AN ASSESSMENT OF THE MAJOR NONCOMMUNICABLE DISEASE (NCD) PROGRAMME IN SECONDARY AND PRIMARY HEALTH - CARE INSTITUTIONS, SRI LANKA
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<tr>
<td>HLC</td>
<td>Healthy lifestyle centre</td>
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<td>MO</td>
<td>Medical officer</td>
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<td>NCD</td>
<td>Noncommunicable disease</td>
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<td>OOPE</td>
<td>Out-of-pocket expenditure</td>
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<td>OPD</td>
<td>Outpatient department</td>
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<td>PMCU</td>
<td>Primary medical care unit</td>
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<td>PMR</td>
<td>Personal medical record</td>
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<td>SD</td>
<td>Standard deviation</td>
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<td>WHO</td>
<td>World Health Organization</td>
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BACKGROUND
Noncommunicable diseases (NCDs) account for about 70% of deaths in Sri Lanka. Most of these deaths are due to cardiovascular diseases (CVD), diabetes, chronic respiratory diseases and cancers. The Government of Sri Lanka offers free health services to the public and implements a programme to address the rising burden of NCDs through its primary, secondary and tertiary health-care institutions. The main components of the NCD programme include the following:
- primary preventive interventions such as screening healthy adults for the risk factors of NCDs* and offering advice on adopting healthy lifestyles to prevent NCDs through healthy lifestyle centres (HLCs); and
- secondary and tertiary preventive interventions such as follow-up care services for patients diagnosed with NCDs, and services to screen and manage complications through medical clinics.

OBJECTIVES
This study assessed the NCD programme of primary and secondary health-care institutions in the country to identify the gaps in care that could be addressed by strengthening health systems. The focus of the assessment was on (a) screening services for NCDs provided through HLCs, and (b) follow-up care services for NCDs through medical clinics. The study described the challenges faced by patients and health-care providers in delivering the NCD programme and services.

METHODS
This cross-sectional study comprised three components – a facility survey, a patient/client exit survey, and a provider survey among medical officers (MOs) designated to manage the NCD programme (MOs NCD) at the district level and MOs in curative institutions. The study was conducted in six districts (Colombo, Vavuniya, Anuradhapura, Nuwara Eliya, Monaragala, Batticaloa) in selected base hospitals that represented secondary health-care institutions, and primary medical care units (PMCU) and divisional hospitals that represented primary health-care institutions. The survey of HLCs (N=11) and medical clinics (N=18) was based on an observation checklist and a data extraction sheet to gather data on the availability of facilities, medicines and equipment, delivery of services and the health information system. Box 1 provides the details of the assessment, which was conducted from March to May 2016.

BOX 1. METHODS

Settings
Six districts – Colombo, Vavuniya, Anuradhapura, Nuwara Eliya, Monaragala, Batticaloa
- 11 HLCs in PMCU and divisional hospitals
- 18 medical clinics in divisional hospitals and base hospitals.

Components and data collection methods
- Facility survey: Data were obtained regarding advice on lifestyle modifications from 11 HLCs and 18 medical clinics through observation checklists and data extraction sheets.
- Patient/client survey: Exit interviews were conducted with 67 clients at HLCs, and 195 patients at medical clinics.
- Provider survey: Qualitative interviews were conducted with MOs NCD in all the six districts on the delivery of screening and treatment services related to NCDs at primary and secondary health-care institutions, and with heads of institutions and the MOs serving the clinics on human resources and governance.

Quantitative data analysis was performed using the statistical software package SPSS version 20. The findings are presented under the main themes of screening services for NCDs provided through HLCs, treatment and follow-up care services for NCDs through medical clinics, and qualitative results from interviews with NCD care providers.

* Most NCDs are the result of four particular behaviours (tobacco use, physical inactivity, unhealthy diet, and the harmful use of alcohol) that lead to four key metabolic/physiological changes (raised blood pressure, overweight/obesity, raised blood glucose and raised cholesterol).
FINDINGS

Screening services for NCDs provided through HLCs

Of the 229 primary and secondary health-care institutions in the six districts included in the survey, 170 (74.2%) had established HLCs since 2011. However, only 136 (59.4%) institutions surveyed had functional HLCs at the time of the survey, of which 11 HLCs in the six districts were included in the survey. Some institutions did not have dedicated space to conduct HLCs.

Though guidelines require HLCs to function at least once a week, 3/11 (27.3%) HLCs were not functioning even once a week. Only 3/11 (27.3%) HLCs recorded an average of 20 or more 40-65 year olds per week, which is the minimum number recommended to be screened per week per HLC. Among the attendees, the majority were females. Box 2 provides a summary of the key findings.

BOX 2. KEY FINDINGS I

Key Findings of assessment of the screening services for NCDs provided through HLCs

HLCs are widely distributed within the districts, but are not functioning optimally.

- Expected coverage of the target population had not been met at most HLCs.
- Not all clients received all prescribed screening activities or education on lifestyle modification, or were managed according to the prescribed total CVD risk approach (determined by the risk factor profile).* In some cases, even the blood pressure had not been measured, as seen by the personal medical records (PMRs) of patients on exit interviews.
- In one third of the HLCs, registers were not updated according to the guidelines.
- The equipment required to be available in an HLC as per the guidelines was not always available. Two did not have even a blood pressure apparatus.
- A doctor trained in HLC protocols was available in a few HLCs only. Other staff was also in short supply.
- Key guidelines on the client management protocol were not always available.
- Advice on lifestyle modification and health education was provided to 65.7% and 46% of patients, respectively.

Treatment and follow-up care services for NCDs through medical clinics

The survey assessed 13 primary and 5 secondary-care medical clinics that provide treatment and follow-up services for patients diagnosed with NCDs in the six districts. The mean number of patients treated per session was 80 (standard deviation [SD] ± 60.6) based on the last three most recent medical clinic sessions at primary-care institutions, and 286 (SD ± 142.2) at secondary-care institutions. The existing information system did not collect information related to the condition of the patients, precluding data on follow-up care on individual major NCDs. The key findings are summarized in Box 3.

*The predicted risk of an individual can be a useful guide for making clinical decisions on the intensity of preventive interventions. Such an approach is particularly suitable to settings with limited resources, where saving the greatest number of lives at lowest cost becomes imperative.
Key findings of assessment of treatment and follow-up care services

The following service gaps were identified as the reasons for lack of treatment and follow-up care services in primary- and secondary-care medical clinics surveyed:

• insufficient facilities for laboratory investigations, e.g. fasting blood sugar was done in 47.4% and 55.5% of patients in primary- and secondary-care facilities, respectively, lipid profile in 27.6% and 28.6%, respectively, and HbA1C in 0% and 2.6%, respectively;
• basic equipment adequate in medical clinics of secondary-care institutions, but not in primary-care institutions (e.g. stadiometers in 9/13 [69.2%], strips used in glucometers in 8/13 [61.5%], ECG machines in 7/13 [53.8%]);
• recurrent shortages of some essential NCD medicines in spite of the Ministry of Health circular, which specifies that all 16 essential NCD drugs should be available in institutions with medical clinics with one month of buffer stock at any given time (about half the patients in both primary- and secondary-care institutions incurred out-of-pocket expenditures on drugs);
• not all patients were assessed for compliance with medication during the clinic session (84.2% [64/76] and 73% [92/121] at primary- and secondary-care institutions, respectively);
• very few received eye referrals (~2.5%);
• long waiting times for the patients to receive services (89.1 min and 159–114.1 min at primary- and secondary-care institutions, respectively);
• inadequate screening for possible complications of NCDs;
• substantial out-of-pocket expenditure (OOPE; ~50%) by patients (both for drugs and laboratory tests);
• lack of data to monitor the NCD follow-up care services at the clinics.

Qualitative results from interviews with NCD care providers

All care providers felt that the HLC service was a positive initiative for preventing and controlling the NCD epidemic in the country, although all were aware that it was not functioning optimally. Gaps in the provision of services and poor demand for and knowledge of the service by the public were cited as the main reasons. MOs NCD pointed out many areas of non-adherence to the prescribed guidelines. These included the following:

• Ignoring the total CVD risk score-based approach. The predicted CVD risk of an individual can be a useful guide for making clinical decisions on the intensity of preventive interventions. Such an approach is particularly suitable in settings with limited resources, where saving the greatest number of lives at lowest cost becomes imperative. However, only a fraction of institutions had MOs who had undergone formal training on conducting HLC and risk stratification.
• Prescribing investigations that were not indicated
• Initiating treatment in the HLC itself without referring to the medical clinics. This is due to the personal belief of some MOs that HLCs should also play a role in treating patients.
• Lack of facilities to assess total cholesterol to complete the CVD risk score. Laboratory facilities are inadequate, resulting in inability to complete scoring.
• Incomplete record-keeping. Screening for smoking and alcohol use and other risk factors is not conducted routinely, and the relevant registers are not updated. The requirement is for providing HLC returns and head counts of medical clinics. There is no inbuilt quality assurance mechanism for data generation and reporting, limiting proper review and supervision of the NCD programme.

• Limited use of educational and health-promotive approaches due to lack of human resources.

• Lack of a system to track clients who are referred back to the HLCs for follow-up screening. MOs NCD suggested that an appointment system be initiated where a specific date is given to the client for the follow-up visit and the client is reminded of the date through the field staff of public health during their home visits.

Other issues that affected optimum functioning were as follows:

• The existing health information system requires too many details to be completed.

• No feedback is given by the NCD Unit to the staff of the HLCs on the statistics collected.

• Monitoring of NCD work by the NCD Unit is limited to data collated by the MO NCD for the district and does not include data from the HLCs.

• Funding for NCD care at the district level is a fixed amount that does not consider the quantum of work or performance.

• Separating the HLC from treatment initiation is not appropriate, as it results in low compliance by attendees.

• Inability to provide HLC services at least once a week as prescribed is due to the inadequate number of trained doctors and other support staff, especially medical laboratory technicians.

• Many PMCUS in rural settings have no permanent MOs, and nursing officers or midwives are not available in PMCUS.

• There is rapid turnover of MOs at the district level, and many accord a low priority to NCD work.
RECOMMENDATIONS

The recommendations can be categorized into three groups:

- **SYSTEMIC/STRUCTURAL**
  - Strengthening health systems

- **CLIENT RELATED**
  - Improving clients' experience

- **SERVICE PROVIDER-RELATED**
  - Building capacity of HLCs
SYSTEMIC / STRUCTURAL RECOMMENDATIONS

1. The health information system should be improved

A system of active surveillance for NCD risk factors should be initiated, and data generated on follow-up care of individual major NCDs. An electronic system is recommended.

- A client tracking system should be incorporated to monitor the compliance of clients who are referred back to the HLCs for follow-up screening.
- Disaggregated data should be collected on individual diseases and multiple comorbidities.
- A clinic return should be generated from each medical clinic and a monthly return sent to the MO NCD.
- The health information system should include a mechanism to capture data on how many new patients recruited at the medical clinic were referred by an MO HLC.
- Registers should include essential information and incorporate indicators that offer HLC providers with feedback on the services they provide.
- Spot-checking of medical clinic registers and periodic NCD reviews at district and institutional levels would strengthen the NCD information system. The Central NCD Unit should conduct regular field visits to institutions and take part in district NCD reviews.

2. Availability of laboratory facilities should be enhanced

- All medical clinics should be equipped with facilities for basic laboratory investigations at the facility itself to reduce OOPE of patients, and to improve regular assessment of possible complications of NCDs.

3. Availability and prescription of essential NCD drugs should be improved

- Essential NCD drugs should be made available along with one month’s buffer stock in all primary- and secondary-care institutes with medical clinics.
- MOs should be encouraged to prescribe within the list of essential NCD drugs to reduce the OOPE of patients. MOs need to update the Central NCD Unit on a monthly basis on the drugs inventory/stocks at the Central level.

4. Budgeting should be based on need

- Financing for activities conducted by MOs NCD needs to be based on the annual plan rather than a fixed allocation. This would encourage the district staff to be creative and committed to improving NCD care in the district.

5. The work of HLCs should be monitored

- The present system of review of returns at the district level should include a component of random visits to HLCs to observe the facilities and functioning. This will allow for feedback and improvement.
CLIENT-RELATED RECOMMENDATIONS

6. Waiting time needs to be shortened

- An effective appointment system for medical clinics needs to be established in all institutions to reduce the waiting time for and overcrowding of patients, and improve care.
- Listing appointments at 15-minute intervals for groups of patients rather than providing only a clinic date would help to streamline the appointment system.

7. Periodic investigations should be conducted to detect the complications of NCDs

- Periodic investigations to detect the possible complications of NCDs should be made mandatory through strict implementation of available guidelines.

8. Coverage of the target population should be improved

- At district level, public health field staff should increase awareness of HLCs in the community during home visits, field activities and at clinics conducted for other services such as Maternal and Child Health services. Referral cards provided to field staff with a tracking number can be used to monitor the progress of referral.
- The proposed initiatives to popularize HLC services among 40-65 year olds, specifically men, should be supported by trained staff and facilities to conduct mobile clinics. Interventions that have been successful in attracting target populations to HLCs should be considered for scaling up.

SERVICE PROVIDER-RELATED RECOMMENDATIONS

9. Adherence to protocols should be improved to ensure provision of all services

- Adherence to the total CVD risk approach could be improved by providing facilities to estimate the total cholesterol of clients at the point of service in HLCs.
- Relevant staff (in addition to MOs) should be trained in institutions with HLCs to screen clients for all the main risk factors, provide clients with education on lifestyle modifications and complete the registers. A system should be established to release them part time to serve in the HLCs.

10. A pool of trained staff should be established to conduct HLCs

- Training on the HLC process should include nursing officers in base and divisional hospitals.
- In PMCs where nursing officers or midwives are not stationed, minor staff with the capability to support screening, documentation and health education should be trained to optimize the HLC process. A detailed report and a plan on training requirements should be a part of the annual plan.