The Democratic Socialist Republic of Sri Lanka
Ministry of Health, Nutrition & Indigenous Medicine

PROJECT FOR ENHANCEMENT OF NON-COMMUNICABLE DISEASES MANAGEMENT IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

PROJECT COMPLETION REPORT

FEBRUARY 2018

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GLOBAL LINK MANAGEMENT, INC.

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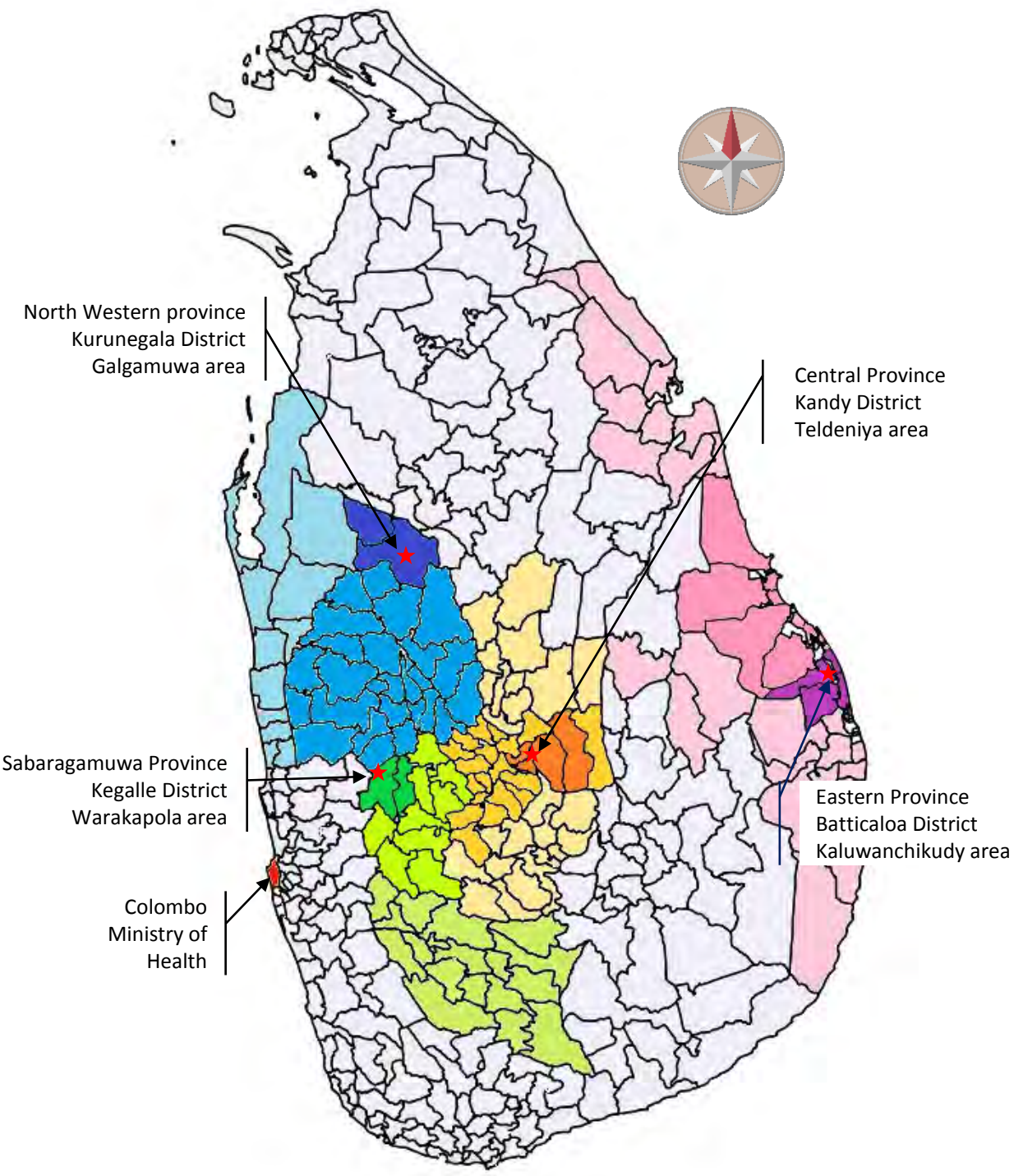

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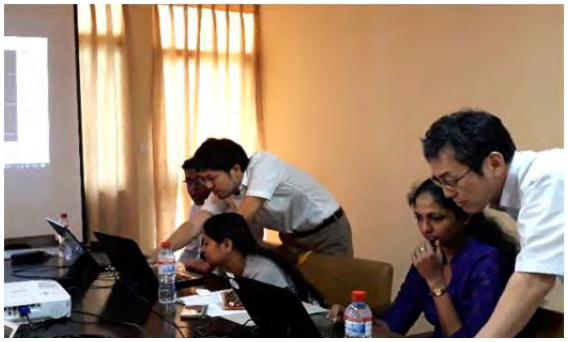

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Abbreviations

APN	access point name (used for data communication on mobile networks)
BH	Base Hospital
CCP	Consultant Community Physician
CVD	cardio vascular disease
C/P	counterpart
CWG	central working group
DC	diabetes clinic
DDG	Deputy Director General
DG	Director General (Health Services)
DH	Divisional Hospital
DM	diabetes mellitus
DO	Development Officer
ERP	enterprise resource planning
FBS	fasting blood sugar
GoSL	Government of Sri Lanka
HbA1c	glycated haemoglobin test
HDL	high-density lipoprotein cholesterol
HLC	Healthy Lifestyle Centre
HQ	headquarters
ICTA	Information Communication Technology Agency of Sri Lanka
ID	identification (number, code, name, etc.)
IMMR	Indoor Morbidity and Mortality Record
IQC	internal quality control
ISO	International Organization for Standardization
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
LAN	local area network
LDL	low-density lipoprotein cholesterol
LIMS	Laboratory Information Management System
MC	medical clinic
M&E	monitoring & evaluation
MLT	Medical Laboratory Technologist
MO	Medical Officer
MOH	Medical Officer for Health or Medical Office for Health
MoH	Ministry of Health, Nutrition and Indigenous Medicines
MO/NCD	Medical Officer/ Non-communicable Diseases
MRI	Medical Research Institute
MSD	Medical Supply Division
MSMIS	Medical Supplies Management Information System
MS	Medical Superintendent
MSU	Medical Statistics Unit
MS-I	Medical Services I (a department in the MoH)
MySQL	an open-source relational database management system (RDBMS)
NCD	non-communicable disease

NO	Nursing Officer
NO/PH	Nursing Officer/Public Health
OPD	outpatient department
PCI	primary care institution
PDHS	Provincial Directorate of Health Services or Provincial Director of Health Services
PDM	Project Design Matrix
PHM	Public Health Midwife
PHP	Hypertext Preprocessor (a programming language)
PMCU	Primary Medical Care Unit
PMR	Personal Medical Record
POCT	point-of-care testing/test
Q	quarter
RBM	results-based management
R/D	Record of Discussions
RDHS	Regional Directorate of Health Services or Regional Director of Health Services
RMSD	Regional Medical Supply Division
RSAM	Referral System Assessment and Monitoring
RTR	Referral Tracking Register
SA	Situation Analysis
SHSDP	Second Health Sector Development Project
SKS	orderly (a category of unskilled staff)
SL	Sri Lanka
STEPS	STEPwise approach to NCD risk factor surveillance
TC	total cholesterol
TRA	total risk assessment
UFR	urine full report
USAID	United States Agency for International Development
Ver.	version
VPN	virtual private network
WAN	wide area network
WG	working group
WHO	World Health Organization
WS	workshop

1. Project Overview

1-1. Background

In the Democratic Socialist Republic of Sri Lanka, due to the increase in the ageing population and changes in dietary habits and lifestyles, according to the Annual Health Statistics 2012, all of the top five causes of death that occurred in hospitals were attributed to non-communicable diseases (NCDs). In recognition of this situation, the Government of Sri Lanka (GoSL) is prioritising a national policy for the "establishment of a healthy society" in order to establish an effective and sustainable health system by reinforcing NCD control activities mainly comprising prevention, health promotion and early detection and treatment.

Japan International Cooperation Agency (JICA) has previously assisted the GoSL in incorporating NCD management into the health system on several occasions including formulation of the "Health Master Plan 2007 – 16". A technical cooperation project named "Project on Health Promotion and Preventive Care Measures of Chronic NCDs" was also implemented from 2008 to 2013, which contributed to the GoSL's establishment of a "National Policy and Strategic Framework for Prevention and Control of Chronic NCDs" in 2009 and related guidelines. The on-going "Project for Improvement of Basic Social Services Targeting Emerging Regions" (hereafter referred to as "the yen loan project") also addresses issues related to NCD management by improving (i) the national capacity to produce safe and quality essential drugs, (ii) medical services provided by four selected Base Hospitals (BHs) through refurbishment of the facilities and (iii) referral services through the provision of ambulances.

This technical cooperation project, the "Project for Enhancement of NCDs Management" (hereafter referred as "the Project") was formulated to maximise the effectiveness of the above-mentioned yen loan project upon a request by the GoSL. The Project aims to develop appropriate systems and tools to manage selected NCDs, namely diabetes mellitus (DM), hypertension and hyperlipidaemia, by strengthening linkages between the four BHs renovated under the yen loan project and the primary-level facilities in their catchment areas, among others.

1-2. Outline of the Project

The following describes the outline of the Project in accordance with the Project Design Matrix version 3 (PDM Ver. 3), which reflects the recommendations from the Mid-Term Review in early 2016. The PDM Ver. 3 was approved by the Joint Coordinating Committee (JCC) members in October 2016 and was officially signed between JICA and the Ministry of Health, Nutrition and Indigenous Medicine during the 7th JCC meeting held in January 2017.

Title of the Project

Project for Enhancement of Non-communicable Diseases Management

Overall Goal (to be achieved within 3-5 years after the closure of the Project)

Enhancement of the national NCD programme

Project Purpose

Strengthening of NCD management at the four target Base Hospitals (BHs) and primary care institutions in their catchment areas as clusters

Outputs

Output 1: Improved monitoring of NCD patients in the catchment areas of the four target BHs

Output 2: Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the four BHs

Output 3: Enhanced pharmaceutical supply management at the four target BHs

Activities

Under Output 1:

1-1 Instituting a patient survey of Medical and Diabetes Clinics in the catchment areas of the four BHs.

1-2 Establishing a system to follow up on referred clients to Medical Clinics of Primary Care Institutions and Base Hospitals.

Under Output 2:

2-1 The Project team carries out a general situation analysis in the Project implementation sites.

2-2 Working Group formulated at the central level (CWG) carries out an in-depth analysis of the existing “satellite laboratory system” in Kurunegala.

2-3 CWG designs a pilot model (a work flow) based on the findings of 2-2 and identifies (i) necessary tools to be used at the primary care institutions, the BHs and RDHS, such as manuals/guidelines, recording and reporting formats (including eligibility guideline for TC or lipid profile testing for HLC screening and manual on pre-examination process) and (ii) resource needs at the primary care institutions and the BHs.

2-4 Preparations for implementation of the pilot model designed in 2-3.

2-5 Implementation and fine-tuning of the pilot system.

2-6 Introduction, fine-tuning and finalisation of the system at the four project sites.

2-7 CWG identifies and documents the resource requirements and steps for introduction of the system in other areas to guide scaling up of this initiative.

Under Output 3:

3-1 The Project team carries out a general situation analysis in the project implementation sites.

3-2 WG formulated carries out an assessment of the existing electronic stock management systems in Kurunegala District, Ratnapura District and MSMIS to decide on the most suitable system to introduce to the target BHs.

3-3 WG sets up a system and tools to monitor the progress and effects of pilot implementation of the selected system (i.e. MSMIS chosen by the WG at the meeting on the 30th Oct. 2014).

3-4 Preparation for and installation of the MSMIS at the main storerooms of the target BHs in pace with the on-going refurbishment.

3-5 MSD with the WG fine-tunes the system and the user manuals as applicable according to feedback from (i) the target BH/RMSD and (ii) the monitoring system set up.

3-6 MSD assists with introducing the system to other BHs/RDHS and monitoring/supporting its operations together with the WG.

3-7 WG with MSD identify and document the resource requirements and monitoring tools for introduction of MSMIS to provincially-managed institutions in view of the nation-wide expansion of the system.

Target areas

Colombo (Ministry of Health, Nutrition and Indigenous Medicine) and catchment areas[1] of four BHs, i.e. Teldeniya BH (Kandy District, Central Province), Kaluwanchikudy BH (Batticaloa District, Eastern Province), Galgamuwa BH (Kurunegala District, North Western Province), Warakapola BH (Kegalle District, Sabaragamuwa Province).

Beneficiaries

Service providers at the four BHs and primary care institutions in their catchment areas, NCD-related personnel/units in the RDHS of the four districts and MoH, population in the catchment areas of the four BHs.

Duration

The duration of the Project is four years from February 2014 to January 2018 (as per the Record of Discussions (R/D) of the 22nd October 2013).

1-3. Inputs

Inputs by GoSL

In line with the R/D, the inputs made by GoSL in terms of human resources were as follows:

(1) Project Director: Secretary, Ministry of Health

During the four-year period, a total of five Secretaries were appointed by the GoSL.

(2) Project Manager:[2]

Planned: Director (Planning)

Actual: Director (Health Information), and later DDG (NCD)

[1] Catchment areas identified are officially stated in the PDM.

[2] The Director of Planning, who was pre-assigned to be the Project Manager by GoSL when the R/D was signed, was appointed as Director of Health Information a few months prior to the commencement of the Project, then as DDG (NCD) during the Project.

(3) Other Officials:

MoH:	DDG (MS-I), DDG (Laboratory Services), DDG (MSD), Director (NCD), Director (Planning), etc.
PDHS:	Provincial Directors of the four target Provinces
RDHS:	Regional Directors of the four target Districts, Medical Officer (MO)/NCDs, MO/Planning, etc.
BHs:	Medical Superintendent (MS), Matron, MO/HLC, MO/Medical Clinic (MC), Nursing Officer (NO)/HLC, NO/MC, Medical Laboratory Technologist (MLT), Pharmacists, etc.
PCIs:	MO-in-charge, MO, NO, other staff

The name list of the main counterparts (C/P) is attached as Annex 4-1.

Inputs by JICA

- **Personnel**

A total of eight personnel were assigned to the Project as detailed in Annex 3. The implementation structure of the Project is depicted in Figure 1.

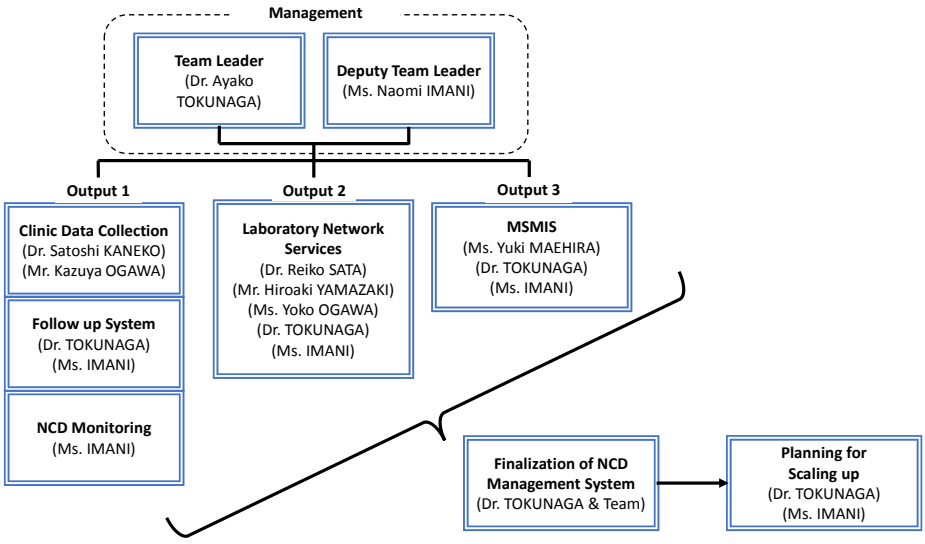


Figure 1 Implementation structure of the JICA Team

- **Equipment**

The equipment procured under the Project, mainly for Output 2 and Output 3, are shown in Annex 5.

2. Activities Undertaken

2-1. Activities related to Project management

(1) Joint Coordinating Committee

The Joint Coordinating Committee (JCC) is the highest decision-making body of the Project, chaired by the Project Director/the Secretary of MoH. The Director General (DG), other Deputy Director Generals (DDGs) as well as the Provincial and the Regional Directors of the target areas are appointed as the members of the Committee (Annex 4-2). During the Project period, nine JCC meetings were organised to revise the PDM, agree on annual work plans, review the progress of the Project activities and discuss the issues to be solved. The minutes of these meetings are appended to this document as Annexes 6-1 to 6-9.

(2) Revision of the PDM

According to the initial plan, the PDM Ver. 1 (Annex 1-3), agreed between the GoSL and JICA in October 2013, was to be revised primarily to fix the appropriate indicators including their baseline and target values for each of the objectives (i.e. Overall Goal, Project Purpose and Output 1-4). However, during the first meeting held in May 2014, the JCC concluded that a more comprehensive revision of the PDM Ver. 1 would be prudent to meet the real needs of the country by (i) taking account of the initiatives already being undertaken by the GoSL to avoid duplication, (ii) enhancing the vague statements therein to clarify them for the readers, (iii) correcting grammatical errors and (iv) examining the logic and re-organising objectives and activities as appropriate.

In order to obtain up-to-date information on the current status of NCD-related interventions, the Project conducted a Situation Analysis (SA) and, in accordance with the findings (Annex 7), modifications to the Project design were discussed. Subsequently, Working Groups (WG) (Annex 4-3) were set up according to the outputs, and a number of formal and informal consultations (Table 1) took place thereafter involving key stakeholders of the Project, until the JCC agreed on the revised version of the PDM Ver. 2 (Annex 1-4) at the third JCC Meeting in December 2014.

Table 1 Consultation meetings for revision of the PDM in 2014

Period	Activities	Details
May	The 1st JCC Meeting	Pointed out the need for a comprehensive review of the PDM Ver. 1
	Consultative Meeting between JICA Team and GoSL C/P	Determined the scope of the planned SA through examination of the PDM Ver. 1 and briefing by the GoSL C/P on some of the on-going initiatives related to the components of the Project
May – July	Situation Analysis	Collected and analysed pertinent information related to the Outputs, status of the Healthy Life Style Centres (HLCs), functions and issues of NCD-related services at the target BHs, best practices and other NCD-related initiatives being implemented by the central/provincial MoHs and other organisations, etc.
July	Planning Workshop	Shared the findings of the SA for discussions on the Outputs, Activities and possible indicators of this Project → reached a consensus on the issues to be addressed under this Project

Period	Activities	Details
Aug.	Video conference with the JICA HQ, JICA SL and JICA Project Team	Reported the outcomes of the Planning Workshop and obtained approval from JICA HQ on overall modifications to the Project design
	The 2nd JCC Meeting	Agreed (i) on the issues to be addressed and activities to be undertaken under the Project and (ii) that the PDM Ver. 2 would be finalised at the 3rd JCC meeting in Dec. 2014
Sep. – Nov.	Additional Surveys	Additional information collection and analysis in line with the 2nd JCC's decision regarding the revised design of the Project
Oct. – Nov.	WG meetings	In view of the findings from the SA and the additional surveys, discussed details of activities, actors and possible indicators to assess the achievements
	Meetings with the chairs of WGs, other key stakeholders and the JICA Team	Determined finer points of the Project activities and administration, to be reflected in the revised PDM
Nov.	Heads of the WGs Meeting	Discussed the Outputs from each of the WGs and possible indicators to be incorporated into the draft PDM Ver. 2
	Video conference with the JICA HQ, JICA SL and JICA Project Team	Discussed the details of the draft PDM Ver. 2
	Indicator-setting Meeting chaired by the DG	Examined the draft PDM Ver. 2 in detail including the logical sequence, clarity of the statements, appropriateness of the activities, indicators and assumptions
Dec.	The 3rd JCC Meeting	Agreed on the PDM Ver. 2

Figure 2 and Figure 3 show how the PDM Ver. 1 was modified into the PDM Ver. 2. Even though they may appear as two different projects with a differently-worded Project Purpose and Overall Goal, the scope of the Project remained largely same. The following four points were specifically considered while the JICA Team revised the PDM: (i) to eliminate vagueness that may allow various interpretations, (ii) to correct English grammatical errors, (iii) to ensure appropriate logic throughout the Matrix and (iv) to be as specific as possible by a) identifying the lead person(s)/group(s) for each of the activities and b) explicitly mentioning assumptions/external conditions that need to be controlled.

	Ver.1		Ver. 2
Overall Goal	Comprehensive NCD management including HLCs, primary medical care facilities and secondary hospitals are implemented nationwide	→	Enhancement of the national NCD programme
Project Purpose	NCD management models including secondary hospitals, which are applicable to nation-wide expansion, are developed and implemented in target areas in selected four provinces	→	Strengthen NCD management at the 4 target BHs and primary care institutions in their catchment areas as clusters
Output 1	Management of NCDs by total risk assessment in HLCs and selected Base Hospitals (BHs) is enhanced	→	Improved monitoring of NCD patients in the catchment areas of the 4 target BHs
Output 2	Essential medicine and medical supplies stock management are enhanced in selected BHs in target areas	→	Improve availability of lab. services for NCD clients of PC institutions
Output 3	Surveillance system for NCDs is developed	→	Enhanced pharmaceutical supply management at the 4 target BHs
Output 4	Expansion plan for NCD management model activities is finalized for nationwide implementation in other provinces	→	(Integrated into each of the outputs as an activity)

Figure 2 Objectives of PDM in Ver. 1 and Ver. 2

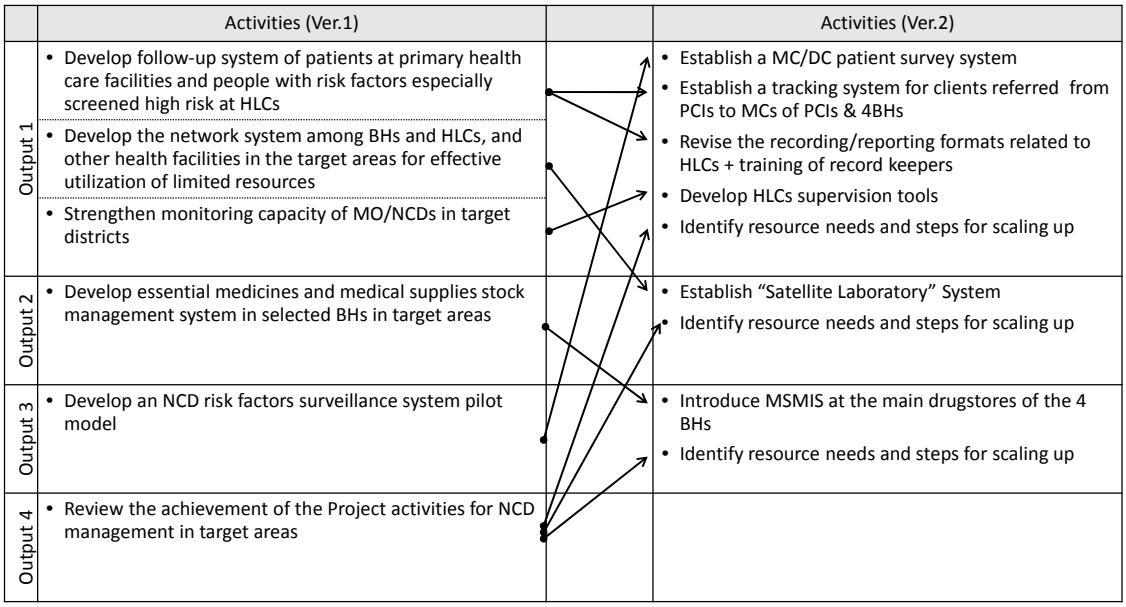


Figure 3 Activities of PDM in Ver. 1 and Ver. 2

With the approval of the JCC held in December 2014, the Monitoring and Evaluation (M&E) WG worked on establishing an M&E Framework (Annex 1-2), which (i) defines exactly what, when and how data should be collected for the monitoring of the Project and (ii) sets data collection and reporting tools. Following this, based on the findings of the SA, appropriate and realistic indicators were set. However, the finalisation of the Framework took some time, as the appropriateness and/or the sources of some indicator data had to be re-examined in relation to the systems being set up or tested under the Project. Furthermore, during the Mid-Term Review held in Jan. – Feb. 2016, the review team proposed a revision of the indicators as shown in Table 2. This was necessary, as the indicators of the Project Purpose and Output 2 were not clearly described to allow measurement of the achievement level.

Although some of the indicators were to be finalised after the point of care testing (POCT) for total cholesterol (TC) was procured and introduced to HLCs by the MoH, the Project went ahead with a revision of the PDM to rectify the problems and other minor issues, as it was likely to take some time for the MoH to complete the procurement of POCT devices. The revised indicators were worked out by the JICA Team by paying particular attention to measuring the effects of the interventions by the Project with or without the introduction of POCT. The M&E WG deliberated upon them and fixed a tentative target for each indicator, which was then finalised through regional and central Review Meetings with inputs from relevant stakeholders. The Project started collecting the data according to the revised indicators from the second quarter of 2016.

The PDM Ver. 3 (Annex 1-1), complete with the indicators, was officially approved at the 7th JCC Meeting in January 2017, which was initially scheduled to be held in November 2016 but postponed due to other commitments of the Health Secretary. The revisions including some minor changes from the PDM Ver. 2 to Ver. 3, are shown in Annex 1-5.

Table 2 Issues identified during the Mid-Term Review and indicators proposed

Current Indicator (PDM Ver. 2)	Issues	Proposed Indicators
Project Purpose P-1: Number of clients at the four target BHs who were referred from primary care institutions HLCs in the catchment area	Monitoring the number of clients does not necessarily contribute to measuring the Project Purpose	P-1: % of patients referred from HLCs and MCs of PCIs in the catchment area who reach four target BHs (Target: 70%)
Output 2 2-1: Number of TC and/or lipid profile tests carried out at the four BHs on blood samples sent from the primary care institutions in their catchment areas in one year	Monitoring of number of TC and/or lipid profile tests does not necessarily contribute to measuring Output 2	*Note: A suitable indicator should be discussed and determined after the introduction of the TC testing kits at HLCs.*
2-1: Number of primary care institutions which sent blood samples to the target BH for TC and/or lipid profile tests in each project sites	Monitoring of number of primary care institutions which sent blood samples to the target BH does not necessarily contribute to measuring Output 2	Number of HLCs, MCs and DCs which send blood samples to the target BH for TC and/or lipid profile tests in each project site (Target: to be confirmed based on the assessment) *Note: A suitable indicator should be discussed and determined after the introduction of the TC testing kits at HLCs.*

(3) Monitoring

Along with other WGs set up in accordance with the "Outputs" of the Project, the M&E WG was set up to check the progress of the Project. With facilitation by the JICA Team, the WG finalised the Project's indicators as per the then draft PDM Ver. 2 and also developed an M&E Framework, which defines each indicator and how data should be collected. For the data collection in accordance with the indicators, the JICA Team prepared reporting forms for the Primary Care Institutions (PCIs), BH and MO/NCDs and gave orientation training sessions on routine reporting at each institution involving MOs-in-charge (the heads of institutions), Nursing Officers (NOs), and record keeping staff. Periodic data collection started in the fourth quarter of 2015 using the forms, which were later revised in accordance with the subsequent PDM revision detailed above.[3]

The quarterly reports from the institutions were to be sent to and collated by the MO/NCDs, who would forward a consolidated report to the M&E WG and the JICA Team. The late report submissions and poor quality of the information, possibly stemming from the manual record keeping and multiple reporting requirements at the institutions, soon emerged as a problem. It was taking 6 to 8 weeks into the new quarter for the consolidated reports to arrive at the Project Office from the MO/NCDs, and endless communications were required for clarification and to address their numerous inconsistencies and incompleteness. After this situation recurred in subsequent quarters, it was obvious that the MO/NCD in each district – the only person in the district overseeing all NCD-related issues– was unable to check and

[3] Because of the changes in the indicators by the PDM revisions, the collected data gave a snapshot of the performance but could not be used to track chronological improvements over time.

rectify errors in each and every report submitted from the institutions. Following this, the JICA Team began sending its staff members to all of the institutions every quarter for the sake of data quality. On several occasions, some of the MO/NCDs also joined in.

Furthermore, the JICA Team developed a detailed monitoring sheet for every quarterly visit, to gather pertinent information on the usage and usability of the systems being tested at the target institutions. The information obtained was analysed and shared with the relevant WGs, discussed during the review meetings as well as at the JCC meetings.

As the above-mentioned activities were needed to check on the performance of the Project and usability of the piloted models, they were not envisaged to continue beyond the Project period. However, with a plan to institute the referral follow-up system (see Section 2-2 (2)) nationwide, the Director of the NCD Unit has instructed the institutions and MO/NCDs involved in the Project to routinely submit to the Unit similar statistics to those collected by the Project, using a reporting format modified by the JICA Team.

2-2. Output 1: Improving monitoring of NCD patients in the catchment areas of the four target BHs

(1) Instituting a patient survey at Medical and Diabetes Clinics in the catchment areas of the four BHs (Activity 1-1)

Background

According to the initial design (PDM Ver.1), the Project was to establish a NCD risk factor surveillance system that captures incidence of hypertension, diabetes mellitus (DM) and hyperlipidaemia. However, this Output had to be reconsidered at the start of the Project as (i) risk factor data was already being collected through the HLC returns and the STEPwise approach to surveillance (STEPS) supported by WHO, and (ii) it is difficult to assess or explain risk factors from the data on incidence of NCDs (data after diagnosis). The Situation Analysis (SA) carried out at the very beginning of the Project then identified a glaring gap in the out-patient morbidity data, while the risk factors are already being covered by the STEPS and the HLC statistics and the in-patient data routinely by the Indoor Morbidity and Mortality Record (IMMR). To fill the gap, the Project was tasked to develop a survey system that can be applied nationwide.

Overview

The survey system developed by the Project, known as the “Clinic Survey”, was modelled after the Patient Survey, which is conducted in Japan at selected institutions every three years by the Ministry of Health, Labour and Welfare. The Clinic Survey follows the three steps shown below:

1. Data collection: doctors fill in a questionnaire for every patient at MC and DC with relevant information;
2. Data entry: the information collected is entered into a database either at the institutions or at the RDHS office, using the web-based data entry system; and

3. Data processing: the data entered are then processed at the MSU of the MoH using statistical software (Stata).

By collecting data such as sex, age, Divisional Secretariat area, type of clinic visited, type of visit (first/subsequent) and type of disease for every single patient who comes to a MC or DC on one particular day, the Survey can provide the estimated number of NCD-related outpatients at the target clinics. It is also characterised by its low workload and low cost (Table 3).

Table 3 Characteristics of the Clinic Survey

Low work load	▪ Data collection completed within a day ▪ One-page questionnaire per patient (takes 1.5 minutes) ▪ Simple web-based data entry (takes 1 minute per questionnaire)
Low cost	▪ About Rs. 200,000 per 100 institutions for printing and orientation sessions (including providing refreshments) ▪ About Rs. 50,000 for hiring 2 data entry staff if necessary ▪ Internet access

The Project produced the following tools for the Survey:

- Handbook No.1 for National Coordinator
- Handbook No.2 for Coordinators at RDHS and Line Ministry Institutions
- Handbook No.3 for Institutions under provincial management
- Questionnaire (English, Sinhala, Tamil)
- Web-based data entry system (PHP, JavaScript, MySQL)
- Programme for data processing and analysis on Stata

The handbooks are intended to be useful for coordinators without prior experience by guiding them through every step of the survey at national, regional and institutional levels. The questionnaire in English was created to collect data at the target institutions while Sinhala and Tamil versions serve as a reference for the staff who are not comfortable with English. With the web-based system, data can be directly uploaded onto a server from any computer with internet access, thus eliminating the need for Microsoft Excel or specifically installed software. The programme for data processing and analysis was written by statisticians at the Medical Statistics Unit (MSU) trained under the Project and is used for data cleaning, estimation of the number of patients and visualisation of the data (creation of tables and charts).

Development process

The Clinic Survey system and tools were developed through the five pilot surveys shown in Table 4. The first three pilot tests were carried out with a small number of institutions in the designated Project areas with the aim to identify suitable procedures and tools equally applicable to small PMCUs as well as to general/teaching hospitals.

The pilot tests in the later stage involved all the MoH institutions in the four target districts with the purpose of (i) assessing the capacity and resources needed at the district and MoH levels to manage the survey, including printing and distribution of materials, orientation sessions, data collection, data entry and submission, and (ii) assessing the applicability of the developed survey procedures and tools for all

the institutions of various organisation in the target districts. Major issues identified by the pilot tests and measures taken for improvement are summarised in Table 5.

Table 4 Number of target institutions and target area of pilot tests

Pilot surveys	Year	Target area	Number of institutions
1st	2015	Galgamuwa BH catchment area in Kurunegala	3
2nd	2015	Teldeniya BH catchment area in Kandy	7
3rd	2016	Warakapola BH catchment area in Kegalle Kaluwanchikudy catchment area in Batticaloa	13 8
4th	2016	Kurunegala district	100
5th	2017	Kandy district Kegalle district Batticaloa district	81 44 23

- **Preparation**

Besides getting the tools ready, the preparatory activities include: (i) orientation by the MoH for RDHS and Line Ministry institutions involved in the survey, followed by (ii) orientation by the RDHS for the provincial institutions involved, and (iii) organisation by each institution for data collection and entry as briefed during (ii), or (i) in case of Line Ministry hospitals. While this was largely straightforward for Line Ministry hospitals, provincial institutions faced some problems during (ii) and (iii). Having to travel to the RDHS, they would often send Nursing Officers or other support staff to the orientation sessions who were, however, not able to communicate fully as to what doctors – their superiors – should do to conduct the survey, including how it should be organised and how the questionnaires should be filled in. Considering this, to make it easier for MOs to attend, the procedure for orientation was then modified to be held at the RDHS multiple times and/or locally at several key institutions. When these orientations are unable to cover all the institutions, the coordinator can follow up on them in regular meetings or direct telephone calls.

- **Data Collection**

With regard to data collection, issues were found in the survey tools, such as the questionnaire and summary sheet, rather than the data collection procedure.

The questionnaire was easy to understand and filled out correctly, apart from the disease name where there was no room for PCIs to include specific details such as type of diabetes and its complications. The doctors involved suggested some modifications to the answer options provided on the form. Based on these findings, the questionnaire was modified by the WG members (Annex 10-1).

The summary sheet was developed to report the total number of patients surveyed and survey date. However, omissions were frequently found in the data item of “survey date”, which is important for calculating the estimated number of patients. In addition, the high work burden for the coordinator at

Table 5 Issues identified through pilot tests and corrective actions taken by the Project

Procedure	Responsibility	Tools	Main issues	Solutions
Preparation	Coordinator at MoH	Handbooks	▪ MOs' low attendance rate for the orientation organised by the coordinator at the RDHS	▪ Organise orientation at the RDHS multiple times and/or locally at several key institutions
Data collection	Coordinator at RDHS and target institutions	Questionnaire Summary sheet	▪ Questionnaire: Difficulty for PCIs to answer some survey items such as type of diabetes and its complications ▪ Summary sheet: (i) High work burden of collecting sheets and (ii) Data omissions in some submitted sheets	▪ Modify survey items so that PCIs can answer ▪ Integrate summary sheet into web-based data entry system
Data entry	Coordinator at RDHS and target institutions	Data entry system	▪ Excel not available at some RDHS and institutions ▪ Insufficient data entry staff at RDHS ▪ Exhausting monthly data traffic before end of month at RDHS	▪ Develop web data entry system ▪ Delegate data entry to institutions with capacity or hire additional data entry staff ▪ All the necessary resources to be assessed at the preparation stage
Data processing and analysis	Medical Statistics Unit	Programme for data processing and analysis	▪ Statistical programming not utilised at MSU ▪ Area ID not standardised at MoH	▪ Train statisticians through 2 workshops and 7 months of distance learning ▪ Area ID is to be standardised
Others	Coordinator at MoH and RDHS		▪ Conflicting schedules at coordinator of MoH and RDHS due to concurrent post and insufficient assistants	▪ Coordinator at MoH is to be assigned as full-time ▪ Assistants are to be allocated for coordinator at MoH and RDHS

the RDHS was another issue in collecting this sheet from all the target institutions. In response to these findings, the summary sheet was incorporated into the web-based data entry system, which specifically requires a survey date to be entered when starting data entry, while also removing the work burden of summary sheet collection.

- **Data entry**

The data entry form and deployment of data entry staff were the main issues in data entry. An Excel-based data entry form developed in the early stages was not usable in several institutions and RDHS due to the lack of computers with such software. In view of the planned island-wide survey, the Project constructed a web-based data entry system (Figure 4) that enables the institutions/RDHS to (i) enter data without depending on the software and (ii) monitor the progress in real time. In this system, the MoH issues user names and corresponding passwords to the RDHS and Line Ministry Institution coordinators who, in turn, administer data entry within the district or institution by issuing the same to data entry staff and monitoring progress online.

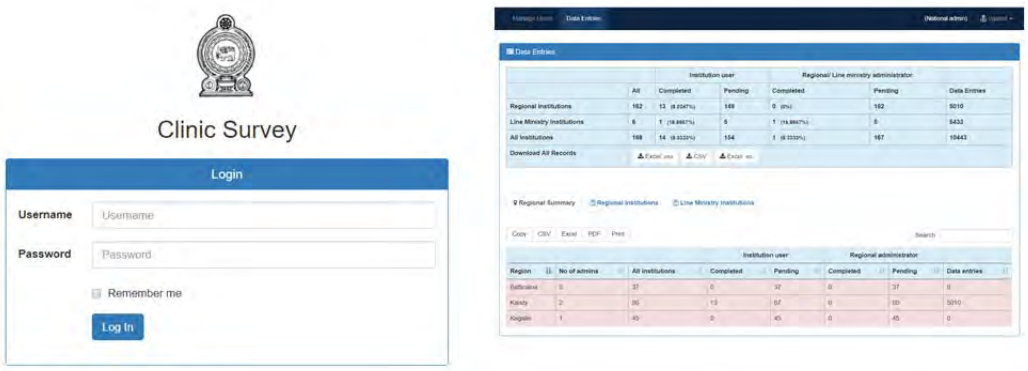


Figure 4 Web-based data entry system

On the other hand, this system created a new issue, i.e. internet access at the RDHS and target institutions. At present, the percentage of provincial institutions with computers, internet access and data entry staff is not high, and the RDHS is given the task of entering the data on their behalf. However, if the RDHS does not have such capacity, they need to (i) delegate data entry to other institutions with such capacity or (ii) hire additional data entry staff. RDHS Kandy delegated data entry to the institutions and RDHS Kegalle hired two data entry staff. On the other hand, RDHS Batticaloa entered all the data by themselves. As this shows, in future surveys, the coordinator at the RDHS should select a solution depending on the conditions of RDHS and the target institutions, bearing in mind the option requires (i) extra coordination efforts and (ii) access to some funds.

- **Data Processing and Analysis**

A challenge in this step was to ensure that there were sufficient skills to undertake the statistical programming required to process and analyse hundreds of thousands of data with accuracy and

reproducibility at the MSU, which is responsible for this step. In order to strengthen this particular aspect of data processing, the Project trained two statisticians and one MO/Health Informatics through two workshops and seven-months of distance learning, at the end of which a data processing programme on Stata was produced. Charts and maps created by this programme using the data collected for the fourth and fifth pilot surveys are presented in Annex 10-2.

Challenges for future surveys

As reported above, the Project specified and solved several key issues during the period of the Clinic Survey development. However, there are still several challenges to be addressed for future operation of the survey.

- **Deployment of survey team at the MoH and RDHS**

  None of the survey coordinators appointed for the fifth pilot survey at either the national and district/institution levels worked on the survey full-time, meaning all had to juggle multiple unrelated tasks besides those related to the survey. While this may be the norm for those working in the health sector, it was extremely difficult to manage the time schedule. The quality of some activities was also affected by the lack of good preparation, to the extent that they had to be repeated to bring out the expected effects. If the MoH plans to complete the survey in all the remaining districts within three years, at least one dedicated coordinator will be essential. Mobilisation of support personnel to assist with the organisation of activities should also be considered. If the above is not possible, a longer timeframe needs to be considered so as not to jeopardise the quality of the data.

- **Web-based data entry**

  The web-based data entry is likely to be a problem for many RDHS offices and provincially-managed institutions, an issue that occurred in the final pilot survey. At the preparatory stage, each RDHS should review this capacity at both the institutions and the RDHS office, make a realistic plan to complete the task, and allocate the necessary human and financial resources. Measures that can be taken include assigning Development Officers (DOs) or other relevant staff from the RDHS to do the data entry (possibly with some incentives), hiring temporary staff, assigning institutions with such capacity to do the data entry for other institutions (this will require good coordination efforts at RDHS), topping up the internet account and/or procuring an additional portable modem.

Challenges not addressed by the Project

In addition to the issues mentioned above, there are three further challenges, which the Project did not address.

- **Data standardisation**

  To provide a population-based estimation or an estimation on a map, the dataset obtained from the Clinic Survey will have to be merged with other data such as population and administrative divisions. Before they can be merged, it is necessary that data sets share a standardised name or ID number for

the same object. The MoH still needs to work on this, as each area often has several different names or ID numbers. Once standardised, they must be used in all records/reports kept/created by the MoH, PHDS and RDHS to avoid confusion.

- **Data dissemination**

  As with other health-related data collected by the MoH, the summary of the Clinic Survey data will be reported in the Annual Health Bulletin published by the MSU. In addition, the data set should also be available to provincial and district health administrators on the MoH server for the sake of evidenced-based planning and monitoring of interventions. An appropriate location on the server as well as levels of access rights to different stakeholders may also need to be worked out.

- **Data utilisation**

  The information obtained from the periodic "Patient Survey" in Japan is categorised as basic data to be used for policy making both at national and district levels. In addition, the Ministry of Health, Labour and Welfare also encourages research institutions and universities to utilise the data for various research by providing additional funds on a proposal basis. The data obtained through the Clinic Survey in Sri Lanka can also greatly enhance the policies and strategies in its health sector, by providing evidence of needs. It should also be useful in determining priorities among numerous issues and allocating human and financial resources. In case the MoH do not have sufficient human resources to do the necessary analysis, partnering with universities and other relevant institutions is encouraged.

- **Data integration**

  There are some data items which are collected routinely by clinic returns and by the Clinic Survey. To minimise duplication and lighten the workload, once the Clinic Survey becomes routine, the data collection practice should be carefully reviewed and restructured as appropriate.

The island-wide survey

The MoH is planning to carry out the Clinic Survey in the remaining 22 health districts within the next few years using the procedure and tools developed under the Project. This process is expected to be led by the DDG/Medical Service 1 and in 2018 for the first wave, about seven districts including Galle, Anuradhapura and Kalumunai will be participating as discussed at the Dissemination Forum held in January 2018. Some new issues not encountered by the Project may emerge in this endeavour and the coordinators' handbooks produced by the Project may need to be revised to reflect new circumstances and practicalities. While one should never be afraid of revising the tools developed by the Project, it should not be done for very local issues, lest the tools be no longer applicable nationwide.

(2) Establishing a system to follow up on referred clients to Medical Clinics of Primary Care Institutions and BHs (Activity 1-2)

Background

Under this activity, the Project was tasked with developing an effective and client-friendly system for the secondary prevention of NCDs by addressing or strengthening various factors that are affecting NCD patients' access to appropriate follow-up care after they are diagnosed and/or treated. It is to ensure that people at high risk identified at primary care facilities – including HLCs – obtain necessary care at MCs. The Project focused especially on those people at high risk who were referred from primary care institutions (PCIs), as show in Figure 5, i.e. arrow (i) from a HLC at a PCI to a MC/DC at a PCI, arrow (ii) from a HLC at a PCI to a MC/DC at target BH, and arrow (iii) from a MC/DC at PCI to a MC/DC at a BH.[4]

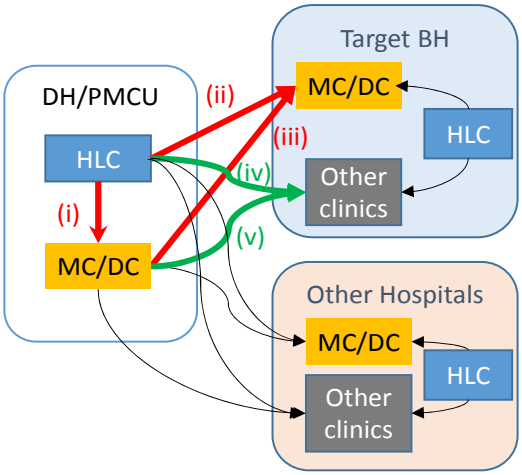


Figure 5 Conceptual diagram for the referral follow-up system

Early detection of high risk factors and health guidance is one of the strategies in the National NCD Policy Framework designed to reduce premature deaths due to NCDs. As the major feature of the "cost-effective NCD screening programme" mentioned in the NCD Policy, MoH started establishing HLCs in health care institutions throughout the country to screen for cardiovascular disease (CVD) risks, including referrals to MCs or to higher-level institutions for those who require further investigations or treatment. However, there was no information about referral completion of those advised to visit a MC. Even if the HLCs are doing "cost-effective NCD screening", if those who need medication are not treated, the cost-benefit of the programme will remain questionable. In this light, the Project worked to establish a system to ensure that high-risk clients identified at PCIs are able to obtain the necessary care at the referred MCs.

Situation Analysis

The Project performed a Situation Analysis (SA) as well as a survey on HLC client's compliance in NCD management to determine the actual proportion of clients procuring the referred services according to the NCD management guideline (Guideline for Management of NCDs in Primary Health Care). The SA looked into current practices of screening and record keeping at HLCs, with particular attention to referrals of those identified as having high risk.[5] The result of the SA clarified that the number and/or proportions of clients assessed as "requiring referral to MC of the same institution" were ranging from 1.71% to 34.15% averaging at 11.30%. The SA also found that the current recording system offers no

[4] (iii) was added after the Mid-Term Review conducted in Jan. – Feb. 2016, following a recommendation from the Review.

[5] According to the NCD management guideline, CVD risk prediction charts are applied during the screening and the risks are classified into four categories, i.e. (i) low risk, (ii) moderate risk, (iii) high risk and (iv) very high risk. The Project focuses on the referral to MCs of clients from categories (ii) and (iii).

information on the actual proportion of clients who do or do not obtain the recommended higher-level care.

With the above findings, the Project conducted another in-depth survey to find out (i) the actual proportion of clients who receive the necessary medical attention at MCs as recommended by HLCs, and (ii) for those who do not, the factors affecting their decisions. To clarify the referral flow of the clients, the survey interviewed the health staff working in HLCs of 26 PCIs[6] and four BHs using a modified version of the "Referral System Assessment and Monitoring (RSAM)" tool kit[7] and also collected and reviewed different documents/recording registers. Furthermore, the Project conducted telephone interviews with clients who were referred from HLCs to MC by using a structured questionnaire to clarify the compliance. However, this turned out to be a challenging task as the telephone numbers of clients were not always entered into the HLC registry and, where telephone numbers were available, they were often wrong or inactive. As a result, the survey managed to contact less than 20% of those who were recorded as "referred for further medical attention" in the HLC registers. Among those contacted, around 60% (= approximately 8% of those who were marked as "referred" in the HLC registers) turned out to have completed the referrals at the intended referral destination.

While the sample size achieved was rather too small to draw any concrete conclusions, the survey identified two issues in the current practice of NCD screening at HLCs which are critical for any follow-up systems to be established under the Project. The first issue concerns identification of those requiring referral by Medical Officers (MOs). According to the NCD management guideline mentioned above, MOs at HLCs are supposed to assess individual clients' risk levels of developing CVD in the next 10 years considering multiple factors ("Total Risk Assessment": TRA), and clients judged as having "high risk" are to be referred for treatment or further investigation. In reality, a majority of MOs interviewed do not base their decisions to initiate a referral or treatment on TRA but react to single factors presented such as high blood pressure or blood glucose. The threshold values are not uniform among the MOs. The second is the weakness in data management. Many HLCs do not complete their register books in the way they are designed to be filled, which may be a reflection of poor understanding of the tools by the record keepers and also of the need to improve the user-friendliness of the format. The survey also spotted many inconsistencies between the daily registers and monthly summaries (Table 6).

Accordingly, two additional activities, i.e. (i) improvement of the information collection/recording tools currently in use (Activity 1-2-5) and (ii) development/improvement of tools to supervise HLCs (as Activity 1-2-6) were added to the Project design to complement the main task of establishing a system to follow up on clients referred to MCs. Regarding the TRA, it was concluded that the Project would not revise the current guideline on TRA as it should be done at the national level involving professional bodies, rather than locally only with the Project's stakeholders.

[6] 22 PCIs and 4 Medical Office of Health (MOHs) with HLCs at the first year of the Project.
[7] Developed under the MEASURE Evaluation supported by USAID.

Table 6 Issues identified and action required

Issue Identified	Action Required	Project (WG)	Responsible
Issues on Register Management	Revise the recording/ reporting format to make it user friendly	✔	NCD Unit
	Train the record keepers to increase skills	✔	NCD Unit
	Provide extra staff to manage the data at HLCs	✘	PDHS/RDHS
Issues on Total Risk Assessment	Train Medical Officers on Total Risk Assessment	✘	NCD Unit
	Revise the current guideline on Total Risk Assessment	✘	NCD Unit
Issues on Supervision of HLCs	Provide transportation for supervisory visits	✘	PDHS/RDHS
	Revise/ develop the tools to supervise HLCs	✔	NCD Unit
No tracking function available at HLCs	Develop a tracking system for follow-up of HLC clients referred to MC	✔	NCD Unit

Establishing a referral follow-up system

The initial plan was to test a pilot model for a year or so in the project site in Kurunegala District, which had worked with JICA for the "Project on Health Promotion & Prevention Care Measures of Chronic NCDs" in 2008 - 2013, and to subsequently introduce the tested model to other districts with modifications as required. In view of the existing variations in the number of institutions including number of HLCs conducted and their staffing in different Project sites, however, the Project decided to pilot the systems in Kurunegala, Kandy and Kegalle,[8] and to fine-tune them through monitoring and reviews of the pilot implementations. Figure 6 shows the flow of the trial system implemented in three districts.

In detail, these steps are as follows. When an HLC client is categorised as high risk at the screening and referred to an MC or DC either at the same institution or at a higher-level institution:

① (i) The MO at HLC fills in the referral form in carbonised triplicate consisting of a referral form (white), back-reporting form (green) and a copy to be retained at the referring institution (pink); (ii) recording staff at HLC obtain a date for the clinic (in case of

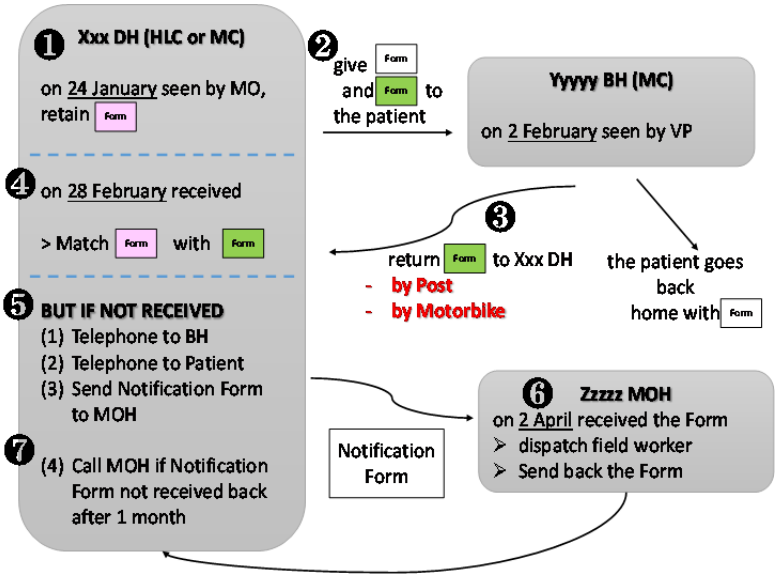


Figure 6 Flow of trial system implemented

[8] Batticaloa district was excluded as Kaluwanchikudy BH did not have a specialist doctor in the MC at the beginning of the Project; the system was introduced in March 2017 after a specialist was posted at the BH.

referral to MC of BH, he/she calls the BH to made an appointment for the client) and notes the date on the referral form; then (iii) the client is verbally informed of the day and time of the clinic he/she should visit and instructed to take both the white and the green sheets to the MC; and (iv) by retaining the copy of referral form (pink), the record keeper at the HLC enters the particulars of the referred client into the Referral Tracking Register (RTR) and files the pink form.

② (i) The client visits the MC/DC of the referred institutions with white and green forms; (ii) the specialist or the MO who examines the client fills in the forms and staples the white form to the client's personal medical record book (PMR).

③ The referred institution sends the back-reporting form (green) back to the referral origin (relevant PCIs) by post or any other appropriate means. As MC/DC of the BHs receive clients from multiple PCIs, the Referral Form Return Log is kept to record the despatches of the "green forms" to the PCIs every time this occurs – normally at the end of the month.

④ On receiving a back-reporting form (green) sent by the referral destination, the record keeper at the PCI matches it with the retained pink form to confirm the attendance at MC.

⑤ If the back-reporting form is not returned to the referral origin within a month, the referring institution is to (i) contact MC/DC of referral destination to check its MC register, (ii) contact the client personally to confirm attendance, and (iii) in case the client cannot be reached by telephone, send a Notification Form to the MOH.[9]

⑥ Upon receiving the Notification Form, the MOH is then to send its field staff to the client's home and enquire about attendance at the MC and send back the Notification Form to the PCI.

⑦ In case of not receiving any answers from the MOH, the referring institution should check with the MOH directly.

For the above process, various tools were developed as per Table 7. The MC Register for BHs was introduced to BHs Galgamuwa and Teldeniya only, as the other two BHs already had an equivalent.

Table 7 Tools developed for the referral follow-up system

Primary Care Institutions (PCI)	Referral Forms with instructions ▪ referral form (white) ▪ back-reporting form (green) ▪ copy of referral form (pink) Referral Tracking Register (RTR) with instructions 2 Labels with instructions for folders to keep the referral forms Instructions for record keepers
Secondary Hospital (BH)	MC Register Referral Form Return Log
Medical Office of Health (MOH)	Notification Form

[9] Field Staff from the MOH perform home visits to do maternal check-ups and family planning. The Project adopted the Notification Form, which is utilised at the MOH.

At most of the institutions, record keeping is done manually by Nursing Officers, midwives and/or chore staff (referred to as SKS) while carrying out their routine clinical work. With such a tedious system as described above and the newly introduced tools, monitoring visits for supportive supervision were an absolute necessity, as wrong entries in the forms and registers, incomplete records, computation errors and even misplaced forms were not rare, especially for the first 6 to 12 months. To compensate for the limited capacity of the MO/NCDs mentioned earlier (under the section of Monitoring), the JICA Team dispatched its Project Officers regularly to monitor the progress and obtain feedback from the personnel involved for the sake of improving the system and tools. This need for good and frequent supervision should be taken seriously if this or a similar system is to be instituted in other areas of the country.

Simplification of the System

Although it may be essential and important to have such a referral follow-up system in place to check on the completion of the referrals, it must be manageable with the current level of staffing both at the referring and referred institutions. The Project looked into the efficacy of the referral follow-up system instituted and how the institutions were handling the increased workload caused by it, to assess the system's sustainability and feasibility for upscaling, with some simplification of the system in mind for the sake of minimising the financial and opportunity costs.

A survey was conducted to describe/compare the referrals made by the HLCs to MCs/DCs at selected PCIs involved in the Project (the intervention group) as well as those not involved in the Project in comparable areas in Kurunegala, Kandy and Kegalle Districts (the control group). The three HLCs with the highest number of referrals for the preceding 12 months were chosen for each group and the referred clients from each of the HLCs were selected as the survey subjects using the probability proportionate sampling method. The survey, especially with the control group, faced a similar set of limitations as the referral assessment survey conducted at the beginning of the Project, namely the small size of the samples due to the small numbers of referrals made and incomplete entries in the HLC registers.

The result showed that all the referred clients of the intervention group were seen at the MC for further treatment. Of the clients in the control group, a majority (70.0%) also reached the MC, though the difference between the intervention group and control group was statistically significant (χ^2=15.76). Frequency distribution of the MC attendance by the referred clients is shown in Table 8.

Table 8 Distribution of the clinic attendance by the referred clients

	Intervention Group (n = 44)		Control Group (n = 79)		Significance
Attended MC/DC after referral	n	%	n	%	
Yes	44	100.0[10]	56	70.9	χ^2 = 15.76
No	0	0.0	23	29.1	df = 1
TOTAL	44	100.0	79	100.0	p < 0.001

[10] Although the survey result with randomly selected HLC clients of the intervention group show 100.0% of referral completion, quarterly reporting of second quarter 2017 was 91.6% (n=190) for those referred from HLCs and MCs of the target PCIs in the four districts.

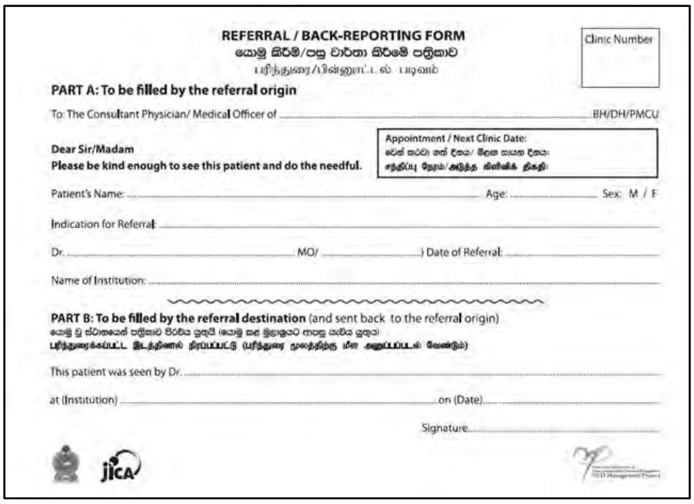
While the above indicates that the system is somewhat effective in terms of encouraging people to complete the referrals; it was the 70% referral completion rate of the Control Group that encouraged the Project to simplify the process described in the pages 18-19, for the sake of the sustainability in view of the insufficient human resources at many PCIs. Endorsed by the Project's Terminal Evaluation in August 2017, which also recommended the system be simplified carefully (see Section 3-2), the Project modified the system through various meetings, including the Finalisation Workshop, in early October 2017, taking account of the estimated printing costs (Table 9) as well as the Project's monitoring data which showed (i) the back-reporting form alone could track more than 90% of the referred clients and (ii) hardly any institutions were taking any of the actions specified beyond step ④ of matching the returned back-reporting form with the referral form copy retained at the institution.

Table 9 Estimation of annual cost for printing tools for referral follow-up system (SL Rupees)

Tools to be printed		Unit price	Project target districts wide		Nation-wide	
			Quantity[1]	Cost	Quantity[1]	Cost
Referral Forms	Triple sheet 1 book (50 sheets)	550	247	135,850	1,293	711,150
	Single sheet 1 book (50 sheets)	120	247	29,640	1,293	155,160
Referral Tracking Register 1 book (20 pages)		300	228	68,400	915	274,500
MOH Notification Form (1 sheet)		2	4,560	9,120	18,300	36,600

1: Required quantities of the tools were estimated from the monthly returns of HLCs submitted to the NCD Unit. All the estimations were made according to the number of HLCs currently deemed functioning by MoH. Some districts have not reported referral statistics for some months; hence a monthly district average was calculated and multiplied by 12 to calculate a yearly estimation.
* The projection does not include referrals from MCs.

In this process, the NCD Unit informed the Project that recruitment of Nursing Officers/Public Health (NO/PH), a new cadre to be deployed at PMCUs, was in progress, who could be tasked with activities related to referrals, including visiting the "defaulters" at their homes. In view of sustainability, the NCD Unit suggested integrating the referral and back-reporting forms into the PMR, which was being revised by the MoH. In the end, the system was simplified in such a way that all the institutions should follow the referral tracking process up to step ④ while institutions with NO/PH would continue up until the home visit of the "defaulters", if any, using simpler referral/back-reporting forms (Figure 7) and RTR (Annex 11-2). This referral/back-reporting will be replaced by those integrated into the currently-revised PMR (the format suggested in Annex 11-1), which will then be used nationwide along with the referral tracking system developed by the Project. All the necessary tools are incorporated into the "Referral Follow up System Introduction Guide" (Annex 9).



REFERRAL / BACK-REPORTING FORM
යොමු කිරීම්/පසු වාර්තා කිරීමේ පත්‍රිකාව
பரிந்துரை/பின்னூட்டல் படிவம்

Clinic Number

PART A: To be filled by the referral origin

To: The Consultant Physician/ Medical Officer of .... BH/DH/PMCU

Dear Sir/Madam
Please be kind enough to see this patient and do the needful.

Appointment / Next Clinic Date:

Patient's Name: .... Age: .... Sex: M / F

Indication for Referral: ....

Dr. .... MO/ ....) Date of Referral: ....

Name of Institution: ....

PART B: To be filled by the referral destination (and sent back to the referral origin)

This patient was seen by Dr. ....

at (Institution) .... on (Date) ....

Signature ....

Figure 7 Simplified referral form which will be used for transaction period (A5 size)

Future plans by the MoH

NCD Unit of the MoH is the responsible section for taking the outputs from this project component forward. Its plan and related issues are as follows:

- **Targeted areas of the Project**

  All the institutions involved in the Project are to continue with the simplified system using the revised tools. Monitoring will be done through additional data collection integrated into the routine quarterly reporting using the formats devised by the Project (Annex 11-3), to be collected and collated by the MO/NCDs before it is submitted to the NCD Unit.[11] The NCD Unit and the MO/NCD of each district are strongly encouraged to pay conscious attention to the needs of continuous supportive supervision to ensure that the practice is sustained.

- **Non-Project areas**

  The referral follow-up system in its simplified form will be instituted in all districts when the new PMR with integrated referral/back-reporting slips is finalised and distributed nationwide, and the "Referral Follow up System Introduction Guide" developed by the Project (Annex 9) is expected to be of help in this process. The on-going revision of the PMR, which will be used not only at the HLCs but also by other screening services such as the Well Women's Clinics, may take some time, however, as it will be finalised jointly by the NCD Unit and the Family Health Bureau. In any case, the issue of monitoring discussed earlier must be taken seriously. In addition, as the PMR will only be used at the screening, the referrals from MC of PCIs to a specialist doctor at a higher institution, as indicated by arrow (iii) in Figure 5, will not be followed up outside of the Project areas.

[11] The quarterly reporting formats developed by the Project have been distributed to all the target institutions and the RDHS offices with an official letter signed by the Director, NCD Unit.

Additional Activities

The status of the two activities added to the Project following its redesign are as follows.

- **Revision and development of the tools to supervise HLCs**

  The JICA Team drafted a checklist based on the existing guideline used by HLCs in consultation with the NCD Unit of the MoH. Relevant inputs were obtained through a workshop involving MO/NCDs and MOs of the HLCs from five districts including the four targeted under the Project as prospective users. The draft supervision checklist was further developed and finalised through a series of field tests involving progressively larger areas of the country (Annex 12). The Director of the NCD Unit, who has been involved in this initiative from the beginning, will continue to monitor the usage and collect recommendations during the routine review meetings organised every quarter by the NCD Unit.

- **Revision of the current recording/reporting formats related to HLCs**

  Revision of the current recording/reporting formats for HLCs did not take place, as it had to wait for the finalisation of the new "Guideline for Management of NCDs in Primary Health Care" undertaken by NCD Unit of the MoH. The document is reportedly in the final stages of production but not yet available in a printed format at the end of the Project. The NCD Unit has started working on the revision of the HLC tools with a Consultant Community Physician (CCP) assigned to lead the exercise beyond the Project.

2-3. Output 2: Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the four BHs

Background

According to the official guidelines of the MoH,[12] all the government hospitals from teaching hospitals to divisional hospitals (DHs), are supposed to be equipped with some investigation facilities but, in reality, the overwhelming majority of the DHs do not perform any tests while some BHs only offer a limited range of laboratory services. This situation obliges most patients at PMCUs and DHs to go to higher-level institutions or private laboratories if investigations are needed.

One of the MoH's strategies to improve patients' access to laboratory services, as identified in various planning and strategy documents, is the satellite laboratory / cluster laboratory services, in which specimens taken at peripheral hospitals are sent to laboratories of larger hospitals for investigations.[12, 13] In line with this strategy, the Project under this Output set up and operationalised a laboratory service network to provide total cholesterol (TC) and/or lipid profile[14] tests to NCD screening clients and MC

[12] Manual on Laboratory Services, the Laboratory Sector of the Ministry of Health, 2011 October.
[13] National Health Development Plan 2013-2017, Ministry of Health.
[14] TC, HDL cholesterol, LDL cholesterol and triglycerides. HbA1C was excluded from this Project as Medical Research Institute (MRI) was then the only government institution offering this test as of 2014, and so was fasting blood sugar (FBS), which was already widely tested at HLCs using glucometers.

patients at the PCIs in each project site. This service utilised the laboratory facilities at the target BHs that were upgraded through "the yen loan project", also supported by Japan.

The Situation Analysis (SA) carried out at the beginning of the Project revealed that no institutions, including the BHs in the designated project sites in Kandy, Kegalle and Batticaloa Districts, were offering simple TC tests. On the other hand, Kurunegala had set up "satellite laboratories" throughout the district at 20 BHs and DHs, including BH Galgamuwa.

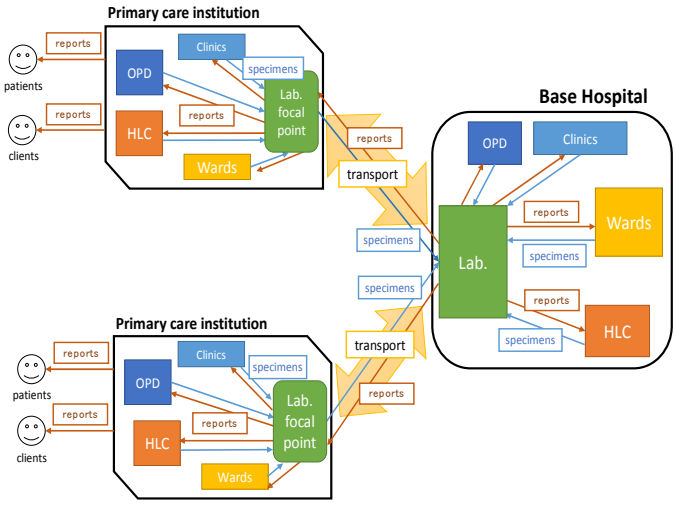


Figure 8 Flow of specimens and investigation reports on laboratory service network

The laboratories, equipped with full-auto or semi-auto analysers, were performing TC, lipid profile, fasting blood sugar (FBS) and serum creatinine tests on blood samples of NCD screening clients sent from the clustered institutions nearby. Based on this finding, the Project started working in Kurunegala ahead of the others to refine the system already in place and apply it as a model to the other three project areas when the BHs under renovation were fully developed with upgraded laboratory equipment installed.

In designing detailed interventions after the SA, the Project also reviewed a list of issues faced in a similar intervention in Badulla District, as shown in the box. Anticipating the same kind of problems, the Project organised an internal discussion involving the DG and JICA Sri Lanka Office, which reached agreement on the following:

- MoH/Provincial Directorate of Health Services (PDHS)/RDHS shall be responsible for human resources;
- Reagents may be provided by the Project as necessary during the first year of implementation. Thereafter PDHS/RDHS shall include the required quantity in their annual estimates; and
- As a means of transport, JICA shall provide scooters to the institutions as appropriate, provided that transporters are pre-identified and the PDHS/RDHS guarantees the fuel and maintenance costs.

Issues encountered in Badulla District

- Insufficient human resources at PCIs to draw blood
- Means of transport
- Securing transporters
- Insufficient supply of reagents
- Delayed despatch of test reports
- Quality of specimens deteriorates during transit
- Gaining cooperation from MLTs and/or SKS (transporters) – need to provide incentives

(1) Galgamuwa area, Kurunegala District

Initial situation

At the start of the interventions, the laboratory of Galgamuwa BH with four Medical Laboratory Technologists (MLTs) was offering FBS, TC, lipid profile (only if the TC was ≥240mg/dl), and serum creatinine tests for NCD screening conducted at the HLCs of the same seven PCIs involved in this Project and a MOH, using a semi-auto biochemistry analyser. Out of the seven PCIs, only three or four were regularly sending blood samples. The mode of transport included ambulances, personal motorbikes and public transport.

The Project started with analysing the pre- and post-examination processes at the feed-in institutions as well as the test processes at the laboratory, checking them against the international standard of ISO 15189. This exercise identified a few issues, as shown in Table 10 following which a specimen transaction register and Laboratory Network Operation Manual were devised by the JICA Team and introduced to both the laboratory and the feed-in institutions.[15]

Table 10 Issues identified related to laboratory network of Galgamuwa BH

Stage	Feed-in institutions	Laboratory at BH
Pre-examination	▪ Request forms not fully filled in ▪ Sample registration incomplete (not used, dates not entered, etc.) ▪ Insufficient information entered on the test tube labels ▪ rough handling of blood samples (when transferring into the tubes, temperature control before and during transport) ▪ no record of dispatch	▪ No record of receiving samples ▪ Samples registered into one book regardless of their origin ▪ Samples registered into the book when test results become available
Examination	—	▪ Lack of internal quality control
Post-examination	▪ Incomplete entries in the sample registration book	▪ Abnormal values not reconfirmed by repeat of the test
Other issues	▪ Insufficient human resources for blood drawing and/or delivery, preventing some PCIs from utilizing the laboratory services ▪ Ambulance is used for transporting samples. Use of public transport (bus) takes too long ▪ Lack of monitoring and supervision	

Transportation

Provision of means of transport by JICA for the laboratory networks was based on a strong request by the then DG. Five scooters were procured by the JICA Sri Lanka Office and deployed at DH Meegalewa,

[15] In addition, the JICA Team also introduced internal quality control (IQC) to the laboratory at BH Galgamuwa. With the limited resources at other BHs, however, the Project only advised the other BHs to participate in the External Quality Control Programme led by MRI under the SHSDP.

DH Giribawa, DH Ehetuwewa, PMCU Usgalasiyambaragamuwa[16] and BH Galgamuwa after the RDHS identified transporters at these institutions and confirmed its commitment to the fuel and maintenance costs. The one given to the BH is used to pick up specimens from those institutions that could not find a transporter amongst their staff. The scooters were not problem-free from the first year of deployment, and they reportedly developed technical problems because they were not utilised often enough. Some PCIs, having limited human and financial resources to arrange for the necessary repairs, prefer to have their samples picked up by the BH.

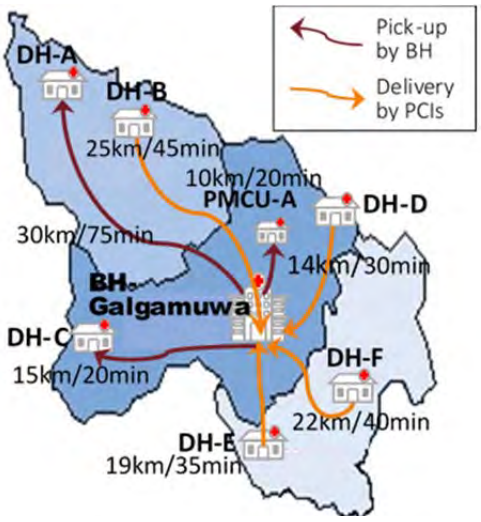


Figure 9 Laboratory network of Galgamuwa area in Kurunegala District

Performance

Table 11 shows the statistics related to the PDM indicators 2-1 and 2-2. The relatively low proportions of the HLC clients who received a TC test for the second and third quarters in 2016 reflects the policy then in place of offering tests only to selected HLC clients based on their risk factors. This policy changed in September 2016. The second quarter of 2017 was affected by the staff strike at the BH and a temporary lack of test tubes.

Table 11 Performance of laboratory network in Galgamuwa area

Galgamuwa area Kurunegala District	2016			2017		
	Q2	Q3	Q4	Q1	Q2	Q3
New HLC clients	431	644	414	357	173	229
who had lab test for TC	223	440	402	334	151	229
%	51.7%	68.3%	97.1%	93.6%	87.3%	100.0%
# of specimens from MC	3	6	499	351	222	233

Investigations for MC patients increased markedly in the fourth quarter of 2016 after the RDHS issued an official circular instructing the institutions to extend the laboratory services to the MC (Table 11). While institutions often cite insufficient numbers of qualified personnel to draw blood as a reason for not sending blood samples, the numbers of MOs and Nursing Officers do not seem to have a direct correlation with the number of specimens sent to the laboratory, as shown in Table 12.

[16] The scooter given to PMCU Usgalasiyambaragamuwa was later transferred to DH Atharagalla with the JICA Office's permission, after the only MO at the PMCU was transferred out, which obliged the institution to discontinue the laboratory services.

Table 12 Utilisation of laboratory network for MC patients (Galgamuwa area)

Institutions		Number of specimens from Medical Clinic															Staffing as of Jan. 2018				
		2016						2017									MO	NO	PHM	DO	Others
		Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.					
Meegalewa	DH	0	0	0	39	66	109	52	19	78	11	35	6	31	56	0	4	5	0	0	19
Mahananneriya	DH	2	2	2	5	0	3	8	5	6	1	1	0	2	0	0	1	1	2	0	16
Ehetuwewa	DH	0	0	0	0	0	0	0	0	16	3	16	22	18	18	15	2	0	3	1	16
Atharagalla	DH	0	0	0	51	79	68	23	20	40	27	2	31	31	29	37	2	0	0	0	7
Giribawa	DH	0	0	0	0	0	0	14	8	3	record incomplete			15	13	5	3	4	1	0	11
Rajanganaya	DH	0	0	0	0	0	0	9	8	33	22	19	26	28	19	13	1	0	0	0	11
Usgalasiyambaragamuwa	PMCU	0	0	0	23	47	9	0	0	9	No MO - lab tests not offered						n.a.				
Total for Galgamuwa area		2	2	2	118	192	189	106	60	185	64	73	85	125	135	70					

Table 13 illustrates different patterns of utilisation of laboratory services by different sections of the PCIs. Despite four PCIs having a scooter each at their disposal, hardly any in-ward patients or those at the outpatient departments (OPDs) are benefitting from the laboratory services in Galgamuwa area – in sharp contrast to the Warakapola BH area where specimens are collected by the BH every day.

Table 13 Number of specimens tested through laboratory networks

Project area	2016 Q3						2017 Q2					
	HLC	MC/ DC	Other clinics	OPD	Wards	Total	HLC	MC/ DC	Other clinics	OPD	Wards	Total
Galgamuwa area	243	6	0	0	0	249	250	220	0	4	1	475
Warakapola area	630	269	1	434	270	1604	425	359	2	892	497	2175
Teldeniya area	10	26	0	0	33	69	171	91	0	8	105	375
Kaluwanchikudy area	0	0	0	0	0	0	180	8	0	8	5	201

(2) Warakapola area, Kegalle District

Initial situation

The RDHS of Kegalle initiated the laboratory network around BH Warakapola in early 2015 with two DHs and five PMCUs in the cluster, without waiting for the operation in Galgamuwa to produce a refined model/tools. With this development, the Project redefined the "catchment area of BH Warakapola" accordingly. The tools being tested in Galgamuwa area were shared with RDHS Kegalle with some modifications and were then tried out in the Warakapola area, before they were consolidated through a joint review in the middle of 2016.

At the beginning, BH Warakapola was not offering TC tests even to its own patients. Those needing TC tests were typically asked to go to one of the nearby private laboratories. With encouragement from the Project, the BH added TC to its laboratory service menu in October 2015 but offering it only on Wednesdays for some time as the laboratory did not have a full-auto analyser. Most of the PCIs shifted their HLCs to Wednesday after finding out that many clients instructed to come back on Wednesdays were not complying.

Transportation

While the laboratory network in Kurunegala was set up primarily for NCD screening – mostly carried out once a week at HLCs – the initial focus of the Kegalle network was on diagnosis and treatment of patients. The RDHS deployed a motorbike at the BH Warakapola, assigned an SKS to go around the eight feed-in institutions[17] every day to pick up specimens and deliver reports at the same time. This method of sample collection was possible as almost all the institutions are on a loop road from the BH (Figure 10). The daily trip clocks up at about 70km.

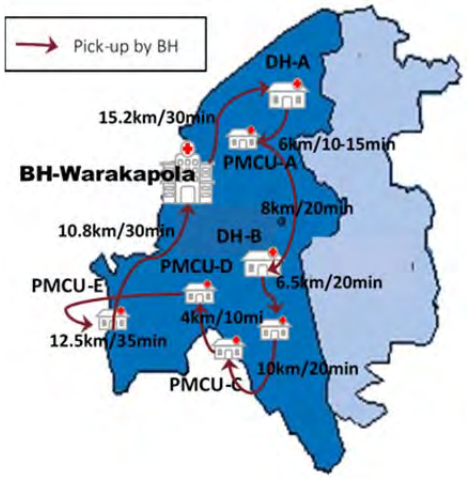


Figure 10 Laboratory network of Warakapola area in Kegalle District

Performance

Table 14 indicates good utilisation of the laboratory network both by HLCs and MCs. The reasons reported for not testing 100% of HLC clients include that some clients declined blood tests or had already received TC tests at private laboratories.

Table 14 Performance of laboratory network in Warakapola area

Warakapola area Kegalle District	2016			2017		
	Q2	Q3	Q4	Q1	Q2	Q3
New HLC clients	454	562	449	444	315	393
who had lab test for TC	393	450	379	407	296	358
%	86.6%	80.1%	84.4%	91.7%	94.0%	91.1%
# of specimens from MC	356	269	572	435	359	486

Table 15 shows that a majority of samples come from the two DHs, with larger staffs and probably higher patient loads than PMCUs. However, the table shows no clear correlation between staff numbers (MO+NO) and the volume of test specimens: PMCU Algama with two MOs sends hardly any samples from their MC and staff are reportedly too busy to draw blood, while PMCU Narangoda with only one MO seems to complete this task well.

As seen in Table 13, institutions in Warakapola area are regularly utilising the laboratory services for their OPD and in-ward patients. The specimen collection modality of daily pick-up by the BH is probably the major factor behind it, enabling PCIs to send and receive specimens and reports without any of their small workforce needing to leave the premises.

[17] The seven PCIs listed in Table 12 plus a MOH.

Table 15 Utilisation of laboratory network for MC patients (Warakapola area)

Institutions		Number of specimens from Medical Clinic															Staffing as of Jan. 2018				
		2016						2017									MO	NO	PHM	DO	Others
		Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.					
Algama	PMCU	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	1	5
Nelumdeniya	PMCU	2	5	0	4	6	24	8	21	17	12	9	8	0	8	6	1	0	0	1	5
Beligala	DH	22	40	32	46	97	89	37	29	62	22	51	38	39	38	28	3	6	1	1	14
Mahapalegama	DH	33	30	26	61	74	88	35	39	44	31	50	42	58	75	67	3	6	2	1	12
Narangoda	PMCU	15	12	40	19	2	5	18	30	17	7	37	21	22	50	44	1	0	0	0	6
Niyadurupola	PMCU	2	2	2	4	2	5	3	1	10	5	1	4	6	5	4	1	0	0	1	4
Galapitamada	PMCU	4	0	2	6	28	12	22	15	27	4	10	6	12	9	9	1	0	0	1	5
Total for Warakapola area		78	89	102	140	209	223	123	135	177	81	159	119	137	185	158					

(3) Teldeniya area in Kandy District

Initial situation

The initial plan was to introduce a laboratory network after the BH Teldeniya, which had only two MLTs, was equipped with high-capacity analysers procured under "the yen loan project". However, in view of the ever-shortening implementation period due to the repeated delays in completion of the construction work at the BH, the Project started the laboratory network in September 2016 before the new analysers were set up.

The project area has six PCIs, with DH Udadumbara, DH Medamahanuwara and PMCU Digana Rajawella on the major road with good public transport to Teldeniya, while DH Dunhinna, PMCU Makuludeniya and PMCU Sandasiri Dunuwila[18] are located in small mountainous communities with limited bus services. DH Udadumbara has a small laboratory but does not offer TC tests.

Transportation

A total of four scooters were procured under the Project and stationed at the three DHs and BH Teldeniya. The one at the BH was to be used for collecting specimens from the three PMCUs that did not have any suitable personnel to ride a scooter. However, when the refurbishment was completed at BH Teldeniya, with the increased workload which came with the expanded facilities, the BH found it impossible to allocate a staff member for sample collection and the scooter remained unutilised until the conclusion of the Project.[19] The two PMCUs[20] have been using public transport but, with limited staff and infrequent bus services, PMCU Makuludeniya is

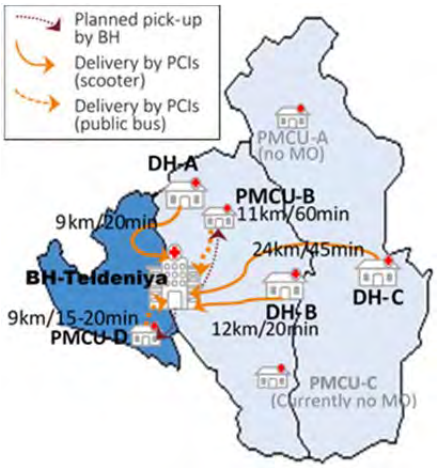


Figure 11 Laboratory network of Teldeniya area in Kandy District

[18] Since early 2017, there has been no permanent MO at this institution. It opens only when a MO from a nearby facility visits.
[19] The PDHS/RDHS was to allocate an additional SKS in January 2018 as a part of an annual transfer exercise. As of the end of January 2018, this had yet to materialise.
[20] PMCU Sandasiri Dunuwila has no MO since the beginning of 2017.

especially finding it difficult to cope. RDHS Kandy is to coordinate PMCU Makuludeniya and the nearby DH Dunhinna so that the specimens from the former are picked up by the latter but, so far, it has not been successful in securing cooperation from DH Dunhinna.

Performances

Table 16 shows the proportion of new HLC clients who had TC tests and the number of specimens taken from MC patients tested at the BH's laboratory. The notable drop in the first quarter of 2017 was due to lack of reagent for TC tests, a situation which continued for about four months. The second quarter of the same year was then affected by the dengue epidemic that stretched the capacity of the laboratory and, as a result, the TC tests for NCD screening had to be limited.

Table 16 Performance of laboratory network in Teldeniya area

Teldenia area Kandy District	2016		2017		
	Q3	Q4	Q1	Q2	Q3
New HLC clients	133	265	74	184	186
who had lab test for TC	10	201	0	139	180
%	7.5%	75.8%	0.0%	75.5%	96.8%
# of specimens from MC	26	187	0	91	200

The prolonged period of reagent stockout was reportedly due to its non-availability at the Regional Medical Supply Division (RMSD) and Medical Supply Division (MSD) of the MoH. As the BH communicated with RMSD concerning this problem – as per the normal practice for hospital supplies – the MO/NCD, who was the district's focal person for this Project and knew that the Project could also procure emergency supplies, was not informed of the problem until alerted by the JICA Team.

As shown in Table 17, utilisation of the laboratory network for MC patients is almost exclusively by DH Medamahanuwara and PMCU Digana Rajawella. The former has a scooter provided by the Project while the latter manages without but has good public transport connections to Teldeniya. DH Dunhinna, which is also equipped with a project scooter, reportedly has (i) very few MC patients who need laboratory tests and (ii) human resource constraints on transporting specimens. The assigned transporter is the only Nursing Officer of the institution and is naturally very much needed within the hospital. DH Udadumbara also reported very few cases in which laboratory tests at Teldeniya are needed, having its own laboratory and an MLT. It is also the farthest away from the BH and would not want to release its staff for long hours when there are also many other tasks requiring attention at the DH. As to utilisation for the OPD and in-patients (Table 17), almost all samples in this Project area came from DH Medamahanuwara.

Table 17 Utilisation of laboratory network for MC patients (Teldeniya area)

Institutions		Number of specimens from Medical Clinic															Staffing as of Jan. 2018				
		2016						2017									MO	NO	PHM	DO	Others
		Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.					
Udadumbara	DH	Lab network not instituted		0	0	0	0	0	0	0	0	0	0	0	0	0	4	9	3	0	28
Makuldeniya	PMCU			0	0	8	0	0	0	0	0	1	1	1	9	7	1	0	0	0	3
Digana Rajawella	PMCU			0	9	34	4	0	0	0	0	0	19	22	18	16	2	0	0	0	3
Dunhinna	DH			0	0	2	0	0	0	0	0	0	0	2	3	1	3	1	2	0	9
Medamahanuwara	DH			26	59	50	21	0	0	0	0	33	37	44	53	24	3	0	2	0	17
Sandasiri Dunuwila	PMCU			0	0	0	0	No MO - lab tests not offered									n.a.				
Total for Teldeniya area		-		26	68	94	25	0	0	0	0	34	57	69	83	48					

(4) BH Kaluwanchikudy area in Batticaloa District

Initial situation

The laboratory network in Batticaloa started its operations only in late April 2017 when the laboratory of the BH Kaluwanchikudy, with new auto analysers, became operational in the new wing of the hospital. With a tripartite analyser and only one MLT, the BH could not offer laboratory services to other institutions earlier. While the number of MLTs has increased to three, the laboratory is still not functioning to its full capacity, hindered by the malfunctioning water distiller caused by low water pressure, which reportedly affected the entire hospital.

Amongst the nine PCIs in the project-defined catchment area of BH Kaluwanchikudy, only the five DHs with HLCs and MCs are currently networked.[21]

Transportation

The PCIs networked are visited by one of the two scooters provided to BH Kaluwanchikudy once a week, mostly on their HLC days. At BH Kaluwanchikudy, two SKS have been assigned as transporters by the MS but are still awaiting their official letters of assignment from the PDHS.

Figure 12 Laboratory network of Kaluwanchikudy area in Batticaloa District

Performances

Due to the limited capacity of the laboratory at BH Kaluwanchikudy, the network focuses on TC tests for HLC clients, and the collection of specimens by the BH is scheduled accordingly. This explains the low utilisation of the network for MC patients indicated in Table 19. The BH also requests that the PCIs limit the number of samples to 20 per week, although the laboratory does not reject additional samples when more are sent in, even for other kinds of investigations. As shown in Table 18,

[21] As an addition, DH Mandur joined the network in late 2017, bringing the total number of participating institutions to six.

less than 60% of the new HLC clients were tested in the third quarter of 2017. This relatively low proportion was explained by the following two factors: (i) the current pick-up for DH Mahiladythivu is on Friday when the DH conducts NCD screenings on Tuesdays and Thursdays and (ii) some HLC clients at DH Kallar, which offers NCD screening as and when requested, regardless of the day of the week, do not come back on the sample collection days for TC tests. Once the laboratory's capacity is established, the BH is expected to increase the frequency of sample collections with a wider variety of tests on offer.

Table 18 Performance of laboratory network in Kaluwanchikudy area

Kaluwanchikudy area Batticaloa District	2017	
	Q2	Q3
New HLC clients	441	349
who had lab test for TC	172	207
%	39.0%	59.3%
# of specimens from MC	8	6

Table 19 Utilisation of laboratory network for MC patients (Kaluwanchikudy area)

Institutions		Number of specimens from Medical Clinic														Staffing as of Jan. 2018				
		2016						2017								MO	NO	PHM	DO	Others
		Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.					
Kallar	DH	lab network not instituted									0	4	1	0	4	1	3	8	9*	2	30
Thraineelavanar	DH										0	0	2	0	0	2	1	3	5*	0	7
Chettipalaiyam	DH										0	0	1	0	0	1	1	4	3	0	12
Palukamam	DH										0	0	0	0	0	0	1	2	3	0	16
Mahiladythivu	DH										no record kept						4	8	4	0	25
Total for Kaluwanchikudy area		-									0	4	4	0	4	4	* incl. those on rotation				

(5) Development and distribution of tools

As presented in Table 20, the Project developed various tools to facilitate operationalisation of the laboratory networks and to have laboratory test results utilised for NCD management. They were distributed to relevant stakeholders in hardcopy as well as softcopy, with a letter signed by the MoH Secretary, who was also the Project Director. The Project Manager is responsible for arranging to have them uploaded onto the MoH website for ease of access from anywhere in the country.

Table 20 Tools developed for laboratory networks

Material	Distributed to:
A Guide for Establishing a Laboratory Service Network (Annex 9)	All PDHS and RDHS All the institutions involved in the Project NCD Unit and Laboratory Service Unit of MoH
Laboratory Sample Register and Transaction Record (Annex 13-1)	All the PCIs involved in the Project (for 10~12-month supply) RDHS of the four target districts NCD Unit and Laboratory Service Unit of MoH NCD Unit and Laboratory Service Unit of MoH
Laboratory Investigation Request Forms (biochemistry, haematology, UFR) (Annex 13-2)	

Material	Distributed to:
Laboratory Investigation Report (UFR) (Annex 13-2)	Four target BHs of the Project RDHS of the four target districts NCD Unit and Laboratory Service Unit of MoH
Stickers indicating dos and don'ts in storing and transporting specimens (Annex 13-3)	All the PCIs involved in the Project RDHS of the four target districts NCD Unit and Laboratory Service Unit of MoH
2 kinds of posters for HLCs (A1 size, Sinhala and Tamil versions) (Annex 13-4)	All static HLCs in the Project areas and additional 8 HLCs in Kandy and Kegalle Districts RDHS of the four target districts NCD Unit and Laboratory Service Unit of MoH
Flipchart (A3 size, Sinhala and Tamil versions) (Annex 13-5)	
Laminated 10-year CVD Risk Prediction Chart (Annex 13-6)	All static HLCs in the Project areas RDHS of the four target districts, NCD Unit of MoH

(6) Issues and lessons learnt

The laboratory networks instituted by the Project greatly improved the benefit of clients/patients at the PCIs involved. While the Project was expected to generate a model that can be applied nationwide, the Project found no single model that fits all districts. Each network needs to be tailor-made to suit local conditions in terms of geographical locations of the institutions involved, road conditions and availability of public transport between them, the human resources available at each institution and so forth. The adoption of any model of laboratory network requires a laboratory with reasonable capacity as a precondition – a prerequisite that is not fully met even in some of the Project areas. While the MoH has a plan to equip all the hospitals up to DH-A with a laboratory, the severe shortage of MLTs is likely to pose a difficulty in its realisation. Meanwhile, many of the secondary and tertiary hospitals, especially those managed by the MoH, have good potential to serve as cluster laboratories. In this regard, the Laboratory Services Unit of the MoH is encouraged to play a more active role in facilitating the establishment of similar laboratory clusters linking peripheral hospitals under provincial management to Line Ministry hospitals.

The following is a summary of pertinent issues faced and lessons learnt in this Project, which may be of some use if the laboratory network system is further pursued by the MoH or RDHS.

- **Human resources**

  Human resources continue to be a major issue permeating the health system in Sri Lanka. It particularly affected the laboratory networks in the following three ways: (i) an insufficient number of MLTs at some of the BHs, (ii) an insufficient number of medical personnel, i.e. MOs and NOs, to draw blood, and (iii) difficulties in securing transporters to deliver specimens and reports.

  (i) Shortage of MLTs: As discussed earlier, shortages of MLTs obliged two BHs to postpone the commencement of a laboratory network and also to limit the number of specimens when it was started. While there is an absolute shortage of MLTs, reflecting irregular intakes in the past, their distribution may also not be equitable or rational with possible interventions by third parties. The labour union is

said to be strong, providing MLTs with good bargaining power.[22] There do not seem to be any easy solutions, but it is definitely important to be aware of these issues when planning interventions.

(ii) Drawing blood: Not having enough personnel to draw blood, which was also an issue in Badulla District's laboratory network (page 24) was very commonly reported not only by PMCUs but also by some DHs with 0~1 Nursing Officers. As the MoH has started deploying Nursing Officer/Public Health (NO/PH) at PMCUs, the situation is expected to ease in the coming years. On the other hand, as indicated by the weak correlation between the number of doctors and nurses and the utilisation status of the laboratory services, it is probably not just a matter of numbers but also of values and the attitude of MOs at the PCIs. Under the Project, some MOs were thrilled with the new opportunities to offer laboratory services for patients and, due to the lack of NOs, the MOs trained midwives at their institutions to draw blood under their supervision. Other MOs, however, would not do "additional work", with which their duty hours might extend into the afternoon. To them, it is also a fixed norm that laboratory tests are not available at PCIs, and they do not consider providing better services by changing it. Additional incentives, motivational training and/or good supervision and performance assessment may be necessary.

(iii) Transporters: Ensuring that feed-in institutions have their own transport was thought to be a good model as it enables them to send specimens whenever and as often as desired. Therefore, the Project provided scooters to selected PCIs that managed to identify at least one rider among their staff. But as observed earlier, the scooters are seldom utilised more than once or twice weekly because the institutions often cannot afford to release the identified riders, who are all SKS or Nursing Officers with many other tasks to do within the institution. BH Teldeniya – even at the end of the Project – was still unable to appoint a minor staff member to ride out twice a week to collect specimens from two PCIs. Besides the shortage of staff itself, there may be other issues related to assigning someone who is officially working within a hospital to undertake work outside of their designated duty post. These issues include the labour union conditions, additional incentives/compensation and insurance coverage in case of accidents.

- **Transportation of specimens**

As observed earlier, the question of transportation of specimens is unlikely to be solved by simply providing a means of transport. At the planning stage, the RDHS is required to look into the following aspects to determine the right transport model for each cluster.

With no such post as transporter of laboratory specimens in the official cadre list, laboratory networks are dependent on the agreement of existing personnel to perform the task. Even when such a person is secured, his/her successor may not be so willing or may not have a relevant driving license.

The cost-benefit should also be carefully assessed. While most of the scooters provided under the Project are doing their job, many of the institutions can only afford to deploy them once or twice a week, not because there are no demands for laboratory investigations but because the transporters designated

[22] Many MLTs run their own private laboratories, which are without a doubt filling the gaps left by government facilities but may lead to conflicts of interest when it comes to the cluster laboratory schemes.

are Nursing Officers or SKS who are also needed within the institutions to perform their regular tasks. Due to the infrequent use, they reportedly tend to develop mechanical problems, which is costing the institutions time and money for repairs. As an alternative, PMCU Digana Rajawella demonstrates public transportation can also work very well in the right setting. Some funds need to be allocated from the budget for incentives or allowances for the transporters in addition to the bus/taxi fares.

The Laboratory Services Unit of the MoH is exploring the possibility of contracting motorbike courier service providers in the private sector, but the responses received so far have not been very positive. The issues of costs and of transporting potentially infectious substances may also have to be cleared before this can become a reality.

- **Structural gaps in health administrations for laboratories**

The RDHS offices involved in this Project, apart from Kegalle, did not have anyone assigned to oversee laboratory services.[23] Although the management of a laboratory is the responsibility of the head of the institution where it is located, the laboratory network and its supervision – the scope of which includes technical and administrative aspects at feed-in institutions – did not quite match the responsibility of the Medical Superintendent of a BH. In Kurunegala, Kandy and Batticaloa Districts, the MO/NCDs, being the focal point for this Project, were automatically overseeing the laboratory network as well. However, they had somewhat less authority in covering aspects that are not connected to HLCs, such as supplies to the laboratories, utilisation of analysers, usage of the means of transport provided, and extending the laboratory services to OPDs, clinics and in-ward patients. The RDHS at Kurunegala assigned its MO/Planning to oversee the laboratory network in Galgamuwa area when he saw the MO/NCD – with over 120 HLCs to supervise – was overstretched. This arrangement, however, did not work adequately and this role was not carried on by the successor when the MO/Planning retired.

Not having designated technical personnel at the RDHS for laboratory services may also be affecting the quality of the tests carried out therein, as the heads of institutions may not have sufficient knowledge to support technical aspects of their laboratories, such as quality assurance or the functions of analysers. When the management of laboratories in provincial institutions including quality assurance is considered within the purview of the provincial health administration rather than of the MoH, the RDHS or at least the PDHS needs to strengthen its function to oversee the laboratory services.

- **Supply management**

Supply management is one area that the Project did not (and was not designed to) intervene, even though the needs for improvement is widely recognised. Shortages of supplies in the health sector have long been considered inexorable, with various bottlenecks in the procurement process. When this occurs, the institutions respond by directing the patients/clients to procure medication/services from the private sector. The Project was also affected by this in terms of shortages of reagents and test tubes, which meant that certain tests could not be performed for some time. As far as the laboratories

[23] Kegalle RDHS appointed a District Registered Medical Officer (DRMO) as the focal point for laboratory operations when it started the laboratory network in early 2015.

of the four BHs are concerned, such instances could be reduced by more accurate forecasting of the requirements based on actual consumption. The service statistics from the laboratories – which are currently not submitted anywhere and left largely uncompiled and unanalysed – should be useful for this purpose.[24] When forecasting usage, activity/investment plans for the forecast period must also be taken into consideration because they, as additions to the existing services, could substantially increase the demand for related items. This applies not only to medical supplies but also to admin supplies, including paper for printing laboratory test reports.

Ensuring a continuous supply of admin tools is also a challenge that needs to be addressed. The JICA Team consulted the MoH several times about future supplies/reprinting of the tools such as investigation request/result forms and the laboratory specimen register, as those printed by the Project are likely to run out within a year. However, no clear solutions were identified before the conclusion of the Project. The MoH reportedly needs a policy decision if it is to use its own budget to supply these tools to provincially-managed institutions. Even if a policy is in place, tools to be used nationwide apparently need to be available in three languages (Sinhala, Tamil and English), and the request/result forms produced by the Project in English only do not meet this criterion. If printed supplies are not made available, most institutions are expected to devise similar tools on their own, typically using "chits" and notebooks easily available locally.

- **Computerisation of hospital records**

While the specimen register introduced by the Project is to be kept by hand, there have been several initiatives in the health sector of Sri Lanka to digitalise various hospital records, including the one known as "e-Health" supported by the Information Communication Technology Agency of Sri Lanka (ICTA).[25] With the Laboratory Information Management System (LIMS) already developed by the MoH as a part of the e-Health package, the MoH also planned to digitalise the laboratory network in Galgamuwa BH area using the funds from the Second Health Sector Development Project (SHSDP),[26] by networking the laboratory at the BH and the feeding institutions so that the test results can be retrieved at the latter, though it did not materialise. The Project did not actively support the MoH, as it did not have sufficient human resources with the right expertise even when financial resources are available from SHSDP.

Computerisation of primary-level institutions, most of which do not have a computer or a staff with good computer literacy, may seem a little far-fetched at the moment. However, in view of the chronic shortage of staff at PCIs and also of the trend by which BHs such as Galgamuwa and Teldeniya are becoming gradually but progressively digitalised, the introduction of digital record keeping will have to be tackled sooner or later. Good planning that pays attention not only to the provision of hardware infrastructure and training but also the needs of network administrators and financial allocations for

[24] "A Guide for Establishing a Laboratory Service Network" produced by the Project includes a formula for computing reagent requirements in its annexes.

[25] There are several different information management systems co-existing in the health sector, and standardisation of these in line with official policy now in place is recognised as one challenge that needs to be addressed.

[26] A four-year project supported by the World Bank for 2014-2018.

internet/VPN/APN access and continuous supplies of consumables, such as bar-code stickers, would be prudent.

2-4. Output 3: Enhanced pharmaceutical supply management at the four target BHs

Background

With the aim of reducing incidents of stock-out of NCD-related drugs, it was envisaged in the initial plan that the Project would develop and introduce a simple electronic inventory management system to the four target BHs using Microsoft Access or Excel. The Situation Analysis (SA) at the beginning of the Project looked into the stock management at the target BHs and found that (i) as far as the 16 essential NCD drugs were concerned, there had been few incidents of stock-out during the previous year thanks to the MoH's deliberate efforts to provide them even at the primary level and that (ii) for other drugs and surgical items, major factors behind stock-out were reportedly the insufficient overall budget and occasional but large-scale recalls due to quality failure rather than poor inventory management. Under such circumstances, introduction of an electronic inventory system would be unlikely to reduce incidences of stock-out in any significant manner, though it would be a step in the right direction to modernise the conventional manual bookkeeping for thousands of items using more than 10 different ledger books, hence the decision to address the issue under the Project. After examining three different stock management systems already in use at MSD and RMSDs of Kurunegala and Ratnapura, the Project decided to install the Medical Supply Management Information System (MSMIS) of MSD in the four BHs, as the system was being rolled out to the MoH warehouses, RMSDs and Line Ministry hospitals across the country then.

MSMIS is a commercial Enterprise Resource Planning (ERP) system called PRONTO Xi, customised to the needs of logistics management of the Sri Lankan health administration at the central, regional and institutional levels. The MoH plans to use this system to eventually connect all government warehouses and hospitals (Figure 13). All of the technical support related to the customisation, installation and maintenance is provided by the PRONTO Xi vendor in Sri Lanka on contract with the MoH. Although the current contracts between the vendor and the MoH do not cover the provincial hospitals, they agreed to assist with the installation of the system at the four BHs targeted by the Project without charging any fees, as pilot cases for the next phase of the MoH project to connect all the MoH hospitals in the country.[27] In these circumstances, the role of the JICA Team was mainly coordination among the stakeholders including MSD, RDHS and the target BHs for timeline management.

[27] Maintenance of MSMIS at the four BHs is expected to be covered by a fresh contract to be signed between the MoH and a/the private company when the MoH plan for rolling out the system to the provincially-managed institutions is finalised.

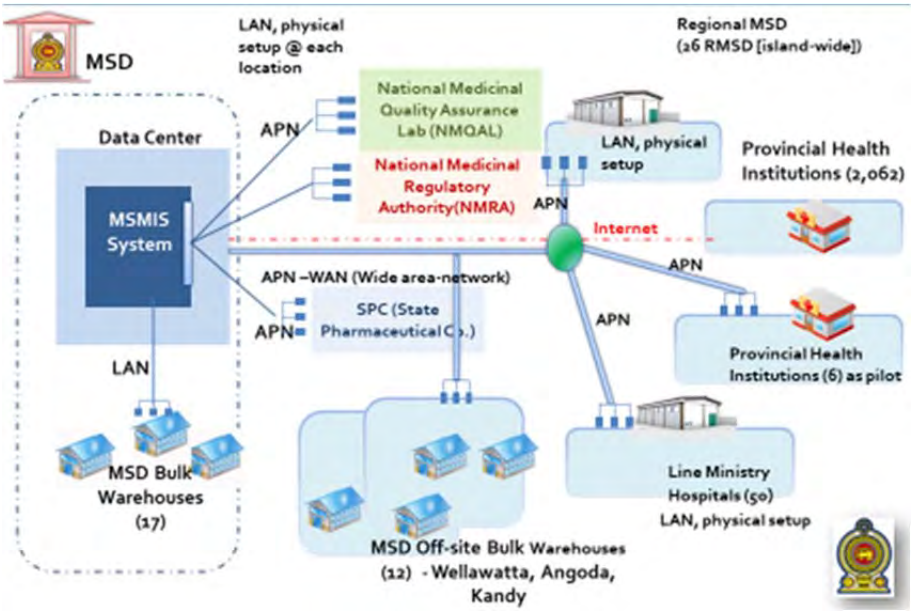


Figure 13 Overview of MSMIS

Introduction of MSMIS

Figure 14 depicts the steps in MSMIS introduction as implemented by the Project. The first step was to agree with the stakeholders on the scope of the installation and determine exactly where the computers would be set up. In view of the limited number of concurrent user licenses the MSD has, it was agreed that the Project would cover only the central stores at each BH. The location of the main stores, however, could not be determined until the completion of construction work at the BHs – initially expected in 2015. In reality, it was not until early 2016 that the Project was able to determine the location of the storerooms at BH Kaluwanchikudy – the first case among the four target BHs (Table 21).

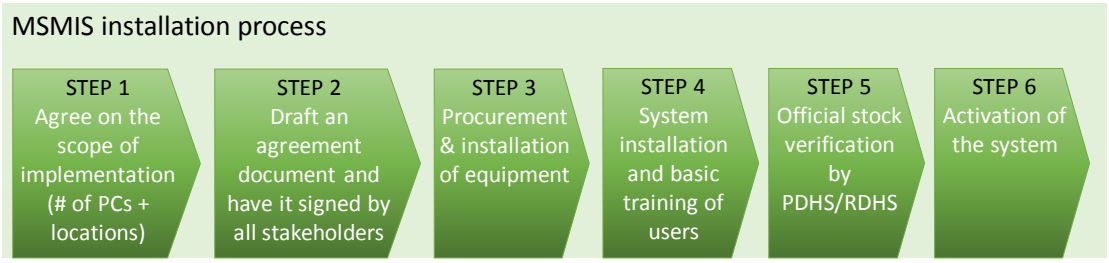


Figure 14 MSMIS installation process

Table 21 Status of MSMIS introduction at the four BHs

BH	Step 2	Step 3	Step 4	Step 5	Step 6	Status as of Jan. 2018
Kaluwanchikudy	Feb. 2016	Jun. 2016	Aug. 2016	Mar. 2017	May 2017	Partially operational
Teldeniya	May 2017	Jun. 2017	Aug. 2017	yet to be completed		Partially operational
Warakapola	Aug. 2017	Sep. 2017	Sep. 2017	yet to be completed		Partially operational
Galgamuwa	Sep. 2017	Dec. 2017	Dec. 2017	yet to be completed		Partially operational

As it turned out, the storerooms at all the target BHs except for BH Teldeniya were not considered in their respective refurbishment plan under "the yen loan project". This meant that the hospitals needed to convert one of their old buildings into a medical and surgical store, which was only possible after the wards/clinics housed therein had shifted to new locations on the completion of the new buildings. While BH Kaluwanchikudy managed this conversion utilising the provincial budget, North-western and Sabaragamuwa provinces were unable to source the necessary funds for BH Galgamuwa and BH Warakapola in time for the project completion in January 2018. In the end, the Project installed the MSMIS in the current location of the main stores at both of the hospitals. As BH Warakapola reportedly has a plan to erect a separate building for the central store as early as 2018, only one computer was installed to avoid investing in the installation of a local area network (LAN) that might not be used for very long, whereas a minimum of two units is recommended by the MSD in view of the need for a back-up. At Galgamuwa BH, the PDHS/RDHS installed LAN cables in the current main drug and surgical consumables stores in a building envisaged to remain as one of the main stores of the hospital, while the Project installed two computers connected through the LAN to a network switch.

The system installation and the initial user training were completed by the MSMIS team of the MSD at all the BHs by December 2017 but, as shown in Table 21, the system is only partially operational at all the BHs pending official stock verification to be organised by the respective PDHS/RDHS.[28] The stock verification is a routine exercise at all government hospitals to be organised by each PDHS or RDHS once a year, according to the MoH guidelines. The information on the available stocks in the hospital verified by this exercise must then be entered into the MSMIS before they can start using the system for managing the existing stocks. As of the end of January 2018, all the four BHs are using the MSMIS for the new stocks that arrived after the system was activated while continuing with the manual bookkeeping for the older ones that were already on hand.

The Project did not revise/modify the user interface and/or user manuals of MSMIS, a planned activity to take place with feedback from the users sometime after the activation of the system at the BHs.

Development of MSMIS Introduction Guide

In view of the MoH's plan to progressively introduce MSMIS into provincially-managed hospitals in the next few years, the Project developed the "Step-by-Step Guide for Introducing MSMIS to Provincial Institutions", intended for PDHS and RDHS (Annex 9) and distributed it to the participants of the Dissemination Forum organised in January 2018. A soft copy is to be uploaded onto the MoH and MSD websites.

[28] BH Kaluwanchikudy performed its stock verification in 2017. However, it needs to be repeated for a full operationalisation of the system at the institution because of a technical error that occurred when the MSD activated the system as the very first case of the provincially managed hospitals connected to the MSMIS.

3. Achievements of the Project

3-1. PDM Indicators

This section presents the status of the indicators for the Project Purpose and the three Outputs at the conclusion of the Project.[29] The indicators for the Overall Goal will be discussed later, in Section 3-3.

(1) Project Purpose

In terms of achieving the set target for each of the indicators, the Project Purpose has been well achieved – as illustrated in the box below, followed by further observations.

Project Purpose: Strengthening of NCD management at the four target BHs and primary care institutions in their catchment areas as clusters	
Indicator	Baseline/Target/Achieved Values
1. Percentage of patients referred from primary care institutions (PCIs), i.e. (i) from HLC@PCI to MC/DC@PCI, (ii) from HLC@PCI to MC/DC@BH and (iii) from MC/DC@PCI to MC/DC@BH, who completed the referral at the institutions specified	Baseline: N.A. Target: ≥ 80% Achieved: 93.0% (2017Q3)
2. Availability of data on patients of Medical and Diabetes clinics at the MoH hospitals in the four project sites	Baseline: No Target: Yes Achievement: Yes
3. Availability of a package of tools for NCD management at primary and secondary institutions as a cluster in the four target districts	Baseline: No Target: Yes Achievement: Yes

Regarding indicator 1, with the absence of a baseline, it is difficult to determine if the Project has had any concrete impact on referral completion. Some positive effects resulting from the Project's interventions can be inferred by comparing the archived referral completion rate of 93.0% with (i) the 64.5% completion rate among the patients referred from the HLCs surveyed by the Project during the first project year[30] and (ii) the 70% completion rate among those referred from selected HLCs in the "control areas" identified in the Kurunegala, Kandy and Kegalle Districts by the Project in 2017.

For indicator 2, the Project collected data for the entire districts of Kurunegala, Kandy, Kegalle and Batticaloa thereby exceeding the target which was for "the four project sites," i.e. the catchment areas of BH Galgamuwa, BH Teldeniya, BH Warakapola and BH Kaluwanchikudy.

For indicator 3, the Project made a conscious decision not to physically bundle all the materials into "a package" as none of their users would require all of them. However, they were packaged electronically

[29] All the numeric data for the indicators are from the third quarter of 2017.

[30] "Healthy Lifestyle Centre Referral System Assessment and Monitoring, Results from the Assessment Survey, September-October 2014". The figure was obtained from a small sample size of 43 HLC clients, with less than 20% of the clients recorded as referred, who were reachable during the survey, and were aware that they had been referred.

into a DVD in view of future needs for reproduction and distributed to relevant stakeholders including all the PDHS, RDHS and the institutions in the four Project areas targeted. The MoH will also upload all the materials onto their website for ease of access from anywhere in the country/world.

(2) Output 1

The indicators assigned to the Output 1 and their status are shown in the table below.

<table>
<tr><td colspan="5">Output 1: Improved monitoring of NCD patients in the catchment areas of the four target BHs</td></tr>
<tr><td>Indicator</td><td colspan="4">Baseline/Target/Achieved Values</td></tr>
<tr><td>1-1. Availability of a set of tools for a patient survey of Medical and Diabetes clinics</td><td colspan="4">Baseline: No
Target: Yes
Achievement: Yes（For details, see page 10）</td></tr>
<tr><td rowspan="5">1-2. Number and percentage of PCIs in the catchment areas of the four target BHs tracking their clients[31] referred to Medical/Diabetes Clinics in each Project site</td><td>Project Area</td><td>Baseline</td><td>Target</td><td>Achievement (2017Q3)</td></tr>
<tr><td>Galgamuwa</td><td>0.00% (0/7)</td><td>≥ 55.0% (4/7)</td><td>71.4% (5/7)</td></tr>
<tr><td>Teldeniya</td><td>0.00% (0/6)</td><td>≥ 65.0% (4/6)</td><td>83.3% (5/6)</td></tr>
<tr><td>Warakapola</td><td>0.00% (0/7)</td><td>≥ 85.0% (6/7)</td><td>57.1% (4/7)</td></tr>
<tr><td>Kaluwanchikudy</td><td>0.00% (0/9)</td><td>≥ 55.0% (5/9)[32]</td><td>44.4% (4/9)</td></tr>
<tr><td>1-3. Availability of documents on resource requirements and steps to be taken for instituting a similar system developed under the Project in other areas of the country</td><td colspan="4">Baseline: No
Target: Yes
Achievement: Yes
“Clinic Survey Coordinators’ Handbooks” （three kinds）
“Referral Follow-up System Introduction Guide”</td></tr>
</table>

The targets for indicators 1-1 and 1-3 are both achieved. As for indicator 1-2, which is defined in the M&E Framework as “the number and % of PCIs which are aware of the referral status (whether s/he has or has not attended the MC or DC referred to) of 75% or more of the clients/patients they have referred in the previous quarter,” two project areas – namely Warakapola and Kaluwanchikudy – apparently fell short of their targets in the third quarter of 2017.[33] It must be noted, however, that Warakapola area exceeded the target for the first and second quarters of 2017 at 85.7% (six out of seven institutions) and 100% (7/7) respectively. The third quarter performance was affected by the long sick leave of the staff member responsible for tracking the referred patients at one institution, as well as the very small number of patients being referred out at another, which ended up with less than a 75% tracking rate when one or two of the referred patients could not be traced. Meanwhile, Kaluwanchikudy area’s achievement is quite satisfactory considering that four out of five institutions involved managed to trace more than 75% of their referred patients even though the system was only set up in April 2017.

[31] See the “M&E Framework for PDM Ver. 3” for the definition of “institutions tracking their referred clients”.
[32] As the system was set up at five PCIs only, the set target (five out of nine institutions) is practically 100% rather than 55%.
[33] Data for the fourth quarter of 2017 were not collected as the Project was ending in January 2018.

(3) Output 2

The table below shows the indicators for Output 2 and their status at the end of the Project.

Output 2: Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the four BHs				
Indicator	Baseline/Target/Achieved Values			
2-1. Percentage of new HLC clients at PCIs who had blood tests for TC or lipid profile at the target BH's laboratory through the laboratory network system established/strengthened by the Project in each Project site	Project Area	Baseline	Target	Achievement (2017Q3)
	Galgamuwa	N.A.	≥ 75%	100.0%
	Teldeniya	0.00%	≥ 60%	96.8%
	Warakapola	0.00%	≥ 80%	91.1%
	Kaluwanchikudy	0.00%	≥ 60%	59.3%
2-2. Number and percentage of PCIs' Medical Clinics that send to the target BH's laboratory at least 1 specimen in a month for any kind of laboratory tests through the laboratory network system established/strengthened by the Project in each Project site	Project Area	Baseline	Target	Achievement (2017Q3)
	Galgamuwa	0.00% (0/7)	100.0% (7/7)	57.1% (4/7)
	Teldeniya	0.00% (0/6)	100.0% (6/6)	66.7% (4/6)
	Warakapola	0.00% (0/7)	100.0% (7/7)	85.7% (6/7)
	Kaluwanchikudy	0.00% (0/9)	≥ 55.0% (5/9)[34]	0.0% (0/9)
2-3. Availability of documents on resource requirements and steps to be taken for instituting similar system developed under the Project in other areas of the country	Baseline: No Target: Yes Achievement: Yes ・"A Guide for Establishing a Laboratory Service Network"			

Indicator 2-1 can be seen as largely achieved, with only Kaluwanchikudy area falling short of its target by just 0.7 points. The factors behind the shortfall include (i) the limited capacity of the laboratory at BH Kaluwanchikudy, which was affected by a malfunctioning water distiller and insufficient training of the MLTs to fully utilise the new analysers and (ii) insufficient coordination between the BH and some institutions about the sample collection days.

Indicator 2-2 was set up to assess the utilisation of the laboratory network for treatment and/or diagnosis rather than screening at PCIs and is defined in the M&E Framework as "the number and % of PCIs in each Project site that sent one or more test specimens for their MC/DC patients to the target BH's laboratory every month of the reporting quarter". Although the set target was not achieved in any of the four Project areas, in view of the baseline, the objective of instituting the laboratory networks under the Project, which was to provide laboratory services to the patients at primary-level facilities, has been well met, as most of the institutions do send test samples to the laboratories from their MCs as shown in Tables 12, 15, 17 and 19 in Section 2-3 of this report.

The apparent poor performance of Kaluwanchikudy area was due to the limited capacity of the laboratory, which is yet to be fully developed following the refurbishment of the hospital, as detailed in the earlier section of this report. Because of this fundamental constraint, BH Kaluwanchikudy collects samples from each PCI only once a week, mostly on its HLC day. For other project sites, the "failure" is probably also

[34] As only five PCIs were networked to the laboratory, the set target (five out of nine institutions) is, in practice, 100% rather than 55%.

attributable to the assumption we had when setting the target for the indicator that a MC at any institution has at least one patient that requires a laboratory test every month. Several institutions in the other three Project areas reported that they had no such instances in certain months. There are no solid guidelines for carrying out laboratory investigations and individual MOs decide on such needs based on their judgement. In doing so, familiarity with laboratory tests that may only be available at higher-level institutions, as well as the principle of "no unnecessary lab tests" repeated in the laboratory service manual,[35] may well play some part – especially if the referring MO has no Nursing Officers to assist in drawing blood from patients.

Indicator 2-3 has been duly achieved. Several copies of the produced Guide have already been distributed to each PDHS and RDHS across the country along with a DVD containing all of the materials produced under the Project. The MoH, through the Director Health Information, is also uploading them onto its website for ease of access by the stakeholders.

(4) Output 3

The indicators and their status for the Output 3 are as follows:

Output 3: Enhanced pharmaceutical supply management at the four target BHs	
Indicator	Baseline/Target/Achieved Values
3-1. Number of the target Base Hospitals using Medical Supply Management Information System (MSMIS) for their pharmaceutical supply management	Baseline: 0 Target: 4 Achievement: 4
3-2. Availability of documents on resource requirements and steps to be taken for instituting similar system developed under the Project in other areas of the country	Baseline: No Target: Yes Achievement: Yes ▪ "Step-by-step Guide for Introducing MSMIS"

Indicator 3-1 is considered achieved, now that all of the four BHs are using MSMIS for both receiving items from RMSD/MSD and issuing them to various sections of the institutions, albeit partially. Given that the pending stock verification is in fact a routine exercise of the provincial health administrations, it will be only a matter of time before the MSMIS installed at the four target BHs becomes fully operational.

For indicator 3-2, the target has been achieved. The material produced is expected to be useful for the MoH's plan to install the system up to the Base Hospital Category B (BH-B) within the next few years.

3-2. Implementation status of the recommendations from the Terminal Evaluation

This section illustrates the actions taken with regard to the six recommendations made by the Project's Terminal Evaluation in August 2017.

[35] Manual on Laboratory Services, the Laboratory Sector of the Ministry of Health, 2011 October

The Project should expedite the series of the actions required to operationalize MSMIS at the four target BHs, including installation of equipment and other facilities in the identified premises, training of the prospective users of the system and stock verifications, so that MSMIS is fully operational before the conclusion of the Project.

As discussed earlier, MSMIS was installed at all the four target BHs before the conclusion of the Project. It is, however, only partially operational pending completion of the official stock verification exercise to be organised by the respective PDHS/RDHS at each institution. As the stock verification is a routine exercise that takes place periodically, it will only be a matter of time before they complete the exercise and MSMIS becomes fully operational.

The Project needs to complete the on-going fifth pilot survey of the medical clinics in Kegalle, Kandy and Batticaloa Districts. The RDHS should mobilize all the resources necessary to complete the local operation, i.e. data collection and data entry by the end of September. Consider assigning dedicated personnel in each district as well as at the central level to oversee the operation to avoid further delays.

The fifth and final pilot survey in Batticaloa, Kandy and Kegalle Districts has been duly completed, as discussed in detail in Section 2-2-(1), with information from 6 institutions out of 81 still missing. Data entry proved to be problematic with limited human resources and internet access in all the three districts. Kegalle hired data entry clerks and Batticaloa utilised staff from other sections of RDHS office while Kandy assigned institutions with computer(s) and internet access to enter the data from other institutions without such facilities. Deployment of full-time coordinators at the central and district levels did not materialise.

In view of the scarcity of human resources at PCIs, the Project should carefully simplify the referral follow-up system for the sake of sustainability, with due attention not to jeopardize the high referral completion rate achieved.

As detailed in Section 2-2-(2), the referral follow-up system was simplified, field tested and finalised between September and December 2017.

Now that TC values are available to HLC clients thanks to the laboratory network instituted in the target areas of the Project, they should be used for the total risk assessment of CVD as per the guideline in place. Medical Officers of HLCs should be specifically instructed to do the CVD risk assessment when a client comes back for the TC result. It is also recommended to have this instruction explicitly stated in appropriate tools being produced by the Project.

To aide MOs in the CVD risk assessment, the Project produced laminated and easy-to-follow CVD risk-assessment charts (Annex 13-6) along with a poster (Annex 13-4) and a flip chart (Annex 13-5) to encourage HLC clients to come back to the HLC and pick up their laboratory report for TC. They were all distributed to all the HLCs in the four target areas of the Project. The instruction for MOs at HLCs to

carry out a CVD risk assessment after the TC test report for the client comes back from the laboratory will be included in the orientation training on the new guidelines for NCD management at PCIs, which the NCD Unit plans to organise as soon as the guidelines are printed in 2018.

The experiences and knowledge gained through experimental operations of various systems/tools should be generously shared with stakeholders who would benefit from establishing the system developed by the Project with possible modifications to suit the local needs. To this end, the Project integrates in the final tool package to be produced useful information such as practical tips, possible options for different circumstances and good practices related to various phase of implementation including planning, monitoring and supervision.

The following tools produced by the Project (Annex 9) reflect various experiences and lessons learnt through the Project implementation.

- Coordinators' Handbooks (three kinds)
- Referral Follow-up System Introduction Guide
- A Guide for Establishing a Laboratory Service Network
- Step-by-Step Guide for Introducing of MSMIS

PDHS/RDHS as applicable should take necessary actions without delay to fully utilize the scooters and the three-wheeler provided for the laboratory network. They include carrying out prompt repairs and regular maintenance, deployment of designated and authorized personnel to ride them with appropriate cover in case of accident and, if necessary, reassignment of a vehicle to another institution where it is best utilized for the purpose with consent of JICA.

The two scooters in Galgamuwa area, which were out of order at the time of the Terminal Evaluation, were repaired with the funds provided by the RDHS, although one of these was out of order again as of January 2018. Another unit originally stationed at PMCU Usgalasiyambaragamuwa was transferred to DH Atharagalla with permission from the JICA Sri Lanka Office, as the PMCU was not offering laboratory services after its only doctor was transferred to another institution without a replacement.

On the other hand, the scooter given to BH Teldeniya remains unutilised without a rider as of the end of January 2018. The PCIs – namely PMCUs Digana Rajawella and Makuludeniya – have been using public transport to bring the specimens to the BH. The Kandy RDHS was to look into allocating additional SKS to the BH by January 2018, whose primary task would be transporting specimens for the laboratory network but apparently it did not materialise. PDHS and RDHS together with the MS of the BH are strongly urged to find a solution as soon as possible so that the transport provided is fully utilised and that the burden on the PMCUs with limited human resources reduced. JICA Sri Lanka Office is also encouraged to monitor the situation.

Regarding insurance coverage for the transporters, issuance of official appointment letters from the respective PDHS, as suggested by the Evaluation Team, could not be confirmed before the closure of the Project.

3-3. Prospect of attaining the Overall Goal

Overall Goal	Indicators
Enhancement of the national NCD programme	1. Number and percentage of health regions using the tools developed under the Project. (Baseline: 0, Target 26 (100%))
	2. Availability of national data on patients attending medical and diabetes clinics of MoH hospitals. (Baseline: No, Target: Yes)

The Overall Goal in the PDM Ver.3, as shown above together with its indicators, has two assumptions as follows:

- GoSL provides necessary equipment, consumables and manpower to scale up the initiatives under this Project nationwide.
- GoSL ensures (i) training of new personnel and (ii) refresher training of existing staff at the national, district and institutional level.

Indicator 1 is defined in the M&E Framework as the "number and % of health regions that are using any tools produced by this Project, with or without modifications". As the NCD Unit of the MoH has already started using the HLC supervision checklist for regular monitoring of HLCs in all the districts through MO/NCDs, achieving the target should not be too difficult, provided that the NCD unit continues monitoring the usage of the tool. As monitoring is not one of the strengths of the health administration, it may also be necessary to improve the capacity at the NCD Unit to see this target achieved.

As for indicator 2, the MoH plans to complete the Clinic Survey in the remaining 22 health districts in the next three years or so, as discussed at the Project's Dissemination Forum in January 2018, where the participants – including the Regional Directors in attendance – have shown strong interest. The MoH has provided assurances that funding is a non-issue not only because the clinic survey costs very little money but also due to the prospect of commencing the Third Health Sector Development Project supported by the World Bank in late 2018. Nevertheless, the MoH will, together with the RDHS to be involved, need to organise itself well with advance planning so that the necessary financial and human resources are duly allocated both at the central and district levels. Although a low-cost survey, its completion requires efficient coordination between the MoH and RDHS as well as within each district involved, to the extent that dedicated coordinators were recommended in the Project's Terminal Evaluation. In this sense, solid commitment and sound leadership of the DDG/Medical Services I, who has taken the responsibility for completing the national survey, will be crucial. The JICA Sri Lanka Office should also be encouraged to monitor its progress.

4. Issues faced and lessons learnt

This chapter discusses some of the issues faced in project implementation in general along with their implications for the efficacy of the Project and solutions, if any. Issues specific to particular components of the Project are addressed in earlier sections under the relevant headings.

Monitoring and Supervision

With the possible exception of a few programmes/projects supported by external donors, the practice of M&E in the health sector is quite limited. The MoH has various plans and strategy documents – many of which are quite ambitious and yet not prioritised – that are hardly ever evaluated for progress or impact. The understanding and skills in M&E are also underdeveloped with a general lack of M&E culture. The routine reports of statistics are largely viewed even by people with managerial responsibilities as something to submit rather than to be analysed for signs of improvements or whether they provide a useful addition to current practices. Evaluation is often referred as audit, and supervision is equated to a visit to somewhere to check on deviations from the standards.

The Project was not designed to address this need in the health administration but had to address this issue in some way if the M&E WG was to function, as the Group was tasked not only with monitoring the progress of the Project but also for working on the revisions of the PDM. To this end, in the second project year, the JICA Team organised a training workshop for results-based management (RBM) for a total of three days involving not only the WG members but also MO/NCDs of the four districts and additional personnel from the NCD Unit. This activity improved understanding and skills amongst the participants in such areas as logical thinking in addressing problems and indicator-setting and produced simple NCD intervention plans with indicators for each district and MoH, as well as a draft M&E plan for the Project. The efficacy of this training, however, did not exceed the level expected of a mere three-day workshop in a setting with little prevailing M&E culture, and the tasks of M&E of the Project, including routine data collection and analysis, remained with the JICA Team until the end.

When the MoH and RDHS apply the models developed under the Project to other areas of the country, detailed monitoring and frequent supervision are crucial, as experienced by the Project. With the JICA Team undertaking most of the M&E-related tasks and supervision needed, however, the Project might have lost the opportunity to cultivate the recognition of the importance of M&E and the need to address the current lack of skills and aptitude among the MoH and RDHS stakeholders.

Human Resources

“Insufficient human resources” is arguably the most commonly-heard phrase when bottlenecks are discussed not only in the context of this Project but in the health sector as a whole. While there is a lack of personnel with the right qualifications necessary to perform certain tasks, the factors underpinning it are multidimensional, including mismatches between the demand and intake for training, skewed distributions of staff, and the role of the unions – as such, there seem to be no overnight solutions.

The Project was very mindful of this bottleneck and did its best to lighten the workload associated with the new systems instituted by, for example, deleting conventional but seldom-used information from the recording tools to be used at institutions. There were, however, always a few institutions not implementing the system because of "insufficient human resources". The Project did not verify each of such claims by investigating the details of their routines but assigning a Development Officer (DO) at each institution seemed to ease the situation somewhat. It would release Nursing Officers from the tedious task of record keeping and preparing routine reports, thus allowing them to focus on the jobs that only Nursing Officers can do, including drawing blood. When assigned to MoH and RDHS, DOs, who are university graduates, could also perform monitoring and tasks related to supervision mentioned above, provided the idea is acceptable to various stakeholders in the administration and that there are skilled trainers to train them properly.

Communications

The communication modality in the Sri Lankan government is very much "top-down" and the relationship between staff members and their boss is also quite formal with casual exchanges of opinions between them seldom occurring. This culture was not very conducive to the process of developing and refining the systems and tools through pilot implementations, as it was not easy to obtain feedback from the rank and file users at institutions including Nursing Officers, MLTs and SKS. At meetings, staff members tend to keep quiet – especially when medical doctors are present. Therefore, local staff from the JICA Team would come and meet them individually at their workplaces, in order to obtain their input. The JICA Team would then communicate their views and opinions to the managers including MO/NCDs, WG leaders and the Project Manager when discussing modifications necessary on the prevailing systems/tools. It was not the most efficient communication modality but necessary in the local cultural context.

Ties to "the yen loan project"[36]

This project was expected "to maximise the effectiveness of the yen loan project by developing NCD management models, including strengthening linkages among secondary hospitals and HLCs".[37] It was accordingly designed to utilise the upgraded services and facilities at the four BHs assuming the refurbishment work would be completed by early 2015. The delays in the construction work and the subsequent handover from the contractors to the provincial authorities under "the yen-loan project" inevitably affected this Project greatly, to the extent some activities could not be completed. In view of rather common occurrences of these kinds of delays, it would be more prudent if future projects of this nature, if any, are scheduled to start only when the required infrastructure and human resources are already in place.

[36] "The Project for Improvement of Basic Social Services Targeting Emerging Regions" under which the same four BHs were refurbished and SMPC's production facilities renewed.

[37] Record of Discussions on Project for Enhancement of Non-Communicable Diseases Management in the Government of Democratic Socialist Republic of Sri Lanka, October 22, 2013.

With the four project sites scattered across the country incorporating a total of 29 institutions, it would have been more effective and desirable to have set up a project office in each district to maximise the efficacy of the BHs upgraded under the yen-loan project rather than remotely supporting and monitoring the activities from Colombo. With more frequent consultations between the JICA Team and the stakeholders at the district and institutional levels, the systems developed could have been better fine-tuned to the local conditions at each site with respect to the availability of human resources, relative locations of hospitals, road network, budget allocations and so forth. However, setting up a base in each district was deemed inopportune when project resources are limited and no one knew when the BHs would be commencing the improved services, a prerequisite for this Project.[38]

The Project was also expected to develop "NCD management models, which are applicable to nationwide expansion",[37] as per a very popular approach seen in JICA-supported projects in which a model is developed through pilot implementations to be applied at the next stage nationwide. This approach was found to be a little contradictory in the context of the Project discussed above, i.e. to maximise the local benefit around the four target BHs. While models were somehow developed as tasked, they are certainly not plug-&-play software that can function as soon as installed straight after unpackaged. As we learnt from the trials under each component of the Project, all of the models require fine-tuning in order to function in different settings and customisation requires some investment. This may apply less in terms of financing but definitely in relation to human resources. In this respect, the nation-wide expansion needs to be planned carefully in balance with the capacity and available resources of the health administrations.

[38] A locally recruited Project Officer was deployed in Batticaloa in February 2016 because the construction work at the BH Kaluwanchikudy had been completed and the new facilities were reportedly to open soon. However, the BH was not able to start functioning as a cluster laboratory or a referral hospital until April 2017.

ANNEXES

Annex 1-1: PDM Ver. 3

Ver. 3 (Nov. 2016)

Project Title: The Project for Enhancement of Non-Communicable Diseases Management

Project Sites: Four Base Hospitals (BHs) (Teldeniya BH in Kandy district, Central Prov., Kaluwanchikudy BH in Batticaloa district, Eastern Prov., Galgamuwa BH in Kurunegala district North Western Prov., Warakapola BH in Kegalle district Sabaragamuwa Prov.) and their catchment areas[1], Colombo (MoH)

Project Period: February 2014 – January 2018 (Four years)

Beneficiaries: Service providers at the 4 BHs and primary care institutions in their catchment areas, NCD-related personnel/units in the RDHSs of the 4 districts and MoH, Population in the catchment areas of the 4 BHs

Narrative summary of Objectives	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Enhancement of the national NCD programme	1. Number and percentage of health regions using the tools developed under the Project. (Baseline: 0, Target 26 (100%)) 2. Availability of national data on patients attending medical and diabetes clinics of MoH hospitals. (Baseline: No, Target: Yes)	1. Annual NCD Review report from each health region to NCD unit of MoH with evidence (eg. copy of filled formats) 2. A periodic national survey report	Priority of the NCD prevention and control is maintained in health sector in Sri Lanka GoSL is able to finance a periodic national patient survey at medical and diabetes clinics of government hospitals.
Project Purpose Strengthening of NCD management at the 4 target BHs and primary care institutions in their catchment areas as clusters	1. Percentage of patients referred from primary care institutions (PCIs) i.e. (i) from HLC@PCI to MC/DC@PCI, (ii) from HLC@PCI to MC/DC@BH and (iii) from MC/DC@PCI to MC/DC@BH, who completed the referral at the institutions specified. (Baseline: n.a., Target: ≥80%) 2. Availability of data on patients of Medical and Diabetes clinics at the MoH hospitals in the 4 project sites. (Baseline: No, Target: Yes) 3. Availability of a package of tools for NCD management at primary and secondary institutions as a cluster in the 4 target districts. (Baseline: No, Target: Yes)	1. Project report (Quarterly report from PCIs) 2. Project report 3. Project report	GoSL provides necessary equipment, consumables and manpower to scale up the initiatives under this Project nationwide. GoSL ensures (i) training of new personnel and (ii) refresher training of existing staff at the national, district and institutional level.
Output **<u>Output 1:</u>** Improved monitoring of NCD patients in the catchment areas of the 4 target BHs	1-1. Availability of a set of tools for a patient survey of Medical and Diabetes clinics. (Baseline: No, Target: Yes) 1-2. Number and percentage of PCIs in the catchment areas of the 4 target BHs tracking their clients[2] referred to Medical/Diabetes Clinics in each Project site.	1-1. Project report 1-2. Project report (Quarterly report from PCIs)	1-1. Staff at the 4 BHs and primary care institutions in their catchment areas accept monitoring of NCD patients as a part of their duties.

[1] Teldeniya BH: 3 MOH areas of Medadumbara, Udadumbara and Kundasale; Kalwanchikudy BH: 3 MOH areas of Kalwanchikudy, Vellavely and Paddipalai; Galgamuwa BH: 3 MOH areas of Galgamuwa, Ehethuwewa and Giribawa; Warakapola BH: 1 MOH area of Warakapola except for the survey components, which also involves MOH area of Galigamuwa.

[2] See the "M&E Framework for PDM Ver. 3" for the definition of "institutions tracking their referred clients".

<table>
<tr><th>Narrative summary of Objectives</th><th>Objectively Verifiable Indicators</th><th>Means of Verification</th><th>Important Assumptions</th></tr>
<tr><td></td><td>
<table>
<tr><th>Project site</th><th>Baseline</th><th>Target</th></tr>
<tr><td>Galgamuwa</td><td>0.00% (0/7)</td><td>≥ 55.0 % (4/7)</td></tr>
<tr><td>Teldeniya</td><td>0.00% (0/6)</td><td>≥ 65.0 % (4/6)</td></tr>
<tr><td>Warakapola</td><td>0.00% (0/7)</td><td>≥ 85.0 % (6/7)</td></tr>
<tr><td>Kaluwanchikudy</td><td>0.00% (0/9)</td><td>≥ 55.0 % (5/9)</td></tr>
</table>
1-3. Availability of documents on resource requirements and steps to be taken for instituting similar system developed under the Project in other areas of the country. (Baseline: No, Target: Yes)</td><td>1-3. Project report</td><td></td></tr>
<tr><td><u>Output 2:</u>
Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the 4 BHs</td><td>2-1. Percentage of new HLC clients at PCIs who had blood tests for TC or lipid profile at the target BH's laboratory through the laboratory network system established/strengthened by the Project in each Project site.
<table>
<tr><th>Project site</th><th>Baseline</th><th>Target</th></tr>
<tr><td>Galgamuwa</td><td>n.a.</td><td>≥ 75 %</td></tr>
<tr><td>Teldeniya</td><td>0.00 %</td><td>≥ 60 %</td></tr>
<tr><td>Warakapola</td><td>0.00 %</td><td>≥ 80 %</td></tr>
<tr><td>Kaluwanchikudy</td><td>0.00 %</td><td>≥ 60 %</td></tr>
</table>
2-2. Number and percentage of PCIs' Medical Clinics that send to the target BH's laboratory at least 1 specimen in a month for any kind of laboratory tests through the laboratory network system established/strengthened by the Project in each Project site.
<table>
<tr><th>Project site</th><th>Baseline</th><th>Target</th></tr>
<tr><td>Galgamuwa</td><td>0.00 % (0/7)</td><td>100.0 % (7/7)</td></tr>
<tr><td>Teldeniya</td><td>0.00 % (0/6)</td><td>100.0 % (6/6)</td></tr>
<tr><td>Warakapola</td><td>0.00 % (0/7)</td><td>100.0 % (7/7)</td></tr>
<tr><td>Kaluwanchikudy</td><td>0.00 % (0/9)</td><td>≥ 55.0 % (5/9)</td></tr>
</table>
2-3. Availability of documents on resource requirements and steps to be taken for instituting similar system developed under the Project in other areas of the country. (Baseline: No, Target: Yes)</td><td>2-1. Project report (Quarterly report from PCIs)

2-2. Project report (Quarterly report from PCIs)

2-3. Project report</td><td></td></tr>
<tr><td><u>Output 3:</u>
Enhanced pharmaceutical supply management at the 4 target BHs</td><td>3-1. Number of the target Base Hospitals using Medical Supply Management Information System (MSMIS) for their pharmaceutical supply management (Baseline: 0, Target: 4)

3-2. Availability of documents on resource requirements and steps to be taken for instituting similar system developed under the Project in other areas of the country. (Baseline: No, Target: Yes)</td><td>3-1. Project report

3-2. Project Report</td><td>3-1. GoSL (RDHSs) is able to finance the running costs of MSMIS.
3-2. MSMIS is properly managed and maintained at the national and district levels.
3-3. All pharmaceutical items are managed through MSMIS, including those distributed by FHB and Epidemiology unit.</td></tr>
</table>

Activities	Input		Important Assumptions
1-1 Instituting patient survey of Medical and Diabetes clinics in the catchment areas of the 4 BHs.	**By Japan** **1) Experts:** - Chief Advisor - NCD Management - Epidemiology - Medical Logistics - Health Information System **2) Local activities cost** - Workshops - Trainings - Meetings - Materials - Local Consultants **3) Machinery and Equipment** **4) Counterpart Training in Japan** - NCD management - Hospital Management	**By Sri Lanka** 1) Counterpart personnel: 2) Office space and necessary office facilities 3) Project office running expenses 4) Custom duties and value added tax, cost for custom clearance, storage and domestic transportation for any equipment provided by the Japanese side for the Project Implementation.	
1-1-1 The Project team carries out a general situation analysis in the Project implementation sites.			
1-1-2 WG formulated conducts an in-depth situation analysis in 4 target BHs with a focus on data flow, work flow and patient flow of their Medical and Diabetes clinics.			
1-1-3 WG in consultation with RDHSs designs a data collection system and tools, including sampling methods and data items, based on the result of 1-1-2.			
1-1-4 Galgamuwa Base Hospital with selected members of the WG conducts a pilot test of the system and tools at its Medical and Diabetes clinics			
1-1-5 WG adjusts the system and tools for a similar survey at Medical and Diabetes clinics of primary care institutions and tests them out at selected primary care institutions in the catchment area of Galgamuwa BH.			
1-1-6 WG modifies the data collection system and tools according to the feedback from 1-1-4 and 1-1-5.			
1-1-7 A BH and primary care institutions in other project site with support from the WG carry out a patient survey at their Medical and Diabetes clinics using the modified tools.			
1-1-8 Based on 1-1-7, the WG further fine-tunes the system and tools to improve their efficacies and cost and time efficiencies.			
1-1-9 Medical statistic unit in collaboration with the WG undertakes analysis of the collected data and produces reports.			

Activities	Important assumptions
1-1-10 WG finalize the data collection and reporting system and package the produced tools in view of nationwide application.	
1-1-11 WG determines resource requirements for replication of the system in other areas.	
1-2 Establishing a system to follow up on referred clients to Medical clinics of Primary Care Institutions and Base Hospitals.	- Staff at primary care institutions and BHs accept client tracking as a part of their duties. - Service providers at HLCs detect and refer “high risk” clients to MC as per the guideline.
1-2-1 The Project team carries out a general situation analysis in the project implementation sites.	
1-2-2 WG formulated with relevant GoSL stakeholders and the JICA team carries out a situation analysis on HLC clients’ compliance in obtaining further medical services at Medical clinics as advised by HLCs.	
1-2-3 WG designs intervention options based on the findings of 1-2-2, for approval by the JCC.	
1-2-4 WG develops a tracking system to follow up clients referred to Medical clinics of primary care institutions and BHs.	
1-2-4-1 Design a tracking system with appropriate monitoring mechanisms and identify necessary tools (leaflets, posters, manuals, guidelines, recording and reporting formats, etc.) and human resources. 1-2-4-2 Develop necessary tools. 1-2-4-3 Train relevant staffs of HLCs and Medical clinics using the tools developed. 1-2-4-4 Pilot implementation of the system in one or more target areas and monitor its effects. 1-2-4-5 Make necessary adjustment to the system and tools. 1-2-4-6 Implement the modified system in other target areas, constantly monitor and fine-tune the system. 1-2-4-7 WG finalize the system and tools.	

Activities	Important assumptions
1-2-5 WG revises the current recording/ reporting formats related to HLCs and train record keepers. 1-2-5-1 Revise the current recording formats for HLCs to make it more user friendly with inputs from users and draft a users' manual/ handbook in the three languages for a pre-test of the improved formats. 1-2-5-2 Pre-test the revised formats at selected HLCs in the catchment area of a selected BH. 1-2-5-3 WG together with MO/NCDs modifies the formats according to the result of the pre-test. 1-2-5-4 Pilot implementation of the modified formats at all HLCs in the catchment area of pilot BH(s) with close monitoring by the MO/NCD(s). 1-2-5-5 Finalize and print the formats and users' manual with necessary modifications in accordance with results of the pilot implementation. 1-2-5-6 WG provides Training of Trainers (ToT) to MO/NCDs on the new formats. 1-2-5-7 MO/NCDs set up training plan in their respective districts. 1-2-5-8 MO/NCDs of the target districts conduct training of record keepers as per the plan. 1-2-5-9 MO/NCDs of the 4 target districts support HLCs in correct record keeping and reporting through supervisory visits and additional training/ guidance.	
1-2-6 WG revises and/ or develops the tools to supervise HLCs. 1-2-6-1 WG collects and review tools currently used by MO/NCDs in all districts. 1-2-6-2 With involvement of MO/NCDs, WG identifies current gaps in tools for monitoring/ supervising of HLCs. 1-2-6-3 WG with involvement of MO/NCDs revise/ devise monitoring/ supervising tools in accordance with the findings of 1-2-6-2. 1-2-6-4 MO/NCDs of the 4 districts pre-test the monitoring/ supervising tools developed and modify them as appropriate for improvement. 1-2-6-5 WG finalizes and disseminate the tools. 1-2-6-6 WG together with RDHSs and NCD unit monitors the usage of the tools. 1-2-7 WG with NCD unit determines resource requirements for replication of the system in other areas.	- GoSL allocates appropriate resources for provision of supportive supervision to HLCs.
2-1 The Project team carries out a general situation analysis in the project implementation sites. 2-2 Working Group formulated at the central level (CWG) carries out an in-depth analysis of the existing "satellite laboratory system" in Kurunegala. 2-3 CWG designs a pilot model (a work flow) based on the findings of 2-2 and identifies (i) necessary tools to be used at the primary care institutions, the BHs and RDHSs, such as manuals/ guidelines, recording and reporting formats (including eligibility guideline for TC or Lipid Profile testing for HLC screening and manual on pre-examination process) and (ii) resource needs at the primary care institutions and the BHs. 2-4 Preparations for implementation of the pilot model designed in 2-3. 2-4-1 JICA team (for the first year of implementation) and GoSL (for the rest of the Project duration) procure necessary items identified. 2-4-2 WG together with hospital staff (including MLTs) develops necessary tools and introduce them at Galgamuwa BH and primary care institutions in its catchment areas as a pilot. 2-4-3 CWG fine-tunes the system based on the results of 2-4-2 and selects another pilot site for implementation of the model in view of the progress of the refurbishment of the 4 BHs. 2-4-4 The RDHS of the selected pilot site formulates a regional working group (RWG) for implementation and monitoring of the pilot system. 2-4-5 CWG with the RWG(s) sets up a system and tools to monitor the progress and effects of pilot implementation. 2-4-6 CWG, RWG and/ or appropriate institution(s) identified by CWG/ RWG train(s) relevant staff of the pilot site on the tools developed. 2-5 Implementation and fine-tuning of the pilot system. 2-5-1 The BH and primary care institutions in the selected pilot site start operating the "satellite laboratory system" designed using the tools devised. 2-5-2 RWG monitor the implementation closely using the devised monitoring tools and reports to the CWG periodically. 2-5-3 RWG in consultation with the CWG make modifications to improve the pilot system.	- The target BHs are equipped with fully automated and well-maintained biochemical analysers and sufficient number of MLTs. - Service providers including MLTs at BHs and minor staff at primary care institutions are cooperative. - Primary care institutions have skilled personnel to draw blood for testing. - GoSL is able to continuously supply necessary reagents/ test kits.

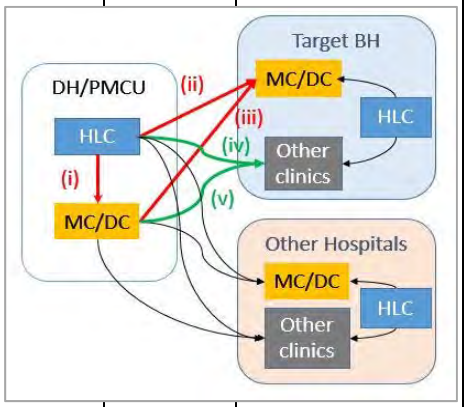
Activities	Important assumptions
2-6 Introduction, fine-tuning and finalisation of the system at the four project sites. 2-6-1 Introduction of the improved pilot system to other project sites (possibly in a staggered manner). 2-6-2 RWGs formulated in the four target areas monitor and fine-tune the system and tools in consultation with the CWG. 2-6-3 CWG and RWGs finalise the system and tools.	
2-7 CWG identifies and documents the resource requirements and steps for introduction of the system in other areas to guide scaling up of this initiative.	
3-1 The Project team carries out a general situation analysis in the Project implementation sites.	- Technical resources needed for implementation and support of the MSMIS at the 4 BHs are available at MSD/ RMSD or the contractor of the support services for MSMIS. - The current phase of the MSMIS roll out is completed by Feb. 2015 as planned. - The 4 target BHs after refurbishment have (i) reasonable space and facility for a PC server and (ii) LAN connections.
3-2 WG formulated carries out an assessment of the existing electronic stock management systems in Kurunegala district, Ratnapura district and MSMIS to decide on the most suitable system to introduce to the target BHs.	
3-3 WG sets up a system and tools to monitor the progress and effects of pilot implementation of the selected system (i.e. MSMIS chosen by the WG at the meeting on the 30th Oct. 2014).	
3-4 Preparation for and installation of the MSMIS at the main storerooms of the target BHs in pace with the on-going refurbishment.	
3-4-1 MSD assists RMSDs of the 4 target districts in completing physical stock taking and data entry into the MSMIS 3-4-2 MSD assists to arrange for the VPN connection at each of the 4 BHs. 3-4-3 JICA team procures necessary hardware (a PC, a printer and a VPN switch for each target BH) according to specifications provided by MSD. 3-4-4 MSD arranges to train the system users at 1 pilot BH with involvement of corresponding RMSD according to the existing user manuals. 3-4-5 The pilot BH and the corresponding RMSD start using the system for transactions while WG together with MSD monitor and support the operation.	
3-5 MSD with the WG fine-tunes the system and the user manuals as applicable according to feedback from (i) the target BH/ RMSD and (ii) the monitoring system set up.	
3-6 MSD assists to introduce the system to other BHs/ RDHSs and monitor/ support its operation together with the WG.	
3-7 WG with MSD identify and document the resource requirements and monitoring tools for introduction of MSMIS to provincially-managed institutions in view of the nation-wide expansion of the system.	

BH: Base Hospital, CWG: Central Working Group, FHB: Family Health Bureau, GoSL: Government of Sri Lanka, HLC: Healthy Lifestyle Centre, LAN: Local Area Network, MC: Medical Clinic MLT: Medical Laboratory Technician: MoH: Ministry of Health, MOH: Medical Officer of Health, MSD: Medical Supply Division of MoH, MSMIS: Medical Supply Management Information System, MO: Medical Officer, NCD: Non-Communicable Disease, PCI: Primary Care Institutions (= Divisional Hospitals (DH) + Primary Medical Care Units (PMCUs)) RDHS: Regional Director(ate) of Health Services, RMSD: Regional Medical Supply Division, RWG: Regional Working Group, WG: Working Group

"NCD" in this Project means Diabetes Mellitus (DM), hypertension and hyperlipidaemia.
"The Project team" refers to GoSL stakeholders together with the JICA Project team.
"HLCs" in this Project exclude mobile clinics/screening services.

Annex 1-2: Monitoring & Evaluation Framework for PDM Ver. 3

OBJECTIVES	INDICATOR	DEFINITION / EXACT DATA TO BE COLLECTED	BASE-LINE	TARGET	DATA SOURCE	Data collection frequency & Line of Reporting		
						Quarterly	Biannual	Annual
Overall Goal (to be achieved in 3-5 years after the project ends)**:**	1. Number and percentage of health regions using the tools developed under the Project.	# and % of health regions which are using any tools produced by this project, with or without modifications. *(A list of tools developed by this project will be produced toward the end of the Project, to be used as a checklist.)*	0	26 (100%)	Annual NCD Review report from each health region to MoH (NCD unit) with evidence (eg. copy of filled formats)	Dir/NCD is responsible for data collection. Data collection starts after the Project is concluded.		D/NCD ↑ RDHS (MO/NCD)
Enhancement of the national NCD programme	2. Availability of national data on patients attending medical and diabetes clinics of MoH hospitals.	Estimated # of NCD patients in each of the 26 health regions who are receiving medical treatment at Medical Clinics (MCs) or Diabetes Clinics(DCs) of MoH hospitals (i.e. provincial and LM hospitals), obtained through a nation-wide survey similar to the one developed by this project, available to the public as an MoH publication.	No	Yes	A periodic national survey report	Reporting line may have to be revised when the responsible unit within the MoH is identified and formalised.		DGHS ↑ DDG/MS1 ↑ D/NCD
Project purpose: Strengthening of NCD management at the 4 target BHs and primary care institutions in their catchment areas as clusters	1. Percentage of patients referred from PCIs (i.e. (i) from HLC@PCI to MC/DC @PCI, (ii) from HLC@ PCI to MC/DC@BH and (iii) from MC/DC @PCI to MC/DC@BH), who completed the referral at the institutions specified.	**[Denominator - definition]** Total # of patients at PCIs who were referred: (i) from HLC to MC/DC of the same PCI; (ii) from HLC to MC/DC of the target BH; and (iii) from MC/DC to MC/DC of the target BH during the 3 consecutive months immediately preceding the reporting quarter. Patients referred to (a) other sections/specialists of the target BH (eg. ophthalmology, orthopaedics, dermatology, etc.); and (b) other institutions than the target BHs are to be excluded. **[Denominator - data source]** Referral Forms (RF) kept at the PCIs: count all used RFs, both "matched (pink+green)" and "unmatched (pink only)", which: - have a referral date of the three consecutive months immediately preceding the reporting quarter, and; - are addressed to MC or DC of the same institution or the target BH	Unknown	≥ 80%	Project report (Quarterly report from PCIs)	Chair M&E WG ↑ RDHS ↑ MOIC ↑ Record keepers at HLC and MC of PCIs		



		[Numerator - definition] Out of the above, # of patients whose attendance at the MC/DC they were referred to (= "completed the referral at the institutions specified") was confirmed before the end of the reporting quarter either by "back reporting" from the referral destinations or by telephone calls to the BH or to the patients made by the referral origins. **[Numerator – data source]** RFs kept at PCIs: out of the denominator, count all of the following: - all "matched" forms (pink+green); then - "unmatched" forms with a tick in the "patient seen at MC" under "Telephone to BH" with a date before the end of the reporting quarter in the Part C; then - "unmatched" forms with a tick "Went to the MC/DC referred" under "Patient reached" when personally contacted, with a date before the end of the reporting quarter in the Part C.						
	2. Availability of data on patients of Medical and Diabetes clinics of the MoH hospitals in the 4 project sites.	Some details (eg. # and % by condition, sex, age group, etc.) of NCD patients receiving medical treatment at MCs or DCs of hospitals under provincial management in each of the 4 target areas, estimated using the data obtained through a survey, made available to the stakeholders of this project.	No	Yes	Project report ↑ (Tables and charts on various aspects of NCD patients receiving medical treatment at MC/DC for each project site.)		Chair M&E WG ↑ Chair CDC WG	
	3. Availability of a package of tools for NCD management at primary and secondary institutions as a cluster in the 4 target districts.	Availability in all of the 4 RDHS offices, of a set of tools produced under this project, which are useful for strengthening NCD-related interventions, especially with PMCUs, DHs and a BH as a cluster. It may include revised HLC registers, recording/reporting formats of laboratory networks, HLC supervision tools and status report on the essential drugs for NCDs at BHs.	No	Yes	Project report ↑ List of tools		Chair M&E WG ↑ D/NCD ↑ RDHS MO/NCD	

Output 1: Improved monitoring of NCD patients in the catchment areas of the 4 target BHs	1-1. Availability of a set of tools for a patient survey of Medical and Diabetes clinics.	Availability of a set of finalised tools for a sample survey to find out some details (eg. # and % by symptoms/diseases, sex, age group, etc.) of NCD patients receiving medical treatment at MC or DC of the provincial hospitals in the 4 project sites. "A set of tools" may include those for data collection, compilation and analysis.	No	Yes	Project report ↑ a list of tools and their development status, prepared by CDC WG		Chair M&E WG ↑ Chair CDC WG	
	1-2. Number and percentage of Primary Care Institutions in the catchment areas of the 4 target BHs tracking their clients referred to Medical/Diabetes Clinics.	# and % of PCIs (DHs & PMCUs) in each BH's catchment area, which are tracking clients/patients they referred (i) from HLC to MC/DC of the same PCI; (ii) from HLC to MC/DC of the target BH; and (iii) from MC/DC to MC/DC of the BH.– PCIs are considered tracking their referred clients if they are aware of the "referral status (= whether or not a patient has attended the MC/DC as referred)" of 75% or more of clients/patients they referred during the 3 months immediately preceding the reporting quarter, through the 6 steps of the Follow-up system instituted by the Project, by the end of the reporting quarter. Steps in the Follow-up System 1. Refer a patient with a referral form (RF) with Back Reporting Form (BRF). 2. Referral destination sends back the BRF to the referral origin. 3. Referral origin calls up the referral destination when BRF is not received within a month from the referral date. 4. Referral origin calls up the patient personally if s/he has not been seen at the referral destination. 5. Referral origin sends an "MOH Notification Form" to the MOH of the missing patient when s/he could not be reached through telephone. 6. MOH sends back the findings to the referral origin.	0	Gal: ≥55%(4/7) Tel: ≥65%(4/6) War: ≥85%(6/7) Kal: ≥55%(5/9)	Project report (Quarterly report from PCIs)	Chair M&E WG ↑ Chair FU WG ↑ RDHS MO/NCD ↑ MO/IC ↑ Record Keeper @HLC and MC		
	1-3. Availability of documents on resource requirements and steps to be taken for instituting similar system developed under the Project in other areas of the country.	Document(s) that contain(s) resource requirements and steps to be taken for: (i) undertaking a sample survey on patients at MCs and DCs at government hospitals in other areas of the country; and (ii) Instituting a system to track patients referred to MC/DC at the BH or within the same institution.	No	Yes	Project Report		Chair M&E WG ↑ Chairs of CDC and FU WGs	

Output 2 Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the 4 BHs	2-1. Percentage of new HLC clients at PCIs who had blood tests for TC or lipid profile at the target BH's laboratory through the laboratory network system established/ strengthened by the Project in each Project site.	**[Denominator – data source]** # of new HLC clients registered in H1236 for the quarter.– **[Limitation]** Some institutions include returning clients ("follow-up visits") in H1236. **[Limitation]** This will include returning clients, which may offset the new clients who were not tested for some reason. **[Numerator – data source]** # of HLC clients according to the laboratory register kept at the PCIs whose blood samples were sent to the BH's laboratory for TC or lipid profile tests in each Project site in the same quarter. PCIs are to count the number of ✓ in the "TC/Lipid P" under HLC in the "Origin" column of the Laboratory Register.	Unknown	Gal: ≥ 75% Tel: ≥ 60% War: ≥ 80% Kal: ≥ 60%	Project report (Quarterly report from PCIs) ↑ H 1236 & Laboratory Register at PCI This is a non-indicator if an HLC offers TC test by POCT.	Chair M&E WG & Chair Lab. network WG ↑ RDHS (MO/NCD) ↑ MOIC@PCI ↑ HLC record keeper		
	2-2. Number and percentage of PCIs' Medical Clinics that send to the target BH's laboratory at least 1 specimen in a month for any kind of laboratory tests through the laboratory network system established/ strengthened by the Project in each Project site.	**[Denominator]** # of PCIs in each Project site **[Numerator]** # of PCIs in each Project site that sent 1 or more test specimens for their MC/DC patients to the target BH's laboratory every month of the reporting quarter. 5 out of 9 PCIs are to be networked in Kaluwanchikudy area	None for all Project sites.	Gal: 100%(7/7) Tel: 100%(6/6) War: 100%(7/7) Kal: ≥ 55% (5/9)	Project report (Quarterly report from PCIs) ↑ Laboratory Register at PCI	Chair M&E WG & Chair Lab. network WG ↑ RDHS (MO/NCD) ↑ MOIC of PCIs ↑ MC record keeper		

	2-3. Availability of documents on resource requirements and steps to be taken for instituting similar system developed under the Project in other areas of the country.	Document(s) on resource requirements and steps to be taken for instituting a laboratory network system in other areas of the country.	No	Yes	Project Report		Chair M&E WG ↑ Chair Lab. network WG	
Output 3 Enhanced pharmaceutical supply management at the 4 target BHs	3-1. Number of the target BHs using Medical Supply Management Information System (MSMIS) for their pharmaceutical supply management	# of the target BHs which use MSMIS both for (i) receiving drugs from RMSD and (ii) issuing drugs to various parts of the hospital.	0	4	Project report ↑ to be substantiated by appropriate reports generated by MSMIS at each of the BHs	Chair M&E WG ↑ Chair Med. Supply Stock M't WG ↑ RDHS ↑ MS		
	3-2. Availability of documents on resource requirements and steps to be taken for instituting a similar system developed under the Project in other areas of the country.	Document(s) that include resource requirements and steps to be taken for instituting MSMIS at provincial institutions in other areas of the country.	No	Yes	Project report		Chair M&E WG ↑ Chair Med. Supply Stock M't WG	

BH: Base Hospital, CDC: Clinic Data Collection, DC: Diabetes Clinic, FU: Follow-up, Gal: Galgamuwa BH area, HLC: Healthy Lifestyle Centre, Kal: Kaluwanchikudy BH area, MC: Medical Clinic, M&E: Monitoring & Evaluation MoH: Ministry of Health, MOIC: Medical Officer in-charge, MO/NCD: Medical Officer for NCD, MS: Medical Superintendent, MSD: Medical Supply Division, MSMIS: Medical Supply Management Information System, PCI: Primary Care Institution (Primary Medical Care Unit and Divisional Hospital), RDHS: Regional Director of Health Services, RMSD: Regional Medical Supply Division, TC: Total Cholesterol, Tel: Teldeniya BH area, VP: Visiting Physician (consultant for internal medicine), War: Warakapola BH area, WG: Working Group

Annex 1-3: PDM Ver. 1

Ver. 1 (Oct. 2013)

Project Title: The Project for Enhancement of Non-communicable Diseases Management
Target Area: Colombo [MoH], and catchment areas of four Base Hospital (BH) [Teldeniya BH, Central Prov., Kaluwanchikudy BH, Eastern Prov., Galgamuwa BH, North Western Prov., and Warakapola BH, Sabaragamuwa Prov.]
Project Period: February 2014 – January 2018 (Four years)
Target Group: NCD Unit of MoH, MO/NCD in 4 districts in 4 provinces, Medical staff at 4 BHs, Health workforces at HLCs that collaborate with target 4 BHs, Population in catchment areas of 4 BHs

Overall Goal	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumptions**
Comprehensive Non-Communicable Disease (NCD) management including Healthy Lifestyle Centre (HLC), primary medical care facilities and secondary hospitals are implemented nationwide.	1. More than XX% of BHs in all provinces conduct NCD management according to the guidelines.	Project report (baseline and end-line)	
Project Purpose			
NCD management models including secondary hospitals, which are applicable to nation-wide expansion, are developed and implemented in target areas in selected four provinces.	1. More than XX% of patients of NCD in primary health care facilities, who need further medical cares, receive proper treatment at selected Base Hospitals. 2. Results of NCD surveillance are analyzed and feed-backed to the NCD prevention strategies. 3. Steps for expansion, stakeholders and their roles, and necessary resources are identified.	Project report Project report (monitoring) Decisions of MoH and project report	- Priority of the NCD prevention and control is maintained in health policies in Sri Lanka. - MoH and PDHSs/RDHSs provide necessary equipment and manpower to implement the guideline in other provinces.
Output	**Objectively Verifiable Indicators**	**Means of Verification**	**Important Assumptions**
Output 1 Management of NCDs by total risk assessment in HLCs and selected Base Hospitals (BHs) is enhanced.	1-1 More than XX% of patients or people with high risk screened by HLCs are properly followed up. 1-2 More than XX% of MO/NCD submit routine reports on time.	Project report Project report (monitoring)	
Output 2 Essential medicine and medical supplies stock management are enhanced in selected BHs in target areas.	2-1 The new inventory system is practiced in selected BHs in target areas. 2-2 Target hospitals experience less frequent stock-out and dead stock of essential medicines and medical consumables.	Hospital records Hospital record	
Output 3 Surveillance system for NCD is developed.	3-1 The incidence of hypertension, Diabetes Mellitus (DM) and hyperlipidaemia is reported annually as the national trend.	MoH report	

Output 4 Expansion plan for NCD management model activities is finalized for nationwide implementation in other provinces.	4-1 All necessary documents, such as guidelines and manuals for the NCDs management models including secondary hospitals are officially prepared by MoH. 4-2 Prepared documents are approved by Ministry of Health by XX/201X.	MoH report MoH report	

Activities	**Input**		**Important Assumptions**
1-1 Develop follow-up system of patients at primary health care facilities and people with risk factors especially screened high risk at HLCs. 1-1-1 Conduct situation analysis on compliance to guidance of patients and people with risk factors especially screened high risk at HLCs who needs treatment or further examinations. 1-1-2 Develop plant to conduct operational researches to identify follow-up system of patients and people with risk factors especially screened high risk at HLCs, including feedback mechanisms, between HLCs and BHs based on the results in 1-1-1. 1-1-3 Implement the operational researches and evaluate the results. 1-1-4 Develop guidelines for follow-up of patients and people with risk factors especially screened high risk by HLCs based on the results in 1-1-3. 1-1-5 Conduct the follow-up system in target areas of selected provinces. 1-2 Develop the network system among BHs and HLCs, and other health facilities in the target areas for effective utilization of limited resources. 1-2-1 Develop the plan for pilot model of network in target areas. 1-2-2 Conduct the pilot model in the target area. 1-2-3 Review the results of the pilot model. 1-2-4 Develop the plan to expand the system to other areas in selected provinces. 1-2-5 Establish the network in target areas in selected provinces. 1-3 Strengthen monitoring capacity of Medical Officer in NCD (MO/NCD) in target districts. 1-3-1 Assess the current monitoring system of MO/NCD on NCD control activities at HLCs and other places. 1-3-2 Revise the monitoring system as a pilot monitoring system model based on the result of 1-3-1. 1-3-3 Conduct pilot model in the target district.	Japan side 1) Experts: - Chief Advisor - NCD Management - Epidemiology - Medical Logistics - Health Information System 2) Local activities cost - Workshops - Trainings - Meetings - Materials - Local Consultants 3) Machinery and Equipment 4) Counterpart Training in Japan - NCD management - Hospital Management	Sri Lanka side. 1) Counterpart personnel: 2) Office space and necessary office facilities 3) Project office running expenses 4) Custom duties and value added tax, cost for custom clearance, storage and domestic transportation for any equipment provided by the Japanese side for the Project Implementation.	- Additional tasks for NCD management are accepted by health personnel. - Posts of the MO/NCD at the target areas are occupied. <u>Precondition</u> None.

1-3-4 Conduct regular meetings to assess monitoring activities by MO/NCD in the target districts. 1-3-5 Revise guidelines and develop training modules for MO/NCD on NCD control monitoring. 1-3-6 Conduct training programmes on NCD control monitoring for MO/NCD. 2-1 Conduct situation analysis on essential medicines and medical supplies management in selected BHs in the target areas. 2-2 Develop essential medicines and medical supplies stock management system in selected BHs in target areas. 2-2-1 Draft electric management system for essential medicines and medical supplies management. 2-2-2 Conduct trial use of the draft system in 2-2-1 in selected BHs. 2-2-3 Finalize the system based on the results in 2-2-2. 2-2-4 Conduct training on the electric data management system for all related staff in selected BHs. 2-2-5 Implement the finalized electric data management system in selected BHs. 3-1 Develop an NCD risk factors surveillance system pilot model. 3-2 Conduct pilot model in target areas for revision. 3-3 Develop the feedback mechanism of results of the surveillance to the NCD prevention strategy and necessary action based on 3-2. 3-4 Finalize the system based on the results in 3-2 and 3-3. 4-1 Review the achievement of the Project activities for NCD management in target areas. 4-2 Finalize the NCD management system among HLCs and BHs, drug management system to be used in all provinces. 4-3 Finalize the guidelines and training modules on those systems. 4-4 Identify appropriate level and allocation of necessary resources such as equipment and training for province-wide enhancement of NCD management model. 4-5 Identify steps, stakeholders and their roles for nation-wide expansion of NCD management model.			

* BH: Base Hospital, HLC: Healthy Lifestyle Centre, MoH: Ministry of Health, NCD: Non-Communicable Disease, MO: Medical Officer
* NCD in the Project means Diabetes Mellitus (DM), hypertension and hyperlipidaemia.

Annex 1-4: PDM Ver. 2

Ver. 2 (March 2015)

Project Title: The Project for Enhancement of Non-communicable Diseases Management
Project Sites: Four Base Hospitals (BHs) (Teldeniya BH in Kandy district, Central Prov., Kaluwanchikudy BH in Batticaloa district, Eastern Prov., Galgamuwa BH in Kurunegala district North Western Prov., Warakapola BH in Kegalle district Sabaragamuwa Prov.) and their catchment areas[3], Colombo (MoH)
Project Period: February 2014 – January 2018 (Four years)
Beneficiaries: Service providers at the 4 BHs and primary care institutions in their catchment areas, NCD-related personnel/units in the RDHSs of the 4 districts and MoH, Population in the catchment areas of the 4 BHs

Narrative summary of Objectives	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Enhancement of the national NCD programme	1. Number of districts using the tools developed under the Project. (Baseline: 0, Target xx) 2. Availability of national data on patients attending medical and diabetes clinics of government hospitals. (Baseline: No, Target : Yes)	1. A questionnaire survey 2. Annual Health Bulletin or other MoH publications	Priority of the NCD prevention and control is maintained in health sector in Sri Lanka GoSL is able to finance a periodic national patient survey at medical and diabetes clinics of government hospitals.
Project Purpose Strengthening of NCD management at the 4 target BHs and primary care institutions in their catchment areas as clusters	1. Number of clients at the 4 target BHs who were referred from primary care institutions HLCs in the catchment areas (Baseline: unknown, Target: not set) 2. Availability of data on patients of Medical and Diabetes clinics at the government hospitals in the 4 project sites. (Baseline: No, Target: Yes) 3. Availability of a package of tools to monitor NCD programme in the 4 target districts. (Baseline: No, Target: Yes)	1. Project report 2. Project report 3. Project report	GoSL provides necessary equipment, consumables and manpower to scale up the initiatives under this Project nationwide. GoSL ensures (i) training of new personnel and (ii) refresher training of existing staff at the national, district and institutional level.

[3] Teldeniya BH: 3 MOH areas of Medadumbara, Udadumbara and Kundasale; Kalwanchikudy BH: 3 MOH areas of Kalwanchikudy, Vellavely and Paddipalai; Galgamuwa BH: 3 MOH areas of Galgamuwa, Ehethuwewa and Giribawa; Warakapola BH: 2 MOH areas of Warakapola and Galigamuwa

Narrative summary of Objectives	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Output **<u>Output 1:</u>** Improved monitoring of NCD patients in the catchment areas of the 4 target BHs	1-1. Availability of a set of tools for a patient survey of Medical and Diabetes clinics. (Baseline: No, Target: Yes) 1-2. Number of Primary Care Institutions in the catchment areas of the 4 target BHs tracking their clients referred to Medical Clinics. (Baseline: 0, Target: xx)	Project report Project report	1-1.Staff at the 4 BHs and primary care institutions in their catchment areas accept monitoring of NCD patients as a part of their duties.
<u>Output 2:</u> Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the 4 BHs	2-1. Number of Total Cholesterol and/ or Lipid Profile tests carried out at the 4 BHs on blood samples sent from the primary care institutions in their catchment areas in one year. (Baseline: Galgamuwa BH: (TC: 615, Lipid Profile: 554), Teldeniya BH: 0, Warakapola BH: 0, Kalwanchikudy BH: 0, Target: Galgamuwa BH: not set, Teldeniya BH: not set, Warakapola BH: not set, Kalwanchikudy BH: not set) 2-2. Number of primary care institutions which send blood samples to the target BH for TC and/ or Lipid Profile tests in each project sites. (Baseline: Galgamuwa BH: xx, Teldeniya BH: 0, Warakapola BH: 0, Kalwanchikudy BH: 0, Target: Galgamuwa BH: xx, Teldeniya BH: xx, Warakapola BH: xx, Kalwanchikudy BH: xx)	2-1. Laboratory Registers of 4 BHs, (which needs to be devised/ revised by the Project)	
<u>Output 3:</u> Enhanced pharmaceutical supply management at the 4 target BHs	3-1. Number of provincially-managed Base Hospitals using Medical Supply Management Information System (MSMIS) for their pharmaceutical supply management (Baseline: 0, Target: 4)	Project report	3-1. GoSL (RDHSs) is able to finance the running costs of MSMIS. 3-2. MSMIS is properly managed and maintained at the national and district levels. 3-3. All pharmaceutical items are managed through MSMIS, including those distributed by FHB and Epidemiology unit.

Activities	Input		Important Assumptions
1-1 Instituting patient survey of Medical and Diabetes clinics in the catchment areas of the 4 BHs.	**By Japan** 1) Experts: - Chief Advisor - NCD Management - Epidemiology - Medical Logistics - Health Information System 2) Local activities cost - Workshops - Trainings - Meetings - Materials - Local Consultants 3) Machinery and Equipment 4) Counterpart Training in Japan - NCD management - Hospital Management	**By Sri Lanka** 1) Counterpart personnel: 2) Office space and necessary office facilities 3) Project office running expenses 4) Custom duties and value added tax, cost for custom clearance, storage and domestic transportation for any equipment provided by the Japanese side for the Project Implementation.	
1-1-1 The Project team carries out a general situation analysis in the Project implementation sites.			
1-1-2 WG formulated conducts an in-depth situation analysis in 4 target BHs with a focus on data flow, work flow and patient flow of their Medical and Diabetes clinics.			
1-1-3 WG in consultation with RDHSs designs a data collection system and tools, including sampling methods and data items, based on the result of 1-1-2.			
1-1-4 Galgamuwa Base Hospital with selected members of the WG conducts a pilot test of the system and tools at its Medical and Diabetes clinics			
1-1-5 WG adjusts the system and tools for a similar survey at Medical and Diabetes clinics of primary care institutions and tests them out at selected primary care institutions in the catchment area of Galgamuwa BH.			
1-1-6 WG modifies the data collection system and tools according to the feedback from 1-1-4 and 1-1-5.			
1-1-7 A BH and primary care institutions in other project site with support from the WG carry out a patient survey at their Medical and Diabetes clinics using the modified tools.			
1-1-8 Based on 1-1-7, the WG further fine-tunes the system and tools to improve their efficacies and cost and time efficiencies.			
1-1-9 Medical statistic unit in collaboration with the WG undertakes analysis of the collected data and produces reports.			
1-1-10 WG finalize the data collection and reporting system and package the produced tools in view of nationwide application.			
1-1-11 WG determines resource requirements for replication of the system in other areas.			
1-2 Establishing a system to follow up on referred clients to Medical clinics of Primary Care Institutions and Base Hospitals.			
1-2-1 The Project team carries out a general situation analysis in the project implementation sites.			
1-2-2 WG formulated with relevant GoSL stakeholders and the JICA team carries out a situation analysis on HLC clients' compliance in obtaining further medical services at Medical clinics as advised by HLCs.			
1-2-3 WG designs intervention options based on the findings of 1-2-2, for approval by the JCC.			

Activities	Important assumptions
1-2-4 WG develops a tracking system to follow up clients referred to Medical clinics of primary care institutions and BHs.	
1-2-4-1 Design a tracking system with appropriate monitoring mechanisms and identify necessary tools (leaflets, posters, manuals, guidelines, recording and reporting formats, etc.) and human resources. 1-2-4-2 Develop necessary tools. 1-2-4-3 Train relevant staffs of HLCs and Medical clinics using the tools developed. 1-2-4-4 Pilot implementation of the system in one or more target areas and monitor its effects. 1-2-4-5 Make necessary adjustment to the system and tools. 1-2-4-6 Implement the modified system in other target areas, constantly monitor and fine-tune the system. 1-2-4-7 WG finalize the system and tools.	
1-2-5 WG revises the current recording/ reporting formats related to HLCs and train record keepers.	
1-2-5-1 Revise the current recording formats for HLCs to make it more user friendly with inputs from users and draft a users' manual/ handbook in the three languages for a pre-test of the improved formats. 1-2-5-2 Pre-test the revised formats at selected HLCs in the catchment area of a selected BH. 1-2-5-3 WG together with MO/NCDs modifies the formats according to the result of the pre-test. 1-2-5-4 Pilot implementation of the modified formats at all HLCs in the catchment area of pilot BH(s) with close monitoring by the MO/NCD(s). 1-2-5-5 Finalize and print the formats and users' manual with necessary modifications in accordance with results of the pilot implementation. 1-2-5-6 WG provides Training of Trainers (ToT) to MO/NCDs on the new formats. 1-2-5-7 MO/NCDs set up training plan in their respective districts. 1-2-5-8 MO/NCDs of the target districts conduct training of record keepers as per the plan. 1-2-5-9 MO/NCDs of the 4 target districts support HLCs in correct record keeping and reporting through supervisory visits and additional training/ guidance.	
1-2-6 WG revises and/ or develops the tools to supervise HLCs.	- GoSL allocates appropriate resources for provision of supportive supervision to HLCs.
1-2-6-1 WG collects and review tools currently used by MO/NCDs in all districts. 1-2-6-2 With involvement of MO/NCDs, WG identifies current gaps in tools for monitoring/ supervising of HLCs. 1-2-6-3 WG with involvement of MO/NCDs revise/ devise monitoring/ supervising tools in accordance with the findings of 1-2-6-2. 1-2-6-4 MO/NCDs of the 4 districts pre-test the monitoring/ supervising tools developed and modify them as appropriate for improvement. 1-2-6-5 WG finalizes and disseminate the tools. 1-2-6-6 WG together with RDHSs and NCD unit monitors the usage of the tools.	
1-2-7 WG with NCD unit determines resource requirements for replication of the system in other areas.	
2-1 The Project team carries out a general situation analysis in the project implementation sites.	- The target BHs are equipped with fully automated and well-maintained biochemical analysers and sufficient number of MLTs. - Service providers including MLTs at BHs and minor staff at primary care institutions are cooperative. - Primary care institutions have skilled
2-2 Working Group formulated at the central level (CWG) carries out an in-depth analysis of the existing "satellite laboratory system" in Kurunegala.	
2-3 CWG designs a pilot model (a work flow) based on the findings of 2-2 and identifies (i) necessary tools to be used at the primary care institutions, the BHs and RDHSs, such as manuals/ guidelines, recording and reporting formats (including eligibility guideline for TC or Lipid Profile testing for HLC screening and manual on pre-examination process) and (ii) resource needs at the primary care institutions and the BHs.	
2-4 Preparations for implementation of the pilot model designed in 2-3. 2-4-1 JICA team (for the first year of implementation) and GoSL (for the rest of the Project duration) procure necessary items identified. 2-4-2 WG together with hospital staff (including MLTs) develops necessary tools and introduce them at Galgamuwa BH and primary care institutions in its catchment areas as a pilot. 2-4-3 CWG fine-tunes the system based on the results of 2-4-2 and selects another pilot site for implementation of the model in view of the progress of the refurbishment of the 4 BHs. 2-4-4 The RDHS of the selected pilot site formulates a regional working group (RWG) for implementation and monitoring of the pilot system.	

Activities	Important assumptions
2-4-5 CWG with the RWG(s) sets up a system and tools to monitor the progress and effects of pilot implementation. 2-4-6 CWG, RWG and/ or appropriate institution(s) identified by CWG/ RWG train(s) relevant staff of the pilot site on the tools developed.	personnel to draw blood for testing. - GoSL is able to continuously supply necessary reagents/ test kits.
2-5 Implementation and fine-tuning of the pilot system. 2-5-1 The BH and primary care institutions in the selected pilot site start operating the "satellite laboratory system" designed using the tools devised. 2-5-2 RWG monitor the implementation closely using the devised monitoring tools and reports to the CWG periodically. 2-5-3 RWG in consultation with the CWG make modifications to improve the pilot system.	
2-6 Introduction, fine-tuning and finalisation of the system at the four project sites. 2-6-1 Introduction of the improved pilot system to other project sites (possibly in a staggered manner). 2-6-2 RWGs formulated in the four target areas monitor and fine-tune the system and tools in consultation with the CWG. 2-6-3 CWG and RWGs finalise the system and tools.	
2-7 CWG identifies and documents the resource requirements and steps for introduction of the system in other areas to guide scaling up of this initiative.	
3-1 The Project team carries out a general situation analysis in the Project implementation sites.	- Technical resources needed for implementation and support of the MSMIS at the 4 BHs are available at MSD/ RMSD or the contractor of the support services for MSMIS. - The current phase of the MSMIS roll out is completed by Feb. 2015 as planned. - The 4 target BHs after refurbishment have (i) reasonable space and facility for a PC server and (ii) LAN connections.
3-2 WG formulated carries out an assessment of the existing electronic stock management systems in Kurunegala district, Ratnapura district and MSMIS to decide on the most suitable system to introduce to the target BHs.	
3-3 WG sets up a system and tools to monitor the progress and effects of pilot implementation of the selected system (i.e. MSMIS chosen by the WG at the meeting on the 30th Oct. 2014).	
3-4 Preparation for and installation of the MSMIS at the main storerooms of the target BHs in pace with the on-going refurbishment.	
3-4-1 MSD assists RMSDs of the 4 target districts in completing physical stock taking and data entry into the MSMIS 3-4-2 MSD assists to arrange for the VPN connection at each of the 4 BHs. 3-4-3 JICA team procures necessary hardware (a PC, a printer and a VPN switch for each target BH) according to specifications provided by MSD. 3-4-4 MSD arranges to train the system users at 1 pilot BH with involvement of corresponding RMSD according to the existing user manuals. 3-4-5 The pilot BH and the corresponding RMSD start using the system for transactions while WG together with MSD monitor and support the operation.	
3-5 MSD with WG fine-tunes the system, the user manuals according to feedback from (i) the target BH/ RMSD and (ii) the monitoring system set up.	
3-6 MSD assists to introduce the system to other BHs/ RDHSs and monitor/ support its operation together with the WG.	
3-7 WG with MSD identify and document the resource requirements and monitoring tools for introduction of MSMIS to provincially-managed institutions in view of the nation-wide expansion of the system.	

BH: Base Hospital, FHB: Family Health Bureau, GoSL: Government of Sri Lanka, HLC: Healthy Lifestyle Centre, MLT: Medical Laboratory Technician, MoH: Ministry of Health, MOH: Medical Officer of Health, MSD: Medical Supply Division of MoH, MSMIS: Medical Supply Management Information System, MO: Medical Officer, NCD: Non-Communicable Disease, RDHS: Regional Director(ate) of Health Services, RMSD: Regional Medical Supply Division, WG: Working Group

"NCD" in this Project means Diabetes Mellitus (DM), hypertension and hyperlipidaemia.
"The Project team" refers to GoSL stakeholders together with the JICA Project team.
"HLCs" in this Project exclude mobile clinics.

Annex 1-5: Revision of the PDM Ver. 2 to Ver. 3

PDM component		Version 2	Comments from MTR (Joint MTR Report 20160211)	Version 3
Overall Goal 1	OVI	Number of districts using the tools developed under the Project.	-	Number and percentage of health regions using the tools developed under the Project.
	Target	25 (100%)	-	26 (100%)
	MoV	A questionnaire survey	-	Annual NCD Review report form each health region to NCD unit of MoH with evidence (e.g. Copy of filled formats)
Overall Goal 2	OVI	Availability of national data on patients attending medical and diabetes clinics of government hospitals.	-	Availability of national data on patients attending medical and diabetes clinics of MoH hospitals.
	MoV	Annual Health Bulletin or other MoH publications.	-	A periodic national survey report.
Project Purpose 1	OVI	Number of clients at the 4 target BHs who were referred from primary care institutions HLCs in the catchment areas.	"the current indicator does not really measure the achievement level of the Project Purpose." "it is difficult to interpret the current results toward the achievement of the indicator without the set target"	Percentage of patients referred from PCIs i.e. (i) from HLC/PCI to MC/PCI, (ii) from HLC/PCI to MC/BH and (iii) from MC/PCI to MC/BH, who completed the referral at the institutions specified.
	Target	Not set		80%
	MoV	Project Report	-	Project Report (Quarterly report form PCIs)
Project Purpose 3	OVI	Availability of a package of tools to monitor NCD programme in the 4 target districts.	-	Availability of a package of tools for NCD management at primary and secondary institutions as a cluster in the 4 target districts.
Output 1-2	OVI	Number of Primary Care Institutions in the catchment areas of the 4 target BHs tracking their clients referred to Medical Clinics.	-	Number and percentage of PCIs in the catchment areas of the 4 target BHs tracking their clients referred to Medical Clinics in each Project site.
	Target	Not set	Need to set a target	Galgamuwa: ≥ 55.0% (4/7), Teldeniya: ≥ 65.0% (4/6), Warakapola: ≥ 85.0% (6/7), Kaluwanchikudy: ≥ 55.0% (5/9)
	MoV	Project Report	-	Project Report (Quarterly report form PCIs)
Output 1-3	MoV	-	-	Project Report

PDM component		Version 2	Comments from MTR (Joint MTR Report 20160211)	Version 3
Output 2-1	OVI	Number of Total Cholesterol and/or Lipid Profile tests carried out at the 4 BHs on blood samples sent from the primary care institutions in their catchment areas in one year.	"the current indicator 2-1 is not clearly described to measure the achievement level of Output 2"	Percentage of new HLC clients at PCIs who had blood tests for TC or lipid profile at the target BH's laboratory through the laboratory network system established/strengthened by the Project in each Project site.
	Target	Not set	Need to set a target	Galgamuwa: ≥ 75.0%, Teldeniya: ≥ 60.0%, Warakapola: ≥ 80.0%, Kaluwanchikudy: ≥ 60.0%
	MoV	Laboratory Registers of 4 BHs, (which needs to be devised/ revised by the Project)	-	Project Report (Quarterly report from PCIs)
Output 2-2	OVI	Number of primary care institutions which send blood samples to the target BH for TC and/or Lipid Profile tests in each project site	-	Number and percentage of PCIs' Medical Clinics (MCs) that send to the target BH's laboratory at least 1 specimen in one month for any kind of laboratory test through the laboratory network system established/ strengthened by the Project in each Project site.
	Baseline	Galgamuwa: 4, Others: 0	-	All Project sites: 0
	Target	To be determined.	Need to set a target.	Galgamuwa: 100.0% (7/7), Teldeniya: 100.0% (6/6), Warakapola: 100.0% (7/7), Kaluwanchikudy: ≥ 55.0% (5/9)
	MoV	-	-	Project Report (Quarterly report from PCIs)
Output 2-3	MoV	-	-	Project Report
Output 3-1	OVI	Number of provincially-managed Base Hospitals using Medical Supply Management Information System (MSMIS) ……	-	Number of the target Base Hospitals using Medical Supply Management Information System (MSMIS) …..
Activities	3-5	MSD with the WG fine-tunes the system and the user manuals according to feedback from (i) the target BH/ RMSD and (ii) the monitoring system set up.	-	MSD with the WG fine-tunes the system and the user manuals as applicable according to feedback from (i) the target BH/ RMSD and (ii) the monitoring system set up.
Footnote for coverage		……., Warakapola BH: 2 MOH areas of Warakapola and Galigamuwa	-	Warakapola: 1 MOH area of Warakapola, except for the survey components which also include Galigamuwa MOH area.

Annex 2: Plan of Operation

Planned: ■ **Actual: ■**

Outputs	Activities	Year	2014			2015				2016				2017				2018
		Quarter	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Output 1: Improved monitoring of NCD patients in the catchment areas of the 4 target BHs.	1-1 Instituting patient survey of Medical and Diabetes clinics in the catchment areas of the 4 BHs.																	
	1-1-1 The Project team carries out a general situation analysis in the Project implementation sites.																	
	1-1-2 WG formulated conducts an in-depth situation analysis in 4 target BHs with a focus on data flow, work flow and patient flow of their Medical and Diabetes clinics.																	
	1-1-3 WG in consultation with RDHSs designs a data collection system and tools, including sampling methods and data items, based on the result of 1-1-2.																	
	1-1-4 Galgamuwa BH with selected members of the WG conducts a pilot test of the system and tools at its Medical and Diabetes clinics.																	
	1-1-5 WG adjusts the system and tools for a similar survey at Medical and Diabetes clinics of primary care institutions and tests them out at selected primary care institutions in the catchment area of Galgamuwa BH.																	
	1-1-6 WG modifies the data collection system and tools according to the feedback from 1-1-4 and 1-1-5.																	
	1-1-7 A BH and primary care institutions in other project site with support from the WG carry out a patient survey at their Medical and Diabetes clinics using the modified tools.																	
	1-1-8 Based on 1-1-7, the WG further fine-tunes the system and tools to improve their efficacies and cost and time efficiencies.																	
	1-1-9 Medical statistic unit in collaboration with the WG undertakes analysis of the collected data and produces reports.																	
	1-1-10 WG finalize the data collection and reporting system and package the produced tools in view of nationwide application.																	
	1-1-11 WG determines resource requirements for replication of the system in other areas.																	
	1-2 Establishing a system to follow up on referred clients to Medical clinics of Primary Care Institutions and Base Hospitals.																	
	1-2-1 The Project team carries out a general situation analysis in the project implementation sites.																	
	1-2-2 WG formulated with relevant GoSL stakeholders and the JICA team carries out a situation analysis on HLC clients' compliance in obtaining further medical services at Medical clinics as advised by HLCs.																	
	1-2-3 WG designs intervention options based on the findings of 1-2-2, for approval by the JCC.																	
	1-2-4 WG develops a tracking system to follow up clients referred to Medical clinics of primary care institutions and Base Hospitals.																	
	1-2-4-1 Design a tracking system with appropriate monitoring mechanisms and identify necessary tools (leaflets, posters, manuals, guidelines, recording and reporting formats, etc.) and human resources.																	
	1-2-4-2 Develop necessary tools.																	
	1-2-4-3 Train relevant staffs of HLCs and Medical clinics using the tools developed.																	
	1-2-4-4 Pilot implementation of the system in one or more target areas and monitor its effects.																	
	1-2-4-5 Make necessary adjustment to the system and tools.																	
	1-2-4-6 Implement the modified system in other target areas, constantly monitor and fine-tune the system.																	
	1-2-4-7 WG finalize the system and tools.																	
	1-2-5 WG revises the current recording/ reporting formats related to HLCs and train record keepers.																	
	1-2-5-1 Revise the current recording formats for HLCs to make it more user friendly with inputs from users and draft a users' manual/ handbook in the three languages for a pre-test of the improved formats.																	

Outputs	Activities	Year	2014			2015				2016				2017				2018
		Quarter	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Output 1: (Cont.)	1-2-5-2 Pre-test the revised formats at selected HLCs in the catchment area of a selected BH.																	
	1-2-5-3 WG together with MO/NCDs modifies the formats according to the result of the pre-test.																	
	1-2-5-4 Pilot implementation of the modified formats at all HLCs in the catchment area of pilot BH(s) with close monitoring by the MO/NCD(s).																	
	1-2-5-5 Finalize and print the formats and users' manual with necessary modifications in accordance with results of the pilot implementation.																	
	1-2-5-6 WG provides Training of Trainers (ToT) to MO/NCDs on the new formats.																	
	1-2-5-7 MO/NCDs set up training plan in their respective districts.																	
	1-2-5-8 MO/NCDs of the target districts conduct training of record keepers as per the plan.																	
	1-2-5-9 MO/NCDs of the 4 target districts support HLCs in correct record keeping and reporting through supervisory visits and additional training/ guidance.																	
	1-2-6 WG revises and/ or develops the tools to supervise HLCs.																	
	1-2-6-1 WG collects and review tools currently used by MO/NCDs in all districts.																	
	1-2-6-2 With involvement of MO/NCDs, WG identifies current gaps in tools for monitoring/ supervising of HLCs.																	
	1-2-6-3 WG with involvement of MO/NCDs revise/ device monitoring/ supervising tools in accordance with the findings of 1-2-6-2.																	
	1-2-6-4 MO/NCDs of the 4 districts pre-test the monitoring/ supervising tools developed and modify them as appropriate for improvement.																	
	1-2-6-5 WG finalizes and disseminate the tools.																	
	1-2-6-6 WG together with RDHSs and NCD unit monitors the usage of the tools.																	
	1-2-7 WG with NCD unit determines resource requirements for replication of the system in other areas.																	
Output 2: Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the 4 BHs.	2-1 The Project team carries out a general situation analysis in the project implementation sites.																	
	2-2 Working Group formulated at the central level (CWG) carries out an in-depth analysis of the existing "satellite laboratory system" in Kurunegala.																	
	2-3 CWG designs a pilot model (a work flow) based on the findings of 2-2 and identifies (i) necessary tools to be used at the PCIs, the BHs and RDHSs, and (ii) resource needs at the PCIs and the BHs.																	
	2-4 Preparations for implementation of the pilot model designed in 2-3.																	
	2-4-1 JICA team (for the first year of implementation) and GoSL (for the rest of the Project duration) procure necessary items identified.																	
	2-4-2 WG together with hospital staff (including MLTs) develops necessary tools and introduce them at Galgamuwa BH and primary care institutions in its catchment areas as a pilot.																	
	2-4-3 CWG fine-tunes the system based on the results of 2-4-2 and selects another pilot site for implementation of the model in view of the progress of the refurbishment of the 4 BHs.																	
	2-4-4 The RDHS of the selected pilot site formulates a regional working group (RWG) for implementation and monitoring of the pilot system.																	
	2-4-5 CWG with the RWG(s) sets up a system and tools to monitor the progress and effects of pilot implementations.																	
	2-4-6 CWG, RWG and/ or appropriate institution(s) identified by CWG/ RWG train(s) relevant staff of the pilot site on the tools developed.																	
	2-5 implementation and fine-tuning of the pilot system.																	
	2-5-1 The BH and primary care institutions in the selected pilot site start operating the "satellite laboratory system" designed using the tools devised.																	
	2-5-2 RWG monitor the implementation closely using the devised monitoring tools and reports to the CWG periodically.																	

Outputs	Activities	Year	2014			2015				2016				2017				2018
		Quarter	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Output 2: (Cont.)	2-5-3 RWG in consultation with the CWG make modifications to improve the pilot system.																	
	2-6 Introduction, fine-tuning and finalisation of the system at the four project sites.																	
	2-6-1 Introduction of the improved pilot system to other project sites (possibly in a staggered manner).																	
	2-6-2 RWGs formulated in the four target areas monitor and fine-tune the system and tools in consultation with the CWG.																	
	2-6-3 CWG and RWGs finalise the system and tools.																	
	2-7 CWG identifies and documents the resource requirements and steps for introduction of the system in other areas to guide scaling up of this initiative.																	
Output 3 Enhanced pharmaceutical supply management at the 4 target BHs.	3-1 The Project team carries out a general situation analysis in the Project implementation sites.																	
	3-2 WG formulated carries out an assessment of the existing electronic stock management systems in Kurunegala, Ratnapura and MSMIS to decide on the most suitable system to introduce to the target BHs.																	
	3-3 WG sets up a system and tools to monitor the progress and effects of pilot implementation of the selected system (i.e. MSMIS chosen by the WG at the meeting on the 30th Oct. 2014).																	
	3-4 Preparation for and installation of the MSMIS at the main storerooms of the target BHs in pace with the on-going refurbishment.																	
	3-4-1 MSD assists RMSDs of the 4 target districts in completing physical stock taking and data entry into the MSMIS.																	
	3-4-2 MSD assists to arrange for the VPN connection at each of the 4 BHs.																	
	3-4-3 JICA team procures necessary hardware (a PC, a printer and a VPN switch for each target BH) according to specifications provided by MSD.																	
	3-4-4 MSD arranges to train the system users at 1 pilot BH with involvement of corresponding RMSD according to the existing user manuals.																	
	3-4-5 The pilot BH and the corresponding RMSD start using the system for transactions while WG together with MSD monitor and support the operation.																	
	3-5 MSD with the WG fine-tunes the system and the user manuals as applicable according to feedback from (I) the target BH/ RMSD and (ii) the monitoring system set up.																	
	3-6 MSD assists to introduce the system to other BHs/ RDHSs and monitor/ support its operation together with the WG.																	
	3-7 WG with MSD identify and document the resource requirements and monitoring tools for introduction of MSMIS to provincially-managed institutions in view of the nation-wide expansion of the system.																	
Project Management	Production of draft work plan.																	
	Discussion of draft work plan.																	
	Preparation for Midterm Review.																	
	Midterm Review.																	
	Preparation for Terminal Evaluation.																	
	Terminal Evaluation.																	

Annex 3: Assignment of Japanese Members of JICA Project Team

	Name (Responsibility)	Number of months				
		2014	2015	2016	2017-18	Total
1	Ayako Tokunaga (Team Leader)	7.07	5.40	5.20	8.00	25.67
2	Nomi Imani (Deputy Team Leader)	6.17	5.27	5.53	7.77	24.74
3	Reiko Sata (NCD Management/Medical Supply Logistics Management)	4.00	-	-	-	4.00
4	Yuki Maehira (Medical Supply Logistics Management 2)	0.93	-	-	-	0.93
5	Hiroaki Yamazaki (Laboratory Network)	-	2.97	1.30	-	4.27
6	Yoko Ogawa (Laboratory Network/IEC Materials Development)	-	-	-	2.58	2.58
7	Satoshi Kaneko (Epidemiology/Health Information System 1)	1.62	1.32	1.10	0.58	4.62
8	Kazuya Ogawa (Health Information System 2)	4.40	3.63	2.87	3.63	14.53
	Total	24.19	18.59	16.00	22.56	81.34

Annex 4-1: Main Counterparts (as of January 2018)

Officials in the Ministry

Secretary	Mr. Janaka Sugathadasa	2017/06 – to date
	Mr. Anura Jayawickrama	2015/09 – 2017/05
	Dr. D. M. R. B. Dissanayke	2015/01 – 2015/09
	Mrs. Sudharma Karunarathna	2014/05 – 2015/01
	Dr. Nihal Jayathilake	2014/02 – 2014/05
DGHS	Dr. Anil Jasinghe	2017/11 – to date
	Dr. J. M. W. Jayasundara Bandara (Actg.)	2017/01 – 2017/11
	Dr. P. G. Mahipala	2014/02 – 2017/01
DDG NCD	Dr. S. Champika Wickramasinghe (Project Manager) (Chair M&E WG)	2017/11 – to date
DDG MS I	Dr. Lakshmi C. Somatunga (Chair CDC WG)	2014/02 – to date
DDG Lab. Services	Dr. B. V. S. H. Benaragama (Chair Lab. WG)	2016/03 – to date
	Dr. A. Sunil De Alwis (Actg.)	2015/09 – 2016/03
	Dr. Ananda Gunasekara (Actg.)	2014/04 – 2015/09
DDG MSD	Dr. B. V. S. H. Benaragama (Actg.) (Chair MSMIS WG)	2017/03 – to date
	Dr. Kamal Jayasinghe	2016/09 – 2017/03
Director NCD	Dr. V. T. S. K. Siriwardhana (Chair Follow up WG)	2014/05 – to date
	Dr. N. M. M Iqbal (Actg.)	2014/04 – 2014/05
Director Health Information	Dr. S. Champika Wickramasinghe (Project Manager) (Chair M&E WG)	2014/02 – 2017/11
Director Lab. Services	Dr. A. R. M. Thoufeek	2017/06 – to date
	Dr. Kamal Jayasinghe (Chair Lab. WG)	2015/12 – 2016/03
	Dr. V. R. Gunasekara	2014/02 – 2017/01
Director MSD	Dr. Lal Panapitiya	2015/07 – to date
	Dr. Kamal Jayasinghe (Chair MSMIS WG)	2014/02 – 2015/07
Director MSU	Mrs. K. A. S Koikara	2014/04 – to date
Deputy Director NCD	Dr. P. Ananthan	2014/09 – to date
	Dr. N. M. M Iqbal	2014/02 – 2014/08
CCP NCD	Dr. S. R. H. P. Gunawardana	2015/10 – to date
	Dr. Virginie Mallwaarachchi	2014/02 – to date
	Dr. Samitha Sirithunga	2014/02 – to date
Registrar/ Health Informatics	Dr. Clive James	2014/02 – to date
Registrar/ Community Medicine	Dr. Aravinda Wickramasinghe	2014/02 – to date
Registrar/ Health Informatics	Dr. Buddika Dayarathne	2014/02 – to date
Project Director/ MSMIS, MSD	Mr. Abewansa Sandarapperuma	2017/02 – to date
	Mr. W. P. W. D. Pathiratne	2017/02 – 2017/02
Project Assistant/ MSMIS, MSD	Mr. Chaminda Perera	2014/02 – to date

Sabaragamuwa Province/ Kegalle District

Provincial Director	Dr. Kapila Bimal Kannangara	2014/02 – to date
Regional Director	Dr. V. R. Gunasekara	2015/11 – to date
	Dr. Kumar Wickramasinghe	2014/02 – 2015/11
MO/NCD	Dr. N. D. C. Dilrukshi	2017/09 – to date
	Dr. Chamara Senadeera	2017/02 – 2017/09
	Dr. Niranjala Kulathunge	2016/02 – 2017/06
	Dr. J. A. Anuradha Gunarathna	2015/03 – 2016/02
	Dr. (Mrs.) R.A.S.R. Illangakoon	2014/02 – 2015/03

MO/Planning	Dr. I. M. C. K. Ilangasinhge	2014/02 – to date
MS Warakapola BH	Dr. Dilini Wijesinghe	2017/10 – to date
	Dr. Januka Galahitiyawa	2017/06 – 2017/09
	Dr. S. M. N. S. Maleesha Mallawaarachchi	2017/01 – 2017/06
	Dr. Aruna Pieris	2016/10 – 2017/01
	Dr. Prabath Werawatta (Actg.)	2015/02 – 2015/06
	Dr. S. M. N. S. Maleesha Mallawaarachchi	2014/10 – 2015/02
	Dr. W. G. D. D. Kumara (Actg.)	2014/09 – 2014/10
	Dr. Chamila Thilakarathne	2014/02 – 2014/09

North Western Province/ Kurunegala District

Provincial Director	Dr. N. Fareed	2014/05 – to date
	Dr. R. M. S. K. Rathnayake	2014/02 – 2014/05
Regional Director	Dr. Champa Aluthweera	2015/10 – to date
	Dr. E. A. Lakshman C. K. Edirisinghe	2014/02 – 2015/10
MO/NCD	Dr. D. A. Hemali Dasanayake	2015/04 – to date
	Dr. A. M. Amila K. Athauda	2014/02 – 2015/04
MO/Planning	Dr. A. S. I. Aththaragama	2017/02 – to date
	Dr. A. N. Senarath	2017/05 – to date
	Dr. Sisira Somarathne	2014/02 – 2017/02
MS Galgamuwa BH	Dr. Asiri Munasinghe	2017/05 – to date
	Dr. Amila Maduragoda	2017/02 – 2017/05
	Dr. U. R. Sirimanne	2014/02 – 2017/02

Central Province/ Kandy District

Provincial Director	Dr. (Mrs.) Shanthi Samarasinghe	2014/02 – to date
Regional Director	Dr. A. M. S. Weerabandara	2015/10 – to date
	Dr. H. M. A. Thilakaratne	2015/03 – 2015/10
	Dr. Chaminda Weerakoon (Actg.)	2014/11 – 2015/01
	Dr. (Mrs.) Nilani Fernando	2014/02 – 2014/11
MO/NCD	Dr. Nayana Danapala	2015/09 – to date
	Dr. H. W. S. R. Rambukwella	2015/02 – 2015/09
	Dr. Weerasooriya	2014/02 – 2015/02
MO/Planning	–	Vacant
	Dr. Rajitha Jayasuriya	2014/02 – 2016/03
MS Teldeniya BH	Dr. Chaminda Weerakoon	2014/02 – to date

Eastern Province/ Batticaloa District

Provincial Director	Dr. K. Muruganandan	2014/02 – to date
Regional Director	Dr. L. M. Navaratnaraja	2016/03 – to date
	Dr. A. L. F. Rahman (Actg.)	2015/11 – 2016/03
	Dr. S. Sathurmugam	2014/02 – 2015/11
	Dr. R. Navalogithan	2014/02 – to date
MO/Planning	Dr. K. Kasthuriye	2014/02 – to date
MS Kaluwanchikudy BH	Dr. G. Sukunan	2014/02 – to date

Annex 4-2: Members of Joint Coordinating Committee (JCC)

Chairperson

- Secretary, Ministry of Health, Nutrition and Indigenous Medicine (MoH)

Committee Members

<Sri Lankan Side>

- Additional Secretary (Medical Services), MoH
- Additional Secretary (Public Health), MoH
- Director General (Health Services), MoH
- Deputy Director General (DDG) (Planning), MoH
- DDG (Medical Services I), MoH
- DDG (Medical Services II), MoH
- DDG (Public Health Services I), MoH
- DDG (Public Health Services II), MoH
- DDG (Education, Training and Research), MoH
- DDG (Non-Communicable Diseases), MoH
- DDG (Laboratory Services), MoH
- DDG (Medical Supply Division), MoH
- Director (Planning), MoH
- Director (Non-Communicable Diseases), MoH
- Director (Primary Care Services), MoH
- Director (Medical Supply Division), MoH
- Representative, Department of External Resources, Ministry of Finance and Planning
- Representative, Department of National Planning, Ministry of Finance and Planning
- Representative, Sri Lankan Medical Association
- Representatives from the Provincial Directorate of Health Services in target areas
- Representatives from the Regional Directorate of Health Services in target areas
- Other personnel concerned to be decided and/or dispatched by the Sri Lankan side (if necessary)

<Japanese Side>

- Representatives from JICA
- Team Leader and other members of the Project dispatched by JICA

<Observers>

- Representative of Embassy of Japan
- Representative of World Health Organization (WHO)
- Representative of the World Bank
- Other personnel concerned to be decided and/or dispatched by JICA (if necessary)

Annex 4-3: Terms and Reference and Members of the Working Groups

GROUP 1: Monitoring and Evaluation

[Tasks]

- Be responsible for regular and continuous monitoring of the Project's progress and effects by (i) compiling and analysing the monitoring data periodically collected as per the M&E plan, (ii) attending relevant meetings and (iii) site visits as necessary,
- Report to the Joint Coordinating Committee (JCC) the progress of the Project and suggest changes to the schedule and/or design of the Project deemed necessary and appropriate, to maximise the benefit of the Project,
- Undertake revision of the Project Design Matrix (PDM) as necessary for approval by the JCC,
- Participate in the joint evaluation exercise (i.e. mid-term review and terminal evaluation) as GoSL counterpart to the JICA-fielded evaluation mission,
- Participate and/or provide inputs into any other M&E related activities under the Project, including the "monitoring capacity development" component of the Project.

[Chairperson]

1. DDG, NCD, MoH (Project Manager)

[Members]

2. Director, NCD, MoH
3. Director, Planning, MoH
4. Director, Medical Services, MoH
5. RD, RDHS, Kurunegala
6. RD, RDHS, Kegalle
7. RD, RDHS, Kandy
8. RD, RDHS, Batticaloa
9. Senior Fellow, Institute for Health Policy (Technical Resource Person)
10. JICA Team Representative (s)

GROUP 2: Clinic Data Collection

[Tasks]

- Be responsible for establishing the data collection system that captures the data from the Medical and Diabetes Clinics,
- Design, pilot test, fine-tune and finalise the system in selected BHs,
- Develop and finalize the manuals, tools and survey materials for the system.

[Chairperson]

1. DDG, Medical Services 1, MoH

[Members]

2. DDG, NCD, MoH (Project Manager)
3. Director, NCD, MoH
4. Dr. Clive James, Registrar, Health Informatics, MoH (appointed by the Secretary)
5. Dr. Buddika Dayarathne, Medical Officer, Health Informatics, MoH (appointed by the Secretary)
6. Dr. Aravinda Wickramasinghe, Registrar, Community Medicine, MoH (appointed by the Secretary)
7. JICA Team Representative (s)

GROUP 3: Follow up System Development

[Tasks]

- Be responsible for setting up an appropriate follow up system in the target areas of this Project to ensure clients' compliance in NCD management,
- Provide inputs to revision of the PDM undertaken by the M&E WG as necessary,
- Participate and/or provide inputs into any other related activities on follow up system development carried out under the Project.

[Chairperson]

1. Director, NCD, MoH

[Members]

2. DDG, NCD, MoH (Project Manager)
3. Director, Primary Care Services, MoH
4. Community Consultant Physician (CCP), NCD, MoH
5. RD, RDHS, Kurunegala
6. RD, RDHS, Kegalle
7. RD, RDHS, Kandy
8. RD, RDHS, Batticaloa
9. JICA Team Representative (s)

GROUP 4: Laboratory Services Sharing System

[Tasks]

- Be responsible for establishment of laboratory service sharing system where the four target BHs provide services to HLCs and Primary Care Institutions in the catchment areas.
- Undertake revision of the Project Design Matrix (PDM) as necessary for approval by the JCC,
- Participate and/or provide inputs into any other related activities on laboratory services network system development carried under the Project.

[Chairperson]

1. DDG, Laboratory Services, MoH

[Members]

2. DDG, NCD, MoH (Project Manager)
3. Director, Laboratory Services, MoH
4. Director, NCD, MoH
5. Director, Medical Research Institute
6. RD, RDHS, Kurunegala
7. RD, RDHS, Kegalle
8. RD, RDHS, Kandy
9. RD, RDHS, Batticaloa
10. MS of 4 Base Hospitals
11. JICA Team Representative (s)

GROUP 5: Medical Supplies Stock Management System

[Tasks]

- Be responsible for instituting an electronic stock management system in the main drug store rooms of the four target Base Hospitals for essential medicines and medical supplies.
- Undertake revision of the Project Design Matrix (PDM) as necessary for approval by the JCC,
- Participate and/or provide inputs into any other related activities on medical supplies and stock management system carried under the Project.

[Chairperson]

1. DDG, Medical Supplies Division, MoH

[Members]

2. DDG, NCD, MoH (Project Manager)
3. Director, MSD, MoH
4. Project Director for MSMIS, MSD, MoH
5. RD, RDHS, Kurunegala
6. RD, RDHS, Kegalle
7. RD, RDHS, Kandy
8. RD, RDHS, Batticaloa
9. MS of 4 Base Hospitals
10. JICA Team Representative (s)

Annex 5: List of Equipment Provided to the Institutions

Item	Year procured	Used at	Unit price (LKR)	Qty.	Total price (LKR)
Copy Machine 5-in-1 Multifunction Center Brother Multifunction Model 7860DW	2014	Project Office Colombo	64,960	1	64,960
Copy Machine CANON IR 2520	2014	Project Office Colombo	407,240	1	407,240
Desktop Computer ACER VERITON M2611 MS Office 2013 Home & Business Windows 7 Professional	2014	Project Office Colombo	85,000	3	255,000
Laptop Computer HP Pavilion i5 Sleekbook14 MS Office Home & Business Windows 8	2014	Project Office Colombo	79,500	2	159,000
Laptop Computer ACER ASPIRE E1-572 Intel Core i5 4th GEN 4200u 1.6 GHz MS Office Home & Business Windows 7 Professional	2014	Project Office Colombo	72,000	2	144,000
Scooter Honda Activa (non het)	2015	1 in Galgamuwa BH and 4 at PCIs, Kurunegala	185,500	5	927,500
Scooter Honda Activa (non het)	2015	2 in Kaluwanchikudy BH, Batticaloa	185,500	2	371,000
Three Wheeler Piaggio APE City Petrol	2016	Warakapola BH, Kegalle	585,000	1	585,000
Scooter Honda Activa (non het)	2016	1 in Teldeniya BH and 3 at PCIs, Kandy	185,500	4	742,000
Desktop Computer Dell Optiplex 3020	2016	Kaluwanchikudy BH, Batticaloa	106,000	2	212,000
Stata/IC data software Stata/IC volume purchase (download) 14	2017	MSU, Health Information, MoH	3,490 (USD)	1	3,490 (USD)
Desktop Computer Dell Vostro 3668	2017	Teldeniya BH, Kandy	102,000	2	204,000
Desktop Computer HP Prodesk 400 G4 Series	2017	Warakapola BH, Kegalle	101,500	1	101,500
Desktop Computer HP Prodesk 400 G4 Series	2017	Galgamuwa BH, Kurunegala	102,000	2	204,000

Annex 6-1: Minutes of 1st JCC

1. **Date & Time:** 8th May, 2014, (10:30 – 11:45)
2. **Venue:** Main Auditorium, Ministry of Health
3. **Agenda:**
   (1) Opening Remarks by the Project Director, Dr. Nihal Jayathilake, Secretary of MoH
   (2) Opening Remarks by the Representative of JICA, Mr. Kiyoshi Amada, Chief Representative, JICA Sri Lanka Office
   (3) Outline and Management Structure of the Project
   (4) Work Plan Working Groups for the Activities during the Inception Phase (April – July 2014)
   (5) JCC Members and GoSL Counterparts
   (6) GoSL Logo and Project Logo
   (7) Date of the Next JCC Meeting
   (8) Closing Remarks

4. Time Table:

MC: Dr. S. C. Wickramasinghe (Project Manager)

Time	Programme	Presenter
10:30 – 10:40	Opening Remarks	Mr. Kiyoshi Amada, Chief Representative, JICA
10:40 – 10:55	Presentation on outline and management structure of the project, work plan and activities during the inception phase	Dr. S. C. Wickramasinghe Director, Health Information
10:55 – 11:45	Open Discussion	Participants

5. Opening Remarks

Opening remarks were made by Mr. Kiyoshi Amada, Chief Representative of JICA Sri Lanka Office by introducing briefly the previous technical cooperation experiences with NCD Prevention Project. He also emphasized that this is Sri Lankan Project and the leadership as well as vital role of the project are expected. In addition, he encouraged a fruitful partnership between the Sri Lankan counterparts and the JICA team with active participation in the project.

6. Presentation

Outline of the project and the project management structure as agreed between the Ministry of Health (MoH) and JICA on 22 October 2013 and a summary of a draft work plan in line with the project outline mention above proposed by the JICA Team (ANNEX 3) were by Dr. S. C. Wickramasinghe (ANNEX 4), then the floor was opened for discussion before adopting the draft work plan as a tentative until July 2014 when the details of the project design is to be finalised with findings from the Situation Analysis planned for May – June 2014.

7. Open Discussion

(1) Outputs of the Project Design Matrix (PDM)

- ✧ Dr. Mahipala, Director General of MoH pointed out the following:
- ♦ Some of the Outputs in the agreed project design are already covered by various initiatives, for example, the Output 2 is being addressed under the HSDP-II funded by the World Bank. As such the project design needs to be reviewed to avoid duplications.
- ♦ Previous project of JICA was to come out with a surveillance system with a set of data available at different levels for decision making but to date such a system does not exist. In this sense we should also be cautious about the Output 3 and pay good attention to why it did not produce the expected output and what should really come out of the Output 3 this time. .
- ♦ There have been many projects/initiatives for NCD management, including the JICA project, PEN project by WHO and Nirogi Lanka, thanks to which the protocol for risk assessment was established and now implemented nationwide. This project should not be reinventing a wheel, which would be a waste of resources. .
- ♦ Every year, 3 million Rupees have been spent by the Sri Lankan Government on establishing more HLCs. However the utilization of HLC has been less than expected, and the performance of the HLCs which were doing well under the NPP in Kurunegala and Polonnaruwa are now down. Given this, we need to critically think of sustainability of this project, especially with the Output 4 which aims to scale up modalities developed by the project nationwide.
- ♦ It is also necessary to review the current screening model of HLC, as it is not demonstrating its effectiveness in capturing the male population. A different modality such as mobile screening services may have to be instituted.
- ♦ This project, which aims to strengthen secondary prevention of NCD particularly at and around the 4 Base Hospitals being refurbished with assistance from JICA, is unlikely to be a great success unless the screening programme, which identifies candidates for the secondary preventions, has major deficiencies such as those mentioned above.
- ✧ The floor acknowledged that attracting apparently healthy males to HLCs is a major challenge they are facing. In addition, the current poor availability of reliable NCD-related data was also reiterated as a gap that should be somehow addressed.

- ✧ JICA explained that the current project was designed soon after the completion of the NPP and thereafter a lot of developments in the NCD prevention field have taken place. Therefore it is necessary to study such developments carefully to avoid duplication in the current project.
- ✧ JICA further explained that the Project design Matrix (PDM) which is attached in the RD is already agreed between Sri Lankan and the Japanese side and also approved by the Board of JICA to start implementing this project. Therefore the contents of the PDM cannot be easily changed at this very beginning stage.
- ✧ However, JICA also emphasized that the alignment towards the current development for NCD prevention within Sri Lanka is important and thus JICA requested to hold another technical meeting soon after the JCC for better situation analysis implementation.

(2) Situation Analysis

- ✧ Dr. Mahipala pointed out that the project structure should be reviewed and revised in view of the many developments since the Project was formulated in last year, He proposed a consultation meeting to iron out the issues regarding the project design mentioned above before the planned situation analysis.
- ✧ Mr Amada, JICA Chief Representative reiterated that the Project came about based on the request made by the Government of Sri Lanka. He suggested the activities during the inception phase mentioned in the draft work plan presented be carried out as planned taking account of all the comments and suggestions from the stakeholders and that then to finalise the project design as proposed in the draft work plan. As the scope of the situation analysis, one of the major activities during the inception phase, depends largely on the design of the project, the meeting agreed to discuss the project design in a separate forum before the Situation Analysis to be participated by the government stakeholders at the national and local (provincial and district) levels as well as professional bodies such as the College of Physician, the College of Community Physician and the Sri Lanka Medical Association. The date shall be given by Dr. Mahipala after obtaining a clearance from the Health Secretary.

The meeting was adjourned without further discussions on other agenda items.

8. The list of Participants *JCC Members

Representatives of Ministry of Health		
Dr. P.G Mahipala	Director General (Health Services)	*
Dr.Sunil de Alwis	Deputy Director General (Education, Training & Research)	*
Dr. V.T.S.K. Siriwardhana	Director (NCD)	*
Dr. Indra Fernando	Director (PHC)	*
Dr.S.Champika Wickramasinghe	Director/ Health Information	
Dr. Lal Panapitiya	Director/ MS	
Dr. P.L. Atapattu	Director/TCS	
Other Representatives of Finance and Planning		
R.D.R. Perera	Assist. Director, Dept. External Resources, Finance & Planning	*
D.A. Niharepola	Assist. Director, Dept. National Planning, Finance & Planning	
Dr. Shiromi Maduwage	SLMA/NCD Sub-committee	*
Provincial Directorate of Health Services of the four target provinces (PDHS)		
Dr. R.M.S.K. Rathnayake	PDHS. North Western Province	*
Dr. S. Arulkumar	Consultant (on behalf of PDHS, Eastern Province)	*
Regional Directorate of Health Services of the four target districts (RDHS)		
Dr. Lakshman Edirisinghe	RDHS Kurunegala	*
Dr. Kumar Wickramasinghe	RDHS Kegalle	*
Dr. Nilani Fernando	RDHS Kandy	*
Dr. R.Navalogithan	MO-NCD/Batticaloa (on behalf of RDHS Batticaloa)	*
Representatives from Japanese side		
Mr. Kiyoshi Amada	Chief Representative, JICA Sri Lanka Office	*
Mr. Hiroyuki Abe	Senior Representative, JICA Sri Lanka Office	*
Mr. Toshiyuki Shimano	Representative, JICA Sri Lanka Office	*
Ms. Kishani Tennakoon	JICA Sri Lanka Office	*
Dr. Ayako Tokunaga	Team Leader, JICA NMP	*
Ms. Naomi Imani	Deputy Team Leader, JICA NMP	*
Dr. Reiko Sata	JICA NMP	*
Prof. Dr. Satoshi Kaneko	Epidemiology/Information Management System, JICA NMP	*
Mr. Kazuya Ogawa	Information Management System, JICA NMP	*
Ms. Hiroyo Onozato	Coordinator, JICA NMP	
Ms. Lakshika Abeyoon	Database Manager, JICA NMP	
Dr. Samandika Saparamadu	Senior Research Assistant, JICA NMP	
Dr. Lawanya Aeyshani Ashubodha	Project officer, JICA NMP	
Dr. L.A.C.N. Liyanaarachchi	Project officer, JICA NMP	

Annex 6-2: Minutes of 2nd JCC

1. **Date & Time:** the 21st August 2014, (15:30 – 16:45)
2. **Venue:** MDPU Auditorium, Ministry of Health
3. **Agenda:**

AGENDA 1: OPENING
Opening remarks were made by Dr. P. G. Mahipala, Director General of Health Services of MoH and Mr. Hiroyuki Abe, Senior Representative of JICA Sri Lanka Office. Dr. Mahipala revisited discussions held at the planning workshop as well as the Consultation Meeting and the 1st JCC meeting, through which a broad consensus on the way forward was formed amongst the participants without having to divert too widely from the original agreement between the governments of Sri Lanka and Japan. Mr. Abe appreciated all the efforts made by everyone to re-determine the issues to be addressed under this project and asked for further contributions by all the parties for the project.

AGENDA 2: APOLOGIES
Apologies received were reported as below;
Dr Sarath Amunugama, DDG, PHS I
Dr R. R. M. L. R Siyambalagoda, DDG, PHS II
Dr Kamal Jayasinghe, Director, MSD
Dr Shanthi Samarasinghe, PD, PDHS, Central Province
Dr K. Muruganandan, PD, PDHS, Eastern Province
Dr S. Sathuranagm, RD, RDHS, Batticaloa

The meeting also noted that Dr. V. T. S. K. Siriwardana, Director of NCD, who was out of country on duty travel was represented by Dr. Virginie Mallawaarachchi, CCP/NCD unit.

AGENDA 3: ADOPTION OF THE AGENDA
The proposed agenda of the meeting was reviewed and adopted by the JCC members without modifications.

AGENDA 4: MINUTES OF, AND MATTERS ARISING FROM THE 1ST JCC MEETING
The final draft of the minutes of the first JCC was adopted without modifications. The meeting also agreed that there were no matters arising from the previous meeting which needed further attention by the JCC.

AGENDA 5: REPORT OF PROJECT MANAGER ON PROGRESS OF THE PROJECT
Dr. S. C. Wickramasinghe, Project Manager, reported overall progress of the project since the 1st JCC meeting in May, mentioning the activities that took place such as the consultation meeting (May), the situation analysis (May-June), the planning workshop (July) and formulation of the working groups (August).

JCC members reviewed and approved the TORs of the 4 working groups formulated (1. Monitoring & Evaluation, 2. Laboratory Service Sharing System & Medical Supplies Stock Management System, 3. Follow up System Development, and 4. Clinical Data collection) and made additions of members to the proposed names as follows.

- Dr Kapila Bimal Kannangara, PDHS Sabaragamuwa, joins (i) the Laboratory Service Sharing System & Medical Supplies Stock Management System WG and (ii) the Clinical Data Collection WG;
- MO Planning of the RDHS Kandy joins the Clinical Data Collection WG in place of MO Informatics of the district, of which position is at the moment vacant.

AGENDA 6: REPORTS FROM THE WORKING GROUPS
(1) M&E WG
Dr S. C. Wickramasinghe, as the group leader of the M&E WG, reported outcomes of its 1st meeting. The group proposed to the JCC that for the component of "strengthening monitoring capacity of MO/NCDs of the 4 target districts" (i.e. Activity 1-3 in the PDM Ver. 1), the project should strengthen monitoring capacity of the target districts rather than the 4 individual MO/NCDs by establishing an M&E framework in each district. This proposal was accepted by the JCC and the group was to start immediately developing tools for mapping of NCD-related activities in the 4 districts, to be undertaken by each RDHS as planned.

(2) Laboratory Service Sharing System & Medical Supplies Stock Management System WG
Dr. Sata of the JICA Team, on behalf of Dr. Kamal Jayasinghe, the team leader who was unable to attend the meeting, presented a summary of the discussions by the laboratory service and stock management WG. For the laboratory services, the WG plans to design an appropriate pilot system by modifying as necessary the satellite laboratory system operational in Kurunegala district since 2010. The WG would start with analysing various factors including challenges faced by the system in Kurunegala, after which a pilot system is to be devised and implemented in the Galgamuwa BH catchment area. A member suggested looking into the reported failure of a similar system in Badulla.

Dr. Sata continued to present the plan for developing a simple electronic stock management system at the 4 BHs as the group's another task. While the WG planned to do so by modifying a system installed in the RMSD Kurunegala to suit particular needs of BHs, Dr. Kapila of Sabaragamuwa province enlightened the JCC that Ratnapura district also has its own electronic stock management system in operation not only at its RMSD but also at a few hospitals. Subsequently the JCC members agreed to look into the two existing systems through an in-depth analysis first and then to make a decision as to which one of the two should be adopted as the base of a pilot system to be devised under this project. The meeting also confirmed that the system to be devised and instituted by this project would be a temporary measure until such time the central system currently being rolled out by the MSD ("MSMIS") is introduced to the BH level.

(3) Follow up System Development WG
On behalf of group leader Dr. Siriwardana, Dr. Tokunaga briefed the JCC that the WG plans to (1) undertake a survey on compliance of HLC clients referred to medical clinics in procuring further medical care as instructed, (2) look into intervention options depending on findings from the survey, and (3) design a follow-up system if interventions are found to be necessary.

(4) Clinic Data Collection WG
A summary of the planned activities by the Clinic Data Collection WG was presented by its group leader, Dr Lakshmi Somathunga. Because the completed situation analysis looked into a different issue, i.e. management of the HLC data, the WG plans to carry out a fresh situation analysis this time on current practices of medical and diabetes clinic data collections at the 4 target hospitals, in order to design a pilot system to capture useful data from the clinics to complete the morbidity part of the NCD information system complementing the IMMR.

The JCC approved the plans of the Follow up System and the Clinic Data WGs, with a unanimous consensus that the subjects dealt by these two WGs are important and deserve due attention.

AGENDA 7: FINALISATION OF THE WORK PLAN
Dr. Tokunaga took the JCC members through the "Plan of Operation" distributed as a handout, going through activity by activity planned for 2014, to confirm the discussions in the previous session and to ensure a shared understanding amongst the members on the work plan for 2014 and beyond.
With the following suggestions and a modification, the work plan was accepted by the JCC.

- With regards to the activity 1-3-4, Dr. Virginie, CCP at NCD unit, stated that national level indicators for NCD activities had already been developed, and suggested that the wording of this activity be corrected. Ms. Naomi Imani responded that the issue would be looked into in the M&E working group meeting planned on the following day, which would make a modification if found necessary. It was agreed by the JCC members to respect the consensus reached in the M&E working group meeting.
- With regard to the pilot site for the electronic stock management, the meeting agreed to choose a location amongst the 4 BHs after the suggested analysis of the two systems in Kurunegala and Ratnapura is completed. The Work Plan is to be amended accordingly.
- With regard to the activities under the Output 4, a question was raised by Dr. Virginie if finalizing "NCD management system among HLCs and BHs" and "guidelines on those systems" were redundant as they had already been finalized for some time. The JICA team explained that the "NCD management system" as per the PDM (ver.1) refers to the systems to be developed under this project and reiterated that ambiguous wordings in the PDM would be formally corrected at the next JCC meeting planned in December.
- Regarding risk assessment, Dr. Virginie suggested for the project to use "vascular risk assessment" for NCD Management instead of the "total risk assessment" in view of the former recently adopted by some countries, the JCC agreed to stay with the total risk assessment since it was a policy decision made by the Ministry only a few years ago.

[Action requested]
To finalize the work plan document, of which final draft was distributed as a handout to all the JCC members, the meeting agreed that (1) JCC members send their comments by 28th of August to the project office, and (2) the project office sends out a soft copy of the document to all the JCC members immediately after the meeting as an email attachment to facilitate the process.

AGENDA 8: JCC MEMBERS AND GoSL COUNTERPARTS
JCC agreed that all the WG leaders should be included in the JCC as members. Accordingly, Director of Medical Supply Division (Dr. Kamal Jayasinghe), who is the leader of the Laboratory Service Sharing System & Medical Supplies Stock Management System WG, was added to the JCC member list.

AGENDA 9: PROJECT LOGO
Three logos were showed during the meeting including the one which won the most votes during the Planning Workshop held in July. The JCC agreed to select the logo as shown below to identify the project.

AGENDA 10: ANY OTHER BUSINESS
No other business to discuss was brought up.

AGENDA 11: DATE OF THE NEXT JCC MEETING
It was decided to hold the 3rd JCC meeting during the first week of December. The members were asked to note it down on their calendars.

AGENDA 12: CLOSING
Dr. Lakshmi Somathunga closed the meeting by highlighting the importance of working with dedication to achieve maximum outcomes for the project and appealed to the WGs to carry out the activities according to the formulated work plan. She also reminded the members of the JCC to forward their comments on the final draft of the work plan by the 28th of August as agreed. The meeting closed with her thanking all the participants for their contributions.

4. The list of participants

Representative of Ministry of Health

Dr. P. G. Mahipala	DG/ HS
Dr. Lakshmi Somathunga	DDG/ Medical Services I
Dr. S.C. Wickramasinghe	Director/ Health Information
Dr. S.R.U Wimalarathne	Director/ Planning
Dr. Indrakumari Fernando	Director/ Primary Care Services
Dr. Virginie Mallawarachchi	CCP/ NCD unit

Provincial Directorate of Health Services of the four target provinces (PDHS)

Dr. Kapila Bimal Kannangara	PDHS, Sabaragamuwa province
Dr. N. Fareed	PDHS, NW province

Regional Directorate of Health Services of the four target provinces (RDHS)

Dr. Lakshman Edirisinghe	RDHS, Kurunegala
Dr. Kumar Wickramasinghe	RDHS, Kegalle
Dr. Nilani Fernando	RDHS, Kandy

Representatives from Japanese side

Mr. Hiroyuki Abe	Senior Representative, JICA Sri Lanka Office
Ms. Nami Kawai	Representative, JICA Sri Lanka Office
Ms. Kishani Tennakoon	Project Specialist, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms. Naomi Imani	Deputy Team Leader, NMP
Dr. Reiko Sata	NCD Management, NMP
Mr. Kazuya Ogawa	Health Information System, NMP
Dr. Lawanya Ashubodha	Project Officer, NMP
Dr. Nisansala Liyanaarachchi	Project Officer, NMP
Ms. Lakshika Abeykoon	Data Manager, NMP
Ms. Hiroyo Onozato	Local Coordinator, NMP

5. Apologies

Dr. Sarath Amunugama	DDG/ PHS I, Ministry of Health
Dr. R.R.M.L.R.Siyambalagoda	DDG/ Public Health Services II, Ministry of Health
Dr. Kamal Jayasinghe	Director/ Medical Supplies Division, Ministry of Health
Dr. V.T.S.K. Siriwardhana	Director/Non-Communicable Diseases, Ministry of Health
Dr. K.Muruganandan	PDHS, Eastern Province
Dr. Shanthi Samarasinghe	PDHS, Central Province
Dr. S.Sathuranagam	RDHS, Eastern Province

6. Absentees

Mrs. Sudharma Karunarathna	Secretary of Health
Dr. Amal Harsha De Silva	Additional secretary/ Medical services, Ministry of Health
Dr. Jayasundara Bandara	DDG/ Planning, Ministry of Health
Dr. D.A.K Ananda gunasekara	DDG/ Medical Services II, Ministry of Health
Dr. Sunil De Alwis	DDG/ ET&R, Ministry of Health
Mrs. Nuwangi Hettiarachchi	Department of National Planning, Ministry of Finance and Planning

Representative of department of External Resources, Ministry of Finance and Planning
Representative of SLMA

Annex 6-3: Minutes of 3rd JCC

1. **Date & Time:** the 2nd December 2014, (11:20 - 12:45)
2. **Venue:** The Main Auditorium, Ministry of Health
3. **Agenda:**

AGENDA 1: OPENING

On behalf of Mrs. Sudharma Kurunarathne, Secretary of MoH, who could not attend the meeting and Dr. P.G. Mahipala, Director General of Health Services (DGHS) of MoH, who was unable to participate in the first half of the meeting due to other urgent business, Dr. Lakshmi C. Somatunga, Deputy Director General (DDG), Medical Services I (MS I) and Dr. S. C. Wickramasinghe, Director, Health Information and Project Manager opened the 2nd JCC meeting by welcoming the participants.

Opening remarks were made by Mr. Hiroyuki Abe, Senior Representative of JICA Sri Lanka Office. In his speech, he acknowledged with appreciation all the efforts made by the GoSL counterpart and the JICA team alike since the first JCC meeting in May 2014. He also explained the involvement of Japanese experts in Technical Cooperation Projects and that the experts shall not perform on their own like in consultancy contracts. He also strongly requested the counterparts to have a sense of project ownership.

AGENDA 2: APOLOGIES

Apologies were received from the following members.

- Dr Sarath Amunugama, DDG, PHS I
- Dr. Indrakumari Fernando, Director, PCS

AGENDA 3: ADOPTION OF THE AGENDA

The proposed agenda of the meeting was adopted by the JCC members without modifications.

AGENDA 4: MINUTES OF, AND MATTERS ARISING FROM THE 2nd JCC MEETING

The final draft of the minutes of the second JCC was adopted without modifications. The meeting also agreed that there were no matters arising from the previous meeting which required attention by the JCC.

AGENDA 5: PROGRESS OF THE PROJECT

Dr. S. C. Wickramasinghe as the Project Manager presented a list of activities taken place since the 2nd JCC meeting in August, of which details were reported by the chairpersons of the working groups as follows:

(1) Monitoring & Evaluation (M&E) Working Group (WG)

Dr. S. C. Wickramasinghe, as the chairperson of the M&E WG, reported on the tasks undertaken by the group since the 2nd JCC meeting. One of them was reorganization of the Project Design Matrix (PDM) through series of meetings and consultation with the DG, including identification of appropriate indicators to monitor and evaluate the project. She also explained the process of officialisation of PDM (ver. 2), which may involve signing of an agreement by GoSL and JICA most likely in Dec 2014 or Jan. 2015 after the internal review by JICA Headquarter, Tokyo is completed. Another task given to the group was to map out NCD-related activities in the four districts as the first step toward establishing the districts' M&E frameworks. The group, however, found this exercise rather challenging to accomplish when information collectors were not familiar with the result-based M&E, also without the national M&E framework and guidelines. Therefore, the group decided to postpone this activity until such time that National indicators become available. At the end of her presentation, she also shared the activities planned for Jan. onwards as; (1) to develop M&E framework for the project in accordance with the approval PDM ver. 2 and (2) to build the capacity of the WG members in result-based M&E.

(2) Laboratory Service Sharing System & Stock Management System Working Group

A summary of the activities performed since the 2nd JCC by the Laboratory Service Sharing System & Stock Management System Working Group was presented by its group leader, Dr. Kamal Jayasinghe. For the laboratory services component, he shared the analysis of the satellite laboratory systems in Kurunegala and Badulla districts. He also informed the JCC that in view of the reliability and costs associated with Point of Care Testing (POCT) or "strip test" and the conventional laboratory-based tests, a decision was made for the project to establish satellite laboratory networks in the catchment areas of the 4 BHs. Regarding the stock management component, he shared the findings from the assessment of the existing stock management systems in Kurunegala, Ratnapura and MSMIS done by JICA team together with stakeholders from MSD and Kurunegala, and informed that the WG agreed on adopting MSMIS primarily to avoid another system change when it is finally introduced to provincial institutions in future. The WG's plan for 2015 and onward was also presented.

(3) Follow up System Development Working Group

Dr. Siriwardana, the chairperson of Follow up System Development WG briefly presented a summary of the survey carried out on client's compliance in NCD management. He presented the current gaps in such areas as record keeping at and supervision of HLCs as identified by the survey and actions required to improve the situation with entities to lead each action identified. Activities to be undertaken by the project in 2015 and onwards were also shared with the JCC members.

(4) Clinic Data Collection (CDC) Working Group

Data collection on NCD from outdoor clinics was presented by the CDC group leader, Dr. Lakshmi Somathunga. She shared the decision of the working group to opt for a one-day Patient Survey rather than routine data collection on all the patients of Medical and Diabetes clinics because of the heavy workload the latter would involve. The JCC advised the group to carry out the survey on one clinic day of a particular week rather than one particular day, in view of the fact that clinics are held on different days of a week at different institutions.

Without any further clarifications or modifications, the JCC endorsed all the decisions of the WGs.

AGENDA 6: REVISION OF THE PROJECT DESIGN MATRIX (PDM)

Ms. Imani, Deputy Team Leader of the JICA team, took the JCC members through the proposed revision of the Project Design Matrix (PDM) Ver. 1 to Ver. 2, emphasising the revised version presented is a product of the joint efforts by the GoSL stakeholders and the JICA team since May 2014.

During the discussion on the Output 2 ("improved availability of laboratory services for NCD clients"), for which the project planned to test the blood samples for Total Cholesterol and/ or Lipid Profile, Dr. Vijith Gunasekara suggested offering HbA1c tests at the 4 target BHs on pilot basis. However, given that HbA1c is currently only available at the national reference laboratory (i.e. MRI), JCC decided against it. Dr. Mahipala suggested the project to start with routine tests like TC and lipid profile for the planned satellite laboratory at the 4 BHs while the Laboratory Services of the MoH works out appropriate policies on availability of various tests at different levels of health service provision.

Dr. Mahipala then raised the issue of transportation for blood samples to be taken from primary institutions to the laboratories in the Base Hospitals, which he identified as one of the major reasons for the poor performance of the system in Badulla. As a similar issue could be anticipated in this project, Dr Mahipala requested the JICA Sri Lanka office to consider provision of motorbikes to the primary institutions involved in this project. Mr Abe responded positively, saying that JICA would look into the possibility.

The JCC agreed on the revised version of PDM (Ver. 2) without any modifications.

AGENDA 7: TENTATIVE PLAN OF NEXT YEAR (2015)

Dr. Tokunaga, the Leader of the JICA team, briefly explained the "Plan of Operation" going through activity by activity to form a shared understanding amongst the members on the plan for the year 2015.

AGENDA 8: ANY OTHER BUSINESS

No other business was discussed.

AGENDA 9: CLOSING

Dr. Mahipala closed the meeting by expressing his appreciation to all the WG members who worked very hard on the PDM revision to make the project fair and agreeable. He mentioned that the project would be a breakthrough of the health system of the country and that the JCC would monitor the work to ensure that the targets be achieved. He also thanked for the flexibility shown by the JICA Sri Lanka office in considering the Ministry's request for the motorcycles for the primary health institutions in the target areas. The meeting closed with his thanking to all the attendants for their contributions.

4. The list of participants

Representatives of Ministry of Health

Dr. P. G. Mahipala	DG/ HS
Dr. Lakshmi Somathunga	DDG/ Medical Services I
Dr. A. Sunil de Alwis	DDG/ Education, Training and Research
Dr. S.C. Wickramasinghe	Director/ Health Information
Dr. V.T.S.K. Siriwardana	Director/ NCD
Dr. S.R.U Wimalarathne	Director/ Planning
Dr. Kamal Jayasinghe	Director/ MSD
Dr. Vijith R. Gunasekara	Director/ Laboratory Services

Provincial & Regional Directorate of Health Services of the four target provinces (PDHS & RDHS)

Dr. R.M.S. Ratnayake	Representative, PDHS, Central Province
Dr. S. Arukumar	Representative, PDHS, East Province
Dr. Lakshman Edirisinghe	RDHS, Kurunegala
Dr. Kumar Wickramasinghe	RDHS, Kegalle
Dr. S. Sathurumugan	RDHS, Batticaloa

Representative of Ministry of Finance and Planning

Mrs. H.D.N.K. Hettiarachchi	National Planning Department

Representatives from Japanese side

Mr. Hiroyuki Abe	Senior Representative, JICA Sri Lanka Office
Mr. Toshiyuki Shimano	Representative, JICA Sri Lanka Office
Ms. Kishani Tennakoon	Project Specialist, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms. Naomi Imani	Deputy Team Leader, NMP
Ms. Mariko Taniguchi	Project Coordinator, NMP
Dr. Lawanya Ashubodha	Project Officer, NMP
Ms. Lakshika Abeykoon	Data Manager, NMP

5. Absentees

Mrs. Sudharma Karunarathna	Secretary of Health
Dr. Amal Harsha De Silva	Additional secretary/ Medical services, Ministry of Health
Dr. Jayasundara Bandara	DDG/ Planning, Ministry of Health
Dr. D.A.K Ananda Gunasekara	DDG/ Medical Services II, Ministry of Health
Dr. R.R.M.L.R.Siyambalagoda	DDG/ Public Health Services II, Ministry of Health
Dr. Kapila Bimal Kannangara	PDHS, Sabaragamuwa Province
Dr. N.Fareed	PDHS, North Western Province
Dr. Chaminda Weerakoon	RDHS, Kandy

Annex 6-4: Minutes of 4th JCC

1. **Date & Time:** the 26th March 2015, (16:00 - 17:00)
2. **Venue:** The Main Auditorium, Ministry of Health
3. **Agenda:**

AGENDA 1: OPENING
On behalf of Dr. D. M. R. D Dissanayaka, Secretary, MoH, Dr. R. R. M. L. R. Siyabalagoda, Acting Additional Secretary (MS)/ Deputy Director General Public Health Services II, MoH chaired the 4th JCC meeting by welcoming the participants.
Opening remarks were skipped, due to time constrain.

AGENDA 2: APOLOGIES
Apologies received were not reported because of the shortage of time.

AGENDA 3: ADOPTION OF THE AGENDA
The proposed agenda of the meeting was adopted by the JCC members without modifications.

AGENDA 4: MINUTES OF, AND MATTERS ARISING FROM THE 3rd JCC MEETING
The final draft of the minutes of the third JCC was adopted without modifications. The meeting also agreed that there were no matters arising from the previous meeting which required attention by the JCC.

AGENDA 5: OUTLINE OF THE PROJECT AND WORK PLAN FOR THE 2nd PROJECT YEAR
Dr. S. C. Wickramasinghe, Director, Health Information, as the Project Manager presented the brief outline of the Project according to PDM Ver. 2 which was revised and approved during the last JCC meeting held in December. She also shared a list of activities taken place in the 1st project year as well as the plan for the 2nd project year, of which details were reported by the chairpersons of the working groups as below:

(1) Monitoring & Evaluation (M&E) Working Group (WG)
Dr. S. C. Wickramasinghe, as the chairperson of the M&E WG, went through the draft M&E framework, discussed and prepared during the last WG meeting. There were few points which require further clarifications and inputs from other WGs as listed below:

- M&E WG needs to discuss and set the frequency of data collection for the indicators of Overall Goal and also of indicator 3 for the Project Purpose.
- Follow up System Development WG is to come up with criteria to judge whether a PCI is tracking its clients or not as well as to decide the target figures and identify the data source.
- Laboratory WG requires to set the target values to monitor the activities related to the satellite laboratory system (indicator 2-1 and 2-2 of output 2). She also added that during the discussion with Dr. Mahipala, Director General of Health Services, he suggested to perform Lipid Profile test on all the HLC clients.
- Stock Management WG has to discuss and clarify the criteria to judge whether a BH is using MSMIS to manage pharmaceutical supply or not.

(2) Laboratory Service Sharing System & Stock Management System Working Group
A summary of the activities to be implemented for the 2nd project year was presented by the chairperson, Dr. Kamal Jayasinghe. For the laboratory services component, he shared that a workshop to design a pilot system was conducted in Kurunegala in Feb. and preparation for implementation in Galgamuwa BH catchment area is underway. He also explained that to carry out the activities, procurement of necessary materials and equipment including reagents for the 1st year of the implementation will be taken care of by the JICA Team, though there is a need to confirm that GoSL is taking over this component in subsequent years and after the project is over. Furthermore, a question was posed to the JCC members whether to perform Total Cholesterol (TC) test for all the patients who are screened at HLCs in the Project's pilot implementation.

Regarding the stock management component, Dr. Kamal mentioned that MSMIS had been installed up to RMSDs' level and technical support after the installation is in place. For introducing MSMIS at the 4 target BHs, initial training will be provided by e-wis, while JICA supports travelling costs and the refreshments. Dr Champika confirmed that LAN cabling within the 4 BHs is being done under the construction project also supported by JICA.

(3) Clinic Data Collection (CDC) Working Group
Dr. Lakshmi Somathunga, the chairperson of the CDC WG briefly presented a summary of the pilot survey carried out at Galgamuwa BH and two primary-level institutions in its catchment area. She also added that the WG is modifying the data collection tools based on the feedback from this trial. Furthermore, she mentioned that the second pilot test would be conducted in Jun – July in another project site and after the 2nd pilot test a workshop would be organized for all the WG members and the relevant stakeholders in Oct. 2015 to review and discuss the outcomes of the two trial surveys and utilisation of the data collected.

(4) Follow up System Development Working Group

Dr. Siriwardana, the chairperson of the Follow up System Development WG presented the activities planned for the 2nd project year. He mentioned the Galgamuwa BH and its catchment area is taken as the pilot site for initial development of a tracking system and revision of the current recording/ reporting formats used in HLCs. He also reported that a workshop was conducted in Kurunegala to develop tools and formats for the pilot tracking system, and that at the forthcoming working group meeting in the following week, the outcome of this workshop would be reviewed and discussed to draft the pilot implementation plan, to be piloted initially between Jun. – Dec. 2015.

After the WG presentations, Dr. Wimalarathne, Director/ Planning, inquired regarding the sampling method of the patient survey carried out in Galgamuwa, to which Dr. Lakshmi Somathunga answered that a stratified random sampling method was used for collecting various data including age, sex, diseases, etc.

Another question was raised from Dr. Bandara, CCP, PDHS, Central Province, whether to perform lipid profile test for all the HLC clients. Dr. Kapila of Sabaragamuwa Province and Dr. Lakshman of Kurunegala also added that testing all the HLC clients would not be feasible as they are always facing the shortage of reagents. The JCC suggested to have another forum with Director General and relevant stakeholders including specialist doctors to discuss feasibility and usefulness of routine lipid profile tests at HLCs. Dr. Lakshmi Somathunga was appointed as the responsible person for this.

Without any further clarifications or modifications, the JCC endorsed the Work Plan for the 2nd project year.

AGENDA 6: SHARING OF THE SITUATION ANALYSIS REPORT (FINAL)

The final draft of the Report on the Situation Analysis was shared with all the JCC members, who agreed to give their inputs/ comments to the Project Office by the 8th April 2015 for the finalization of the Report.

AGENDA 7: ANY OTHER BUSINESS

There was no other business to be discussed.

AGENDA 8: CLOSING

Dr. Siyabalagoda closed the meeting by thanking the JICA representatives and all present at the meeting for their hard work to make this project a success.

4. The list of participants

Representatives of Ministry of Health

Dr. R. R. M. L. R. Siyabalagoda	Acting Additional Secretary (MS)/ DDG, PHS II
Dr. Lakshmi Somathunga	DDG/ Medical Services I
Dr. S.C. Wickramasinghe	Director/ Health Information
Dr. V. T. S. K. Siriwardana	Director/ NCD
Dr. S. R. U. Wimalarathne	Director/ Planning
Dr. Kamal Jayasinghe	Director/ MSD
Dr. Indrakumari Fernando	Director PCS
Mr. W. P. W. D. Pathiratna	Project Director/MSMIS

Provincial & Regional Directorate of Health Services of the four target provinces (PDHS & RDHS)

Dr. K. Muruganandan	PD, PDHS, East Province
Dr. Kapila Bimal Kannangara	PD, PDHS, Sabaragamuwa Province
Dr. K. M. G. Kumudu Bandara	CCP, PDHS, Central Province
Dr. Lakshman Edirisinghe	RD, RDHS, Kurunegala
Dr. N. C. Loganathan	Deputy RD, RDHS, Kegalle
Dr. H. W. S. R. Rambukwella	MO/NCD, RDHS, Kandy

Representatives from JCIA side

Mr. Hiroyuki Abe	Senior Representative, JICA Sri Lanka Office
Ms. Ryoko Tabaru	Representative, JICA Sri Lanka Office
Ms. Kishani Tennakoon	Project Specialist, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms. Naomi Imani	Deputy Team Leader, NMP
Mr. Kazuya Ogawa	Health Information System, NMP
Ms. Mariko Taniguchi	Project Coordinator, NMP
Dr. Buddhika Hapuarachchi	Senior Project Officer
Dr. Lawanya Ashubodha	Project Officer, NMP

Annex 6-5: Minutes of 5th JCC

1. **Date & Time:** the 12th November 2015, (14:30 - 15:30)
2. **Venue:** Meeting Room of the Secretary, Ministry of Health
3. **Agenda:**

AGENDA 1: OPENING
As the Project Director and the Chairperson of the JCC, Mr. Anura Jayawickrama, the Secretary of the Ministry of Health, Nutrition and Indigenous Medicine welcomed all who were present.

AGENDA 2: APOLOGIES
This agenda item was skipped.

AGENDA 3: ADOPTION OF THE AGENDA
This agenda item was skipped.

AGENDA 4: MINUTES OF, AND MATTERS ARISING FROM THE 4th JCC MEETING
This agenda item was skipped.

AGENDA 5: OUTLINE OF THE PROJECT, PROGRESS AND PLANS FOR THE 3rd PROJECT YEAR
Dr. S. C. Wickramasinghe, as the Project Manager, briefly presented the outline of the Project according to the PDM Ver. 2 (March 2015) for the benefit of those new to the Project. This was followed by presentations by the Working Groups (WG) on the progress made this year as well as the plans for the year 2016.

Monitoring & Evaluation (M&E) Working Group (WG)
Dr. S. C. Wickramasinghe, who is also the chairperson of the M&E WG, mentioned the Result-Based Management (RBM) Workshop, finalisation of the Project's M&E Framework and preparation of the data collection formats as the major work undertaken by the M&E WG this year. She reported that the RBM Workshop facilitated by Ms. Naomi Imani, Deputy Team Leader of the Project was very useful, and that various data collection formats for reporting on the PDM indicators are at the final stage of development. Orientations for the users of the formats would be taking place before the end of the year, and actual data collection using the formats at the beginning of 2016. For 2016, the WG plans to (i) review the data collected twice a year, and (ii) work closely with the Mid-Term Review mission, to be fielded by JICA in early February, 2016.
The Secretary, who was new to the Project, was informed that the Project started in 2014 and that no clear information on the Project's budget is available, as the Project is a part of a larger Japanese assistance to the health sector, which involves upgrading of 4 Base Hospitals and the State Pharmaceutical Manufacturing Corporation (SPMC).

Clinic Data Collection (CDC) Working Group
Dr. Lakshmi Somathunga, the chairperson of the CDC WG presented the progress of the WG for 2015 including the 2 pilot surveys on medical and diabetes clinic patients in the catchment areas of Galgamuwa and Teldeniya BHs and development of necessary tools for data collection and analysis. Activities planned for the WG for 2016 include two pilot surveys: one in Kegalle and Batticaloa districts involving both Provincial and Line Ministry hospitals in the catchment areas of the target BHs, and another involving all hospitals of one entire district. In addition, a workshop on utilisation of the collected data would also be organised.
The JCC was also informed that reporting of the collected data is paper-based at the PMCU level, while larger hospitals are entering the data into computers. The DG suggested the project to look into on-line reporting, which is now being practiced as most of the Divisional Hospitals and larger hospitals for e-IMMR, emphasising the importance of capacity building at the primary-level facilities.

Follow up System Development Working Group
Dr. V.T.S.K. Siriwardana, the chairperson of the Follow up System Development WG, presented the progress achieved in year 2015, including designing and instituting pilot system to follow up on HLC clients referred to medical clinics in the Galgamuwa, Warakapola and Teldeniya BH's catchment areas. For the 3rd project year, a similar intervention may start in the Kaluwanchikudy BH area, if a VP is appointed at the BH. Besides fine-tuning the systems being piloted in the 3 project sites, the WG also plans to revise/ devise HLC supervision tools as well as the current recording formats at HLCs.
The DG urged the WG to expand the scope of the follow up systems being implemented, to track not only HLC clients but also clinic and OPD patients referred to the specialist medical clinics at the BHs, as the latter group of people often represents higher needs for medical care.

Laboratory Service Sharing System & Stock Management System Working Group
Representing Dr. Kamal Jayasinghe, the chairperson of the WG, Dr. Muditha Hapudeniya, Medical Officer of Laboratory Services, reported the activities undertaken by the WG this year to institute/ enhance laboratory sharing system in Galgamuwa, Warakapola and Kaluwanchikudy BHs' catchment areas. As common challenges faced by the three project sites, the following issues were brought to the JCC's attention:

(a) Appointment of a person to deliver specimens and test results by motorbikes for the areas where JICA will provide motorbikes;
(b) Lack of nursing officers at some primary care institutions to take blood samples;
(c) Supply of reagents and other consumables; and
(d) Quality Control of laboratory testing.

In addition, Dr. Muditha also reported on behalf of the WG that installation of MSMIS at the 4 BHs has incurred some delays due to the delays in completion of the construction work at the target BHs but that the Project is now preparing for installation at Kaluwanchikudy BH early next year.

Regarding the above-mentioned issues, the JCC deliberated and decided as follows:
Regarding motorbike drivers, the DG instructed the RDs to identify and officially assign appropriate persons at applicable institutions, as the cadres of this level are to be managed locally. As it would not be an appointment but an assignment, it is well within the RD's purview, thus consultation with the Provincial Secretary would also not be necessary. The question of insurance coverage in case of an accident should not arise, as it could happen to anyone at any time, on or off the job. For personnel to draw blood, it was agreed that MOs should draw blood himself/ herself or train and supervise existing personnel to do so, as it is not possible to allocate nurses to smaller institutions. As to Quality Control of laboratory, the DG advised to involve MRI for discussion.

At this juncture, the Project Manger informed that MSMIS is reportedly having some technical problems, which must be solved before the system is installed at the project site. The DG concurred and advised the Project to hold on to the planned installation at Kaluwanchikudy BH until the issue is solved.

AGENDA 6: MID TERM REVIEW & THE DATE OF NEXT JCC MEETING
Dr. Tokunaga, Team Leader of the Project, informed the JCC that a team from Japan for a joint Mid-Term Review will be in Sri Lanka for the first two weeks of February, 2016 and requested the JCC members to be available for this exercise including formal discussions on the findings of the Review at t JCC meeting either on the 11th or 12th of February, 2016.

JCC members noted the plan and requested to be informed the JCC date when it is fixed.

AGENDA 7: CLOSING
Without further issues to discuss, the meeting adjourned at 15:30 pm.

4. The list of participants

Chairperson

Mr. Anura Jayawickrama	Secretary, Ministry of Health

Committee Members

<Sri Lankan Side>

Dr. P.G. Mahipala	Director General Health Services, Ministry of Health
Dr. Lakshmi Somathunga	DDG, Medical Services I, Ministry of Health
Dr. A. Sunil de Alwis	DDG, Education, Training and Research, Ministry of Health
Dr. S.C. Wickramasinghe	Director, Health Information, Ministry of Health (Project Manager)
Dr. V.T.S.K. Siriwardana	Director, NCD, Ministry of Health
Dr. U.S.B. Ranasinghe	Director, PCS, Ministry of Health
Dr. Muditha Hapudeniya	MO, Laboratory Services, Ministry of Health (representing Dr. Kamal Jayasinghe)
Dr. Lakshmi Kumarathilaka	Deputy PD, PDHS, North Western Province (representing Dr. N. Fareed, PD)
Dr. I.E. Weerasinghe	CCP, PDHS, Central Province (representing Dr. Shanthi Samarasinghe, PD)
Dr. Champa Aluthweera	RD, RDHS, Kurunegala
Dr. V.R. Gunasekara	RD, RDHS, Kegalle

<Japanese Side>

Mr. Hiroyuki Abe	Senior Representative, JICA Sri Lanka Office
Ms. Ryoko Tabaru	Representative, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms. Naomi Imani	Deputy Team Leader, NMP
Ms. Mariko Taniguchi	Project Coordinator, NMP
Dr. Buddhika Hapuarachchi	Senior Project Officer
Ms. Lakshika Abeykoon	Data Manager, NMP

<Observer>

Dr. Kumari Nawaratne	Senior Health Specialist, World Bank

Annex 6-6: Minutes of 6th JCC

1. **Date & Time:** the 11th February 2016, (10:00 - 11:30)
2. **Venue:** Meeting Room of the Secretary, Ministry of Health
3. **Agenda:**

AGENDA 1: OPENING
As the Project Director and the Chairperson of the JCC, Mr. Anura Jayawickrama, the Secretary of the Ministry of Health, Nutrition and Indigenous Medicine welcomed all who were present.

AGENDA 2: PRESENTATION AND DISCUSSION ON FINDINGS FROM THE MTR
Mr. Ashida, the member of the MTR team briefly explained the purpose of the exercise as it is a form of routine and internal evaluation of the JICA project management practice for technical cooperation carried out jointly by JICA and the MoH, Sri Lanka at the midpoint of a project. Then, Ms. Fujita, the consultant of the MTR team presented the summary result of the exercise. She illuminated achievements of the Project by referring to the indicators of outputs and project purpose, clarifying the issues found related to the indicators, and also shared the exercise result by using five evaluation criteria: relevance, efficiency, effectiveness, impact and sustainability. At the end, Dr. Isono, the team leader of the MTR team gave the recommendations to the Project as well as to the MoH, Sri Lanka. He suggested the Project to revise the indicators of the Project Purpose (P-1) and Output 2 (2-1, 2-2) and also to revise the Monitoring & Evaluation Framework accordingly.

The JCC agreed to revise the suggested indicators. M&E WG will be responsible to look into and revise/ modify those indicators accordingly and will present them to the next JCC meeting.

AGENDA 3: WORK PLAN FOR 2016
Major activities designed for the 3rd Project Year was planned to be presented during the JCC, though this agenda item was skipped due to time constrain.

AGENDA 4: CLOSING
Anura Jayawickrama closed the meeting by thanking the MTR Team and all present at the meeting for their hard work to make this project a success.

4. The list of participants

Chairperson

Mr. Anura Jayawickrama	Secretary, Ministry of Health

Committee Members

<Sri Lankan Side>

Dr. Neelamani R. Hewageegana	DDG, Planning
Dr. Lakshmi Somathunga	DDG, Medical Services I, Ministry of Health
Dr. J. M. W. Jayasundara Bandara	DDG, Medical Services II, Ministry of Health
Dr. Sarath Amunugama	DDG, PHS I, Ministry of Health
Dr. S. C. Wickramasinghe	Director, Health Information, Ministry of Health (Project Manager)
Dr. V. T. S. K. Siriwardana	Director, NCD, Ministry of Health
Dr. U. S. B. Ranasinghe	Director, PCS, Ministry of Health
Dr. K. Muruganandan	PD, PDHS, East Province
Dr. Kapila Bimal Kannangara	PD, PDHS, Sabaragamuwa Province
Dr. Kumudu Bandara	CCP, PDHS, Central Province (representing Dr. Shanthi Samarasinghe, PD)
Dr. V. R. Gunasekara	RD, RDHS, Kegalle
Dr. Champa Aluthweera	RD, RDHS, Kurunegala

<Japanese Side>

Mr. Hiroyuki Abe	Senior Representative, JICA Sri Lanka Office
Ms. Ryoko Tabaru	Representative, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms. Naomi Imani	Deputy Team Leader, NMP
Ms. Mariko Taniguchi	Project Coordinator, NMP
Dr. Buddhika Hapuarachchi	Senior Project Officer
Ms. Lakshika Abeykoon	Data Manager, NMP

<Midterm Review Team>

Dr. Mitsuo Isono	Team Leader, MTR
Mr. Tatsuya Ashida	Evaluation Planning, MTR
Ms. Makiko Fujita	Evaluation Analysis, MTR

Annex 6-7: Minutes of 7th JCC

1. **Date & Time:** the 27th January 2017, (15:30 - 17:00)
2. **Venue:** The Secretary's Meeting Room, Ministry of Health
3. **Agenda:**

AGENDA 1: OPENING
On behalf of Mr. Anura Jayawickrama, the Secretary of the Ministry of Health, Nutrition and Indigenous Medicine (MoH), who was unable to participate in the first half of the meeting due to other urgent business, Dr. A. Sunil de Alwis, Deputy Director General, Education Training & Research (ET & R), MoH opened the 7th JCC meeting by welcoming the participants.

AGENDA 2: APOLOGIES
Apologies were received from the following members.

- Dr. Shanthi Samarasinghe, PD, PDHS, Central Province
- Dr. A. M. S. Weerabandara, RD, RDHS, Kandy

AGENDA 3: ADOPTION OF THE AGENDA
The proposed agenda of the meeting was adopted by the JCC members without modifications.

AGENDA 4: MINUTES OF, AND MATTERS ARISING FROM THE 6th JCC MEETING
The final draft of the minutes of the 6th JCC was adopted without modifications. As a matter arising from the previous meeting, the revision of the Project indicators were presented and discussed under Agenda 6.

AGENDA 5: ADDITION TO JCC MEMBERS AND NEW APPOINTMENTS OF CHAIRPERSON OF WGs
In view of the "Laboratory Sharing System" being one of the major components of the Project, it was proposed that DDG Laboratory Services be officially included in the JCC. The post is currently held by Dr. B. V. S. H. Beneragama, who has already been appointed as the Chairperson of the Laboratory Services Sharing System WG by the Project Director. Dr. Kamal Jayasinghe, DDG of MSD has also been appointed as the Chairperson of Medical Supplies Stock Management System WG.
The JCC approved the proposed addition of the member to the JCC and the new appointments of the Chairperson of the WGs.

AGENDA 6: REVISION OF THE PROJECT DESIGN MATRIX (PDM)
Dr. S. C. Wickramasinghe, Director, Health Information, as the Project Manager briefly explained the revised version of the PDM. During the Mid-term Review (MTR) in February 2016, it was found that some indicators do not adequately measure the achievements and all indicators need to have appropriate targets, revision was undertaken by the M&E WG. Several meetings also were conducted with 4 regions, and even discussion and explanations were given to the Secretary and the Director General of Health Services.

- Indicator for Project Purpose is revised to "% of patients referred from PCIs who completed the referrals at the institutions specified", the target set as ≥ 80%.
- For Output 1, indicator 1-2 is revised to "# and % of PCIs in the catchment areas of the 4 target BHs tracking their clients referred to MC/DC in each Project site". Targets are set according to the circumstance of the 4 regions.
- Likewise, Output 2, indicator 2-1 and 2-2 were revised and targets are set by looking into the situation of the 4 different areas.

Furthermore, Dr. Champika shared the plans of M&E WG for the 4th Project year, continuing monitoring visits to the target institutions followed by quarterly data collection and analysis.

The JCC agreed on the proposed changes and the revised PDM (ver. 3) was officially signed by the representatives of the Ministry and JICA soon after the meeting.

AGENDA 7: PROGRESS OF THE ACTIVITIES AND PLANS FOR THE FINAL PROJET YEAR

Follow up System Development Working Group
Dr. Siriwardana, the Chairperson of the Follow up System Development WG presented the progress. During 2016, referral follow up system is piloted in Galgamuwa BH, Teldeniya BH and Warakapola BH and developed tools were standardised, while in Kaluwanchikudy BH, translation of the tools into Tamil are in process and the orientation programme is planned in February 2017. He also briefed the JCC regarding the issues identified during the monitoring visits are (1) at some institutions, the system is not introduced / practiced at all, (2) matching of referral forms not done and (3) referral tracking register not maintained. Dr. Champa, RD, RDHS Kurunegala was especially asked to look into the matter as these issues are mostly occurring in Kurunegala. Moreover, Dr. Siriwardana presented the activities planned of the 4th Project year, was accepted by the JCC without further clarification.

Laboratory Service Sharing System
The progress of the activities implemented during the 3rd Project year was presented by the Chairperson, Dr. B. V. S. H. Beneragama. He briefly shared the current status of laboratory activities in the 4 BHs and raised the issue of motorbikes procured by JICA, provided to Kurunegala and Batticaloa took about 6 months for registration. Likewise the motorbikes provided to Kandy in December, 2016 are under registration process, Mr. Anura, the Secretary called Director Transport at the spot and gave instructions to make it faster to cater the specimens from the institutions. Dr. Beneragama also presented the plans for the 4th Project year, was agreed by the JCC.

Clinic Data Collection (CDC) Working Group
Dr. Lakshmi Somathunga, the Chairperson of the CDC WG briefly presented a summary of two pilot surveys carried out in (1) 13 institutions in Warakapola area, Kegalle and 8 institutions in Kaluwanchikudy area, Batticaloa and (2) all the government institutions in Kurunegala districts. She showed the diagram of the survey team and explained that the cost of the surveys were very minimal. During the 4th Project year, the WG is planning to conduct a final survey in all the MoH institutions in Kegalle, Kandy and Batticaloa districts, followed by finalisations of tools and the system.

Medical Supplies Stock Management System Working Group
On behalf of Dr. Kamal Jayasinghe, the Chairperson of the WG, Dr. Ayako Tokunaga briefly shared the progress of the activities. This component is affected by delays in completion of the four Base Hospitals' construction, therefore, the system could only installed in Kaluwanchikudy BH till the 3rd Project year. Basic training was given to the pharmacists and relevant staff of the BH in August 2016, though "Board of Survey" is yet to be planned. Mr. Anura, the Secretary asked Dr. Muruganandan, PD of Eastern Province to coordinate with RDHS / RMSD Batticaloa to complete the survey as soon as possible. Furthermore, she presented the plan for the 4th Project year, basically on the installation of the MSMIS to the rest of the 3 BHs.

Without any further modifications, the JCC endorsed the activities planned for the 4th Project year. It was also agreed that the JICA team will prepare the Work Plan document according to the presentations.

AGENDA 8: ANY OTHER BUSINESS
Announcement was given regarding the Terminal Evaluation planned in August 2017 to be carried out jointly by JICA and MoH. An evaluation team will be dispatched from JICA HQ in Tokyo to facilitate the process and main MoH personnel involved in the Project are expected to be available for information gathering and discussions during the exercises. Also the 8th JCC meeting will be held during the same time to discuss the evaluation findings. The JCC members noted the announcement.

AGENDA 9: CLOSING
Mr. Anura Jayawickrama closed the meeting by thanking all the participants.

4. The list of participants

Chairperson

Mr. Anura Jayawickrama	Secretary, Ministry of Health

Committee Members

Representatives of Ministry of Health

Dr. J. M. W. Jayasundara Bandara	Director General of Health Services
Dr. A. Sunil de Alwis	DDG, ET & R
Dr. Lakshmi Somathunga	DDG, Medical Services I
Dr. B. V. S. H. Beneragama	DDG, Laboratory Services
Dr. S.C. Wickramasinghe	DDG, NCD (Project Manager)
Dr. V. T. S. K. Siriwardana	Director, NCD
Dr. U. S. B. Ranasinghe	Director, PCS

Provincial and Regional Directorate of Health Services of the four target provinces

Dr. K. Muruganandan	PD, PDHS, East Province
Dr. Kapila Bimal Kannangara	PD, PDHS, Sabaragamuwa Province
Dr. V. R. Gunasekara	RD, RDHS, Kegalle
Dr. Champa Aluthweera	RD, RDHS, Kurunegala
Dr. Nayana Danapala	MO/NCD, RDHS Kandy (representing PD of Central Province & RD of Kandy)

Representatives from JCIA side

Ms. Ryoko Tabaru	Representative, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms. Mariko Taniguchi	Project Coordinator, NMP
Dr. Buddhika Hapuarachchi	Senior Project Officer
Ms. Lakshika Abeykoon	Data Manager, NMP

Annex 6-8: Minutes of 8th JCC

1. **Date & Time:** the 25th August 2017, (12:00 - 13:00)
2. **Venue:** The Main Auditorium, Ministry of Health
3. **Agenda:**

AGENDA 1: OPENING

As Mr. Janaka Sugathadasa, Secretary of the Ministry of Health and the Project Director, was unable to attend the meeting due to some unavoidable business, Dr. Champika S. Wickramasinghe, DDG NCD opened the meeting by making opening remarks and requested Dr. Lakshmi C. Somathunga, DDG Medical Services I to chair the meeting on behalf of the Secretary.

AGENDA 2: PRESENTATION AND DISCUSSION ON FINDINGS FROM THE EVALUATION TEAM

Mr. Hajime Sonoda, the consultant, Japanese Terminal Evaluation Team presented the major findings from the evaluation exercise in terms of inputs, outputs, implementation process and the five evaluation criteria (i.e. relevance, effectiveness, efficiency, impact and sustainability). While overall achievements of the Project were found fairly satisfactory, the evaluation also found some of the limitations that affected the Project including the following:

- Lack of human resources, especially there is a considerable staff shortage in peripheral institutions and MLTs in Base Hospitals;
- Transporters of laboratory specimens are not officially assigned or authorised to carry out the tasks outside of their duty stations;
- Interruption in the supply of necessary consumables, e.g. reagents, test tubes, etc.;
- Delay in the construction building of the Base Hospitals.

Dr. Kaname Kanai, the leader of the Evaluation Team presented the conclusions and the recommendation of the evaluation exercise. He expressed in his conclusion that the Project is likely to be completed satisfactory, with other points according to the 5 evaluation criteria as follows:

Relevance: the Project is highly relevant to National and Japanese policy agendas as strong needs for the NCD management are clearly illustrated in the National Health Master Plan 2016 – 2015 as well as Japan's cooperation policy to Sri Lanka;
Effectiveness: the Project considered fairly effective in terms of achievement of its purpose through production of the set outputs, which will be measured by the agreed indicators, and it appears to be reasonable to expect that all the targets for the Project Purpose indicators will be met by the end of the Project;
Efficiency: the efficiency of the Project implementation is considered moderate in view of underutilisation of some of the inputs such as vehicles provided for specimen transportation are not fully utilized;
Impact: in terms of impact, Ministry of Health is planning to carry out island-wide clinic data collection next year and the number of the regions that uses the tools developed by the Project is likely to increase after the Project, however at the time of Terminal Evaluation, it is difficult to predict how speedy the number would increase.
Sustainability: it is considered moderate. As in policy aspect is very high and is expected to be generally high in financial and technical aspects though there are concerns in organizational and administrative aspects such as general shortage of human resources.

Recommendations put forward include:
The Project is:

- to operationalize MSMIS in all four Base Hospitals before the Project ends by expediting installation of equipment and other facilities, user training and stock verifications;
- to complete the on-going final pilot (the 5th pilot) of the clinic survey in Kandy, Kegalle and Batticaloa districts, for which the RDHSs involved considers placing a full-time coordinator to expedite the process;
- to simplify the referral follow-up system for the sake of sustainability, with due attention not to reduce the high referral completion rate achieved;
- to take necessary measures to guide MO/HLCs to do the CVD risk assessment by using the TC test results made available through the laboratory networks instituted by the Project;
- to produce the final tool package to share the experiences and knowledge gained through the Project activities;
- to ensure full utilisation of the scooters and the three wheeler provided by the Project for the laboratory network services through the RDHSs and PDHSs involved.

The Ministry of Health is to consider:

- strengthening the regional NCD interventions by placing additional personals and providing necessary mechanisms for this purpose;
- sustaining the system developed by the Project, assure the continuous availability of Visiting Physician (VP) in each of the target Base Hospitals;
- a functional organizational set up to plan and conduct the island-wide clinic data collection exercise and to explore various ways to analyse and utilize the data obtained;
- selecting appropriate transport modalities for laboratory network depending on local conditions;

- revision of current service agreement between the Ministry of Health and MSMIS maintenance service providers to include institutions under provincial management; and
- incorporating NCD-related aspect in the basic training of health care providers including Medical Officers, Nursing Officers and other health care providers so that they are well prepared to face NCD related challenges.

After the presentations from the Terminal Evaluation Team, Dr. Ayako Tokunaga, the team leader of the Project clarified the action points for the Working Groups (WG) and RDHSs in accordance with the recommendations put forward as follows:

1. Clinic Data Collection (WG Chairperson: Dr. Lakshmi C. Somathunga)

The WG is responsible to complete on-going 5th pilot survey of the medical/diabetes clinics in Kandy, Kegalle and Batticaloa. RDHSs involved are expedite the process and mobilize the resources as necessary, especially Kegalle and Batticaloa to complete the local operation i.e. (1) district level orientation programme, (2) data collection and (3) web-based data entry by the end of September, 2017.

Current status of three districts are:

Kandy

(1) Orientation programme: completed
(2) Data collection: planned in first 2 weeks of September
(3) Data entry: trying to complete by the end of September

Kegalle

(1) Orientation programme: conducted on the 23rd August
(2) Data collection: plan not finalized
(3) Data entry: plan not finalized

Batticaloa

(1) Orientation programme: plan not finalized
(2) Data collection: plan not finalized
(3) Data entry: plan not finalized

After the completion of the above tasks, statisticians of MSU/MoH require to proceed for data cleaning and data processing, which is planned in October, followed by production and finalisation of survey tools by the WG.

2. Installation of MSMIS (WG Chairperson: Dr. B. V. S. H. Beneragama)

The Project should expedite the series of the actions required to operationalize MSMIS before the conclusion of the Project. RDHSs involved need to perform the following:

Kaluwanchikudy BH, Batticaloa and Teldeniya BH, Kandy

- Stock verification

Warakapola BH, Kegalle and Galgamuwa BH, Kurunegala

- Finalisation and signing of the Requirement Document
- Procurement of equipment (including wiring and cabling)
- Installation of MSMIS into computer by MSD
- User training by MSD
- Stock verification

3. Laboratory Network System (WG Chairperson: Dr. B. V. S. H. Beneragama)

PDHSs/RDHSs of the 4 regions

- Official appointment and authorisation of transporters (for accident cover, etc.)
- Assignment of minor staff to the Base Hospital's laboratory for data entry and other simple work
- Continuous supply of consumables (reagents and test tubes)

Kurunegala

- Immediate repair of the scooters provided by the Project
- Re-assignment of a scooter to another institution (with official letter to JICA)
- Procure/provide HDL reagents for the auto analyser at Galgamuwa BH

Kandy

- Deployment of a transporter at Teldeniya BH

Batticaloa

- Arrangement of distilled water supply for auto-analyser in Kaluwanchikudy BH
- Abolish the limit of 5 samples per institution per week (send out a circular)

Kegalle

- Start testing lipid profile at Warakapola BH by providing reagents

4. Referral Follow up System (WG Chairperson: Dr. V. T. S. K. Siriwardana)

WG is responsible (1) to simplify the referral follow up system by September and introduce the simplified system to the target areas by October with monitoring of the utilisation, and (2) to modify the HLC supervision checklists by incorporating check points on CVD risk assessment.

At this juncture, the Chairperson requested the regional representatives to take all the necessary actions to ensure the above action points are implemented without delay and that Kegalle, which was not represented at the meeting, be informed of the same. RDHS Batticaloa was also specifically requested to make extra effort to expedite the clinic data collection which was already behind schedule.

As the floor was opened for the discussion, the following comments and observations were put forward:

- When setting up a laboratory network, one needs to look into different options of transportation including private courier services, public transport and ambulance, as provision of a scooter or a three wheeler to a small institution may not always be effective (Dr. Lakshman Gamlath).
- Asked about the challenges faced by the referral follow-up system set by the Project, Dr. Siriwardana, Director NCD pointed out incomplete/lack of contact details to follow up the clients/patients. He also added insufficient human resources.
- With regard to availability of specialist doctors (VPs) at the 4 target Base Hospitals, it was informed that the current temporary assignments are to be converted to proper appointments by next January, with which future vacancies of these posts shall be prevented (Dr. Somathunga).
- As to the on-going medical clinic surveys in the 3 districts, meeting was alerted that it may face a problem in entering the collected data into the system through the web-based interface, which requires the stable internet connection (Dr. Tokunaga).

AGENDA 3: CLOSING

In conclusion, the chairperson thanked the Japanese Evaluation team for their generosity and support. She also requested the RDHSs to closely supervise the activities so that they will be appropriately and timely implemented to maximize the Project's outputs as well as to achieve the indicators' targets, for the benefit of the hospitals involved and to the people at large. Moreover, she thanked all the attendees for their contributions and the meeting was closed at 13:00.

4. The list of participants

Chairperson

Dr. Lakshmi C. Somathunga	DDG Medical Services I (on behalf of the Secretary)

Committee Members

<Sri Lankan Side>

Dr. Lakshman Gamlath	Actg. DDG Public Health Services II
Dr. S. C. Wickramasinghe	DDG NCD
Dr. V. T. S. K. Siriwardana	Director NCD
Dr. A. T. S. Sudarshana	Deputy Director MSD (representative of Director MSD)
Dr. U. S. B. Ranasinghe	Director PCS
Dr. R. Seneviratne	MO Planning (representative of Director Planning)
Dr. Suranga Fernando	CCP, PDHS, Central Province (representative of PD, PDHS Central Province and RD, RDHS of Kandy)
Dr. Champa Aluthweera	RD, RDHS, Kurunegala
Dr. L. M. Navaratnaraja	RD, RDHS, Batticaloa

<Japanese Side>

Ms. Naoko Kato	Project Formulation Advisor, JICA Sri Lanka Office
Mr. Hideyuki Suzuki	Trainee, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms. Naomi Imani	Deputy Team Leader, NMP
Ms. Mariko Taniguchi	Project Coordinator, NMP
Dr. Buddhika Hapuarachchi	Senior Project Officer, NMP
Dr. Milinda Gamlath	Project Officer, NMP
Dr. Mohamed Shahmy	Project Officer, NMP
Ms. Lakshika Abeykoon	Data Manager, NMP

<Terminal Evaluation Team>

Dr. Kaname Kanai	Team Leader
Mr. Hajime Sonoda	Evaluation Analysis
Ms. Yumiko Inoue	Evaluation Planning

5. Apologies

Mr. Janaka Sugathadasa	Secretary, MoH
Dr. J. M. W. Jayasundara Bandara	Director General of Health Services, MoH
Dr. Eshani Fernando	Director Planning, MoH
Dr. Lal Panapitiya	Director, MSD
Dr. K. Muruganandan	PD, PDHS, East Province
Dr. Kapila Bimal Kannangara	PD, PDHS, Sabaragamuwa Province
Dr. A. M. S. Weerabandara	RD, RDHS, Kandy

6. Absentees

Dr. B. V. S. H. Beneragama	Additional secretary (MS)/ DDG Laboratory Services, MoH
Dr. Amal Harsha De Silva	DDG Medical Services II, MoH
Dr. Sarath Amunugama	DDG PHS I, MoH
Dr. A. Sunil de Alwis	DDG ET & R, MoH
Dr. S. Sridharan	DDG Planning, MoH
Dr. N. Fareed	PD, PDHS, North Western Province
Dr. V. R. Gunasekara	RD, RDHS, Kegalle
Representative	Sri Lanka Medical Association
Representative	Dep. of National Planning, Ministry of Finance and Planning
Representative	Dep. of External Resources, Ministry of Finance and Planning

Annex 6-9: Minutes of 9th JCC

1. **Date & Time:** the 12th January 2018, (14:30 - 16:30)
2. **Venue:** Main Auditorium, Ministry of Health, Nutrition & Indigenous Medicine
3. **Programme:**

PART1: PRESENTATIONS ON THE OUTPUTS AND LESSONS LEARNT FROM THE PROJECT

(1) Overview of the Project and its Performance
(2) Clinic Data Collection
(3) Referral Follow-up Systems
(4) Laboratory Services Networks
(5) Medical Supplies Stock Management System
(6) Comments from the JICA Project Team

REMARKS

Remarks by the JICA Sri Lanka Office
Remarks by the MoH Secretary

PART 2: TAKING IT FORWARD BY MOH & PDHS/RDHS - DISCUSSIONS

(1) Referral Follow-up System
(2) Clinic Data Collection
(3) Laboratory Services Networks
(4) MSMIS

OPENING REMARKS

As the Project Director, Mr. Janaka Sugathadasa, the Secretary welcomed all who were present.

PART 1: PRESENTATIONS ON THE OUTPUTS AND LESSONS LEARNT FROM THE PROJECT

(1) Overview of the Project and its performance

Dr. S. C. Wickramasinghe, the Project Manager and the chairperson of M&E Working Group (WG) presented the overview of the Project according to the PDM Ver. 3 and its achievements by indicators. The meeting noted the targets for most of the indicators had been achieved.

(2) Clinic Data Collection (CDC) Working Group

Dr. Lakshmi Somathunga, DDG MS1 & the chairperson of the CDC WG presented the overview of the achievements of the Group including the district-wide surveys on medical, diabetes, VP/OPD and endocrinology clinic patients, which were conducted with all the MoH institutions in Kurunegala district in 2016 and in Kegalle, Kandy and Batticaloa districts in 2017. The survey tools developed through the pilot tests were also shown, following which a plan that the Clinic Survey would cover all the districts within the next three years was presented.

(3) Follow-up System Development Working Group

Dr. V.T.S.K. Siriwardana, Director NCD unit & the chairperson of the Follow-up System Development WG, presented the outputs from the WG, the system to follow up on HLC/MC patients referred to medical clinics within institutions and to the BH and the associated tools. The challenges faced during the Project period were also discussed. The MoH's planned actions utilising the products in the immediate future were shared as follows:

- Incorporate the referral form into PRM
- Integrate the referral follow up system developed by the Project into the current system of NCD management
- Continuous monitoring of the usage of supervision checklists by MO/NCDs in all the 26 districts

(4) Laboratory Service Sharing System Working Group

On behalf of Dr. B.V.S.H.Beneragama, DDG/LS & Chairperson of Laboratory Services Sharing System WG, who could not attend the meeting, Dr. A.R.M.Thowfeek, Director/Lab Services, reported the four models of laboratory network system in Galgamuwa, Warakapola, Teldeniya and Kaluwanchikudy BHs' catchment areas and shared the tools and information materials developed by the Project. He also presented specific challenges faced with regard to human resources, transportation, supplies/logistics and capacity of laboratories, which need to be considered in scaling up this model as a means to avail laboratory services to primary care institutions. He informed the MoH's plan, in which the laboratory network system would be maintained and scaled up as appropriate within the same district and other districts of the provinces using ADB and World Bank funding expected. In addition, the Laboratory Services unit of MoH shall (i) support PDHS & RDHS to develop laboratories in "Apex hospitals" identified, and (ii) establish a reference laboratory in every province at a tertiary hospital to conduct special investigations.

(5) Medical Supplies Stock Management System Working Group

On behalf of, Dr. B.V.S.H.Beneragama, Acting DDG/MSD & Chairperson of Medical supplies Stock Management System WG, Dr. Sudarshan, Deputy Director/MSD presented the activities undertaken in relation to introduction of MSMIS to the 4 BHs involved in the Project. According to him the MSMIS is only partially operational at Kaluwanchikudy BH and not yet activated at the other 3, pending official stock verification to be organized by RDHS. He also informed that MSD would be introducing the MSMIS to all the BH-A and BH-B in the next few years.

(6) Comments from the JICA Project Team

Dr. Ayako Tokunaga, the team leader of the Project clarified the roles played by JICA Project Team such as management (schedule, supplies distribution, and communication) and periodic monitoring and data collections for the PDM indicators. She urged the MoH to seriously consider the following points for successful implementation of NCD-related work including those undertaken by the Project:

- place more personnel at the RDHSs for NCD interventions to work as a team;
- create a designated position at the RDHSs to properly oversee the laboratories and related activities; and
- deploy dedicated personnel as a national coordinator for the planned islandwide clinic data collection.

REMARKS

Remarks by the JICA Sri Lanka Office

Mr. Toru Kobayakawa, Senior Representative of JICA Sri Lanka Office described the importance of the NCD management in view of the circumstances surrounding the health in Sri Lanka. He also emphasized that the systems developed by this Project should be expanded to island-wide addressing the issues specified in the presentations and that the progress would be evaluated by the ex-post evaluation in about 3 years.

Remarks by the MoH Secretary

Noting the issues presented in the presentation sessions, Mr. Janaka Sugathadasa, the Secretary of the MoH expressed his intention to address the problems one by one while expanding the outputs/outcomes of the Project throughout the nation. He also emphasised that the MoH ensures the outputs from the Project be well utilised after the Project.

PART 2: TAKING IT FORWARD BY MOH & PDHS/RDHS

After the presentations from the Working Groups, more in-depth discussions on the plans for the immediate future were held as follows:

(1) Referral Follow-up System

- In order to minimise the issues in tracking patients, public health nursing officers to be assigned to each PMCU in the near future will be utilised. (Dr. V.T.S.K. Siriwardana).
- Integration of the referral / back reporting forms into PRM will be handled by Dr. S.R.H.P. Gunawardana (CCP/NCD unit).
- There is a problem of attitude about referrals among doctors, which also needs to be addressed.

(2) Clinic Data Collection

- To cover all the districts within 3 years, about 7 districts will be targeted each year. (Dr. Lakshmi Somathunga)
- RDs from Galle, Anuradhapura and Kalumunai districts expressed their interest in carrying out the survey in 2018. Other four districts will be selected later.
- Dr. Nayana Danapala, MO/NCD RDHS Kandy, shared an issue faced at Kandy district about the data entry, which took longer time than expected in the institutions where human resources were insufficient.

(3) Laboratory Services Networks

- In view of various models of laboratory services including point of care testing (POCT) and collaboration with the private sector, the cluster laboratory system piloted by the Project will be one of the options to choose from.

(4) MSMIS

- By 2020, the MSD plans to cover for all the types of institutions from line ministry hospitals to district hospitals with the system. The budget will be from the MoH (as against the province). (Dr. Sudarshan)

CLOSING

Dr. S. C. Wickaramasinghe emphasized that this meeting is not the end, but the beginning of the next phase to maximize the Project's outputs/outcomes. In addition, she thanked all the attendees for their contributions and the meeting was closed.

4. The list of participants

JCC Members
Chairperson

Mr. Janaka Sugathadasa	Secretary, Ministry of Health (Project Director)

Committee Members

Sri Lankan Side

Dr. Lakshmi Somathunga	DDG, Medical Services I, Ministry of Health
Dr. S.Champika Wickramasinghe	DDG, Non–Communicable Diseases, Ministry of Health (Project Manager)
Dr. V.T.S.K. Siriwardana	Director, NCD, Ministry of Health
Dr. Eshani Fernando	Director, Planning, Ministry of Health
Dr. U.S.B. Ranasinghe	Director, PCS, Ministry of Health
Dr. A.R.M. Thoufeek	Director, Laboratory Services, Ministry of Health (representing Dr. B.V.S.H. Benaragama)
Dr. A.T. Sudarshana	Deputy Director, MSD, Ministry of Health (representing D.Lal Panapitiya, Director, MSD)
Dr. V. Premananth	PDHS, North Western Province (representing Dr. K. Muruganandan, PD, PDHS, Eastern Province)
Dr. E.P. Godakanda	CCP, PDHS, NW Province (representing Dr. N. Fareed, PD, PDHS, NW Province)
Dr. K.M.G.K. Bandara	CCP, PDHS, Central Province (representing Dr. Shanthi Samarasinghe, PD, PDHS, Central Province)
Dr. V.R. Gunasekara	RD, RDHS, Kegalle
Dr. A.M.S. Weerabandara	RD, RDHS, Kandy
Dr. L.M. Navaratnaraja	RD, RDHS, Batticaloa
Dr. Indika Wickramasinghe	Deputy RD, RDHS, Kurunegala (representing Dr. Gamini Wimalarathna, Actg. RD, RDHS, Kurunegala)

Japanese Side

Mr. Kobayakawa	Senior Representative, JICA Sri Lanka Office
Ms.Kato Naoko	Project Formulation Advisor, JICA Sri Lanka Office
Ms.Kishani Tennakoon	Project Specialist, JICA Sri Lanka Office
Dr. Ayako Tokunaga	Team Leader, NMP
Ms.Naomi Imani	Deputy Team Leader, NMP
Mr. Kazuya Ogawa	Expert, Health Information System, NMP
Ms.Mariko Taniguchi	Project Coordinator, NMP
Dr. Buddhika Hapuarachchi	Senior Project Officer, NMP
Dr. M.H.M.Shahmy	Project Officer, NMP
Ms.Lakshika Abeykoon	Data Manager, NMP

Observer

Dr. Nalika Gunawardena	National Consultant, WHO

Apologies

Dr. B.V.S.H. Benaragama	DDG, Laboratory Services, Ministry of Health
Dr. Kapila Bimal Kannangara	PD, PDHS, Sabaragamuwa Province
Dr. Shanthi Samarasinghe	PD, PDHS, Central Province
Dr. Lal Panapitiya	Director, MSD, Ministry of Health

Absent

Dr. Anil Jasinghe	Director General, Health Services, Ministry of Health
Dr. Amal Harsha De Silva	DDG, Medical Services II , Ministry of Health
Dr. Sarath Amunugama	DDG, PHS I, Ministry of Health
Dr. Lakshman Gamlath	DDG, PHS II, Ministry of Health
Dr. A. Sunil de Alwis	DDG, Education, Training and Research, Ministry of Health
Dr. S. Sridharn	DDG, Planning, Ministry of Health
Representative	Dep. of External Resources, Ministry of Finance and Planning
Representative	Dep. of National Planning, Ministry of Finance and Planning
Representative	Sri Lanka Medical Association

Other invitees attended

Dr. A.I. Jagoda	Director, Health Information, Ministry of Health
Dr. P. Ananthan	Deputy Director, Non- Communicable Diseases, Ministry of Health
Dr. Poornima Wimalarathne	DD/Lab Services, Ministry of Health
Dr. Virginie Mallawaarachchi	CCP, NCD Unit, Ministry of Health
Dr. S.R.H.P. Gunawardana	CCP, NCD Unit, Ministry of Health
Dr. Samitha Sirithunga	CCP, NCD Unit, Ministry of Health
Dr. Clive James	Registrar, Health Informatics, Family Health Bureau
Dr. N.C.D. Ariyarathna	RD, RDHS, Anuradhapura
Dr. M. Nahontran	Deputy RD, RDHS, Vavuniya
Dr. A. Issale	Deputy RD, RDHS, Kalmunai
Dr. K.H.P. Jeewarathne	Deputy RD, RDHS, Galle
Dr. Chamind Weerakoon	Medical Superintendent, BH Teldeniya
Dr. G. Sukunan	Medical Superintendent, BH Kaluwanchikudy
Dr. Dilini Gunawardena	Medical Superintendent, BH Warakapola
Dr. Nayana Danapala	MO/NCD, RDHS, Kandy
Dr. D.A. Hemali Dasanayake	MO/NCD, RDHS, Kurunegala
Dr. N.D.C. Dilrukshi	MO/NCD, RDHS, Kegalle
Dr. R. Navalogithan	MO/NCD, RDHS, Batticaloa
Dr. S.Shivaganesh	MO/NCD, RDHS, Jaffna
Dr. T. Suredran	MO/NCD, RDHS, Kilinochchi
Dr. T. Osmandtenny	MO/NCD, RDHS, Mannar
Dr. B.L.D Jayanath	MO/NCD, RDHS, Puttlam
Dr. W.R.J.P. Wanninayake	MO/NCD, RDHS, Rathnapura
Dr. Nalin Wijesekara	MO/NCD, RDHS, Galle
Dr. Thusitha Aththanayake	MO/NCD, RDHS, Badulla
Dr. A.M.I. Asiri	MO/NCD, RDHS, Monaragala
Dr .Shalini Gunarathna	MO/NCD, RDHS, Gampaha
Dr. H.K.D.W.M. Gajanayake	MO/NCD, RDHS, Hambanthota
Mrs. K.A.S. Kodikara	Director, Medical Statistics Unit, Ministry of Health
Mr. Chaminda Perera	Project Assistant, MSD, Ministry of Health
Mr. M.W.R. Shyaminda	ICT Officer, MSD, Ministry of Health
Mr. I.M. Mahinda Herath	Office in charge/RMSD, Kurunegala
Mr. W.M.P. Arambepola	Office in charge/RMSD, Kandy

Annex 7: Summary of Findings from the Situation Analysis

1. Follow-up System of HLC Screened Clients

◆ **Current situations:**

- No institution has an established follow-up system to track their referred clients at the moment. This current lack of the system is in reflection of the following factors:

(1) under the under the free and open system where people can go to any hospitals of their choice, contacting the clients one by one is the only means for them to find out if s/he has obtained the further care as prescribed and this is time consuming;
(2) telephone numbers of clients are not always entered in the HLC registry, making it difficult to follow up on the clients;
(3) in view of the human resource constraints, institutions' priority is to attend to those who come to seek their services; and
(4) in rare cases of a screened client needing immediate attention of specialists, s/he is transferred to a higher-level institution by ambulance (= "transfer" as against "referral"). This leaves those "referred" are not in immediate danger.

- Personal medical record (PMR) booklets provided at HLCs, Medical Clinic (MC) record booklets (= ordinary exercise books commonly used at MCs) and referral letters are the most commonly used referral tools, all of which do not leave any records at the institution. While some institutions do keep duplicates of the MC record booklets, no information contained therein is collected/compiled in the current information system.
- Number and/or proportions of clients assessed as "requiring referral to Medical Clinic of the Institution" are recorded at the 20 HLCs out of the 32 HLCs surveyed. The proportions of this referral within the same institution differ among the 20 HLCs, ranging from 1.20% to 34.15% averaging at 11.34%.
- Numbers of clients assessed as "requiring referral to Specialist Medical Clinic" are recorded by only 12 out of the 32 HLCs surveyed. The proportions of this out referral differ quite significantly among the 12 institutions, ranging from 0.41% to 7.32% averaging at 2.52%.
- The follow-up registers are not always kept diligently, indicating non-uniform understanding on the format provided. Insufficient attention to this particular part of the record keeping is perhaps because information therein is currently not routinely collected.
- The current recording system offers no information on the actual proportion of clients who do or do not obtain higher-level care needed outside of an institution.

◆ **Options for the project**

- It would be relatively simple to set up a system to follow up on "requiring referral to a Specialist Medical Clinic" clients: by (i) ensuring clients' telephone numbers are entered in the registry and (ii) assigning someone from HLCs a task of checking on them by calling after a while.
- Similarly, for those "requiring referral to Medical Clinic of the same Institution", an internal system within an institution to trace the clients to the MC may be established.
- However, to make the system functional, dedication/motivation of the assigned personnel and appropriate supervision would be crucial. Given the human resource constraints at HLCs in primary-level institutions, this would be one of the major challenges that need to be overcome.
- The project may start with a proper survey to find out the actual proportion of the clients who receive the necessary medical attention at an MC as recommended by HLCs. If the survey finds the proportion of those accessing the further care at MCs is already sufficiently high, this component of the project may be scraped with consensus of the stakeholders.

2. Networking of Institutions (Satellite Laboratories)

◆ **Current situations:**

- TC tests for clients/patients are currently available at only 1 BH (Galugamuwa) out of all the primary and secondary institutions surveyed. The major barriers are: availability of sufficient number of laboratory technicians (MLTs), reagents and biochemical testing equipment.
- It was not possible to determine the proportion of the clients who were able to procure TC tests among those

who should be tested according to the risk assessment done at HLCs. It was due to insufficient record keeping.

- Blood glucose tests are available at most of the surveyed institutions. However, some cases were reported where HLC sessions did not take place because test strips were out of stock. Some BHs did venous blood tests under such a circumstance.
- Among the HLC surveyed, only 4 HLCs in Kurunegala currently avail TC tests for their clients, making use of the Satellite Laboratory system the district has established by strategically placing MLTs and equipment to cater for testing needs of surrounding institutions.
- Other districts also have some kind of static satellite laboratories. Kegalle has in addition one mobile laboratory team (with 2 vehicles) as of 2013 but they are not operational in the catchment areas of the target BHs.
- MoH has an initiative of designating selected LM hospitals as laboratory centres to cater for the needs of other hospitals surrounding them. As TC tests for NCD screening at HLCs are not necessarily accounted for in this plan, however, Directorate of Laboratory Services is planning to institute a similar system to cater for the HLCs ("ComLab").
- Directorate of Organisation Development also has a project ("Shared Care Cluster System") which includes establishment of a laboratory service sharing system. It started at the beginning of 2014 in Anuradhapura, Ratnapura, Vavuniya and Puttalam districts.

◆ **Options for the project**

- It is proposed that the 4 BHs be designated as TC testing centres for managing (and screening) NCDs in their respective catchment areas and establish a mechanism to collect specimens from the primary institutions in regular intervals and send back the results in a reasonable time frame.
- This assumes that the 4 BHs, after the current refurbishment is complete, will have sufficient human resources, equipment and supplies to carry out TC tests for NCD management in addition to various laboratory investigations required by day-to-day operations of the hospitals. RDHS/PDHS will have to secure necessary laboratory supplies, which they in general are reportedly capable, budget wise.
- Installing a fully automatic biochemical analyzer (instead of semi-automatic machine) at each of the 4 BHs will significantly increase testing capacity. The proposed lists of equipment for the 4 targets BHs submitted by the respective PDHS to the Secretary do include auto analysers.
- Satellite Laboratory networks of Kurunegala could serve as a model for other districts to emulate. The project should also link with not only the "ComLab" initiative but also with the "shared care cluster system" undertaken by Dir. Organisational Development.

3. Capacity Building of MO/NCD in Monitoring

Issues as per the PDM appear to be (i) the late submission of regular reports from districts to the central level (i.e. NCD) unit due to inadequate monitoring capacity of the MO/NCDs, to be addressed by this project through training.

◆ **Current situations:**

- The major cause of the delays in report submission is the delayed, incomplete and/or inconsistent data submission by HLCs, affected reportedly by (i) weak motivation/understanding of the MOICs and (ii) insufficient skills/knowledge (+ perhaps time) of those responsible for compiling the data at HLC (i.e. nurse, midwife or minor staff). As such, the current problems related to the reporting including its timeliness are unlikely to be solved by improving skills and knowledge of individual MO/NCDs.

% of monthly reports submitted in time by HLCs

	1st Q 2014	4th Q 2013	3rd Q 2013
Kandy	0%	0%	0%
Batticaloa	10%	25%	10%
Kurunegala	40%	20%	40%
Kegalle	30%	30%	40%

- Some of the issues faced by MO/NCDs in relation to monitoring include:

(1) With the increasing number of HLCs, the workload is simply too much for one MO/NCD to handle, even with full-time support staff to help them (Batticaloa does not have a dedicated support staff);
(2) Lack of dedicated transport for supervisory visits for MO/NCD (Kandy, Batticaloa); and
(3) Insufficient computer skills at the district level (Kurunegala)

The issue may be more of an effective monitoring system at the regional level rather than the capacity of individual MO/NCDs, especially with the regular rotation of the job holders.

	Batticaloa	Kandy	Kegalle	Kurunegala
Land area of the district (km^2)	2,854 km^2	1,940 km^2	1,693 km^2	4,816 km^2
District population (2012)	525,399	1,370,247	836,659	1,610,955
# of MOH areas (current)	14	23	11	30
# of HLCs (current)	12	23	50	133
# of HLCs at the end 2014	14	28	52	136
# of MO/NCD	1	1	1	1
# of full time staff under MO/NCD(s)	0	1	2	3 (a)
Dedicated vehicle for MO/NCD(s)	0	0	1	1 (a)

(a) shared with MO/CKD

- While monitoring constitutes a major part of their responsibilities according to their Job Descriptions (JD), there do not seem to be clear and shared understanding of "monitoring", possibly related to the absence of monitoring guidelines or manuals. Their current monitoring practices, including data analysis, are largely dictated by the reporting requirements and tools (formats, checklist, etc.) provided by the NCD unit.
- No MO/NCDs involved in the survey had had proper training in monitoring in the past. While their understanding and skills in monitoring are not uniform, however, individual efforts have been made in each district to make HLC monitoring more efficient by, for example, devising own tools.
- One of the current challenges is training up new MO/NCDs in various areas of NCD control. While NCD unit organises short training in thematic areas for new MO/NCDs as and when necessary/possible, monitoring is as of today not covered by this effort.

◆ **Options for the project**

- Timeliness of the report submission needs to be addressed through improving capacity of HLCs (which may be outside of the project scope) rather than of MO/NCDs.
- The project could develop a monitoring handbook or guidelines and training modules for MO/NCDs in line with (i) their JD and (ii) reporting framework. Issues that need to be considered in the process include:

(1) As the JD covers such wide areas, the tools to be developed may need to be selective in their focus, lest they be too genera;
(2) Revision of the current reporting formats, which the NCD unit is planning to undertake; and
(3) Responsibility/sustainability of training MO/NCDs under the rotation system.

4. Enhancing the Stock Management at the 4 BHs (to reduce stock-out occasions)

◆ **Current situations:**

- MoH has recently been focusing on ensuring availability of the 16 essential medicines for NCD, due to which stock-out of the NCD-related drugs are rather rare these days. The situation is similar about the test strips for blood glucose. While there is no guarantee that this favourable condition sustains, at least the baseline data shows little room for improvement.
- Major causes of the stock-out are reportedly (i) absolute shortfalls of the overall supply against the demand due to the shortage of the national funds, and (ii) substandard quality of some imported drugs, due to which the stock cannot be distributed. As such, enhancing the stock management at the 4 BH levels may not significantly contribute to reduction of stock out (= PDM indicator).
- MoH (MSD: Medical Supply Dept.) has developed a computerised system for stock management and introducing it to MSD, Regional MSD (RMSD), SPC, NDQAL and the hospitals managed by MoH ("Line Ministry hospitals"), planning to implement the complete system before the end of 2014 (but may take much longer than this forecast). Expansion to provincial hospitals would be the next phase, to be financed by the provincial governments. This will be the ONE and ONLY system for the government hospitals.
- In Northwestern and Southern provinces, a free software (Medilog LK) has been in use for stock management at the RMSD for some years.
- A committee to oversee stock management has been set up recently at each hospital, through which stock status is reviewed monthly and shared with other institutions in the region. Commodities are then moved between institutions according to their surplus and shortage.
- Record keeping system in the pharmacies are standardised at least at the 4 BHs. The pharmacies have PCs but they are not used for stock management.

◆ **Options**

- Cancellation of this component: In view of the national system being rolled out by the MSD, the project may not have much role to play in improvement of the stock management system. The cost of introducing the system to the four target BHs (equipment and licensing fees) would be too great for the project to cover. The project may be able to support the process of the system introduction at the 4 BH, if it happens during the project period and if it is necessary. More details need to be discussed with RDHS/PDHS.
- The project could also assist computerisation of the record keeping at the 4 target BHs using commonly available software such as Access or Excel or Medilog LK, as a bridging measure to be used until the centralised system comes down to this level in future. Pros and cons of this option are summarised in the table below.

Pros and cons of undertaking computerisation of record keeping system

Pros	Cons
➢ Can reduce dependency on memories of individuals. ➢ Realises automatic routine analysis such as computation of monthly average consumption, identification of short-stocked and surplus items, etc, saving time of the pharmacy staff. ➢ Can reduce the number of registers in future.	➢ Pharmacies will have to keep the current manual system while trying out a computerised system, at least in the beginning. ➢ Unlikely to produce significant impact such as reduction of stock-out.
➢ May be worth developing if it takes some time for the MSD system to be introduced to the BHs. ➢ Computerised records must be accepted by the district health administration as against the current standardised manual record keeping. ➢ Compatibility of the computerised system to MSD must be ensured so that the data could be imported into the MSD system when introduced.	

5. NCD Surveillance System (to capture the national trend of risk factor/prevalence)

◆ **Current situations:**

- The current system captures good range of data elements on risk factors, morbidity and mortality, which are utilised in some ways at different sections/levels of MoH, with some degrees of challenges in light of capturing national trend.

Specific to risk factor surveillance

- NCD unit is currently undertaking STEP survey, together with WHO. The sample size is approximately 7200 and the data will be collected at 80 DS divisions nationwide.
- Screening data from HLC are manually collated and submitted to the district monthly. The data are entered into a computer by MO/NCD and his/her assistant(s), who compile quarterly reports according to the prescribed format. The quarterly reports are submitted to the NCD unit both manually and electronically through RDHS.
- HLC data are currently well utilised as indicators for coverage of the screening programme, which also serves as a basis for a DLI to obtain the HSDP2 funds.
- The current HLC dataset as it is, however, may not be useful for policy-level decision making due to (i) the unbalanced gender composition of the clients, (ii) multiple registration of clients, (iii) aggregated forms of the reported data and (iv) their focus on outputs (= numbers) rather than outcomes.
- The workload of MO/NCDs is getting heavier with the increasing number of HLCs being established. This may be reducing the time and attention of those at the district and national levels for interpretation and utilisation of the information obtained.
- A web-based system (based on DHIS-2) to collect and analyse HLC data has been developed by Prof. Vajira of Univ. Colombo and currently being tested in Kurunegala district. NCD unit is planning to deploy this system nationwide.
- NCD unit also has a plan to modify the data collection formats, possibly toward the end of the year after the major work of the STEP survey is completed. The web-based system mentioned above will then be modified to accommodate the changes.

Specific to morbidity surveillance

- One possible and more gender-balanced data source than HLC data is the service statistics from Medical Clinics. The number of visits are reported from institutions periodically but other data that allow in-depth analysis are not collected in a standardised manner at the moment. Systematic collection of this data nationwide would offer quite comprehensive picture of NCD prevalence of the country.
- On the other hand, IMMR alone reportedly captures around 80% of NCD patients, according to the Health Information of MoH. Under the HSDP2, IMMR is being computerised and progressively rolled out as "eIMMR" to both national and provincial institutions (down to the Divisional Hospitals).

◆ **Options**

- Once the DHIS-2 is introduced to the target districts, the project could assist the districts and NCD unit in management and effective utilisation of the data for decision making and programme improvement. This would include identifying kind of analysis needed by the system users and further fine-tuning the system to accommodate them in cooperation with Prof. Vajira's team.
- The project could also contribute to introduction of the DHIS-2 to the target districts if desired, by organising initial training in cooperation with the Prof. Vajira's team, for example.

6. Mobile/Field HLC (seen as a way to reach out for male clients by MoH)

◆ **Current situation:**

- All the four target districts have Mobile/field HLCs. Their sessions are organised often (but not always) as community-level events/campaigns upon requests by local political or religious leaders. Such sessions are often organised by MO/NCD who pull necessary resources together from several institutions including MOHs. A small number of MOHs do screening more regularly according to a fixed schedule at their satellite centres.
- Quality of mobile screening, especially in the first case mentioned above, differs from the regular HLCs. They tend to be more focused on the act of check-up rather than risk assessment or life style modifications. Issues reported include:

(1) the number of people to screen in one occasion is often too great for the providers to afford proper (i) record keeping including referrals and (ii) consultation including Total Risk Assessment (TRA);
(2) MOs deployed may not be well trained in Total Risk Assessment;
(3) lack of privacy and time prevents proper history taking; and
(4) Personal Medical Record booklets are not always given to clients of mobile sessions.

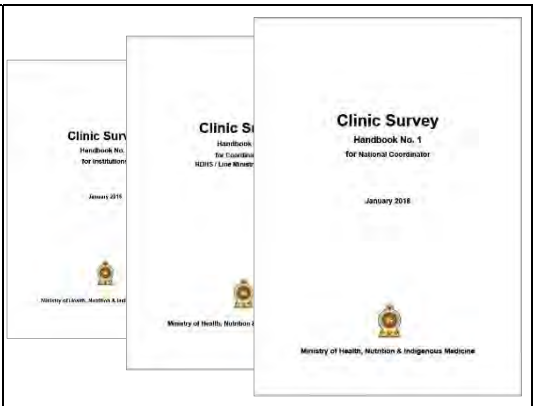
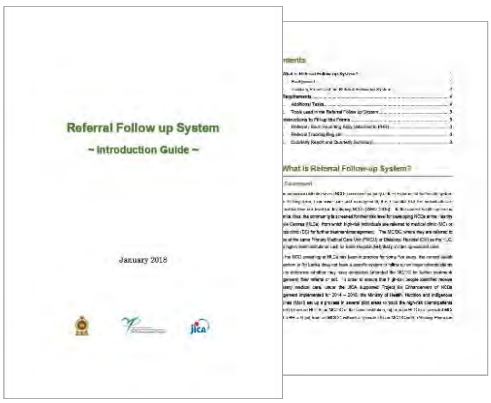
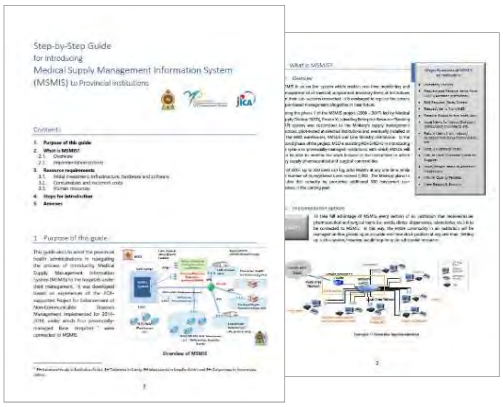
- When funded as a project with special funds, sustainability needs to be looked into. Uththama Sharma Pooja, under which mobile screening to work places organised in Colombo, discontinued when funding ceased.
- Proportion of male clients appears to be only slightly higher than static HLCs.

Annex 8: List of Materials produced by the Project

All the items except for those shaded are included in the DVD

WG/Area	Material		Distribution
Clinic Survey	1. Coordinator's Handbooks (set of 3)	A4, MS Word • For National Coordinator • For District Coordinator (+ LM institutions) • For Institution Coordinator/data collectors	Digital copies to be uploaded onto MoH server/website
	2. Survey tools	• Data collection Forms in English, Sinhala and Tamil (used in the 5th pilot survey) • Format for "basic data collection of institutions" (used in the 5th pilot survey)	
		• Web-based data entry system	(in the custody of Dr. Buddika Dayarathne as one of the National Coordinators for the 5th pilot survey appointed by the MoH Secretary)
		• Stata programme for data processing	Stata installed in 4 computers @ MSU. Survey data and analysis to be uploaded onto MoH server/website
	3. Survey data	• All the data collected through the pilot surveys	
Referral Follow-up	1. Referral Form	A5, pink, English + Sinhala + Tamil in one, instruction on the cover (produced as booklet with 100 sheets)	1-year supply distributed in Jan 2018 to the institutions in the Project Area Digital copies to be uploaded onto MoH server/website
	2. Referral Tracking Register with instruction	A3 sheets produced in A4 exercise book format, Sinhala and Tamil versions	
	3. Reporting format	MS Word (1 file contains 2 formats, for institutions and for MO/NCDs) To be submitted to NCD unit by the institutions involved in the Project via MO/NCDs together with the regular HLC returns.	Hard copy given to institutions and MO/NCDs in the Project Area in Jan 2018
	4. Referral / Back reporting slips (draft)	MS Word To be integrated into the Personal Medical Record books by NCD unit as appropriate	NCD unit
	5. Introduction Guide	MS Word, intended for NCD unit	
	6. HLC Supervision Checklist	MS Excel	Digital copy to be uploaded onto MoH server/website
Laboratory Network	1. A Guide for Establishing a Laboratory Service Network	A4 book, full colour, include all tools produced by the Project in Annexes Intended for PDHS/RDHS	Hard copies (i) distributed to institutions involved in the Project, and (ii) sent to all PDHS and RDHS. Digital copy to be uploaded onto the MoH server/website.
	2. Laboratory sample register and Transaction Record	A3 sheets produced in A4 exercise book format with instructions on the first pages. Sinhala and Tamil versions. Intended for feed-in institutions (PCIs)	1-year supply given to PCIs involved in the Project. 4 RDHSs given some extra copies. Digital copies to be uploaded onto the MoH server/website.
	3. Lab. test order/result forms	Order form (English): Biochemistry	
		Order form (English): Haematology, UFR Result form (English): UFR	Digital copies to be uploaded onto the MoH server/website.
	4. Posters x 2 kinds x 2 languages	• TC tests available FOC (blue) – Sinhala and Tamil versions • Come to HLC (yellow) – Sinhala and Tamil versions	Distributed to all institutions and RDHSs involved + to additional institutions as requested by RDHSs. Digital copies to be uploaded onto the MoH server/website.
	5. Flipchart (2 pages)	A3, 2-sided, Sinhala and Tamil versions, "What is Cholesterol?" + "Test results"	
	6. CVD risk assessment chart	A4, full colour, laminated Steps in CVD risk assessment + risk assessment chart + mmol/mg conversion scale	
	7. Stickers	• For cool box 1: Sinhala + Tamil in one • For cool box 2: graphics only • For refrigerator: Sinhala and Tamil versions	
MSMIS	1. Step-by-step Guide for Introducing MSMIS	A4, MS Word, Intended for PDHS/RDHS	Final Draft given to participants at Dissemination Forum. Digital copy to be uploaded onto the MSD and MoH server/website.

Annex 9: Manuals produced by the Project

Clinic Survey Coordinators' Handbooks (A4, English) • No.1: for National Coordinator (9 pages) • No. 2: for Coordinators at RDHS and Line Ministry Institutions (8 pages) • No. 3: for Institutions (12 pages) ✓ Flow of the survey activities ✓ Who should be involved ✓ Tools ✓ Resources required ✓ Practical tips	
Referral Follow up System Introduction Guide (A4, English, 13 pages) • For NCD Unit to use when rolling out the referral follow-up system when the forms are integrated into the PMR • Written in line with the system simplified toward the end of the Project ✓ Overview of the system ✓ Tasks and tools for each step of the system	
A Guide for Establishing a Laboratory Service Network (A4, English, 55 pages) • Assist PDHS/RDHS in planning, setting up and operating a lab service network • Guide MO-in-charge at apex hospitals with a laboratory and of feed-in institutions in running the lab network ✓ Different models and practical tips based on the Project experiences in the 4 pilot areas ✓ All the tools produced by the Project, which can be used for day-to-day operation of the network	
Step-by-Step Guide for Introducing Medical Supply Management Information System (MSMIS) to Provincial Institutions (A4, English, 15 pages) • Assist PDHS/RDHS in planning for and navigating through the process of MSMIS introduction at provincially managed hospitals in consultation with the MSD ✓ Overview of the system and options ✓ 7 steps to be taken before the system activation ✓ Required resources incl. equipment specifications	

Annex 10-1: Questionnaire for Clinic Survey

Final Trial

Clinic Survey

July 2017 (One specified day)

Ministry of Health

Institution Use stamp if available	
Clinic No of patient	
Serial No of questionnaire	

After the survey, write the sequential number from 1 in the "Serial No. of questionnaire".

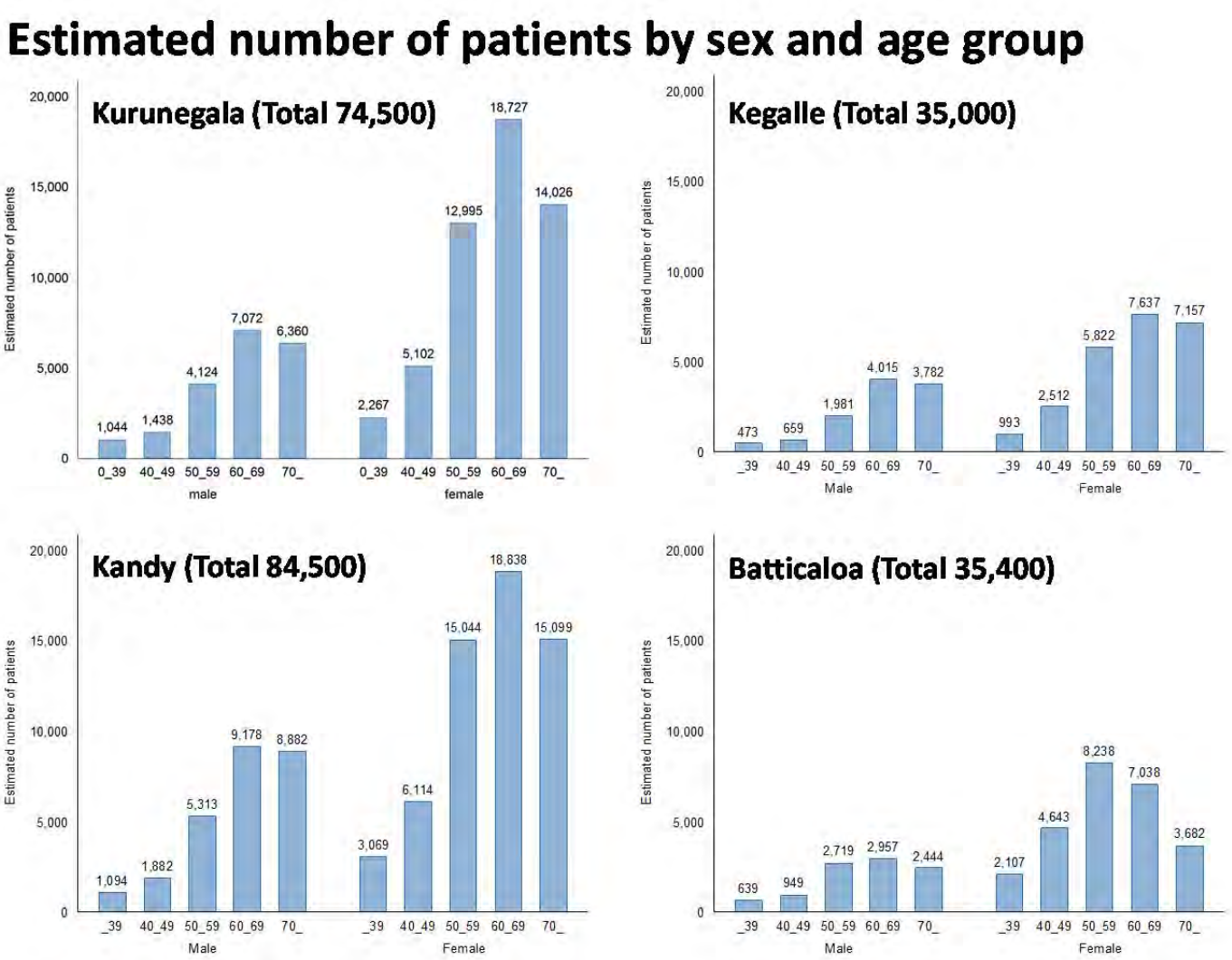
Date of survey

Data items from "(1) Type of clinic" to "(5) Type of visit" should be **filled out by Nursing Officer or other staff** at the registration face to face with the patient.

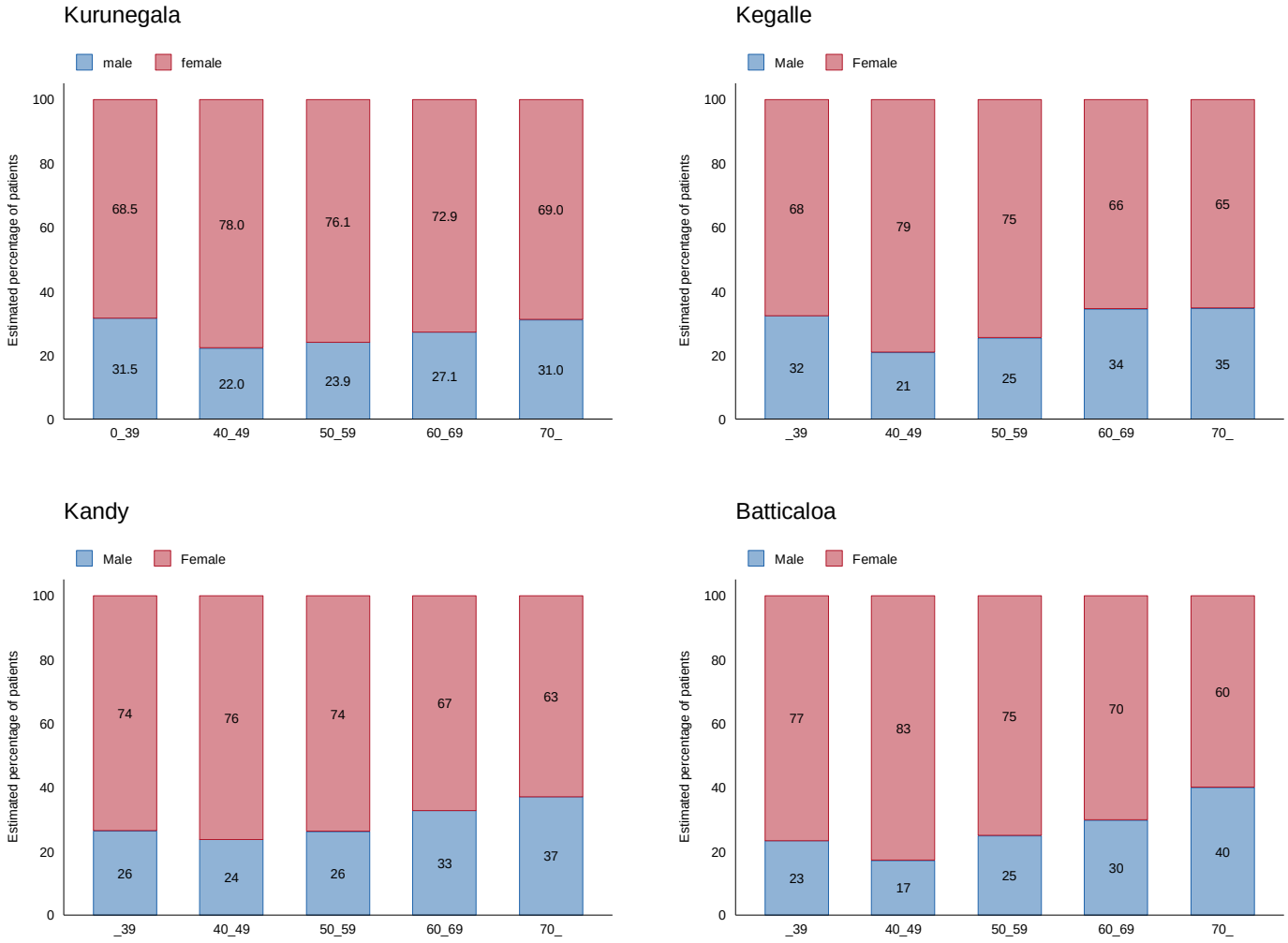
(1) Type of clinic	☐ Medical clinic	☐ VP/OPD clinic	☐ Other
	☐ Diabetes clinic	☐ Endocrine clinic	
(2) Gender	☐ Male		
	☐ Female		
(3) Year of birth	Year	*Only if year of birth is unknown, write estimated age.	Age
(4) Address	4-1 District →		4-2 DS area
(5) Type of visit	☐ Subsequent visit →	Date of **previous** visit *Record only if subsequent visit.	Day / Month / Year
	☐ First visit →	Origin of referral *Tick only if first visit.	☐ OPD (same hospital) ☐ Other clinics (same hospital) ☐ Ward (same hospital) ☐ Other government hospitals ☐ HLC (same hospital) ☐ Others (Private hospital etc.)

"(6) Disease" is to be **ticked by Medical Officer**.

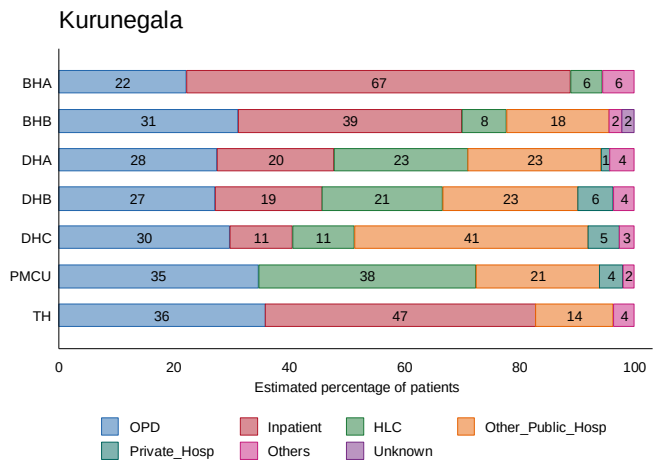
(6) Diseases				Last value available (within 6 months)
* Tick diseases which were **checked up on the survey day.**	1	Diabetes Mellitus	☐ New ☐ Follow-up →	FBS: mg/dl mmol/L ☐ N/A HbA1c: % ☐ N/A
* Tick **"New"** if you checked up the diseases **firstly** on the survey day .	2	Hypertension	☐ New ☐ Follow-up →	SBP: mmHg ☐ N/A DBP: mmHg ☐ N/A
* Otherwise tick **"Follow-up"**.	3	Hyperlipidaemia	☐ New ☐ Follow-up →	Total Cholesterol: ☐ N/A
	4	Ischemic Heart Disease	☐ New ☐ Follow-up	
	5	Stroke	☐ New ☐ Follow-up	
	6	Rheumatological Disorders (including Arthritis)	☐ New ☐ Follow-up	
	7	Epilepsy	☐ New ☐ Follow-up	
	8	Chronic Renal Diseases	☐ New ☐ Follow-up	
	9	**Bronchial Asthma**	☐ New ☐ Follow-up	
	10	COPD	☐ New ☐ Follow-up	
	11	Haematological Disorders (including Anaemia)	☐ New ☐ Follow-up	
	12	Thyroid Dysfunction	☐ New ☐ Follow-up	
	13	Psychiatric Disorder	☐ New ☐ Follow-up	
	14	Other Diseases (Specify below) →		
	■		☐ New ☐ Follow-up	
	■		☐ New ☐ Follow-up	

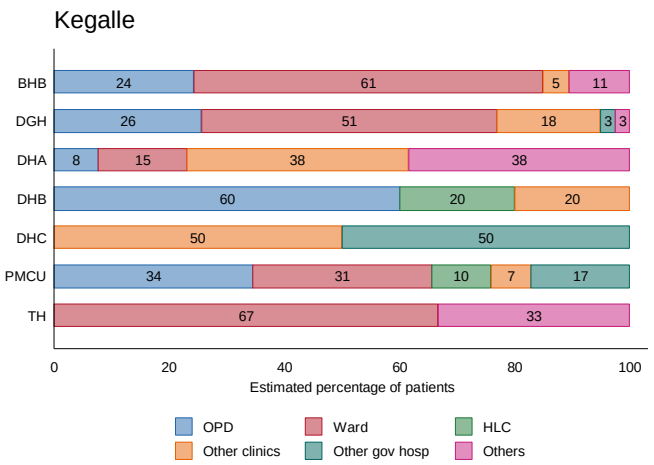

Estimated number of patients by sex and age group
Kurunegala (Total 74,500)
Estimated number of patients
20,000
15,000
10,000
5,000
0
1,044
1,438
4,124
7,072
6,360
2,267
5,102
12,995
18,727
14,026
0_39
40_49
50_59
60_69
70_
male
female
Kegalle (Total 35,000)
473
659
1,981
4,015
3,782
993
2,512
5,822
7,637
7,157
_39
Male
Female
Kandy (Total 84,500)
1,094
1,882
5,313
9,178
8,882
3,069
6,114
15,044
18,838
15,099
Batticaloa (Total 35,400)
639
949
2,719
2,957
2,444
2,107
4,643
8,238
7,038
3,682

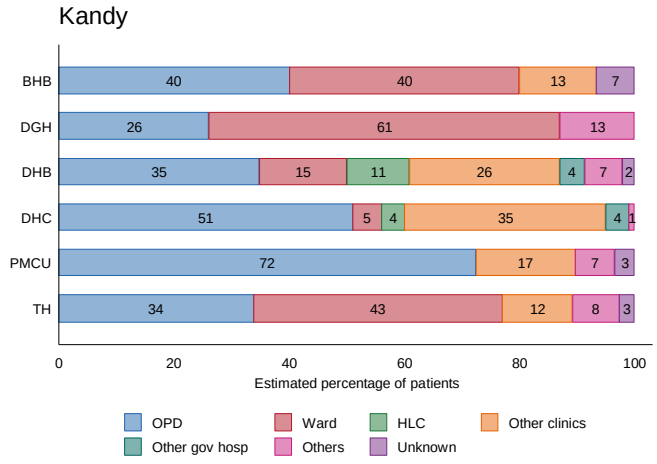
Estimated percentage of patients by sex and age group

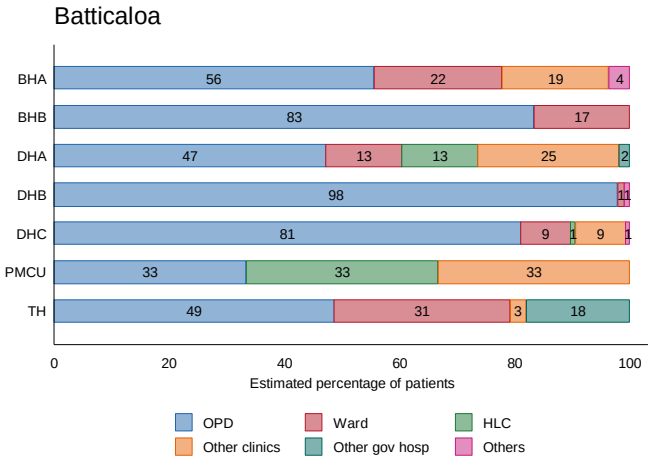


Origin of referral by type of institution

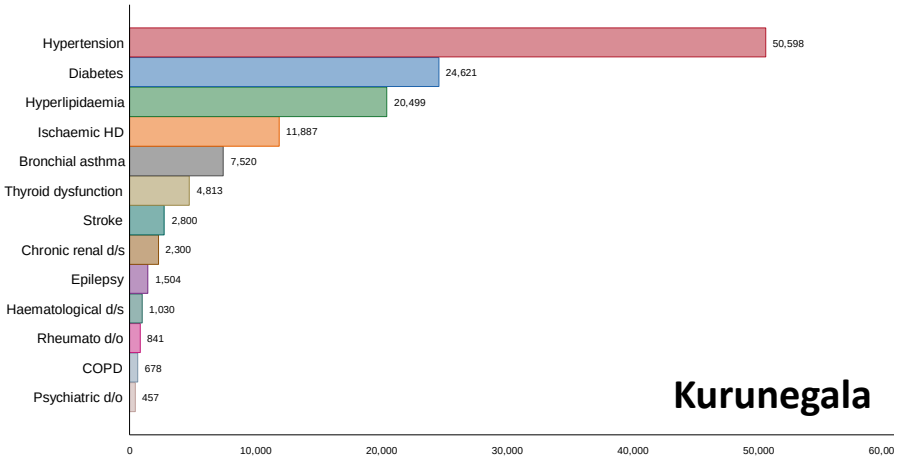


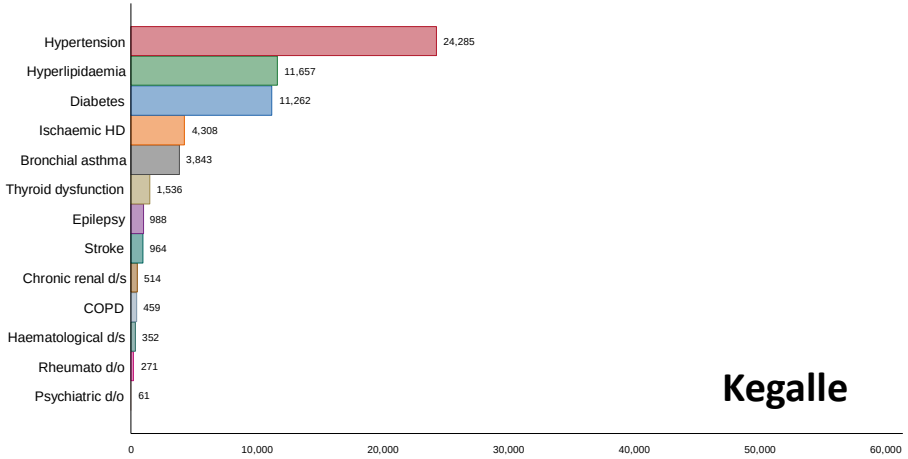


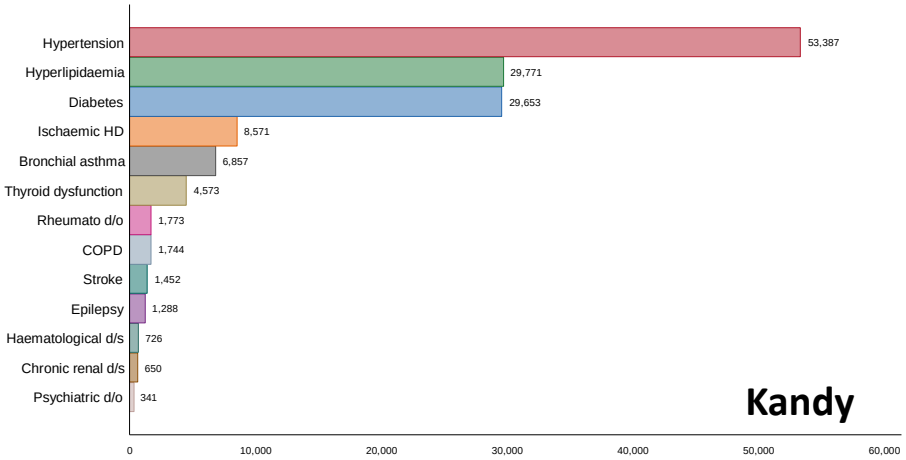


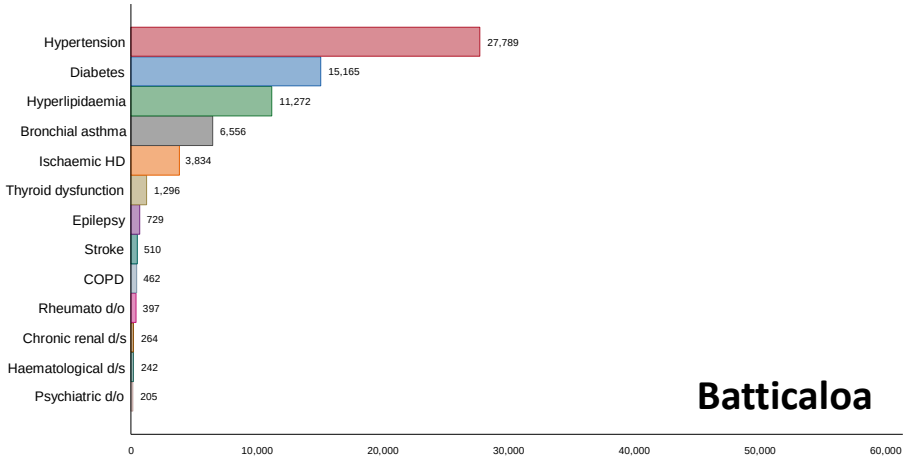


Estimated number of patients by diseases



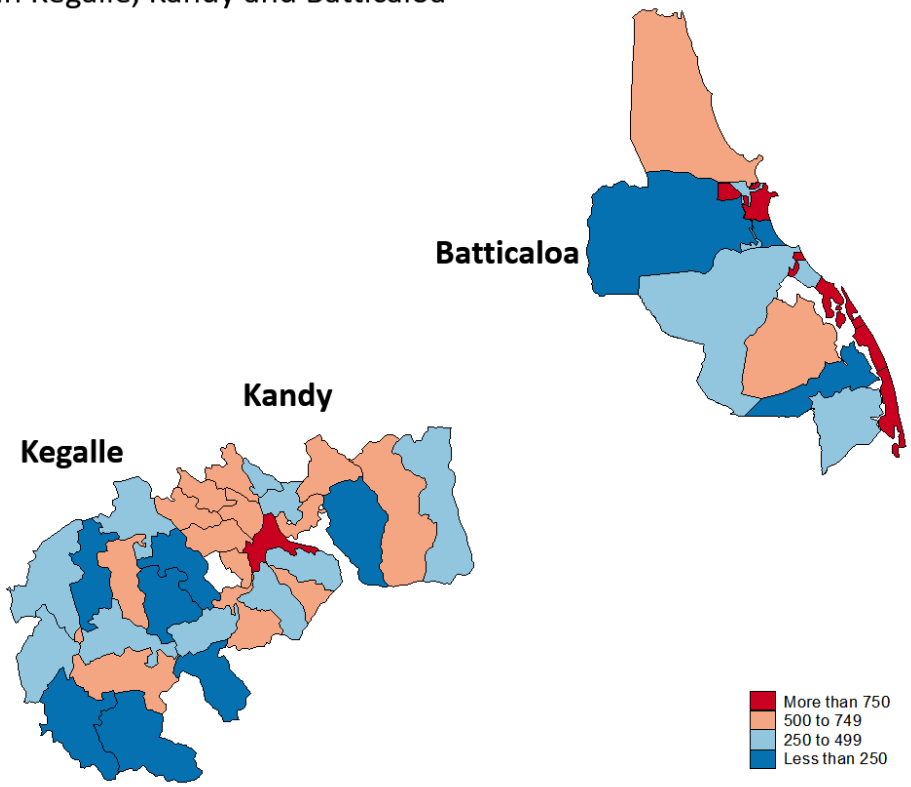






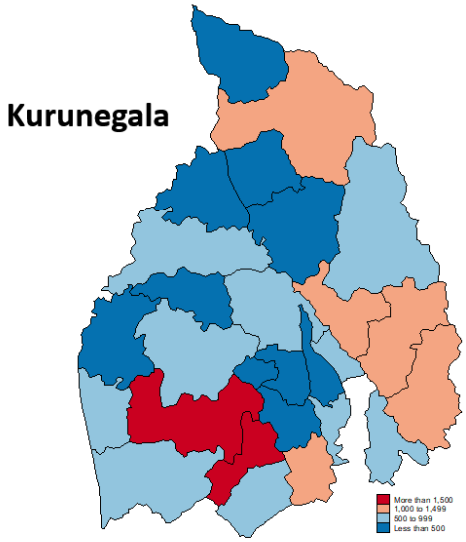
Ratio of patients visiting to target clinics

Estimated number of patients **with DM**
per 10,000 people over 40 years old (**age-standardised**)
in Kegalle, Kandy and Batticaloa



Number of patients visiting to target clinics

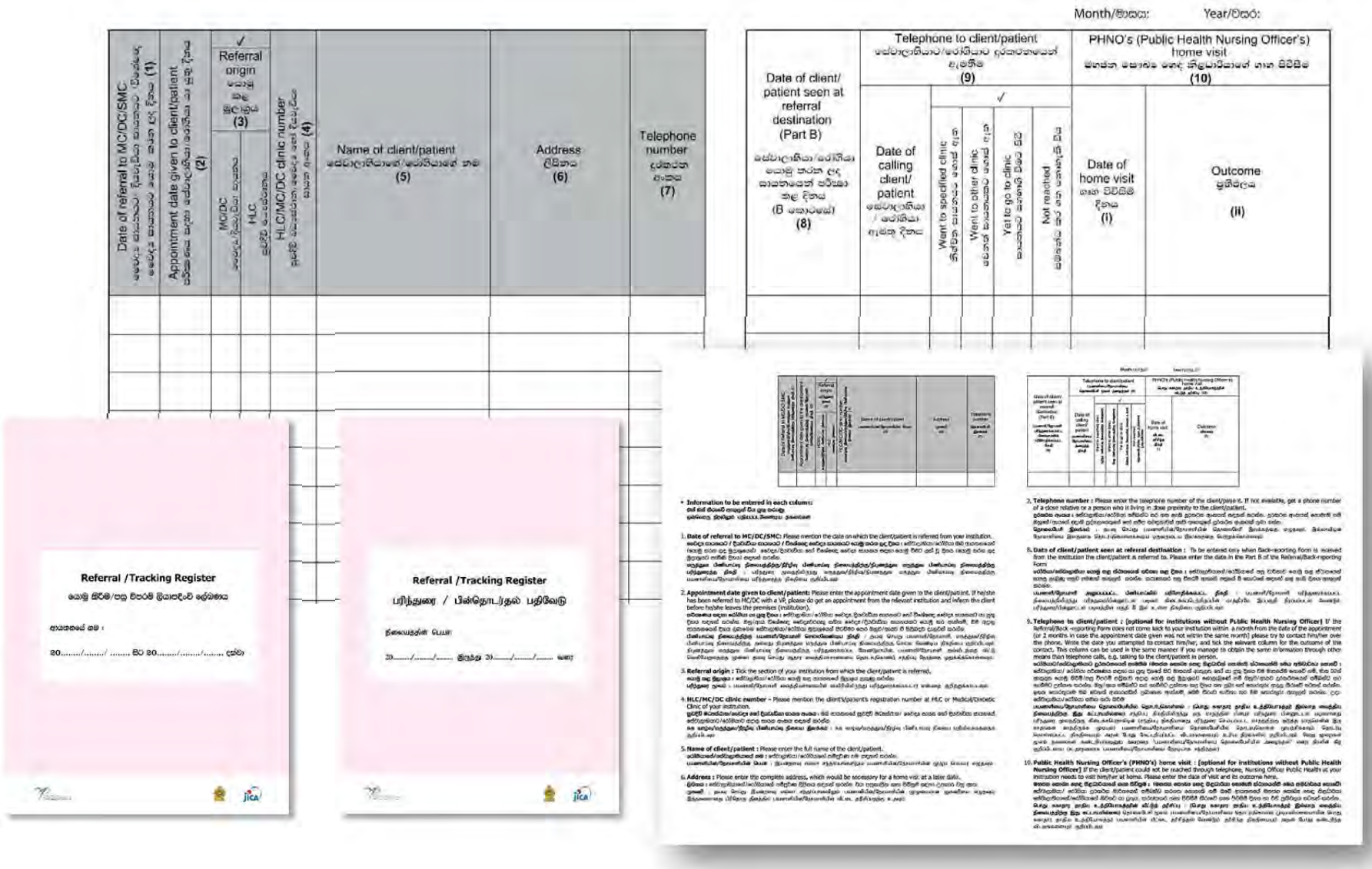
Estimated number of patients **with DM** in Kurunegala
(This is not population based data (**NOT age-standardised)**.
This can be converted into age-standardised using population by age group.)



Annex 11-1: Referral/Back-Reporting Slip for Follow-up System

Date	Reason for referral	Referred clinic/ institution Appointment/ Next clinic date	Back referral/ Follow-up	Back-Reporting Slip (this side is to be filled by Referral Origin)	Back-Reporting Slip (this side is to be filled, detached and sent out by the referral destination to the referral origin)
				Patient's name: ______ PHN/Clinic No.: ______ Referred from: ______ Gender: M / F MO's signature: ______ Date: ______	This patient was seen by Dr. ______ at ______ clinic of TH/DGH/BH/DH/PMCU: ______ on ______ (date). Signature of Consultant/MO: ______
				Patient's name: ______ PHN/Clinic No.: ______ Referred from: ______ Gender: M / F MO's signature: ______ Date: ______	This patient was seen by Dr. ______ at ______ clinic of TH/DGH/BH/DH/PMCU: ______ on ______ (date). Signature of Consultant/MO: ______
				Patient's name: ______ PHN/Clinic No.: ______ Referred from: ______ Gender: M / F MO's signature: ______ Date: ______	This patient was seen by Dr. ______ at ______ clinic of TH/DGH/BH/DH/PMCU: ______ on ______ (date). Signature of Consultant/MO: ______
				Patient's name: ______ PHN/Clinic No.: ______ Referred from: ______ Gender: M / F MO's signature: ______ Date: ______	This patient was seen by Dr. ______ at ______ clinic of TH/DGH/BH/DH/PMCU: ______ on ______ (date). Signature of Consultant/MO: ______
				Patient's name: ______ PHN/Clinic No.: ______ Referred from: ______ Gender: M / F MO's signature: ______ Date: ______	This patient was seen by Dr. ______ at ______ clinic of TH/DGH/BH/DH/PMCU: ______ on ______ (date). Signature of Consultant/MO: ______

Annex 11-2: Referral/Tracking Register (RTR)



Quarterly Report of the Referral Follow up System (for Institution)

District		**MOH Area**			
Health Institution		**Year**		**Quarter**	

Previous Quarter					Current Quarter
A: # of referrals made from the referral institution (referral origin)	**B**: # of back reporting received from the referred institution (referral destination)	**C**: # of telephone calls made at the referral institution (referral origin)	**D**: # of home visits made by the referral institution (referral origin)	**E**: # of referral tracking complete (B+C+D)	**F**: # of referrals made from the referral institution (referral origin)

Quarters:
- Quarter 1: January – March
- Quarter 2: April – June
- Quarter 3: July – September
- Quarter 4: October - December

Signature of MOIC of the Institutions

Date

[NOTE]

- Prepare the quarterly report by looking into the Referral Tracking Register (RTR).
- There are two sections, (i) Previous Quarter: check and count the information during the previous quarter to know the referral tracking status (completion) of the client/ patient and (ii) Current Quarter: check and count the information during the current quarter.
- Fill in two copies, send one copy to the MO/NCD before the 5th of every quarter (e.g. 4th April, 5th July, etc.) and keep the other copy at your institution.

Quarterly Summary of the Referral Follow up System (for RDHS)

District		# of Health Institutions in the District	
Year		# of HLC in the District	
Quarter		# of Health Institutions referring and tracking the client/patient	

Previous Quarter					Current Quarter
A: total # of referrals made in District	**B**: total # of back reporting received in the District	**C**: total # of telephone calls made in the District	**D**: total # of home visits made in the district	**E**: total # of referral tracking complete (B+C+D)	**F**: total # of referrals made in District

Signature of MONCD

Date

[NOTE]

- Accumulate the # of each institution to find out the total # of each column.
- Fill in two copies, send one copy to the Director, NCD Unit of the Ministry of Health before the 20th of every quarter and keep the other copy for RDHS.

Annex 12: HLC Supervision/Monitoring Checklist

HLC Supervision/Monitoring Checklist

Section I (to be filled before visiting the institution)		
District		
Name of the Institution		
Visited by	Name	Designation
Date visited		
Date of the previous visit		
Issues identified during the previous visit and any other standing issues		
Statistics from the latest monthly return		
The latest monthly report received by MONCD		Month/Year
a. Total number of attendees for the reported month		
b. Number of HLC sessions conducted in the reported month		
c. Was the report submitted before 5th of the following month?		
d. Were all the sections filled as required?		
e. Was the report sufficiently accurate?		
f. Who prepared the report?		

Section II: General Information			
If officer is assigned for the day at HLC	Staff Category	Availability	Number
	MO/RMO	Yes/No	
	NO	Yes/No	
	PHM	Yes/No	
	DO	Yes/No	
	SKs	Yes/No	
	Others (specify)	Yes/No	
NCD related training the staff have received	Staff Category		
	MO/RMO		
	NO		
	PHM		
	SKs		
	Others (specify)		
HLC Day	Mon / Tue / Wed /Thu / Fri / Sat		
Frequency of HLC session	weekly / fortnightly / monthly / others ( )		
Is HLC maintained well in general?	Yes / No	comments:	
Are clients in general satisfied with the service provided?	Yes / No	comments:	
Statistics of the day visited	Total number of attendees		
	Total number referred from HLC		

Section III: Physical Properties and Equipment

Item			Availability	Comments/observation
Registration area	Space	Designated area	Yes/No	
		Seating facility available for 25 clients	Yes/No	
	Furniture	Table	Yes/No	
		Chairs at Registration Desk	Yes/No	
		Cupboard	Yes/No	
		Filling cabinet	Yes/No	
			Yes/No	
Examination area	Furniture	Table	Yes/No	
		Chairs	Yes/No	
		Examination bed	Yes/No	
	Tools	Functioning BP apparatus	Yes/No	
		The use of guidelines		
		NCD guideline (Edition:)	Yes/No	
		SEAR B chart	Yes/No	
		Guidelines/manual for the SEAR B	Yes/No	
Other equipment and tools	Glucometer		Yes/No	
	Cholesterol meter		Yes/No	
	Sharp bin		Yes/No	
	Weighing scale		Yes/No	
	Stadiometer		Yes/No	
	BMI chart		Yes/No	
	Glucose test strips		Yes/No	
	Control solution or test strips for calibration of the glucometer		Yes/No	
	Total Cholesterol (TC) test strips		Yes/No	
	Control solution or test strips for calibration of the TC test apparatus		Yes/No	
	Lancet		Yes/No	
	Gloves		Yes/No	
Stationery and recording/ reporting tools	PMR booklet		Yes/No	Approx. number of PRM in stock:

Section IV: Documentation

Standard Items	Status	Comments / information
1. Participants' Registry for HLCs (H 1236)		
Available?	Yes/No	H 1236 / CR book
Updated?	Yes/No	Date of the latest entry:
Columns that tend to be left blank or incorrectly filled, if any, and reasons		
2. Follow up register for HLCs (H 1237)		
Available?	Yes/No	
Used and updated?	Yes/No	Date of the latest entry:
Columns that tend to be left blank or incorrectly filled, if any, and reasons		
3. Daily summary (H 1238)		
Prepared for every session?	Yes/No	
4. Monthly report (H 1239)		
Prepared correctly and in a timely manner?	Yes/No	
5. Visitor Book		
Available and used?	Yes/No	

Section V: Skills and Practices

Area	Checks	Knowledge	Practice	Additional Info / Comments
Measuring of Height weight and BMI	**Measuring Height**			
	The top head is set at the right angle and touches the wall	Yes/No	Yes/No	
	Back of head, buttocks, calves and heels are touching the wall	Yes/No	Yes/No	
	Read the measurement at the eye level	Yes/No	Yes/No	
	Use the platform to check height if the client is taller	Yes/No	Yes/No	
	Measuring Weight			
	Before taking the measurement the scale is adjusted to zero	Yes/No	Yes/No	
	Ask clients to remove shoes	Yes/No	Yes/No	
	Ask clients to empty the pockets	Yes/No	Yes/No	
	BMI Calculation			
	BMI chart is used	Yes/No	Yes/No	
	Advise clients how to reduce BMI if high	Yes/No	Yes/No	
	Waist to Hip ratio			
	Measuring waist circumference at examination		Yes/No	
	Waist to Hip ratio calculated	Yes/No	Yes/No	
	General			
	Does the service provider think that the tools, knowledge and the skills are adequate to take various measurements correctly and give appropriate advice to clients?	Yes/No		
	Additional tools/training that the provider feels needed, if any			

Measuring of FBS by POCT	Ensure at least 8 hours of fasting before testing	Yes/No	Yes/No	
	Prick middle or ring finger of clients	Yes/No	Yes/No	
	Not squeezing the finger when taking blood	Yes/No	Yes/No	
	Wipe off the first drop of blood	Yes/No	Yes/No	
	Measure the blood glucose level using the second drop of blood	Yes/No	Yes/No	
	Glucometer accuracy is checked regularly	Yes/No	Yes/No	
	⇨ if yes, how often			
	⇨ if no, why?			
	Does the service provider feel that the tools, knowledge and the skills are adequate to do the task?	Yes/No		
	Additional tools/training that the provider feels needed, if any			
Assessment of 10-year CVD risk and strategy for treatment	Is every new client assessed for CVD risk?	Yes/No	Yes/No	
	⇨ if no, why?			
	What is the tool used for the assessment?			
	Does the service provider feel that the tools, knowledge and the skills are adequate to do the risk assessment correctly?	Yes/No		
	Additional tools/training that the provider feels needed, if any			
【Optional】 Breast examination	Does a service provider perform breast examination to female clients?	Yes/No	Yes/No	
	Does a service provider teach female clients how to perform self-breast examination?	Yes/No	Yes/No	
Awareness creation / health talk	Is health talk conducted at every HLC session?	Yes/No		
	⇨ if yes, by whom?			
	to whom?	all clients / clients with risks only		
	⇨ if no, why?			
	Tools currently used to conduct the health talk			
	Does the service provider (person who conduct the health talk) think that the tools, knowledge and the skills are adequate to do the task?	Yes/No		
	Additional tools/training that the service provider feels needed, if any			
Communication	Is the client explained regarding the follow-up session?	Yes/No		

Section VI: Drugs and Supplies

Items	Availability	Availability of buffer stocks for 1 month
Essential drugs for NCD		
Adrenaline tartrate 0.1% injection 1ml Ampoule	Yes/No	Yes/No
Aspirin Tablet 100mg	Yes/No	Yes/No
Atenolol Tablet 50mg	Yes/No	Yes/No
Atorvastatin tablet 10mg	Yes/No	Yes/No
Beclomethasone diproprionate		
Aerosol inhaler 50mcg metered dose	Yes/No	Yes/No
200 dose unit MDI dry powder capsule for breath induced device	Yes/No	Yes/No
100mcg DPI	Yes/No	Yes/No
200mcg DPI	Yes/No	Yes/No
Chlorpheniramine malate		
injection 10mg in 1ml Ampoule	Yes/No	Yes/No
tablet 4mg	Yes/No	Yes/No
Enalapril malate tab 5mg	Yes/No	Yes/No
Frusemide		
injection 20mg in 2ml Ampoule	Yes/No	Yes/No
tablet 40mg	Yes/No	Yes/No
Glibenclamide tab 5mg	Yes/No	Yes/No
Glyceryle trinitrate tablet 0.5mg sublingual	Yes/No	Yes/No
Hydrochlorothiazide tablet 25mg	Yes/No	Yes/No
Hydrocortisone hemisuccinate injection 100mg vial	Yes/No	Yes/No
Metformin		
Tablet 500mg	Yes/No	Yes/No
Nifidipine slow release tablet 20mg	Yes/No	Yes/No
Salbutamole respiratory solution 0.5% in 10ml bottle	Yes/No	Yes/No
Tablet 2mg & 4mg	Yes/No	Yes/No
Theopyline slow released tablet 125mg	Yes/No	Yes/No

Section VII: Optional for MoH/JICA NCD Management Project Area

Part I (Documentation)		
Standard items	**Status**	**Comments/Information**
1. Laboratory Network (Satellite Laboratory) Sample Register & Transaction Record		
Available?	Yes/No	
Updated?	Yes/No	Date of the latest entry:
Columns that tend to be left blank or incorrectly filled, if any, and reasons		
2. Referral Tracking Register		
Available?	Yes/No	
Updated?	Yes/No	Date of the latest entry:
Columns that tend to be left blank or incorrectly filled, if any, and reasons		
3. (additional materials may be listed here)		
Available?	Yes/No	
Updated?	Yes/No	Date of the latest entry:
Columns that tend to be left blank or incorrectly filled, if any, and reasons		

Part II (Equipment and Supplies)		
Refrigerator	Yes/No	functioning/need repair
Motorbike	Yes/No	functioning/need repair
Sterilizer	Yes/No	functioning/need repair
Thermometer	Yes/No	functioning/need repair
Ice packs	Yes/No	
Cool box	Yes/No	
Tube racks	Yes/No	
Kidney trays	Yes/No	
Gloves	Yes/No	
Syringes + needles	Yes/No	
Test tubes	Yes/No	
Forceps	Yes/No	

Part III (Operation)				
		✓		
	Tests	to all clients	Only to specific clients	comments/observations (incl. eligibility criteria if not offered to all)
Investigations offered	a. Total Cholesterol			
	b. Lipid profile			
	c. FBS			
	d. Serum creatinine			
	e. Hb			
	f. UFR			
	g. ECG			
	h. others (specify)			
Blood drawing	Who draws the blood?			
	On which day?	HLC day / other specific day(s) ( ) / any day as needed		
	What is the frequency?	weekly / fortnightly / monthly / irregular / other ( )		
Giving back test results to clients	When do clients collect results?			
	Approx. % of results NOT collected by clients			
	Are clients informed of how to read the test results?	Yes / No		
	✓ if yes, by whom?			

Section VIII: Summary

Issues identified/discussed during the visit (incl. suggestions & requests from the staff)	Actions taken during the visit	Actions to be taken	
		Actions	by whom & by when

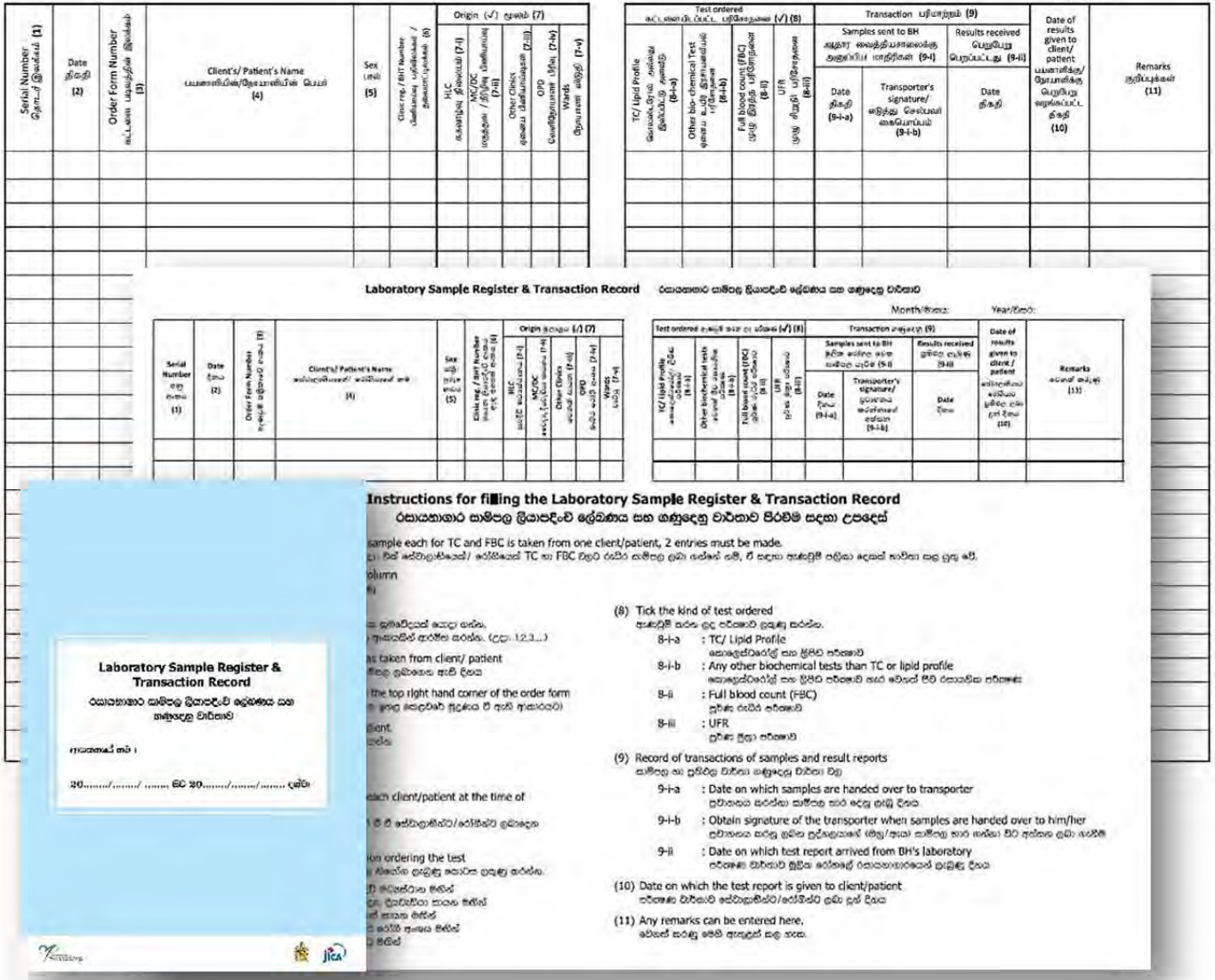
Special Programs conducted at this HLC :
Other comments/remarks:

RDHS:

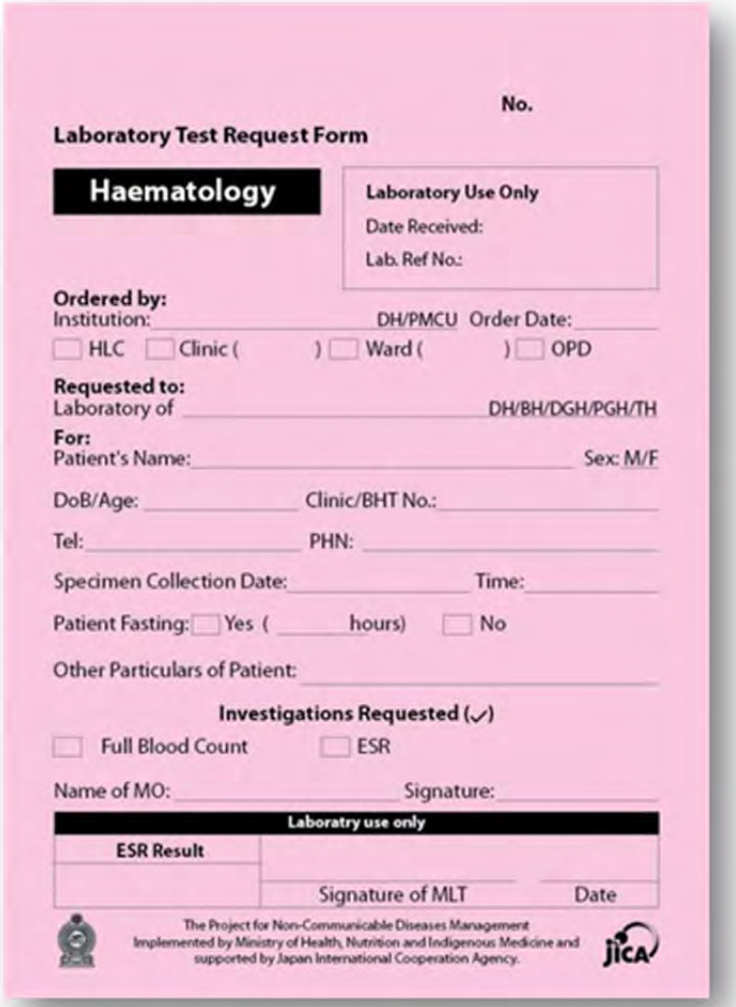
MO/NCD: Signature: Date:

MS/DMO/MOIC: Signature: Date:

Annex 13-1: Laboratory Register



Annex 13-2: Laboratory Test Order Forms & Result Form



No.

Laboratory Test Request Form

Haematology

Laboratory Use Only
Date Received:
Lab. Ref No.:

Ordered by:
Institution: _____ DH/PMCU Order Date: _____
☐ HLC ☐ Clinic ( ) ☐ Ward ( ) ☐ OPD

Requested to:
Laboratory of _____ DH/BH/DGH/PGH/TH

For:
Patient's Name: _____ Sex: M/F

DoB/Age: _____ Clinic/BHT No.: _____

Tel: _____ PHN: _____

Specimen Collection Date: _____ Time: _____

Patient Fasting: ☐ Yes (hours) ☐ No

Other Particulars of Patient: _____

Investigations Requested (✓)

☐ Full Blood Count ☐ ESR

Name of MO: _____ Signature: _____

Laboratry use only		
ESR Result		
	Signature of MLT	Date

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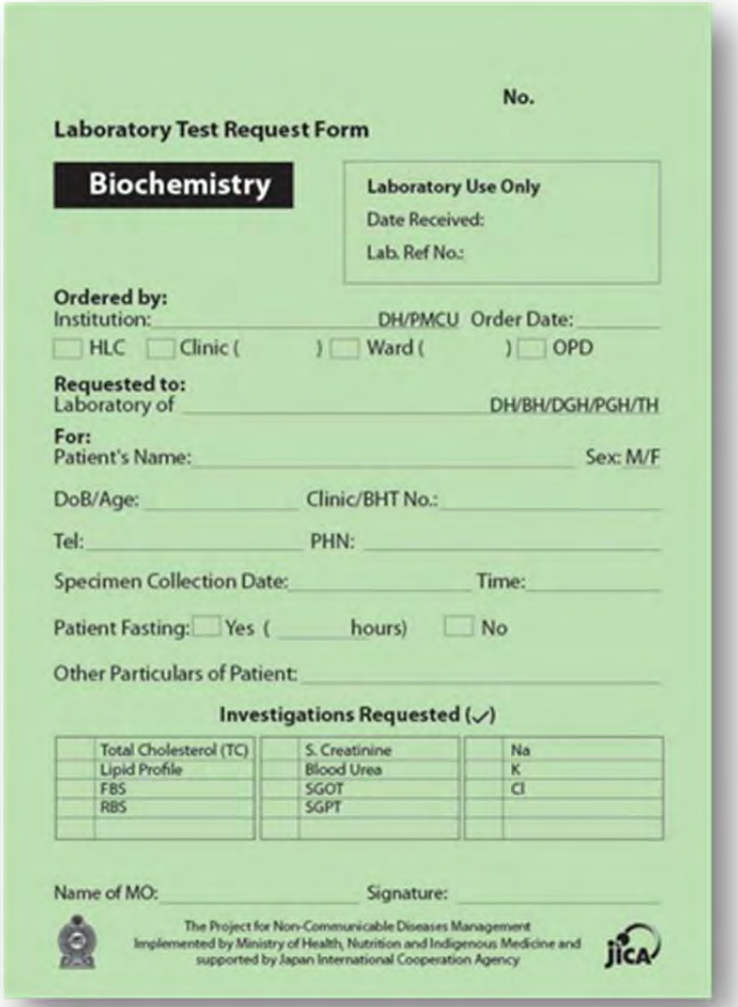

No.

Laboratory Test Request Form

Biochemistry

Laboratory Use Only
Date Received:
Lab. Ref No.:

Ordered by:
Institution: _____ DH/PMCU Order Date: _____
☐ HLC ☐ Clinic ( ) ☐ Ward ( ) ☐ OPD

Requested to:
Laboratory of _____ DH/BH/DGH/PGH/TH

For:
Patient's Name: _____ Sex: M/F

DoB/Age: _____ Clinic/BHT No.: _____

Tel: _____ PHN: _____

Specimen Collection Date: _____ Time: _____

Patient Fasting: ☐ Yes (hours) ☐ No

Other Particulars of Patient: _____

Investigations Requested (✓)

	Total Cholesterol (TC)		S. Creatinine		Na
	Lipid Profile		Blood Urea		K
	FBS		SGOT		Cl
	RBS		SGPT		

Name of MO: _____ Signature: _____

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No.

Laboratory Test Request Form

Urine Full Report

Laboratory Use Only
Date Received:
Lab. Ref No.:

Ordered by:
Institution: _____ DH/PMCU Order Date: _____
☐ HLC ☐ Clinic ( ) ☐ Ward ( ) ☐ OPD

Requested to:
Laboratory of _____ DH/BH/DGH/PGH/TH

For:
Patient's Name: _____ Sex: M/F

DoB/Age: _____ Clinic/BHT No.: _____

Tel: _____ PHN: _____

Specimen Collection Date: _____ Time: _____

Other Particulars of Patient: _____

Name of MO: _____ Signature: _____

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Pilot Test Ver. 201611

Laboratory Test Results Form - **Urine Full Report**

Request Form No.:	Lab Ref. No.:

Name of Ordering Institution: _____

Patient's Name: _____

DoB/Age: _____ Sex: M/F

Investigations Results

Colour		Pus Cells	
PH		Red Cells	
Sp. Gravity		Epi. Cells	
Albumin		Cast	
Sugar		Crystals	
Bile			
Urobilonogen			

Signature of MLT: _____ Date: _____

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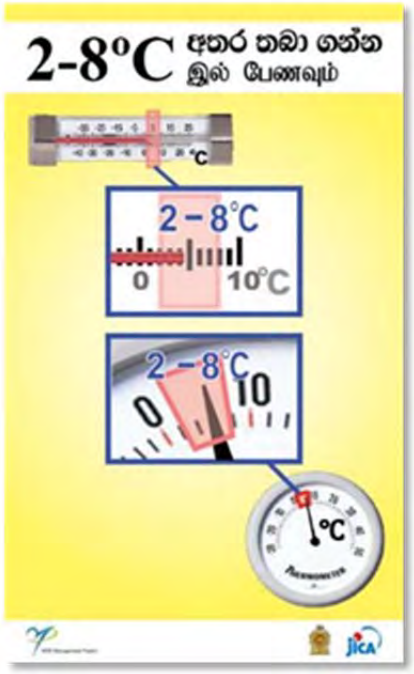
Annex 13-3: Stickers

To be pasted on a refrigerator to inform hospital staff to place blood samples for TC tests in the fridge only when the blood is clotted

To be pasted inside a cool box for transporting specimens



Annex 13-4: Posters

This poster informs audience about the Total Cholesterol tests available at HLCs for free of charge with emphasis on the importance of discussing the results with a doctor.

[Sinhala]

[Tamil]

This poster encourages audience to inform their friends and family members of the benefit of NCD screening at HLCs including the free Total Cholesterol tests.

[Tamil]

[Sinhala]

Annex 13-5: Flip Charts

This is to be used at HLCs offering Total Cholesterol tests to inform the importance of discussing the results of screening with a doctor.

<Side 1>

<Side 2>

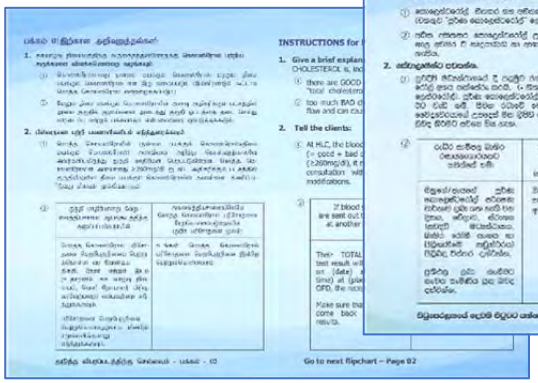
[Tamil]

[Sinhala]

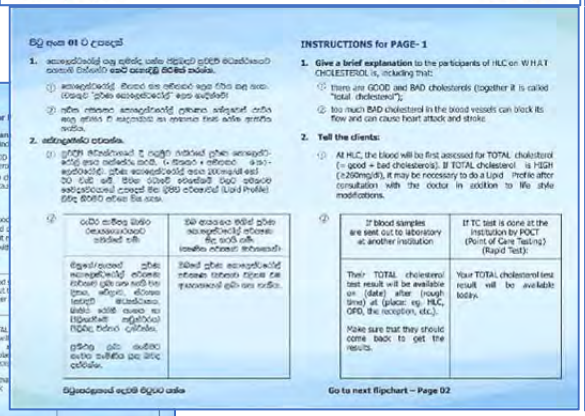
[Tamil]

[Sinhala]

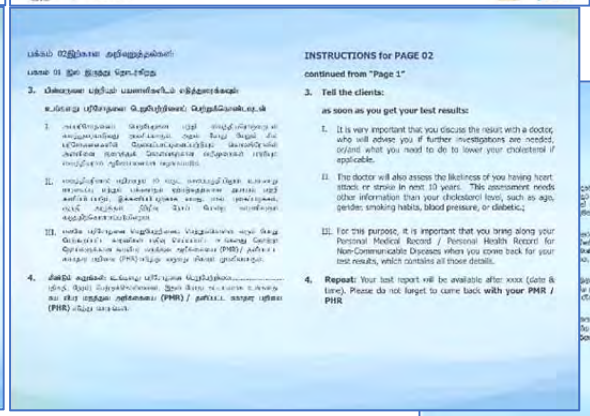
[Tamil/English]



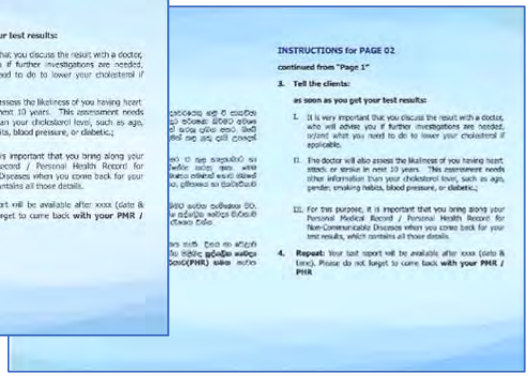
[Sinhala/English]



[Tamil/English]



[Sinhala/English]



Annex 13-6: CVD Risk Assessment Chart

CVD Risk Assessment Chart to be used by doctors at HLCs offering Total Cholesterol tests