulse Oximeter	01		1	200,000	**200,000**
11	Resuscitators with warmer	01		1	300,000	**300,000**
12	Vacuum Extractors	01		1	450,000	**450,000**
				TOTAL		**3,954,000**

*Annexture III

Equipments for PBCU

No	Equipment	Suggested Qty. for 01 Ward	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Pressure App.	04 + 01		5	10,000	**50,000**
2	Cot	-		10	87,000	**870,000**
3	Incubator, Infant	-		2	1,500,000	**3,000,000**
4	Infant Warmer	-		2	3,400,000	**6,800,000**
5	Neonatal Ventilator	-		1	2,200,000	**2,200,000**
6	Monitor,Multifunctional, Naonate	-		2	500,000	**1,000,000**
7	Nebulizer	-		1	20,000	**20,000**
8	Bilirubin Meter	-		1	287,000	**287,000**
9	Phototherapy Unit	-		2	300,000	**600,000**
10	Spot Lamps	-		2	50,000	**100,000**
11	Suction Apparatus, Low Pressure	-		1	200,000	**200,000**
12	Laryngoscope, Neonate	-		1	44,000	**44,000**
13	Ambu Bag, Neonate	-		1	27,000	**27,000**
14	Weighing Scale Baby	-		1	100,000	**100,000**
15	Syringe Pump	-		3	100,000	**300,000**
16	Pulse Oximeter	-		2	200,000	**400,000**
17	Transport Incubator	-		1	890,000	**890,000**
18	Others (10%)	-		1		**1,688,800**
				TOTAL		**18,576,800**

Sub-Total 2	**29,243,850**
Grand Total	**35,956,900**

(Sub total 1 +2)

5-b Equipment for Gyn. & Obs. Unit (Ward)

No	Equipment	Suggested Qty. for 01 Ward	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood pressure Apparatus	04 + 01	01 Reserve	5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Spot Lamp	01		1	50,000	**50,000**
4	X-Ray Illuminators	01	Double Panel	1	60,000	**60,000**
5	Suction Apperatus	02		2	150,000	**300,000**
6	Weighing Scale	01		1	68,000	**68,000**
7	Resuscitator Trolley*	01		1	880,000	**880,000**
8	Syringe pump	01		1	100,000	**100,000**
9	CTG	01		1	450,000	**450,000**
10	Detectors Doppler	01		1	205,000	**205,000**
11	Ultra Sound Scaner	01		1	3,000,000	**3,000,000**
12	Others (15%)	-		1		**775,050**
				TOTAL		**5,942,050**

*Annexture III

Clinic (Common)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Blood Presure App.	04 +01		5	10,000	**50,000**
2	Glucometer	01		1	4,000	**4,000**
3	Peakflow Meter	01		1	3,000	**3,000**
4	Specula	01		1	13,000	**13,000**
5	Featal Stethascope	04		4	20,000	**80,000**
6	Electronic Weighing Scale With Height	01		1	164,000	**164,000**
7	Weighing Scale Baby	01		1	100,000	**100,000**
8	Opthalmascope	01		1	16,000	**16,000**
9	Proctoscope	01		1	13,000	**13,000**
10	Plaster Cutter	01		1	13,000	**13,000**
11	X-Ray Illuminators	01	Double panel	1	60,000	**60,000**
12	Spot Lamps	01		1	50,000	**50,000**
13	Doppler Detector	01		1	205,000	**205,000**
				TOTAL		**771,000**
					Grand Total	**6,713,050**

6-a Equipment for MICU/SICU Unit (02 ICU & 04 HDU Beds) (Major)

01. Equipment for (02 ICU Bed)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
01	Ventilator Intensive care	02	Pediactric & Adul	2	2,000,000	**4,000,000**
02	Multipara Monitors	02	ECG,SPO2,ETCO2	2	500,000	**1,000,000**
03	Syringe Pumps	02		2	100,000	**200,000**
04	Infusion Pumps	02		2	100,000	**200,000**
05	Suction Apparatus	01		1	150,000	**150,000**
06	Others (20%)	-		1		**1,110,000**
				TOTAL		**6,660,000**

02. Equipment for (04 HDU Bed)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
01	Multipara Monitors	04	ECG,SPO2,NIBP	4	500,000	**2,000,000**
02	Syringe Pumps	04		4	100,000	**400,000**
03	Infusion Pumps	04		4	100,000	**400,000**
04	Suction Apparatus	01		1	150,000	**150,000**
05	Others (20%)	-		1		**590,000**
				TOTAL		**3,540,000**

03. Commen Equipment for ICU & HDU

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
01	Blood pressure Apparatus	04 + 02	02 Reserve	6	10,000	**60,000**
02	Glucometer	01		1	4,000	**4,000**
03	Nebulizer	02		2	20,000	**40,000**
04	Opthalmascope	01		1	82,000	**82,000**
05	Respiro Meter	02		2	900,000	**1,800,000**
06	Suction Apparatus	01	Standby	1	150,000	**150,000**
07	Spot Lamp	01		1	50,000	**50,000**
08	X-Ray Illuminator	01		1	60,000	**60,000**
09	Resusitator Trolley*	01		1	410,000	**410,000**
10	Pulse Oximeter	01		1	200,000	**200,000**
11	ECG Recorder	01		1	160,000	**160,000**
12	Centrifuge,Microhaematocrit	01		1	273,000	**273,000**
13	Defibrilator	01		1	1,100,000	**1,100,000**
14	Blood Gas / Electrolyte Analyzer	01	pre.reagent modu	1	800,000	**800,000**
15	Transport Monitor	01		1	500,000	**500,000**
16	Transport Ventilator	01		1	1,369,000	**1,369,000**
17	X-Ray machine Mobile	01		1	3,000,000	**3,000,000**
				TOTAL		**10,058,000**

*Annexture I

Grand Total	**20,258,000**

6-b Equipment for MICU/SICU Unit (02 ICU & 02 HDU Beds) (Minor)

01. Equipment for (02 ICU Bed)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
01	Ventilator Intensive care	02	Pediactric & Adult	1	2,000,000	**2,000,000**
02	Multipara Monitors	02	ECG,SPO2,ETCO2,NIBP	1	500,000	**500,000**
03	Syringe Pumps	02		1	100,000	**100,000**
04	Infusion Pumps	02		1	100,000	**100,000**
05	Suction Apparatus	01		1	150,000	**150,000**
06	Others (20%)	-		1		**570,000**
				TOTAL		**3,420,000**

02. Equipment for (04 HDU Bed)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
01	Multipara Monitors	04	ECG,SPO2,NIBP	1	500,000	**500,000**
02	Syringe Pumps	04		1	100,000	**100,000**
03	Infusion Pumps	04		1	100,000	**100,000**
04	Suction Apparatus	01		1	150,000	**150,000**
05	Others (20%)	-		1		**170,000**
				TOTAL		**1,020,000**

03. Commen Equipment for ICU & HDU

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
01	Blood pressure Apparatus	04 + 02	02 Reserve	4	10,000	**40,000**
02	Glucometer	01		1	4,000	**4,000**
03	Nebulizer	02		2	20,000	**40,000**
04	Opthalmascope	01		1	82,000	**82,000**
05	Respiro Meter	02		1	900,000	**900,000**
06	Suction Apparatus	01	Standby	1	150,000	**150,000**
07	Spot Lamp	01		1	50,000	**50,000**
08	X-Ray Illuminator	01		1	60,000	**60,000**
09	Resusitator Trolley*	01		1	410,000	**410,000**
10	Pulse Oximeter	01		1	200,000	**200,000**
11	ECG Recorder	01		1	160,000	**160,000**
12	Centrifuge,Microhaematocrit	01		1	273,000	**273,000**
13	Defibrilator	01		1	1,100,000	**1,100,000**
14	Blood Gas / Electrolyte Analyzer	01	pre.reagent module	1	800,000	**800,000**
15	Transport Monitor	01		1	500,000	**500,000**
16	Transport Ventilator	01		1	1,369,000	**1,369,000**
17	X-Ray machine Mobile	01		1	3,000,000	**3,000,000**
				TOTAL		**9,138,000**

*Annexture I

Grand Total	**13,578,000**

7-a Equipment for Operation Theatre Unit (3 Operation Tables)

Equipment for 01 Operation Theatre (2 Operation Bed)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	BP Apparatus	04 + 01	01 Reserve	5	10,000	**50,000**
2	Plaster Cutter	01		1		**-**
3	Spot Lamp	01		1	50,000	**50,000**
4	Suction Apperatus	04	02-Bed/01-Recovery/01-Standby	4	200,000	**800,000**
5	X-Ray illuminators	01	Double panel	1	60,000	**60,000**
6	Rigid Sigmoidascope	01		1	6,849,000	**6,849,000**
7	laryngoscope (0,1,2,3,4)	04 Set		4	44,000	**176,000**
8	Laparascope	01	Optional	1		**-**
9	Monitor, Multipara with Capno.	03	02-Bed / 01-Recovery	3	1,000,000	**3,000,000**
10	Electrosurgical Units	03	02-Bed / 01-Standby	3	1,800,000	**5,400,000**
11	Defibrilators	02		2	1,100,000	**2,200,000**
12	Lights Surgical,Mobile	01		1	1,500,000	**1,500,000**
13	Lights,Overhead	01		1	3,200,000	**3,200,000**
14	Tables, Operating	02		2	2,000,000	**4,000,000**
15	Anaesthetic Machine	03	02-Bed/01-Standby	3	2,700,000	**8,100,000**
16	Ventilators, Anesthesia	03	02-Bed / 01-Standby	3	2,000,000	**6,000,000**
17	AutoclavesTable Top	01		1	800,000	**800,000**
18	Others (20%)	-		1		**8,437,000**
				TOTAL		**50,622,000**

Equipment for 01 Operation Theatre (1 Operation Bed)

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	BP Apparatus	02 + 01	01 Reserve	3	10,000	**30,000**
2	Plaster Cutter	01		0		**-**
3	Spot Lamp	01		1	50,000	**50,000**
4	Suction Apperatus	04	02-Bed/01-Recovery/01-Standby	2	200,000	**400,000**
5	X-Ray illuminators	01	Double panel	1	60,000	**60,000**
6	Rigid Sigmoidascope	01		1	6,849,000	**6,849,000**
7	laryngoscope (0,1,2,3,4)	04 Set		2	44,000	**88,000**
8	Laparascope	01	Optional	0		**-**
9	Monitor, Multipara with Capno.	03	02-Bed / 01-Recovery	2	1,000,000	**2,000,000**
10	Electrosurgical Units	03	02-Bed / 01-Standby	1	1,800,000	**1,800,000**
11	Defibrilators	02		1	1,100,000	**1,100,000**
12	Lights Surgical,Mobile	01		1	1,500,000	**1,500,000**
13	Lights,Overhead	01		1	3,200,000	**3,200,000**
14	Tables, Operating	02		1	2,000,000	**2,000,000**
15	Anaesthetic Machine	03	02-Bed/01-Standby	1	2,700,000	**2,700,000**
16	Ventilators, Anesthesia	03	02-Bed / 01-Standby	1	2,000,000	**2,000,000**
17	AutoclavesTable Top	01		1	800,000	**800,000**
18	Others (20%)	-		1		**4,915,400**
				TOTAL		**29,492,400**

Equipments for CSSD

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	High Pressure Sterilizer	01		1	8,000,000	**8,000,000**
2	Autoclave Tabletop	03	01 Vaccum & 02 Normal	3	800,000	**2,400,000**
				TOTAL		**10,400,000**
					Grand Total	**90,514,400**

7-b Equipment for Operation Theatre Unit (2 Operation Tables)

Equipment for 01 Operation Theatre

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	BP Apparatus	02 + 01	01 Reserve	3	10,000	**30,000**
2	Plaster Cutter	01		0		**-**
3	Spot Lamp	01		1	50,000	**50,000**
4	Suction Apperatus	04	02-Bed/01-Recovery/01-Standby	2	200,000	**400,000**
5	X-Ray illuminators	01	Double panel	1	60,000	**60,000**
6	Rigid Sigmoidascope	01		1	6,849,000	**6,849,000**
7	laryngoscope (0,1,2,3,4)	04 Set		2	44,000	**88,000**
8	Laparascope	01	Optional	0		**-**
9	Monitor, Multipara with Capno.	03	02-Bed / 01-Recovery	2	1,000,000	**2,000,000**
10	Electrosurgical Units	03	02-Bed / 01-Standby	1	1,800,000	**1,800,000**
11	Defibrilators	02		1	1,100,000	**1,100,000**
12	Lights Surgical,Mobile	01		1	1,500,000	**1,500,000**
13	Lights,Overhead	01		1	3,200,000	**3,200,000**
14	Tables, Operating	02		1	2,000,000	**2,000,000**
15	Anaesthetic Machine	03	02-Bed/01-Standby	1	2,700,000	**2,700,000**
16	Ventilators, Anesthesia	03	02-Bed / 01-Standby	1	2,000,000	**2,000,000**
17	AutoclavesTable Top	01		1	800,000	**800,000**
18	Others (20%)	-		1		**4,915,400**
				TOTAL		**29,492,400**

Equipment for 01 Operation Theatre

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	BP Apparatus	02 + 01	01 Reserve	3	10,000	**30,000**
2	Plaster Cutter	01		0		**-**
3	Spot Lamp	01		1	50,000	**50,000**
4	Suction Apperatus	04	02-Bed/01-Recovery/01-Standby	2	200,000	**400,000**
5	X-Ray illuminators	01	Double panel	1	60,000	**60,000**
6	Rigid Sigmoidascope	01		1	6,849,000	**6,849,000**
7	laryngoscope (0,1,2,3,4)	04 Set		2	44,000	**88,000**
8	Laparascope	01	Optional	0		**-**
9	Monitor, Multipara with Capno.	03	02-Bed / 01-Recovery	2	1,000,000	**2,000,000**
10	Electrosurgical Units	03	02-Bed / 01-Standby	1	1,800,000	**1,800,000**
11	Defibrilators	02		1	1,100,000	**1,100,000**
12	Lights Surgical,Mobile	01		1	1,500,000	**1,500,000**
13	Lights,Overhead	01		1	3,200,000	**3,200,000**
14	Tables, Operating	02		1	2,000,000	**2,000,000**
15	Anaesthetic Machine	03	02-Bed/01-Standby	1	2,700,000	**2,700,000**
16	Ventilators, Anesthesia	03	02-Bed / 01-Standby	1	2,000,000	**2,000,000**
17	AutoclavesTable Top	01		1	800,000	**800,000**
18	Others (20%)	-		1		**4,915,400**
				TOTAL		**29,492,400**

Equipments for CSSD

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	High Pressure Sterilizer	01		1	8,000,000	**8,000,000**
2	Autoclave Tabletop	03	01 Vaccum & 02 Normal	3	800,000	**2,400,000**
				TOTAL		**10,400,000**
					Grand Total	**69,384,800**

8 Equipment for Radiology Unit

No	Equipment	Suggested Qty.	Remarks	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	X-Ray Illuminator	01	Double Panel	1	60,000	**60,000**
2	X-Ray Film Procesor Manual	01		1	684,000	**684,000**
3	X-Ray Film Procesor (Automatic)	01		1	1,000,000	**1,000,000**
4	X-Ray Machine,Mobile	01		1	3,000,000	**3,000,000**
5	X-Ray Machine,static	01		1	3,000,000	**3,000,000**
6	X-Ray Machine,Dental	01		1	700,000	**700,000**
				TOTAL		**8,444,000**

9 Equipment for Pathology Unit

No	Equipment	Suggested Qty	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Biochemistry Analyzer, Semi-Auto	-	1	900,000	**900,000**
2	Hematology Analyzer	-	1	1,500,000	**1,500,000**
3	Microscope	-	2	195,000	**390,000**
4	Table-top Centrifuge	-	1	1,500,000	**1,500,000**
5	Refrigerator	-	2	1,200,000	**2,400,000**
6	Colorimeter	-	1	131,500	**131,000**
7	Water Distiller	-	1	728,000	**728,000**
8	Spectrophotometer	-	1	200,000	**200,000**
9	Others(10%)	-	1		**774,000**
			TOTAL		**8,523,000**

10 Equipment for Blood Bank Unit

No	Equipment	Suggested Qty	Proposed Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Bed	-	2	116,000	**232,000**
2	Table-top Centrifuge	-	1	547,000	**547,000**
3	Microscope	-	2	195,000	**390,000**
4	Water Bath	-	1	800,000	**800,000**
5	Separator	-	1	82,000	**82,000**
6	Sealer	-	1	410,000	**410,000**
7	Balance	-	1	205,000	**205,000**
8	Refrigerator	-	2	695,000	**1,390,000**
9	Freezer	-	1	273,000	**273,000**
10	Others (10%)	-	1		**432,900**
			TOTAL		**4,761,900**

*** Annexture I**

Equipment for Resusitator Trolley

(Medical / Surgical / Intensivecare)

No	Equipment	Qty	Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Oxygen Cylinder & Regulator	01	1	27,000	**27,000**
2	Defibrilator & Monitor	01	1	1,100,000	**1,100,000**
3	Laryngoscope & Blades (Adult)	02	2	27,000	**54,000**
4	Stilets (Introducer)	02	2	5,700	**11,000**
5	Tongue Depressure	01	1	6,800	**6,000**
6	Magilis Forcepp	01	1	9,500	**9,000**
7	Ambu Bag & Face Mask	02	2	41,000	**82,000**
8	Trolley	01	1	410,000	**410,000**
			TOTAL		**1,699,000**

*** Annexture II**

Equipment for Resusitator Trolley for Paediatric

No	Equipment	Qty	Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Laryngoscope,Paediatric	02	2	27,000	**54,000**
2	Laryngoscope,Neonatal	02	2	44,000	**88,000**
3	Larigoscope Blades,Straight/curved(0,1,2,3)	04 Sets	4	27,000	**108,000**
4	Oral Air Ways (0000,00,0,1,2,3)	02 each	2	13,000	**26,000**
5	Nasal Air Ways	02	2	13,000	**26,000**
6	Ambu bag with Reservoir,Paediatric	02	2	20,000	**40,000**
7	Ambu bag with Reservoir,Neonatal	02	2	13,000	**26,000**
8	Face Mask size 0,1(Round / Anatomical/transparant/Bla	06 Sets	6	136,000	**816,000**
9	Trolley	01	1	410,000	**410,000**
			TOTAL		**1,594,000**

*** Annexture III**

Equipment for Resusitator Trolley for Gyn.& Obs.

No	Equipment	Qty	Q'ty	Unit Price (Rs.)	Total (Rs.)
1	Baby Ambu Bags	04	4	13,000	**52,000**
2	Oxygen Face Masks	05	5	13,000	**65,000**
3	Laryngoscope	04	4	27,000	**108,000**
4	Stilets	04	4	5,700	**22,000**
5	Stethescope-Baby	02	2	13,000	**26,000**
6	Kidney Trays	04	4	4,000	**16,000**
8	S.S.Tray-Medium	02	2	4,000	**8,000**
9	Canisters	02	2	2,000	**4,000**
10	Oxygen Cylinders	01	1	27,000	**27,000**
11	Forceps Jar	01	1	2,700	**2,000**
12	Cheetle forceps	01	1	6,800	**6,000**
13	Small Size Jar	01	1	2,700	**2,000**
14	Catch Forceps	01	1	6,800	**6,000**
15	Oxygen Flow Meters	02	2	13,000	**26,000**
16	Feotal Stethescope	05	5	20,000	**100,000**
17	Trolley	01	1	410,000	**410,000**
			TOTAL		**880,000**

Annex 21: Cost breakdown and MM schedule of consulting services

Assignment schedule/Cost estimation of consulting services

		Position	Billing Rate F/C Yen	Billing Rate LC/ Rs	2012	2013	2014	2015	2016	2017	Total
		Part A(SPMC & Overall Coordination)									
A	1	Project Manager	2500000	0	1	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1	1 1	1 1	1	20
A	2	Equipment Engineer (SPMC)	2500000	0	1	1 1 1 1 1	1 1 1	1	1	1	11
A	3	Document&Procurement Specialist	2500000	0		1 1	1				3
A	4	Quality Control Expert(SPMC)	2500000	0			1	1	1		3
A	5	Architect(SPMC)	2500000	0	1	1 1 1 1	1 1 1				8
			0	0							
			0	0							
			0	0							
			0	0							
			0	0							
			0	0							
B	1	Deputy PM/Civil Engineer	0	500000	1	1 1 1 1 1	1 1 1 1	1 1 1 1 1 1	1 1 1 1 1		18
B	2	Structure Engineer	0	500000		1 1 1					3
B	3	Architect	0	500000		1 1 1					3
			0	0							
			0	0							
			0	0							
		Part B (Hospital)	0	0							
B	4	Project Manager	0	500000	4 4 4 4	4 4 4 4 4 4 4 4	4 4 4 4				64
B	5	Civil Engineer	0	500000	4 4 4	4 4 4 4 4	4				32
B	6	Structure Engineer	0	500000	4 4						8
B	7	Architect	0	500000	4 4	4					12
B	8	Bio Medical Engineer	0	500000	4 4	4 4 4 4 4	4				28
B	9	Documentation and Procurement Specialist	0	500000		4 4					8
			0	0							
			0	0							
			0	0							
			0	0							0
		[Total of Pro-A]			**3**	**18**	**15**	**4**	**4**	**1**	**45**
		[Total of Pro-B]			**53**	**86**	**27**	**6**	**4**	**0**	**176**
		[Total of Pro-A+Pro-B]			56	104	42	10	8	1	221
		Total Cost of FC for Each Month(Pro-A)			7,500,000	45,000,000	37,500,000	10,000,000	10,000,000	2,500,000	112,500,000
		Total Cost of FC for Each Month(Pro-B)			0	0	0	0	0	0	0
		Total Cost of LC for Each Month(Pro-A)			0	0	0	0	0	0	0
		Total Cost of LC for Each Month(Pro-B)			26,500,000	43,000,000	13,500,000	3,000,000	2,000,000	0	88,000,000
			0	0							0
			0	0							0
C	1	Accountant	0	80000	1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1		24
C	2	Secretary	0	80000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1		43
			0	0							0
			0	0							0
			0	0							0
			0	0							0
			0	0							0
			0	0							0
		[Total of Supporting Staff]			**2**	**19**	**18**	**18**	**10**	**0**	**67**
		Total Cost of LC for Each Month(SS)			160,000	1,520,000	1,440,000	1,440,000	800,000	0	5,360,000
		Grand Total			**58**	**123**	**60**	**28**	**18**	**1**	**288**

Annex 22: Questionnaire sent from MoH to MSD

දුරකථන
தொலைபேசி
Telephone
2698475
2698490
2698507

ෆැක්ස්
பெக்ஸ்
Fax
2692913
2694860

විද්‍යුත් තැපෑල
மின்னஞ்சல் முகவரி
e-mail
postmaster@health.gov.lk

වෙබ් අඩවිය
இணையத்தளம்
website
www.health.gov.lk

සුවසිරිපාය
சுவசிரிபாய
SUWASIRIPAYA

මගේ අංකය
எனது இல
My No:
H05/62/2011

ඔබේ අංකය
உமது இல
Your No:

දිනය
திகதி
Date
10/01/2012

සෞඛ්‍ය අමාත්‍යාංශය
சுகாதார அமைச்சு
Ministry of Health

To: Dr. Kamal Jayasinghe

Director MSD

Request for Cooperation to the JICA Preparatory Study

As you are aware, the Ministry of Health and the Japan International Cooperation Agency (JICA) are jointly preparing for a new project with three components; upgrading production capacity of SPMC, upgrading 4 Base Hospitals and providing 124 ambulances. In order to finalize the preparatory study, please furnish the following information (attachment) by 13 January 2012 and send your response directly to:

Ms. Keiko Nishino, Team Leader, JICA Study Team
Tel: 11-2369970
Fax: 11-2369971
Email: nishino.keiko@glm.co.jp

If you have any question, please contact Ms. Nishino directly.

Dr. Palitha Mahipala
Additional Secretary

Dr. P. G. Maheepala
Addl. Secretary (Medical Services)
Ministry of Health
"Suwasiripaya"
Colombo - 10.

Question 1: For the items listed in the table below, how many million units did MSD require for 2009, 2010 and 2011? Please furnish the figure in the table.

ITEM	2009 (million units)	2010 (million units)	2011 (million units)
Aluminium Hydro.Tab. BP 500mg.			
Amoxicillin Tab. USP 125mg.			
Amoxicillin Cap. BP 250mg.			
Amoxicillin Cap. BP 500mg.			
Ascorbic Acid Tab. BP 100mg.			
Aspirin Tablets BP 150mg (Enteric coated)			
Atenolol Tab. BP 50 mg (Blister)			
Benzhexol Tab. BP 2mg.			
Bisacodyl Tab. BP 5mg.			
Carbamazepine Tab. BP 200mg			
Chloramphenicol Cap. BP 250mg.			
Chloroquine Phos. Tab. BP 250mg.			
Cimetidine Tab. BP 200mg			
Cloxacillin Cap. BP 250mg.			
Cloxacillin Cap. BP 500mg.			
Co-Trimoxazole Tab. BP 480mg. (Adult)			
Diclofenac Sodium Tab.USP 50mg.			
Diethylcarbamazine Tab. BP 50mg.			
Diltiazem HCL Tab 60 mg (Blister)			
Erythromycin Stearate Tab. BP 250mg.			
Enalapril Maleate Tab USP 5 mg			
Folic Acid Tab. BP 5mg.			
Frusemide Tab. BP 40mg.			
Famotidine Tab. USP 20mg (Blister)			
Indometacin Cap. BP 25mg.			
Mebendazole Tab. USP 500mg.			
Mebendazole Tab. USP 100mg.			
Metformin Tab. BP 500mg.			
Pae.Cotrim Tablets 120 mg			
Paracetamol Tab. BP 500mg.			
Phenoxymethylpenicillin Tab. BP 125mg.			
Phenoxymethylpenicillin Tab. BP 250mg.			
Prednisolone Tab BP 5mg.			
Primaquine Phos. Tablets 7.5mg			
Propranolol Tab. BP 40mg.			
Propranolol Tab. BP 10mg.			
Rifampicin Cap. BP 150mg.			
Salbutamol Tab. BP 2mg.			
Salbutamol Tab. BP 4mg.			
Theophylline (E R) Tab. 125mg.			
Trifluoperazine Tab. BP 5mg.			
Verapamil Tab. BP 40mg.			
Vitamin B Complex Tablets			
Vitamin B Compound Strong Tab. BPC			

Question 2: For the items listed in the table below, how many million units did MSD request SPMC to produce for 2009, 2010 and 2011? Please furnish the figure in the table.

ITEM	2009 (million units)	2010 (million units)	2011 (million units)
Aluminium Hydro.Tab. BP 500mg.			
Amoxicillin Tab. USP 125mg.			
Amoxicillin Cap. BP 250mg.			
Amoxicillin Cap. BP 500mg.			
Ascorbic Acid Tab. BP 100mg.			
Aspirin Tablets BP 150mg (Enteric coated)			
Atenolol Tab. BP 50 mg (Blister)			
Benzhexol Tab. BP 2mg.			
Bisacodyl Tab. BP 5mg.			
Carbamazepine Tab. BP 200mg			
Chloramphenicol Cap. BP 250mg.			
Chloroquine Phos. Tab. BP 250mg.			
Cimetidine Tab. BP 200mg			
Cloxacillin Cap. BP 250mg.			
Cloxacillin Cap. BP 500mg.			
Co-Trimoxazole Tab. BP 480mg. (Adult)			
Diclofenac Sodium Tab.USP 50mg.			
Diethylcarbamazine Tab. BP 50mg.			
Diltiazem HCL Tab 60 mg (Blister)			
Erythromycin Stearate Tab. BP 250mg.			
Enalapril Maleate Tab USP 5 mg			
Folic Acid Tab. BP 5mg.			
Frusemide Tab. BP 40mg.			
Famotidine Tab. USP 20mg (Blister)			
Indometacin Cap. BP 25mg.			
Mebendazole Tab. USP 500mg.			
Mebendazole Tab. USP 100mg.			
Metformin Tab. BP 500mg.			
Pae.Cotrim Tablets 120 mg			
Paracetamol Tab. BP 500mg.			
Phenoxymethylpenicillin Tab. BP 125mg.			
Phenoxymethylpenicillin Tab. BP 250mg.			
Prednisolone Tab. BP 5mg.			
Primaquine Phos. Tablets 7.5mg			
Propranolol Tab. BP 40mg.			
Propranolol Tab. BP 10mg.			
Rifampicin Cap. BP 150mg.			
Salbutamol Tab. BP 2mg.			
Salbutamol Tab. BP 4mg.			
Theophylline (E R) Tab. 125mg.			
Trifluoperazine Tab. BP 5mg.			
Verapamil Tab. BP 40mg.			
Vitamin B Complex Tablets			
Vitamin B Compound Strong Tab. BPC			

Question 3: For the items listed in the table below, how many million units did SPMC produce for 2009, 2010 and 2011? Please furnish the figure in the table.

ITEM	2009 (million units)	2010 (million units)	2011 (million units)
Aluminium Hydro.Tab. BP 500mg.			
Amoxicillin Tab. USP 125mg.			
Amoxicillin Cap. BP 250mg.			
Amoxicillin Cap. BP 500mg.			
Ascorbic Acid Tab. BP 100mg.			
Aspirin Tablets BP 150mg (Enteric coated)			
Atenolol Tab. BP 50 mg (Blister)			
Benzhexol Tab. BP 2mg.			
Bisacodyl Tab. BP 5mg.			
Carbamazepine Tab. BP 200mg			
Chloramphenicol Cap. BP 250mg.			
Chloroquine Phos. Tab. BP 250mg.			
Cimetidine Tab. BP 200mg			
Cloxacillin Cap. BP 250mg.			
Cloxacillin Cap. EP 500mg.			
Co-Trimoxazole Tab. BP 480mg. (Adult)			
Diclofenac Sodium Tab.USP 50mg.			
Diethylcarbamazine Tab. BP 50mg.			
Diltiazem HCL Tab 60 mg (Blister)			
Erythromycin Stearate Tab. BP 250mg.			
Enalapril Maleate Tab USP 5 mg			
Folic Acid Tab. BP 5mg.			
Frusemide Tab. BP 40mg.			
Famotidine Tab. USP 20mg (Blister)			
Indometacin Cap. BP 25mg.			
Mebendazole Tab. USP 500mg.			
Mebendazole Tab. USP 100mg.			
Metformin Tab. BP 500mg.			
Pae.Cotrim Tablets 120 mg			
Paracetamol Tab. BP 500mg.			
Phenoxymethylpenicillin Tab. BP 125mg.			
Phenoxymethylpenicillin Tab. BP 250mg.			
Prednisolone Tab. BP 5mg.			
Primaquine Phos. Tablets 7.5mg			
Propranolol Tab. BP 40mg.			
Propranolol Tab. BP 10mg.			
Rifampicin Cap. BP 150mg.			
Salbutamol Tab. BP 2mg.			
Salbutamol Tab. BP 4mg.			
Theophylline (E R) Tab. 125mg.			
Trifluoperazine Tab. BP 5mg.			
Verapamil Tab. BP 40mg.			
Vitamin B Complex Tablets			
Vitamin B Compound Strong Tab. BPC			

Annex 23: Questionnaire sent to 4 base hospitals

January 9, 2012

To: Dr. Upul Wijenayake
Medical Superintendent,
Base Hospital Warakapola
Kegalle – Sabaragamuwa Province

Request for furnishing Baseline information for the Project for Improvement of Basic Social Services Targeting Emerging Regions

Dear Sir,

On behalf of the JICA Preparatory Study Team, I am pleased to inform you that your hospital is selected to be developed as a full scale secondary level hospital under this project. Although the project framework still needs to be finalized in March 2012, we are obliged to collect baseline data set for project monitoring and evaluation.

For this purpose, we will be visiting your hospital on January 11th (Wednesday) at 8:00 a.m. to observe actual situation and to interview concerned personnel. In order to facilitate our survey, it is highly appreciated if you could kindly prepare for the attached questionnaires prior to our visit.

We sincerely look forward to seeing you soon.

Keiko Nishino
JICA Study Team Leader
C/O JICA NPP Office
555/5, AMC Building
Elvitigala Mawatha, Colombo 5
077-357-2563

emai

January 9, 2012

To: Dr. P. G. P. S. Karunarathna
Medical Superintendent,
Base Hospital Teldeniya
Kandy – Central Province

Request for furnishing Baseline information for the Project for Improvement of Basic Social Services Targeting Emerging Regions

Dear Sir,

On behalf of the JICA Preparatory Study Team, I am pleased to inform you that your hospital is selected to be developed as a full scale secondary level hospital under this project. Although the project framework still needs to be finalized in March 2012, we are obliged to collect baseline data set for project monitoring and evaluation.

For this purpose, we will be visiting your hospital on January 11th (Wednesday) at 11:30 a.m. to observe actual situation and to interview concerned personnel. In order to facilitate our survey, it is highly appreciated if you could kindly prepare for the attached questionnaires prior to our visit.

We sincerely look forward to seeing you soon.

Keiko Nishino
JICA Study Team Leader
C/O JICA NPP Office
555/5, AMC Building
Elvitigala Mawatha, Colombo 5
077-357-2563

Fax

January 9, 2012

To: Dr. L. D. P. Wickramasinghe
Acting Medical Superintendent,
Base Hospital Galgamuwa
Kurunegala – North Western Province

Request for furnishing Baseline information for the Project for Improvement of Basic Social Services Targeting Emerging Regions

Dear Sir,

On behalf of the JICA Preparatory Study Team, I am pleased to inform you that your hospital is selected to be developed as a full scale secondary level hospital under this project. Although the project framework still needs to be finalized in March 2012, we are obliged to collect baseline data set for project monitoring and evaluation.

For this purpose, we will be visiting your hospital on January 12th (Thursday) at 10:00 a.m. to observe actual situation and to interview concerned personnel. In order to facilitate our survey, it is highly appreciated if you could kindly prepare for the attached questionnaires prior to our visit.

We sincerely look forward to seeing you soon.

Keiko Nishino
JICA Study Team Leader
C/O JICA NPP Office
555/5, AMC Building
Elvitigala Mawatha, Colombo 5
077-357-2563

January 9, 2012

To: Dr. G. Sukanan
Medical Superintendent,
Base Hospital Kaluwanchikudy
Batticaloa – Eastern Province

Request for furnishing Baseline information for the Project for Improvement of Basic Social Services Targeting Emerging Regions

Dear Sir,

On behalf of the JICA Preparatory Study Team, I am pleased to inform you that your hospital is selected to be developed as a full scale secondary level hospital under this project. Although the project framework still needs to be finalized in March 2012, we are obliged to collect baseline data set for project monitoring and evaluation.

For this purpose, we will be visiting your hospital on January 13th (Friday) at 9:00 a.m. to observe actual situation and to interview concerned personnel. In order to facilitate our survey, it is highly appreciated if you could kindly prepare for the attached questionnaires prior to our visit.

We sincerely look forward to seeing you soon.

Keiko Nishino
JICA Study Team Leader
C/O JICA NPP Office
555/5, AMC Building
Elvitigala Mawatha, Colombo 5
077-357-2563

e.mail

Attachment

Question 1: Availability of conventional x-ray unit(s) with Bucky stand and Bucky table

Please furnish the information required in the table.

	Questions	Answers	
1	Do you have x-ray room(s) with conventional x-ray unit (equipment) in your hospital? Please circle your answer.	Yes	No
2	Do you have a mobile x-ray unit in your hospital? Please circle your answer.	Yes	No
If your hospital has either conventional and/or mobile x-ray unit (s), please answer questions from 3 to 8. If your hospital does not have either conventional or mobile x-ray unit (s), please go to question No. 9.			
3	Do you have an x-ray film processing room with manual or automatic film processor (equipment)? Please circle your answer.	Yes	No
4	Have you experienced stock out of consumables such as x-ray film, reagents for x-ray film processor? Please circle your answer.	Yes	No
5	Please list consumables that is frequently out of stock.		
6	Do you have skilled personnel (radiologist, technician, medical doctor, etc.) assigned for radiology? Please circle your answer.	Yes	No
7	Please list skilled personnel who are assigned for radiology.		
8	How many x-ray examinations (patients) did you take during the last 3 months from October 1 to December 31, 2011? Please write numbers within the hospital and outside of the hospital.	Within the hospital	Outside of the hospital
9	What is missing in your hospital to conduct x-ray examination? Please describe		
10	Where do you send the patients to take x-ray examinations? Please list the hospitals or laboratories.		
11	How many x-ray patients did you send to take x-ray examination during the last 3 months from October 1 to December 31, 2011? Please write numbers.		

Question 2: Availability of "ultrasound scanner" abdominal ultrasonography tests; Please furnish the information required in the table.

	Questions	Answers	
1	Do you have an ultrasound room with ultrasound scanner (equipment) and examination table in your hospital? Please circle your answer.	Yes	No
If your hospital has ultrasound scanner unit (s) for abdominal ultrasonography tests, please answer questions from 2 to 6. If your hospital does not have ultrasound scanner unit (s) for abdominal ultrasonography tests, please go to question No. 7.			
2	Have you experienced stock out of consumables such as gel? Please circle your answer.	Yes	No
3	Please list consumables that is frequently out of stock.		
4	Do you have skilled personnel (technician, medical doctor, etc.) assigned for abdominal ultrasonography tests? Please circle your answer.	Yes	No
5	Please list skilled personnel who are assigned for abdominal ultrasonography tests.		
6	How many abdominal ultrasonography tests did you take during the last 3 months from October 1 to December 31, 2011? Please write numbers within the hospital and outside of the hospital.	Within the hospital	Outside of the hospital
7	What is missing in your hospital to conduct ultra sound examination? Please describe		
8	Where do you send the patients to take abdominal ultrasonography tests? Please list the hospitals or laboratories.		
9	How many patients did you send out to take abdominal ultrasonography tests during the last 3 months from October 1 to December 31, 2011? Please write numbers.		

Question 3: Availability of "biochemistry analyzer (semi-automatic or automatic)" Please furnish the information required in the table.

	Questions	Answers	
1	Do you have a biochemistry analyzer in your hospital? Please circle your answer.	Yes	No
If your hospital has a biochemistry analyzer, please answer questions from 2 to 7. If your hospital does not have a biochemistry analyzer, please go to question No. 8.			
2	Do you have equipment such as centrifuges for the preparation of samples for biochemistry analyzer?	Yes	No
3	Have you experienced stock out of consumables such as reagents? Please circle your answer.	Yes	No
4	Please list consumables that is frequently out of stock.		
5	Do you have skilled personnel (MLT, medical doctor) assigned for biochemistry investigations? Please circle your answer.	Yes	No
6	Please list skilled personnel who are assigned for biochemistry investigations		
7	How many "total cholesterol" investigations did you take during the last 3 months from October 1 to December 31, 2011? Please write numbers within the hospital and outside of the hospital if you send out.	Within the hospital	Outside of the hospital
8	What is missing in your hospital to conduct "total cholesterol" investigations? Please describe		
9	Where do you send the patients to take "total cholesterol" investigations? Please list the hospitals or laboratories.		
10	How many patients did you send out to take "total cholesterol" investigations during the last 3 months from October 1 to December 31, 2011? Please write numbers.		

Question 4: "Availability of DM clinic"; Please furnish the information in the table below

	Questions	Answers	
1	Do you have a DM clinic separate from the medical clinic in your hospital? Please circle your answer.	Yes	No
2	How many outpatients who attended in DM clinic during the last past 3 months from October 1 to December 31, 2011? Please write numbers.		
	If your hospital does not have DM clinic, how many DM outpatients who attended in medical clinics during the past 3 months from October 1 to December 31, 2011? Please write numbers.		

Following two questions must be answered by the hospital director.

Question 5: Knowing that your hospital is upgraded through construction/renovation of OPD, radiology unit, pathology unit, operation theatre, ward, etc. – if applicable – and installation of biomedical equipment in a few years time, what do you plan to improve management of this hospital?"

Question 6: What kind of activities will you plan to implement for strengthening NCD prevention in your hospital?

Annex 24: Questionnaire sent from MoH to PC health secretaries

දුරකථන
தொலைபேசி
Telephone
2698475
2698490
2698507

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பெக்ஸ்
Fax
2692913
2694860

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மின்னஞ்சல் முகவரி
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postmaster@health.gov.lk

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இணையத்தளம்
website
www.health.gov.lk

සුවසිරිපාය
சுவசிரிபாய
SUWASIRIPAYA

මගේ අංකය
எனது இல
My No:
HPJ/62/2011

ඔබේ අංකය
உமது இல
Your No:

දිනය
திகதி
Date
10/01/2012

සෞඛ්‍ය අමාත්‍යාංශය
சுகாதார அமைச்சு
Ministry of Health

To: Mr. P.M.B. Sirisena
Health Secretary, North Western Province

Request for Cooperation to the JICA Preparatory Study

As you are aware, the Ministry of Health and the Japan International Cooperation Agency (JICA) are jointly preparing for a new project with three components; upgrading production capacity of SPMC, upgrading 4 Base Hospitals and providing 124 ambulances. In order to finalize the preparatory study, please furnish the following information (attachment) by 18 January 2012. If you have any question, please contact Ms. Nishino directly.

Thank you for your cooperation.

Dr. Palitha Mahipala
Additional Secretary

P. G. Mahipala
Additional Secretary (Medical Services)
Ministry of Health
Suwasiripaya

Cc: Dr. R.M.S.K. Rathnayaka, PDHS, North Western Province

Attachment

Please furnish the following information and send this sheet to:

Ms. Keiko Nishino, Team Leader, JICA Study Team
Tel: 11-2369970
Fax: 11-2369971
Email: nishino.keiko@glm.co.jp

	Questions	Response	
1	How many ambulances existing in your province?		
2	Among the existing ambulances, how many are in working order?		
3	In your province, how many drivers are assigned for ambulance operation?		
4	How many drivers' positions are currently vacant?		
5	Do you have sufficient fuel to operate ambulances?	Yes	No

දුරකථන 2698475
தொலைபேசி 2698490
Telephone 2698507

ෆැක්ස් 2692913
பெக்ஸ் 2694860
Fax

විද්‍යුත් තැපෑල postmaster@health.gov.lk
மின்னஞ்சல் முகவரி
e-mail

වෙබ් අඩවිය www.health.gov.lk
இணையத்தளம்
website

සුවසිරිපාය
சுவசிரிபாய
SUWASIRIPAYA

මගේ අංකය 1-HP/1/60/2011
எனது இல
My No:

ඔබේ අංකය
உமது இல
Your No:

දිනය 10/01/2012
திகதி
Date

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சுகாதார அமைச்சு
Ministry of Health

To: Mr. Keerthi Gamage
Health Secretary, North Central Province

Request for Cooperation to the JICA Preparatory Study

As you are aware, the Ministry of Health and the Japan International Cooperation Agency (JICA) are jointly preparing for a new project with three components; upgrading production capacity of SPMC, upgrading 4 Base Hospitals and providing 124 ambulances. In order to finalize the preparatory study, please furnish the following information (attachment) by 18 January 2012. If you have any question, please contact Ms. Nishino directly.

Thank you for your cooperation.

Dr. Palitha Mahipala
Additional Secretary

Dr. P. G. Mahipala
Addl. Secretary (Medical Services)
Ministry of Health
Suwasiripaya
Colombo 10

Cc: Dr. W. Atapattu, PDHS, North Central Province

දුරකථන 2698475
தொலைபேசி 2698490
Telephone 2698507

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பெக்ஸ் 2694860
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website

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சுவசிரிபாய
SUWASIRIPAYA

මගේ අංකය
எனது இல MP3/62/2011
My No:

ඔබේ අංකය
உமது இல
Your No:

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சுகாதார அமைச்சு
Ministry of Health

To: Mr. R. Raveenthiran
Health Secretary, Northern Province

Request for Cooperation to the JICA Preparatory Study

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Thank you for your cooperation.

Dr. Palitha Mahipala
Additional Secretary

Dr. P G. Mahipala
Addl. Secretary (Medical Services)
Ministry of Health
"Suwasiripaya"
Colombo - 10.

Cc: Dr. (Mrs.) S. R. Jude, PDHS, Northern Province

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මගේ අංකය HPS/62/2011
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My No:

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சுகாதார அமைச்சு
Ministry of Health

To: Mrs. G. A. M. S. P. Abanwela
Health Secretary, Uva Province

Request for Cooperation to the JICA Preparatory Study

As you are aware, the Ministry of Health and the Japan International Cooperation Agency (JICA) are jointly preparing for a new project with three components; upgrading production capacity of SPMC, upgrading 4 Base Hospitals and providing 124 ambulances. In order to finalize the preparatory study, please furnish the following information (attachment) by 18 January 2012. If you have any question, please contact Ms. Nishino directly.

Thank you for your cooperation.

Dr. Palitha Mahipala
Additional Secretary

P. G. Mahipala
Secretary (Medical Services)
Ministry of Health
Suwasiripaya
Colombo - 10.

Cc: Dr. (Mrs.) N. S. R. Hewageegana, PDHS, Uva Province

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எனது இல
My No: HPS/62/2011

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சுகாதார அமைச்சு
Ministry of Health

To: Mrs. Sirani Weerakoon
Health Secretary,
Central Province.

Request for Cooperation to the JICA Preparatory Study

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Thank you for your cooperation.

Dr. Palitha Mahipala
Additional Secretary

D: P. G. Mahespala
Additional Secretary (Medical Services)
Ministry of Health
"Suwasiripaya"
Colombo - 10.

Cc: Dr. (Mrs) K. A. Shanthi Samarasinghe, PDHS, Central Province

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எனது இல
My No: MPJ/62/2011

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Date 10 /01/2012

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சுகாதார அமைச்சு
Ministry of Health

To: Mr. J. A. Ranjigh
Health Secretary, Sabaragamuwa Province

Request for Cooperation to the JICA Preparatory Study

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Thank you for your cooperation.

Dr. Palitha Mahipala
Additional Secretary

Dr. P. G. Mahipala
Addl. Secretary (Medical Services)
Ministry of Health
Sri Lanka
Colombo - 10

Cc: Dr. Kapila. B. Kannangara PDHS, Sabaragamuwa Province

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சுகாதார அமைச்சு
Ministry of Health

To: Mr. U.L.A. Azeeze
Health Secretary, Eastern Province

Request for Cooperation to the JICA Preparatory Study

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Dr. Palitha Mahipala
Additional Secretary

Cc: Dr. M. Thevarajan- PDHS, Eastern Province