



REPUBLIC OF MAURITIUS

NATIONAL AUDIT OFFICE

PERFORMANCE AUDIT REPORT

PREVENTION AND CONTROL OF NON COMMUNICABLE DISEASES

Ministry of Health and Quality of Life

FEBRUARY 2018

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ABBREVIATIONS AND ACRONYMS

AHCs	Area Health Centres
CHCs	Community Health Centres
CVD	Cardiovascular Diseases
FCTC	Framework Convention on Tobacco Control
GYTS	Global Youth Tobacco Survey
HIEC	Health Information Education and Communication
ITC	International Tobacco Control
MoE	Ministry of Education and Human Resources, Tertiary Education and Scientific Research
MoHQL	Ministry of Health and Quality of Life
NAPPA	National Action Plan on Physical Activity
NAPTC	National Action Plan on Tobacco Control
NCDHPU	Non Communicable Diseases and Health Promotion Unit
NCDs	Non Communicable Diseases
NPAN	National Plan of Action for Nutrition
WHO	World Health Organisation

EXECUTIVE SUMMARY

According to the World Health Organization (WHO), Cardiovascular Diseases (CVDs), Chronic Respiratory Diseases, Cancers and Diabetes are referred as essential Non Communicable Diseases (NCDs). Tobacco and alcohol consumption, unhealthy diet and physical inactivity are the common risk factors of NCDs.

The Health Statistics Report of 2016 revealed that CVDs and Diabetes were among the main causes of mortality with 1,934 (19.5 per cent) and 2,329 (23.5 per cent) deaths respectively. The results of the National NCD Survey 2015 revealed that 52.8 per cent of the population was consuming alcohol, only 23.7 per cent of the adults aged between 25 to 74 years were undertaking sufficient physical activity and the prevalence of current smoking and obesity were 19.3 and 19.1 per cent respectively. The Ministry of Health and Quality of Life (MoHQL) took several measures to address NCDs and their related risk factors.

This Performance Audit assessed the extent to which the measures taken to address early detection of NCDs, unhealthy diet, physical inactivity and harmful use of tobacco and alcohol have been efficient and effective.

Key Findings

- The WHO Progress Monitor Reports revealed that for Mauritius, the four main NCDs were attributable for 87 per cent of deaths in 2016, as compared to 85 per cent in 2015. This is not in line with Target 3.4 of the Sustainable Development Goal which is to reduce premature deaths from NCDs by one-third by 2030.
- MoHQL formulated various Action Plans on Physical Activity, Nutrition and Tobacco independently of each other and which were to be implemented at different time periods. As of December 2017, the strategies and activities of the Plans have not been evaluated to ascertain their appropriateness and effectiveness. As for alcohol consumption, it was only in mid 2017, that the Ministry initiated procedures for the preparation of an Action Plan.
- For the different Action Plans, there were issues in the implementation of the strategies and activities. These were as follows:

- *National Action Plan on Physical Activity*

For National Action Plan on Physical Activity (NAPPA) 2004-2006, only six of the 19 activities were implemented. As for NAPPA 2011-2014, in 20 of the 56 activities, MoHQL was the lead agency for their implementation. 17 of them were implemented. For the remaining 36 activities, seven were not implemented, and no feedback obtained on three. Moreover, of the eight Sub Committees set up as recommended in the Plan, two did not submit any report, and this was not followed up by the Ministry.

- *National Plan of Action for Nutrition*

- (i) The proposal to prepare a National Food-based Dietary Guidelines and to set up a Food Standards Agency was not implemented in 2009-2010 and was rolled over in

the National Plan of Action for Nutrition (NPAN) 2016-2020. As of December 2017, the Ministry has requested the services of a Consultant for preparing the Guidelines. As for the setting up of the Agency, action has been initiated;

- (ii) Action was taken to amend the Food Regulations of 1999 with a view to regularising the consumption of oil saturated fats and trans-fatty acids. However, as of December 2017, the Regulations were not yet finalised;
- (iii) Several other activities relating to the increased consumption of fruits and vegetables, the formulation of an infant Food Bill and minimising anaemia among female adolescents were not implemented.

▪ *National Action Plan on Tobacco Control (NAPTC)*

- (i) According to WHO Framework Convention on Tobacco Control (FCTC), Mauritius has to take measures to control the supply chain of tobacco products effectively. The proposal to have a protocol on illicit trade was made in NAPTC 2008-2012, but as of December 2017, its ratification was still under consideration;
- (ii) The contents and emissions of tobacco products were not regulated. Hence, the importers were not legally bound to disclose such information to Government Authorities. Further, the contents in the cigarette sticks have never been tested;
- (iii) According to FCTC, countries should consider establishing two or more sets of health warnings and messages to alternate within 12-36 months. As of December 2017, the Ministry had not revised the existing set of health warnings, prevailing since 2012.

- The different coordination mechanisms recommended in the Action Plans were not functioning as intended, thus affecting the implementation and monitoring of several strategies and activities.

Conclusion

The Ministry developed Action Plans independently of each other to address three of the main risk factors of NCDs, instead of using an integrated approach as in other countries. Moreover, the coordination mechanisms as proposed in the different Plans are not functioning as intended, and hence, affect the smooth implementation of those strategies and activities both falling under the responsibility of the Ministry and other stakeholders within the given timeframe. The appropriateness and effectiveness of the strategies and activities contained therein has never been evaluated.

Key Recommendations

Integrated Approach

The Ministry should adopt a strategic and integrated approach to address NCDs and their related risk factors. It may use examples from countries, such as South Africa, Seychelles,

Tobago and Trinidad which have adopted Whole of Government and Whole of Society approaches. An integrated approach will bring a more synergetic and cost effective response, within a given timeframe, to mitigate the prevalence of NCDs and to meet the Sustainable Development Goal Target 3.4.

Reviewing the Coordination Mechanisms

An effective coordination mechanism is a key to the successful implementation of the different strategies and activities. The coordination mechanisms proposed in the different Action Plans need to be reviewed with a view to meeting its objectives.

Evaluation of the Action Plans

The strategies and activities of the Action Plans have to be evaluated after their implementation period. This will help the Ministry to ascertain to what extent the objectives of the different Plans have been achieved, and what changes are needed to improve them. The valuable information can be used for future Action Plans.

National Action Plan on Physical Activity

There is a need for the Ministry to identify the reasons for the non-implementation of the strategies and activities of NAPPA 2004-2006 and NAPPA 2011-2014 and take corrective action. The Ministry may consider rolling over all the uncompleted strategies and activities in a new Action Plan, along with new objectives and targets. In the meantime, the Ministry should continuously educate the population on the frequency, duration, intensity and types of physical activity necessary for better health.

National Plan of Action for Nutrition

Several of the uncompleted strategies and activities of NPAN 2009-2010 have been rolled over in NPAN 2016-2020, and which the Ministry intends to complete within the timeframe. To achieve the target, it should ensure that the new Nutrition Taskforce, together with the Nutrition Committee set up for that purpose regularly reviews the implementation status and takes corrective actions wherever needed. Continuous monitoring and reporting are vital.

National Action Plan on Tobacco Control

With the increase in prevalence of smoking, it is important for the Ministry to ensure that strategies developed under NAPTC 2015-2018 are implemented. There is a need to finalise the amendments of Tobacco Regulations 2008. Action should also be taken to assess the quality of cigarettes which are available on the market. The Protocol to Eliminate Illicit Trade in Tobacco Products should to be ratified, and the amendments to the Regulations should be finalised without further delay.

Alcohol

According to WHO, the harmful use of alcohol is a significant contributor to the global burden of disease, and is listed as the third leading risk factor for premature deaths and disabilities in the world. In Mauritius, over the period 2009 to 2015, the prevalence of alcohol consumption

has increased. In that respect, the formulation of an Action Plan on alcohol consumption needs to be finalised.

Summary of Ministry's Reply

With regard to evaluation of Action Plans, this is a time and resource consuming exercise.

As for the issues regarding the implementation of the different Action Plans, the following corrective actions are being taken:

National Plan of Action for Nutrition

- Regulations for decreasing the consumption of oil, saturated fats and trans-fatty acids are in the process of being amended;
- In all health promotion activities in schools and in the community, Nutritionists and other resource persons promote the consumption of fruits and vegetables;
- For minimising anaemia among female adolescents, technical support has been sought for the fortification of staples or other food vehicles from external agencies.

National Action Plan on Tobacco Control

- The Ministry has already embarked on the necessary steps towards ratification of the Protocol for the Elimination of Illicit Trade;
- Necessary amendments will be made to the Public Health (Restrictions on Tobacco Products) Regulations 2008 in order to comply with WHO FCTC;
- The second set of Graphic Health Warnings has already been finalised and is awaiting approval prior to the pre-testing exercise, and amendment of legislations for implementation.

CHAPTER ONE

INTRODUCTION

This Chapter provides background of the subject matter and describes the approach used to conduct this Performance Audit.

1.1 Background

According to the World Health Organisation (WHO), Cardiovascular Diseases (CVDs), Chronic Respiratory Diseases, Cancers and Diabetes are referred as essential Non Communicable Diseases (NCDs). Tobacco and alcohol consumption, unhealthy diet and physical inactivity are the common behaviourally modifiable risk factors of NCDs, while overweight and obesity, raised blood pressure, raised blood glucose and abnormal blood lipids are the metabolic risk factors. Diabetes is also a risk factor for other NCDs. If uncontrolled, it can lead to serious complications, such as renal failure and CVDs.

The WHO Report of 2016 on NCDs revealed that both the number of cases and the prevalence of Diabetes have been steadily increasing over the past few decades. Globally, an estimated 422 million adults were living with Diabetes in 2014, compared to 108 million in 1980.

In Mauritius, the results of National Surveys on NCDs have shown that the country has experienced a rise in the prevalence of Diabetes over the years. As per the National Health Accounts of 2016, NCDs represent more than 80 per cent of the total burden of diseases, and they are a major threat to the country at large, and impact heavily on the curative budget, as well as on the social status of the nation. Government, through the Ministry of Health and Quality of Life (MoHQL), has been taking several measures to address the problem.

1.2 Motivation

According to the Health Statistics Report of 2016, CVDs and Diabetes have been among the main causes of mortality with 1,934 (19.5 per cent) and 2,329 (23.5 per cent) deaths respectively. The National Survey on NCDs of 2015 revealed that the standardised prevalence of Diabetes in adults aged 25-74 was 22.8 per cent. It also revealed that 52.8 per cent of the population was consuming alcohol, only 23.7 per cent of the adults aged 25-74 were doing sufficient physical activity, and the prevalence of current smoking and obesity were 19.3 and 19.1 per cent respectively. Moreover, total expenditure for curative services and for prevention of NCDs increased from some Rs 6.28 billion in 2010 to some Rs 9.30 billion in 2016-17.

The magnitude of NCDs, coupled with the significant premature ill health and death, warrants the need for increased attention. Several measures have been taken by the Ministry to address the risk factors of NCDs, and to promote healthy lifestyle so as to reduce early deaths.

It was against this background that the National Audit Office carried out this Performance Audit on the measures taken to address NCDs and their related risk factors.

1.3 Audit Objective

The audit assessed the extent to which the measures taken to address early detection of NCDs, unhealthy diet, physical inactivity and harmful use of tobacco and alcohol have been efficient and effective.

1.4 Audit Questions

- Have the Action Plans to address unhealthy diet, physical inactivity and harmful use of tobacco and alcohol been efficient and effective?
- Have measures taken to screen sufficient number of persons for early detection of NCDs been effective, and was there any follow up regarding the detected cases?
- Have the allocated financial resources been used optimally to address early detection of NCDs, unhealthy diet, physical inactivity and harmful use of tobacco?

1.5 Audit Scope

The Report focused on the strategies implemented and activities carried out by MoHQL to address unhealthy diet, physical inactivity, and consumption of tobacco in Mauritius over the period 2004 to 2017. The activities carried out by the Non-Government Organisations in Mauritius and by the Private Sector, and in Rodrigues and Outer Islands for combating NCDs and their risk factors have been scoped out. To get an insight of the latest achievement of the measures taken by the Ministry, data up to December 2017 has been included in the Report.

1.6 Assessment Criteria

Criteria from the following sources were used as a basis for evaluating the evidence collected, developing audit findings and reaching conclusions on the audit objectives.

- WHO Policies and Guidelines;
- MoHQL Policies and Guidelines;
- Action Plans on Tobacco, Nutrition and Physical Activity;
- The Food Act and its related Regulations;
- Literatures on NCDs from other countries;
- Other details on assessment criteria used in this Report are in the relevant paragraphs.

1.7 Audit Methodology

The audit was conducted in accordance with International Standards of Supreme Audit Institutions. Different methodologies were used for the audit to understand the audit area, along with obtaining sufficient, relevant and reliable audit evidence that support the conclusions and recommendations.

1.8 Methods of Data Collection

For this audit, data was collected from files, documents reviews and interviews. Site visit was carried out at one Regional Hospital to confirm information in files, and to get acquainted with its activities in relation to NCDs to support our conclusions.

1.8.1 Documents Reviewed

Information relating to policies, guidelines, regulations, processes, systems, procedures and practices was collected through review of files and documents. Data from the Treasury Accounting System and other financial records was reviewed so as to confirm the information obtained from other sources.

1.8.2 Personnel Interviewed

Interviews were carried out with key personnel at operational, middle and senior management levels of the NCD Section, the NCD and Health Promotion Unit (NCDHPU), the Nutrition and Health Information and Education and Communication (HIEC) Unit and the NCD Coordinators of one Regional Hospital. The interviews were used to confirm that the facts and figures obtained from the documents reviewed were correctly understood, and also for providing more explanations where information was not available in the reviewed documents.

1.8.3 Sampling

One Regional Hospital was selected at random to take cognisance of the role and responsibilities of the NCD Coordinators regarding implementation of the Action Plans, their roles and responsibilities in relation to the NCD Clinics, HIEC and Nutrition Units and the Tobacco Cessation Clinics, and reporting mechanisms at the NCD Secretariats. The NCDHPU, responsible for primary screening, was also selected for this assignment.

1.8.4 Data Validation Process

Management of MoHQL was provided with the audit criteria, findings and recommendations to confirm their relevance, accuracy and suitability.

1.9 Structure of the Audit Report

The remaining part of the Report covers the following:

- Chapter Two describes the vision and mission of the Ministry in relation to NCDs. It presents the objectives, roles and responsibilities of key players involved in addressing

NCDs. Key aspects of the activities, programmes and procedures in prevention and control of risk factors of NCDs are also described;

- Chapter Three presents the audit findings relating to the efficiencies and effectiveness of the measures taken by the Ministry to address NCDs and the related risk factors;
- Chapter Four provides audit conclusions based on analysis and findings supported by audit evidence;
- Chapter Five outlines recommendations which can be implemented to address risk factors of NCDs.

CHAPTER TWO

DESCRIPTION OF THE AUDITED AREA

This Chapter describes the vision and mission of the Ministry in relation to NCDs, the roles and responsibilities of the NCD Section and those of the different NCD Units and other key players. The WHO's response to NCDs and brief on the different Action Plans developed to address the risk factors of NCDs are also described.

2.1 Vision and Mission of MoHQL in relation to NCDs

The vision of the Ministry is to constantly improve quality of life to have a healthy nation. Its mission is to improve the well being of the population through the prevention of NCDs, promote healthy lifestyles and an environment conducive to health, and to ensure that the available human, financial and physical resources lead to the achievement of better health outcomes. A NCD Section manages all NCD related issues.

2.2 Organisation Set up of the NCD Section

To meet its objectives, several units have been set up within the Section to deal with the different aspects of NCDs. Their functions, roles and responsibilities are described below.

2.2.1 NCD and Health Promotion Unit

In 1988, the NCD Office was set up with the primary objective of conducting awareness campaigns against the risk factors and advising the Ministry on legislative and fiscal measures to discourage people adopting harmful lifestyles. The NCD Office was converted into NCD and Health Promotion Division in 1998, before it became the NCDHPU in 2001. Its main objective is to prevent or delay the onset of NCDs and their related complications.

The concept of NCD Mobile Service was introduced in 2001 as many people with early stages of NCDs were not identified through the standard primary and secondary health care services. Prior to 2007, screening for Diabetes, Obesity and Blood Pressure was done in five Caravans.

Since 2008, screening is carried out at Worksites, Secondary Schools and in the Community at least every three years. After screening, each citizen is given a Health Card with details on his health status. There are NCD and Health Promotion Teams in each of the five health regions, and comprise Medical Officers, Nursing Officers, Health Care Assistants, Community Healthcare Officers and Community Health Development Motivators.

For Secondary Schools, the School Health Programme has been carried out by the NCDHPU in collaboration with Ministry of Education and Human Resources, Tertiary Education and Scientific Research (MoE) throughout the five Health Regions, with a view to promoting healthy behaviours and lifestyles in students in both Government and Private Secondary Schools. The target population for the Programme comprised all students of Form III and Lower VI. In 2016, students of Form I had also been included in the population for screening.

2.2.2 Non Communicable Diseases Secretariat

The NCD Secretariats are headed by NCD Coordinators whose offices are located within each of the Regional Hospitals. The roles and responsibilities of the NCD Coordinators are to ensure the smooth running of the NCD and Diabetes Clinics at primary health care, the Tobacco Cessation Clinics, the Foot Care Clinic and the Retinal Screening Unit in their respective Health Regions. They also supervise activities of the Health Information and Education and Communication (HIEC) Officer and the Nutritionist posted in the Region. They are responsible to implement and supervise NCD Programmes, to coordinate all health promotion activities related to NCDs, to compile appropriate register on NCDs, to conduct medical audit of the management of NCDs in primary health care centres and submit reports to Director Health Services. They also participate in media programmes on NCDs and provide technical input for the production of health education materials.

2.2.3 Roles and Responsibilities of other Units Related to Non Communicable Diseases

- (i) The NCD Clinics are located within the Regional Hospitals, Medi Clinics and in all the Area Health Centres (AHCs) and Community Health Centres (CHCs), and are responsible for the treatment and follow up of patients, data collection and monitoring of detected cases;
- (ii) The HIEC Unit is responsible for the sensitisation of the population on health issues, and supports the implementation of the Action Plans. It carries out awareness campaigns on healthy lifestyle and risks factors associated with NCDs at schools, colleges, Social and Community Centres. Posters and pamphlets on the different risk factors of NCDs are prepared, and when an epidemic crops up, mass media campaign is also done in collaboration with the Mauritius Broadcasting Corporation TV and Radio;
- (iii) The Nutrition Unit is responsible to advise the population on a healthy diet. It is staffed with 13 Nutritionists and they work in collaboration with the NCDHPU. The nutrition services offered by the Unit are both preventive and curative. Obese and overweight participants from screening sessions are referred to Nutritionists based at AHCs and Hospitals to follow dietary guidelines. Doctors at AHCs and Hospitals also refer patients to the Nutritionist for advice. They also carry out talks on healthy lifestyle to be adopted by everyone. Statistics are computed on a monthly basis and a report is sent to the Ministry for corrective actions and enforcement of Regulations under the Food Act by the Inspectorate Section.
- (iv) The Mauritius Institute of Health assists the Ministry in the preparation of Guidelines for the prevention and control of NCDs, and training of staff;
- (v) The Medical Records Section, in collaboration with NCDHPU, provides support services for the compilation of data on NCDs;
- (vi) The Health Statistics Unit is responsible to collect data relating to infrastructure and personnel, morbidity, mortality and the activities of all health services pertaining to the Republic of Mauritius and to publish the information in an annual report.

2.3 Other Key Players

WHO provides both financial and non-financial support to MoHQL for the formulation of policies and strategies in the fight against NCDs. It also conducts training courses for the health personnel of the Ministry. National Surveys on NCDs are conducted in collaboration with Baker IDI Heart and Diabetes Institute and other Partners.

2.4 WHO's Response to Non Communicable Diseases

In 2000, the World Health Assembly resolution endorsed the global strategy for the prevention and control of NCDs, with a particular focus on developing countries. Since then, several initiatives to control NCDs have been launched by WHO and other global players. The global commitment to prevention and control of NCDs was further strengthened with the adoption of the Political Declaration at the High-level Meeting of the UN General Assembly on the Prevention and Control of NCDs in September 2011 by the Head of States in New York.

In March 2014, WHO developed various tools to prevent and control NCDs – from setting national targets and developing national multi sector policies and plans to measuring results. The list of tools was intended to provide information and guidance on effectiveness and cost effectiveness of evidenced based interventions, taking into account the “Global NCD Action Plan 2013-2020”. About nine voluntary global targets, six objectives of the NCD Action Plan and 25 indicators of the Global Monitoring Framework were set.

2.5 Measures to address the Modifiable Risk Factors

In response to the rising burden of NCDs, a number of Action Plans have been prepared by MoHQL to reduce smoking, promote healthy diet and increase physical activity among the population. The implementation of the strategies and activities contained therein has been assigned to MoHQL and other stakeholders, including other Ministries and Departments. A brief is provided below.

2.5.1 National Action Plan on Physical Activity

Physical activity is defined as any body movement produced by skeletal muscles that results in energy expenditure by the individual. Physical exercises are important for maintaining physical fitness and can contribute positively to maintaining a healthy body weight. However, physical inactivity is a significant contributing factor to the high prevalence of NCDs globally. It increases all causes of mortality, and doubles the risks of CVDs, Diabetes and Obesity.

The World Health Assembly endorsed a Global Strategy on Diet, Physical Activity and Health in May 2004. In line with the recommendations of WHO, and the philosophy of the Ministry which is to promote physical activity at schools, in families, at work sites and in the community, a National Action Plan on Physical Activity (NAPPA) for the period 2004-2006 was launched in November 2004.

The Nairobi Call to Action developed at the 7th Global Conference held in 2009 focused on key strategies and commitments required for closing the implementation gap in health and

development through health promotion. NAPPA 2011-2014 was thus prepared and launched in April 2011 in response to the high prevalence of NCDs and their risk factors, and to the low level of adequate regular physical activity in the adults, youth and children population.

The fundamental recommendation of the NAPPA was the practice of 30 minutes of moderate physical activity five times a week for adults, and 60 minutes of moderate to vigorous exercise daily for children. Moreover, a National Committee on Physical Activity had to be constituted under the Chairmanship of the Supervising Officer of the Ministry, and co-chaired by the Director Health Services and would comprise representatives of other Ministries and Government Departments.

2.5.2 National Plan of Action for Nutrition

Increased consumption of animal and unhealthy hydrogenated fats, the replacement of nutrient-rich by energy-dense nutrient poor foods and the consumption of salty, sugary and fatty snacks will grow steadily worse unless urgent actions are taken.

In 1992, at the International Conference on Nutrition, a joint venture of WHO and the Food and Agriculture Organisation, and participating countries endorsed a World Declaration on Nutrition. A National Plan of Action for Nutrition for Mauritius (NPAN), 1994 to 1999, had been prepared according to established guidelines. Thereafter, new concepts were added following the results of the National NCD Surveys 2004, and the Ministry came up with NPAN 2009-2010.

2.5.3 Salt Reduction Study

An excessive consumption of salt contributes to high blood pressure which increases the risk of heart disease and stroke. WHO recommends reducing salt consumption to less than 5g per person per day in adults. Given the relationship between the consumption of dietary salt and CVDs, salt reduction strategies at national level are essential. In that respect, a Committee was set up at the MoHQL which came up with a Salt Intake Study in 2012.

2.5.4 National Action Plan on Tobacco Control

The WHO Framework Convention on Tobacco Control (FCTC) was signed by Mauritius in June 2003 and ratified in May 2004. Mauritius has taken significant steps to fulfill its obligations under the FCTC. In 2007, Government, in collaboration with the WHO and several other stakeholders, developed a National Action Plan on Tobacco Control (NAPTC) 2008-2012 whose main objectives was to reduce tobacco-related mortality and morbidity by preventing the use of tobacco products, promoting cessation, and protecting the population from exposure to second hand smoke.

Mauritius passed the Public Health (Restrictions on Tobacco Products) Regulations 2008, which updated Regulations 1999 on smoking in public places, packaging and labelling of tobacco products, tobacco advertising, promotion and sponsorship, and illicit trade. With a view to assessing the progress and identifying areas where improvements were required, the International Tobacco Control (ITC) Policy Evaluation Project was carried out to evaluate the effectiveness of the new Regulations.

Further, the Global Youth Tobacco Survey (GYTS) is carried out every five years to gather data on knowledge, behaviour and use of tobacco by youngsters, as well as to measure the effectiveness of existing tobacco control programmes. It is a school based, tobacco specific survey for students aged 13-15, and a component of the Global Tobacco Surveillance System which is a global standard for systematically monitoring youth tobacco (smoking and smokeless) and tracking key tobacco control indicators. The first GYTS was carried out in 2003, followed by a second, and third round which were conducted in 2008 and 2016 respectively.

2.6 Financing

Funds from Programme 585, now Sub-Head 11-105 – ‘Prevention of Non Communicable Diseases and Promotion of Quality of Life’ are disbursed upon receipt of claims. For the period January 2010 to June 2017, some Rs 365 million have been disbursed under the Programme/ Sub-Head. As regards overseas funding from International Organisations, they are accompanied by a set of conditions, and therefore funds are only disbursed when the expenditure is in line with the conditions attached. For the same period, Government received some Rs 11 million as donations for the prevention and control of NCDs. With regard to implementation of activities identified in the different Action Plans and assigned to other stakeholders, the expenditure is met from their own budgets.

CHAPTER THREE

FINDINGS

This Chapter describes the findings relating to the efficiencies and effectiveness of the measures taken by MoHQL to respond to NCDs and their related risk factors.

3.1 Prevalence of Non Communicable Diseases and their Risk Factors

According to WHO, over 80 per cent of all premature global deaths are caused by NCDs. For Mauritius, the WHO Progress Monitor Report of 2017, indicated that CVDs, Cancer, Diabetes and Chronic Respiratory Diseases were attributable for 87 per cent of deaths in 2016, as compared to 85 per cent in 2015. This is not in line with the 2030 Agenda for Sustainable Development which recognises the huge impact of NCDs worldwide. The aim is to reduce premature deaths from NCDs by one-third by 2030 (Sustainable Development Goal Target 3.4).

3.2 Ministry's Approach to Non Communicable Diseases

Government through MoHQL has taken various measures to address NCDs and their related risk factors. These included:

- Formulation of various Action Plans, such as on physical activity, nutrition and tobacco control;
- Introducing a structured screening programme for NCDs;
- Conducting surveys and studies, such as NCD Surveys every five years and Salt Intake Study.

Despite the prevalence of alcohol consumption had increased from 48.5 per cent in 2009 to 52.8 per cent in 2015, it was only in mid 2017, that the Ministry initiated procedures for the preparation of an Action Plan.

The Action Plans of the different risk factors (except alcohol consumption) were formulated independently of each other, and they were to be implemented at different time periods as shown in the Table 1.

Table 1 Action Plans and their Respective Implementation Periods

National Action Plan on	Period
Physical Activity (NAPPA)	2004-2006, 2011-2014
Nutrition (NPAN)	2009-2010, 2016-2020
Tobacco Control (NAPTC)	2008-2012, 2015-2018

Source Ministry's Records

The implementation of some of the strategies and activities in the Actions Plans required concerted actions by several stakeholders, including other Ministries and Departments. Some activities were carried out in close collaboration with MoHQL. These included activities, such as monitoring of food items sold in school canteens by MoE, and sensitisation campaign on healthy eating, benefits of physical activities, harmful effects of alcohol and tobacco on health by the Ministry of Gender Equality, Child Development and Family Welfare. However, for some activities which had to be carried out by other Ministries and Departments, the status was not known, as no feedback was received at MoHQL (for example Kitchen gardening by the Ministry of Agro Industry and Food Security).

The National Action Plans on Physical Activity, Nutrition and Tobacco Control were scrutinised to assess the efficiency and effectiveness of the strategies and activities contained therein. These are described in the paragraphs below.

3.2.1 National Action Plan on Physical Activity

According to WHO Guidelines on Physical Activity, it is recommended for adults to do at least 30 minutes of regular, moderate-intensity physical activity on five days a week, and for young people aged between 5 and 18, at least 60 minutes of moderate to vigorous intensity activity each day.

The two Action Plans prepared during the audit period covered were examined and details are given below.

National Action Plan on Physical Activity 2004-2006

The main aim of this Action Plan was to foster and promote a culture of physical activity in Mauritius. It identified seven strategies and several related activities to be implemented within specific time by different stakeholders, including MoHQL. However, by 2006, only six of the 19 activities were implemented. The other activities identified in the Plan were not initiated at all. A few of them are listed below:

- To develop test battery mechanism for persons aged 12 and above;
- Introduction of National Fitness Award;
- Setting up of a National Committee on Physical Activity;

- Construction of Health Tracks;
- Evaluation of activities;
- Production of other Information, Education and Communication materials.

The National NCD Survey of 2009 revealed that there was a slight decline from 24.5 per cent in 2004 to 23.2 per cent in 2009 of the male population practising physical activities, and a little improvement from 9.5 per cent in 2004 to 10.9 per cent in 2009 with regard to women.

From 2007 to 2010, MoHQL again took several measures to promote physical activities. A few examples are:

- Ongoing sensitisation campaign in schools and the community;
- Programme on the media – National and Private radios;
- Printing of existing pamphlets on physical activity;
- Two more Health Clubs set up in the community;
- Employment of 17 Physical Instructors on a part-time basis to run Yoga classes.

National Action Plan on Physical Activity 2011-2014

NAPPA 2011-2014 was prepared and launched in April 2011. The objective was to put more emphasis on preventive and health promotion activities. To meet the objectives of NAPPA 2011-2014, 56 activities had to be carried out by MoHQL and other stakeholders, such as other Ministries and Departments. In 20 of the 56 activities, MoHQL was the lead agency for their implementation. 17 of them were implemented. For the remaining 36 activities, seven were not implemented, and no feedback obtained on three.

According to the Ministry, during the period 2011 to 2014, a few significant achievements have been made. For example

- Physical Education has been made an examinable subject at School Certificate and Higher School Certificate levels as from 2011 and 2013 respectively;
- Surveillance Tools developed by WHO, namely the Global Physical Activity Questionnaire have been introduced in the NCD Survey in 2015;
- New and updated pamphlets and posters based on the new guidelines for physical activity have been produced and printed by the MoHQL in 2013 and 2014;
- A Health Gymnasium for public servants is operational on the 8th Floor of Emmanuel Anquetil Building under supervision of the Ministry;
- Five more Health Tracks have been constructed by MoHQL and training in Physical Activity has been extended to 64 localities in the community.

The implementation of NAPPA 2011-2014 required the setting up of Sub Committees with specific term of reference relating to one or more activities in the Plan. As of December 2017, of the eight Sub Committees set up, six submitted their reports which included recommendations and proposals. Actions have already been taken to implement them. However, the Sub Committees set up for surveillance, research and evaluation and that for making an inventory of existing infrastructure and facilities provided by the Ministry did not submit any report. MoHQL did not follow up on the two reports not submitted.

Results of the National NCD Surveys showed that the percentage of adult men doing regular physical activity increased from 23.2 in 2009 to 30.2 in 2015. Similarly for adult women, it increased from 10.9 per cent in 2009 to 18.5 per cent in 2015. This compares favourably with the target of the Global NCD Action Plan of a relative rise of 10 per cent by 2020.”

However, the percentages of men and women practising physical activity were still below the targets set in NAPPA 2011-2014 of 35 and 20 respectively.

During the period 2015 to 2017, in the absence of a new Action Plan and with a view to meeting the target set, the Ministry continued to implement some of the activities, such as sensitisation campaigns, and radio and TV spots/ programmes, identified in NAPPA 2011-2014.

According to the Ministry, as of end January 2018, a new NAPPA 2018-2022 was under preparation.

3.2.2 National Plan of Action Plan for Nutrition

The development of NPAN 2009-2010 was motivated by the fact that among adults aged 20-74, 25.4 per cent were overweight and 10.3 per cent were obese. The prevalence of overweight in children aged 5-11 was 7.9 and 7.5 per cent among boys and girls respectively, and of underweight in children aged 5-11, it was 24.3 per cent. The prevalence of anaemia among female adolescents aged 12-19 and pregnant women was 16.4 and 9 per cent respectively. Further, 30.7 per cent of children aged 5-11 and 38.4 per cent of adolescents aged 12-19 did not eat any fruit daily.

The general objectives of the Plan 2009-2010 were to decrease the average consumption of oils and fats, to reduce obesity in the adult population, nutritional anaemia in female adolescent and in pregnant women, and underweight in children aged 5-11 and to increase the consumption of fruits and vegetables by two fold. It was based on 10 theme areas for action and each was accompanied by several strategies and activities with the responsible implementing agency, a timeframe, targets and the estimated cost. A Nutrition Taskforce was set up to monitor and evaluate the Plan.

As at December 2017, the status of the themes areas of action as elaborated in the Plan were as follows:

3.2.2.1 Promotion of Appropriate Diets and Healthy Lifestyles

➤ Dietary Guidelines for Mauritians

The purpose of the Guidelines was to establish dietary recommendations for adults for the prevention of diet-related diseases. MoHQL already had a National Nutrient-based Dietary

Guidelines for Mauritians prepared by the Mauritius Institute of Health since 2000. A National Food-based Dietary Guidelines was proposed in the Plan to provide advice to various sectors of the population about sound food choices so that their usual diet contributed to a healthy life style. The services of a Consultant were hired through WHO for that purpose in 2010. The Consultant did not prepare the National Food-based Dietary Guidelines, but instead prepared another Nutrient-based Guidelines, which did not meet the requirements of the Ministry. The latter has reiterated its intention to come up with a Food-based Dietary Guidelines in NPAN 2016-2020 with the assistance of WHO. As of December 2017, the Ministry has requested the services of a Consultant from WHO in that respect.

➤ *Decreasing the Consumption of Oil Saturated Fats and Trans-fatty Acids*

The objective was to decrease the consumption of oils and fats by 10 per cent. In the Plan, it was highlighted that the apparent consumption of oils and fats was 28 kg per head per year, and was of concern, especially in relation to overweight and obesity. To meet this objective, MoHQL would be responsible for discouraging the consumption of oils and fats through the Dietary Guidelines and other educational materials. Also, the Nutrition Taskforce would commission a study on the re-use of cooking oils, and would recommend legislative measures as appropriate.

Several measures, such as Healthy Weight Campaign for Adults, the National Study on trans- fatty acids level and peroxide value of re-used cooking oils, and nutrition education materials, including pamphlets and special waist measuring tapes, were implemented during 2009-2010.

Following the National Study on the re-use of cooking oils, action was taken to amend the Food Regulations of 1999. It was only in 2016 that the draft Food Regulations, which included the ban on the use of fats and oils containing more than 1.0 per cent of trans-fatty acids on a fat weight basis, and the controlling of their amounts at the source of entry in the country, and to ensure that it was not available for use in the local market, were prepared and submitted in November 2016 to the Attorney General's Office. However, as of December 2017, one year after, the Regulations were still not finalised.

Ministry's Reply

Regulations are in the process of being amended and discussions are taking place with the Attorney General's Office.

➤ *Raising the Consumption of Fruits and Vegetables*

The objective was to increase the average apparent consumption of fruits and vegetables by two fold. Researches indicate that fruits and vegetables are important components of a healthy diet, and their daily consumption in adequate amounts can prevent NCDs. WHO has recommended intake of 400g of vegetables and fruits daily. In that respect, MoHQL had to undertake a fruit and vegetable promotion initiative, such as awareness campaign to consume more fruits and vegetables, in collaboration with other stakeholders involved in fruit and vegetable production and distribution. The project was not initiated till November 2016, when it was rolled over to NPAN 2016-2020.

The National Nutrition Survey 2012 revealed that the daily per capita consumption of vegetables and fruits amounted to 173g instead of 400g. However, some achievements have been made. The percentage of children aged 5-11 who did not consume any fruit has decreased from 30.7 in 2004 to 22.3 in 2012. For adolescents aged 12-19, a decrease from 38.4 per cent in 2004 to 26.5 per cent in 2012 has been noted. The current status is expected to be measured in the proposed National Nutrition Survey 2018. From 2012 to 2017, there was no data available on the nutrition status on the consumption of fruits and vegetables by the population at the Ministry. Except for the National Nutrition Survey, MoHQL did not have a system to regularly carry out monitoring and surveillance on consumption of fruits and vegetables.

Ministry's Reply

- In all health promotion activities in schools and in the community, Nutritionists and other resource persons promote the consumption of fruits and vegetables;
- Monitoring consumption of fruits and vegetables does not fall within the mandate of this Ministry.

3.2.2.2 Protection of Consumers through Improved Food Quality and Safety - Enforcement of the Food Regulations

The objective was to adopt and enforce legal measures for the provision of safe food to the population, and to introduce Nutritional Signpost labelling so as to allow consumers to obtain nutritional information at a glance. The labelling system on food will indicate the level of sugars, fats, saturated fats and salt using colour codes. Moreover, the system, combined with public education, will help to reinforce information about healthy eating practices, and help people reduce the risk of chronic nutrition-related diseases. For that purpose, it was proposed to set up a Food Standards Agency, which would be an independent Government Department. Its role will be to protect the public's health and consumer's interests in relation to food, and will monitor different aspects, like food quality and food safety and ensure the implementation of the Signpost labelling.

The proposal to set up a Food Standard Agency was not implemented and was rolled over in NPAN 2016-2020. Further, during the meeting of the Nutrition Taskforce held on 10 March 2016, it was agreed to set up a Nutrition Committee which would be responsible to work out the processes for the setting up of the Agency. It was only in December 2017, some 20 months after that the Committee met for the first time, and as at that date, the setting up of the Agency has not been finalised.

3.2.2.3 Care of the Socio-Economically Deprived and Nutritionally Vulnerable

➤ Maternal Nutrition and Breast Feeding

The objective was to increase the mean duration of exclusive breast feeding to three months in infants, and the Dietary Guidelines would include advice directed specifically at women who were pregnant or lactating. Iron and folic acid supplements will be supplied by the Ministry. Monitoring of the World Health Assembly Resolutions will be carried out in all Health Care Facilities by the Breastfeeding Taskforce of the Ministry.

Mauritius is a signatory to the International Code of Marketing of Breast Milk Substitutes, enforced in 1989, which bans all promotion of bottle feeding and sets out requirements for labelling and information on infant feeding. In that respect, MoHQL recommended exclusive breast feeding up to six months. Government envisaged an Infant Food Bill to ensure safe and adequate nutrition for infants by promoting and protecting breast feeding, and by regulating the marketing of some infant foods and feeding bottles, teats and pacifiers. As of December 2017, the Ministry had not prepared an Infant Food Bill. However, according to the Ministry, it has a National Policy on Infant Feeding Practices developed in 1993 and amended in 2008. It is being adhered to ensure safe and adequate nutrition for infants.

➤ *Feeding of Young Children and Young Adults*

The objective was to decrease malnutrition among children and young adults, and at the same time reduce underweight in children aged 5-11, as well as obesity in the adult population by three per cent. All Government Agencies and other partners concerned with the care of young children will adopt and promote sound feeding practices as established in the Dietary Guidelines. The Ministry will carry out health promotion activities in both Primary and Secondary Schools. Children and adolescents with nutritional problems will be referred for dietary counselling.

According to the Nutrition Survey Report 2012, there was a decrease in the prevalence of underweight in children aged 5-11 from 24.3 per cent in 2004 to 15.4 per cent in 2012. Further, among adults aged 20-49, the prevalence of obesity has decreased from 22.9 per cent in 2004 to 17.6 per cent in 2012. However, as of December 2017, the current status of underweight and obesity in the mentioned age groups was not available at the Ministry. Another nutrition survey was scheduled in 2018 according to the Ministry.

➤ *Setting up Standards for School Food*

The objective was to review guidelines of food sold in primary and secondary educational institutions. The Mauritius Institute of Education will revise school curricula in accordance with Dietary Guidelines for children. A Working Group to monitor the sale of food in school canteens and report on its progress will be appointed by the Nutrition Taskforce, and a Nutritionist to support the Mauritius Institute of Health in curriculum development in nutrition will be nominated by the Ministry.

The new Regulations on the sale of foods in school canteens made under the Food Act were passed in August 2009, and were enforced in all educational institutions as from January 2010. These Regulations ban the sale of unhealthy snacks, namely deep fried foods, foods with high levels of fats, especially of the saturated type, sugar and salt.

The existing Regulations are enforced by the Health Inspectorate Division of MoHQL. From January 2010 to October 2017, some 10,000 inspections visits were effected, and some 290 contraventions against operators of school canteens had been registered.

3.2.2.4 Prevention of Specific Micro-nutrient Deficiencies - Minimising Anaemia

One of the objectives was to reduce nutritional anaemia in female adolescents aged 12-19. The Nutrition Unit will examine the feasibility of strategies, such as iron supplementation for girls and iron fortification of staples, such as wheat flour, or other appropriate food vehicle.

The Nutrition Survey 2012 revealed that the highest prevalence of anaemia was among female in the age group 20-49 with 33.6 per cent, followed by that in female adolescents aged 12-19 with 28.5 per cent, showing an increase of 14.6 and 12.1 per cent respectively when compared to Survey 2004 results. Hence, the objective of NPAN 2009-2010 to reduce nutritional anaemia in female was not met.

Ministry's Reply

- Since the set objectives to address anaemia in NPAN 2009-2010 could not be met, they have been rolled over in NPAN 2016-2020;
- Technical Support has been sought for the fortification of staples or other food vehicles from external agencies;
- Concerning iron supplementation for non-pregnant women above 15 years of age, the modalities of introducing it in the School Health Programme are being looked into by the Nutrition Committee.

3.2.2.5 Capacity Building - Training, Research and International Cooperation in Nutrition

The objective of this intervention was to advance the science and practice of nutrition and dietetics. The Nutrition Unit will work jointly with the University of Mauritius to prepare courses in Nutrition and Dietetics, and will coordinate research in nutrition, and initiate its application with the least possible delay. The Taskforce will also propose participants for attending international conferences on nutrition. Presently, the University of Mauritius is providing undergraduate and post graduate course in Nutritional Science.

Further, training on nutrition related matters was imparted to both Medical and Para-medical staff through Continuous Medical Education and Continuous Nurses Education, as well as through lectures to Nursing Students. However, there was no target on the number of officers to be trained during that period.

3.2.2.6 Assessment, Monitoring and Analysis of Nutritional Situations - Nutrition Surveillance

The objective was to collect, analyse and utilise data on specific nutrition indicators to monitor the nutritional status of the population. The Nutrition Unit will be responsible for data collection, analysis and reporting systems relating to nutrition. The Ministry will collate and publish data on mortality, morbidity, growth measurements, breast-feeding, water and food analyses, and food borne diseases and intoxications.

An expanded programme on immunisation exists, whereby all children aged 0-5 are vaccinated. The coverage is about 90 per cent, and every time a child gets vaccinated, he/ she is weighed, and the weight recorded on the updated WHO growth charts which are compiled

by the Nutrition Unit since 2007 so as to have an ongoing growth monitoring of children. The percentage of overweight and underweight children for each region is also provided.

However, this initiative was limited to children aged 0-5 and has not been extended to the other age groups of the population, contrary to the objective of the strategy.

Ministry's Reply

It is not appropriate to extend this system as there are other means of assessing malnutrition in other age groups of the population, including national surveys and the School Health Programme.

3.2.3 National Action Plan on Tobacco Control

In 2007, a National Action Plan on Tobacco Control (NAPTC) 2008-2012, based on WHO FCTC was developed. FCTC gives general guidance on actions to circumscribe the use of tobacco, and its devastating effects in the population.

3.2.3.1 Implementation of NAPTC 2008-2012

➤ Amendments to the Restrictions on Tobacco Products Regulations

A number of initiatives had been taken by the Ministry, including the amendment of the Public Health (Restrictions on Tobacco Products) Regulations 1999 into the Public Health (Restrictions on Tobacco Products) Regulations 2008. The objective was to strengthen the Regulations and to facilitate their enforcement.

Various measures of the new Regulations had been implemented, and they included the ban on sale of single cigarettes and packages of 10 cigarettes, the ban on sale of cigarettes to and by minors, the affixing of an excise stamp on the cigarette packages to control illicit trade, as well as the mention of the country of origin in English and French. Smoking in public places, including workplaces and public conveyance was also prohibited. However, the following are examples of issues not considered in the present Regulations by the Ministry.

- The words “Cigarette” and “Electronic Cigarette” were not defined;
- The Regulations banned smoking while driving or travelling in a private vehicle carrying passengers. However, no mention was made for stationed vehicles with more than one person;
- There was no provision regarding the seizure of non-compliant tobacco products, and the securing of exhibits by enforcement officers;
- The Regulations did not allow the element of trapping by the enforcement officers.

According to the Ministry, these issues will be addressed in NAPTC 2015-2018.

➤ *Surveillance and Evaluation*

According to the NAPTC, indicators had to be established to measure progress in its implementation. Surveillance will be used to monitor tobacco consumption in different population groups, health consequences of tobacco use, tobacco related knowledge, attitudes and behaviours, and exposure to environmental tobacco smoke.

Prevalence surveys will also be carried out to establish trends in tobacco use. The surveillance and evaluation system will allow determining the success of NAPTC and guide in the reformulation of policies. However, except for the National Survey on NCDs, the GYTS and Global Tobacco Report, no other surveillance and evaluation systems were set up. The objectives of the surveillance and evaluation system were, hence, not met.

Ministry's Reply

Surveys are expensive and time consuming exercises. Global School Health Surveys were carried out in 2007, 2011 and 2017.

➤ *Illicit Trade*

Recent cases of imported cigarettes packs, packages of cigarettes not bearing the excise stamps, and not having the pictorial health warning are examples of illicit trades in Mauritius.

According to the NAPTC 2008-2012, tobacco smuggling was a major threat to public health as it stimulated consumption by making international brands cheaper and more affordable, especially to young people. Illicit trade also represents loss in Government Revenue through tax evasion.

The protocol to eliminate illicit trade in Tobacco Products was a new International Treaty which was legally linked to the FCTC. The main objective of the protocol was to eliminate all forms of illicit trade in tobacco products, in accordance with the terms of the FCTC which required parties to take measures to control the supply chain of tobacco products effectively.

From 2013 to 2016, no action has been taken for the ratification of the protocol. It was only in February 2017, that a 3-day workshop was organised by WHO, in collaboration with MoHQL to raise awareness and increase commitment of Mauritius to ratify or accede to the protocol. However, as of December 2017, the ratification of the protocol was still under consideration.

Ministry's Reply

The Ministry has already embarked on the necessary steps towards ratification. A Steering Committee meeting has been held with key stakeholders to discuss and analyse legal impediments to the ratification of the Protocol for the elimination of illicit trade.

➤ *Quality of Cigarettes Sticks*

According to the Health Statistics Report for 2016, the number of imported cigarettes sticks was 858 million in 2016 compared to 1,000 million in 2012. The Public Health (Restrictions on Tobacco Products) Regulations 2008 prohibited the display of the level of tar, nicotine, carbon monoxide and other chemical substances in tobacco products. However, WHO FCTC provides that each Party shall, where approved by competent national authorities, adopt and implement effective legislative, executive and administrative or other measures for the testing and measuring of the contents and emissions of tobacco products, and for the regulation of these contents and emissions.

The contents and emissions of tobacco products were not regulated, and therefore the importers were not legally bound to disclose such information to Government Authorities. Further, the contents had since 2014 not been tested. This is in contrast to the practice in Singapore whereby a Cigarette Testing Laboratory has been set up in support of the Tobacco (Control of Advertisement and Sale) Act. The Act provides for limits on the tar and nicotine yield of cigarette smoke.

Ministry's Reply

Articles 9 and 10 of the FCTC supports testing and measuring of the contents of tobacco products, and for importers and manufacturers of tobacco products to disclose to governmental authorities about the contents and the emissions of tobacco products. Necessary amendments will be made to the Public Health (Restrictions on Tobacco Products) Regulations 2008 in order to comply with Article 9 and 10 of the WHO FCTC and the National Agricultural Products Regulatory Office will also be involved.

➤ *Global Youth Tobacco Survey*

The GYTS is carried out every five years to gather data on knowledge, behaviour and use towards tobacco by youngsters, as well as to measure the effectiveness of existing tobacco control programmes by MoHQL, the Centre for Disease Control and Prevention of the US and the WHO's Office in Mauritius. It is a school based, tobacco specific survey for students aged 13-15, and a component of the Global Tobacco Surveillance System. It also assists countries in fulfilling their obligations under the FCTC to generate comparable data within and across countries. The first GYTS in Mauritius was carried out in 2003. The second round was conducted in 2008, while the third one in 2016, that is, eight years later.

With a view to creating a supportive environment for tobacco control policies and programmes, it was recommended in NAPTC 2008-2012 to ensure that the Tobacco Regulations were strictly enforced in and out of schools to protect young people, and to reduce the prevalence of smoking among adolescents aged 13-15 from 15 per cent in 2003 to 10 per cent in 2011.

However, in spite of anti-tobacco education being imparted to young people at school, there has been a constant increase in current smokers. GYTS for 2016 showed that the overall percentage of current cigarette smokers had increased to 17.4 compared to 13.7 for 2008. Moreover, 46.1 per cent of the students surveyed had tried their first cigarette by the age of 12 or 13. 57.7 per cent of the current smokers who bought cigarette were not prevented from buying them despite their age. From January 2009 to June 2017, only 217

contraventions have been taken by the Public Health and Food Safety Inspectors for breach of the Public Health (Restriction on Tobacco Products) Regulations 2008 in the 13 existing branches in Mauritius.

➤ *Cessation Clinics*

Since November 2012, tobacco cessation and tobacco dependence treatment are available at the five Regional Hospitals, one CHC and the Diabetes and Vascular Centre. Health professionals have been trained to run the tobacco cessation and tobacco dependence treatment clinics. From 2011 to 2016, 5,076 new cases were referred to the Cessation Clinics. 1,963 sessions were held at the Tobacco Cessation Clinics over the last five years. WHO carried out a review on three of the Cessation Clinics in February 2017. As of December 2017, a report was awaited from their end.

➤ *International Tobacco Control Policy Evaluation 2012 Project*

The ITC Policy Evaluation 2012 Project was carried out to evaluate the effectiveness of the new Public Health (Restrictions on Tobacco Products) Regulations in view of assessing the progress and to identify areas where improvements were required. Its overall objective was to measure the psycho-social and behavioural impact of key national level policies of the FCTC, while the findings focused on describing smoking and quitting behaviour, assessing public support for and use of cessation services, evaluating the effectiveness of smoking bans in public places and workplaces, pictorial warnings, and the World Lung Foundation Sponge Campaign.

Mauritius was the first African Country to have implemented the pictorial health warnings as recommended by the FCTC since October 2009. Based on the ITC Survey Report 2010 for Mauritius, this measure resulted in a significant increase in smokers' awareness. As at November 2015, Mauritius had even provided its pictorial health warnings to other countries, including Togo, Iran, Russia and Seychelles. However, according to the ITC Survey Report of 2012, the set of pictorial warnings had been less effective 20-21 months after their implementation. As of December 2017, the Ministry has not revised the existing set of health warnings in accordance with the FCTC, which stated that countries should consider establishing two or more sets of health warnings and messages to alternate after a specified period, such as 12-36 months.

Currently, the Ministry is working on a new set of pictorial health warnings and on plain packaging.

Ministry's Reply

The second set of Graphic Health Warnings (GHWs) has already been finalised and is awaiting approval prior to the pretesting exercise, and subsequent amendment of legislation for implementation. Immediately after implementation, the Ministry will consider its rotation within 12-36 months along with the introduction of Plain Packaging, whereby the Graphic Health Warnings will be used thereon.

3.3 Other Measures

3.3.1 Screening

According to a Report of 2008 from WHO on Prevention and Control of NCDs, Member States should establish mechanisms for the early detection of and screening for common NCDs. The aim of the Ministry has always been to bring NCDs down to a controllable level. In that respect, community involvement in health development has been enhanced through the setting up of the NCDHPU to mobilise people for health promotion and prevention of NCDs.

3.3.1.1 NCD Health Promotion Unit

The objectives of the NCDHPU include screening as many people as possible at worksites, schools and in the community at large at least every three years according to established guidelines adapted from WHO, enhancing the health status of the community by means of nutritional intervention, and setting up infrastructural facilities to promote and increase physical activity.

According to reports of the Unit, for the period 2013 to 2016, 113,599 persons aged 18 and above were screened at the worksites and in the community. Those with abnormal results were either referred to AHCs, CHCs or Regional Hospitals for further tests and treatment.

The number of persons reached during the period 2013 to 2016 was 192,244. Of these, 113,599 were screened based on their Diabetes Risk Score. This was below the target set in the different Programme Based Budgets of 175,000 adults to be screened. Hence, the objectives of the Unit to prevent or delay the onset of NCDs and the related complications and to improve their management were not met. An additional 115,003 students were screened for NCDs during that period. However, the Unit did not have a tracking system to follow up the referred cases to other health institutions. Hence, the effectiveness of the screening programme could not be measured.

Between 2013 and 2016, according to the screening reports for persons aged 18 and above, the percentages of detected cases with problems of Overweight, Obesity, and Blood Pressure which were in 2013, 33.2, 15.4 and 3.4 increased to 35.4, 18.9 and 7.6 respectively in 2016.

In addition, the number of detected cases of those who already had Diabetes or were on pre-diabetic state, increased from 568 and 2,058 in 2013 to 1,538 and 2,826 respectively in 2016. These cases were referred to the hospitals for further investigation, treatment and follow up. As regards those detected with elevated blood pressure, they were referred to the nearest AHCs and CHCs for further treatment. During the period 2012 to 2016, some 14,500 cases were referred.

Ministry's Reply

Currently, the NCDHPU is considering the establishment of a tracking system and has requested for the necessary staff for this project. Moreover, the introduction of e-health will facilitate tracking of referred cases.

3.3.1.2 School Health Programme for Secondary Schools

The percentage of Overweight and Obesity detected in students screened during the Programme had increased from 9.9 and 7.1 per cent in 2013 to 12.4 and 10.7 per cent respectively in 2016. Moreover, the number of cases of Diabetes and Pre-Diabetes detected has increased from 19 and 136 in 2013 to 49 and 912 respectively in 2016. However, the Programme has enabled the early detection of the risk factors of NCDs among the school population.

A report on the outcome of the Screening Programme was sent to the MoE. However, no feedback on the report was received at MoHQL as at December 2017.

3.3.2 Salt Reduction

WHO recommends salt consumption to less than 5g per person per day in adults. An excessive consumption of salt increases the risks of high blood pressure and CVDs. According to the National NCD Survey 2009, the prevalence of hypertension was 37.9 per cent in the adult population, while in 2004, it stood at 23.1 per cent. Thus, Salt Reduction Strategies at national level were essential, and for that purpose, the Ministry carried out a National Salt Intake Study in 2012.

3.3.2.1 Salt Intake Study 2012

The objective was to measure the average salt intake in a representative sample of 300 persons aged 30-59 in the Mauritian population using the single 24-hour urine collection method. The results of the survey indicated that the mean consumption of salt was 7.9g per person per day, instead of less than 5g as recommended by WHO. Following the survey, aggressive awareness campaigns were carried out on the need to reduce salt intake consumption through health promotion talks by the Nutritionists and other health professionals in various institutions and the community. Mass media campaigns were carried out on the TV and private radios.

WHO then carried out a technical meeting on population based salt reduction strategies with a view to reducing the total salt intake in June 2012. One of the strategies was the reformulation of foods so as to decrease their salt content. Thus, the Government Analyst Division was entrusted the task to analyse the level of sodium content on a sample of foods consumed in large quantities by the population.

3.3.2.3 Main Sources of Salt Intake

A report dated December 2012 revealed that most of the selected food items had sodium above the recommended levels.

Following the above report, in April 2013, the Ministry proposed to organise two workshops for bakers and other food manufacturers with a view to sensitising them on the need for reformulation of their food products. However, the workshops were deferred. As of December 2017, the reformulation of the food products of the other manufacturers was still in the pipeline for implementation.

As for bread, the Ministry decided to regularise its salt content, being one of the main contributors to the total sodium intake in the diet in view of the amount consumed daily.

3.3.2.4 Decreasing the Sodium Level in Bread

Some three years later, that is, in May 2016, approval was obtained to conduct a half day workshop for bakers. The objectives were to present the findings of the Study of Salt Content in Bread, to inform the bakers about the Ministry's decision of bringing down the level of sodium in bread to a maximum of 400 mg per 100g.

The workshop was held in November 2016, and out of 100 bakers invited, only 14 attended. The Ministry then decided to set up a Technical Committee with the Mauritius Baker's Association so that they adopt a strategy for salt reduction gradually in breads over a period of three months starting on 1 April 2017. As of August 2017, no response had been received from the Association.

Hence, the Ministry proposed that a fresh study on the salt content of bread be carried out, and based on the findings, the draft Food Regulations would be amended to include the maximum sodium content of bread. As of December 2017, the results of the study, which showed that 88 per cent of the bread examined were within the recommended sodium level, were already submitted to the Ministry for further action.

Ministry's Reply

Amendments to the Food Regulations are in the pipeline and educational materials have been prepared to sensitise the public about the benefits of using less salt.

3.4 Coordination Mechanisms

Some of the core interventions and services in the implementation of the Actions Plans on Physical Activity, Nutrition and Tobacco, which have the greatest impact on NCD outcomes, require concerted action by several Government Agencies. Over and above the activities undertaken by MoHQL in NCD Prevention and Control, a number of other Ministries and Non-Governmental Organisations are involved. MoHQL has to work in close collaboration with these agencies in order to have interrelated sector actions towards the prevention of NCDs. In all the Action Plans developed by the Ministry, provision was made for the setting up of coordination mechanism among the different stakeholders to ensure that all the strategies and activities were implemented in a timely manner to achieve their overall respective objectives.

Successful prevention and control of NCDs require commitments of several stakeholders with a view to mitigating the effects of all the modifiable risk factors or influencing all relevant dimensions of the NCD problem. MoHQL plays a central coordinating role in prevention efforts, but other stakeholders, such as Ministry of Agro Industry and Food Security, MoE, Ministry of Youth and Sports have important leadership roles in their respective fields. However, for all Action Plans, the coordination mechanism was not functioning as intended, thus affecting the implementation and monitoring of several strategies and activities. This is elaborated below.

3.4.1 National Action Plan on Physical Activity 2011-2014

A National Committee was constituted under the Chairmanship of the Supervising Officer of the Ministry, and co-chaired by the Director Health Services. The main functions of the National Committee were to coordinate actions of different sectors and stakeholders, and to monitor and evaluate programme implementation. However, after three meetings in July 2011, October 2012 and March 2013, it ceased functioning.

3.4.2 National Plan of Action for Nutrition 2009-2010

A Nutrition Taskforce was set up for monitoring and evaluating the Action Plan. The Taskforce would include representatives from various Ministries, such as Ministry of Agro Industry and Food Security and MoE, and the main sectors of food production and food processing and the National Consumer Organisations.

One of the responsibilities of the Taskforce was to review the Plan of Action in 2010. After a few meetings during the period January to March 2011, it ceased its activities.

3.4.3 NAPTC 2008-2012

Similarly, as Tobacco Control cuts across several sectors, there is a need to have the full participation of other Ministries, Non-Governmental Organisations, and the Civil Society in the fight against the epidemic of tobacco use. In that respect, the setting up of a National Committee on Tobacco Control was recommended with representatives of all stakeholders. It will guide Government on Tobacco Control Policies and coordinate and monitor the implementation of Action Plan. However, the Committee was not set up.

Ministry's Reply

A first Steering Committee meeting with stakeholders, chaired by the Minister has already been held and a second meeting is scheduled in March 2018.

3.5 Evaluation of Action Plans

Action Plans formulated by the Ministry have as their ultimate goal of preventing and controlling NCDs. This requires mobilisation of adequate resources and the coordination among stakeholders. It is therefore imperative to get the best possible outcomes for every Rupee spent. Hence, evaluation of the appropriateness and effectiveness of the different strategies and activities to address the risk factors of NCDs is important.

Evaluation helps with identifying the most valuable and efficient use of resources and demonstrates that the Ministry's efforts have a measurable impact on expected outcomes and the different strategies and activities have been implemented effectively.

However, as of December 2017, the different strategies and activities formulated by MoHQL and implemented by the latter and other stakeholders, at different time periods had not been evaluated to ascertain their appropriateness and effectiveness.

Ministry's Reply

- Evaluation of an Action Plan is time and resource consuming;
- Achievements are evaluated through specific indicators of the NCD Surveys and GYTS whereby the findings give an indication on whether objectives have been reached or not.

3.6 Funding of Action Plans

3.6.1 Funds Allocated for the Implementation of the Action Plans

For the proper monitoring of an Action Plan, it is important to identify the cost of implementing the activities therein in relation to the total budget available. Thus, their scope may be adjusted accordingly, and the actual expenditure can be compared to the initial budget estimate and corrective actions taken where necessary.

Despite several Action Plans were developed, the budget of MoHQL was not linked to these Plans. In NPAN 2009-2010, of the 59 activities earmarked, only 14 had estimated costs totalling Rs 3.6 million. As regards NAPTC 2008-2012, 31 of the 113 activities had estimated cost totalling Rs 48.8 million, and in NAPPa 2011-2014, there was no estimated cost for the 48 activities.

3.6.1.1 Allocation of Funds to Implementing Agencies

Several Ministries and Departments were involved in the implementation of the different strategies and activities of the Action Plans. Except for a few, there was no estimated cost for activities to be implemented by them. Moreover, no mention was made in the Action Plans as to how these activities would be funded. For example for the implementation of the NAPTC 2008-2012, MoE was allocated the task to conduct Anti-tobacco policies and programmes for schools. For that purpose, some Rs 4.5 million were earmarked over the period 2008 to 2012. However, it was not known as to whether the sum earmarked was from the Ministry's own budget or from other sources.

3.6.2 Utilisation of Budgeted Funds for Prevention of NCDs

For the period January 2010 to June 2017, out of the total budgeted provisions of Rs 481.5 million for Prevention of NCDs and Promotion of Quality of Life, some Rs 365 million, representing 76 per cent of the budget, were actually used.

A further analysis of two items of expenditure, namely "NCD Related Studies and Surveys", and "Awareness and Sensitisation Campaigns" for the period January 2014 to June 2017 confirmed the underutilisation of financial resources allocated for combating NCDs and their underlying risk factors. Details are as shown in the Table 2 below.

Table 2 Underutilisation of Financial Resources - Period January 2014 to June 2017

Period	NCD Related Studies and Surveys (Rs million)		Awareness and Sensitisation Campaigns (Rs million)	
	Budgeted	Actual	Budgeted	Actual
Jan to Dec 2014	15.0	5.6	18.0	17.5
Jan to Jun 2015	3.0	0.5	9.0	8.0
July 2015 to June 2016	5.6	3.1	18.0	7.5
July 2016 to June 2017	4.0	2.2	18.0	17.0
Total	27.6	11.4	63.0	50.0

Source: Accountant General Annual Reports

3.6.3 Use of Overseas Fund for Prevention of NCDs

According to WHO Biennium Work Plan of 2016-2017, and to increase access to interventions to prevent and manage NCDs and their risk factors, a sum of US \$ 16,000 was earmarked for smoking cessation in line with FCTC, and US \$ 10,000 for promotion of physical activity. The sum earmarked would be used to finance the following activities:

- US \$ 8,000 for the implementation of the technical support to monitor and improve adherence to therapy through Carbon Monoxide Smokerlyser;

- US \$ 3,000 for the production of smoking cessation kits for patients attending cessation clinics;
- US \$ 5,000 for the training of Cessation Clinics personnel to provide smoking cessation brief interventions;
- US \$ 10,000 for the development of training program for health professionals, printing and dissemination of posters and pamphlets on physical activity on the occasion of World Physical Activity Day.

As of December 2017, only US \$ 3,000 were spent on the production of smoking cessation kits. The other activities were not implemented and the sums earmarked were reallocated for other purposes. Thus, the Ministry missed the opportunity to make optimum use of the financial resources earmarked under the WHO Biennium 2016-2017.

Ministry's Reply

All remaining funds have been used by WHO to conduct National Health Services Assessment for better NCD outcomes.

CHAPTER FOUR

CONCLUSION

This Chapter concludes against the audit objective based upon analysis and findings supported by audit evidence as elaborated in the previous Chapter.

NCDs represent more than 80 per cent of the total burden of diseases, and they have become a major cause of concern for Government. MoHQL has been taking laudable initiatives to develop Action Plans to address NCDs and their related risk factors. However, these Plans are prepared independently of each other to address tobacco consumption, unhealthy diet and physical inactivity, instead of using an integrated approach as in other countries. This has not brought a synergetic response, and the implementation of the Plans has been a major challenge for the Ministry.

An efficient and effective coordination mechanism is the key to the successful implementation of the strategies and activities identified in each Action Plan. The coordination mechanisms as proposed in the different Plans are not functioning as intended, and hence, affect the monitoring and smooth implementation of the strategies and activities within the given timeframe.

MoHQL has a leading role in ensuring the implementation of all the strategies and activities, and yet, several of them have either not been initiated or not yet completed at the end of the implementation period. For some activities that had to be implemented by other Ministries and Departments, their implementation status was not always communicated to MoHQL. Moreover, the Ministry does not evaluate the appropriateness and effectiveness of the strategies and activities contained therein.

Though MoHQL has to screen a maximum number of persons, it falls short to meet the target for the period 2013 to 2016, but an additional 115,003 students were screened during the same period. The absence of a tracking system to follow up cases that have been referred to other Health Institutions undermines the effectiveness of the screening programme.

The financing of the activities was not clearly defined in the Action Plans. The implementation of strategies and activities falling under the responsibility of MoHQL were financed from its budget, along with funds obtained from WHO. The source of funds for activities to be implemented by other Ministries and Departments was not stated in the Action Plans.

CHAPTER FIVE

RECOMMENDATIONS

This Chapter presents the recommendations based on the findings and conclusion reported in previous Chapters.

In the light of the audit findings and conclusion, hereunder are the recommendations.

5.1 Integrated Approach

The Ministry should adopt strategic and integrated approach to address NCDs and their related risk factors. It may use examples from countries, such as South Africa, Seychelles, Tobago and Trinidad which have adopted Whole of Government and Whole of Society approaches by integrating the strategies recommended by WHO for the different risk factors into their strategic plans on prevention and control of NCDs. An integrated approach will bring a more synergetic and cost effective response, within a given timeframe, to mitigate the prevalence of NCDs and meet international commitments, such as Sustainable Development Goal Target 3.4.

5.2 Reviewing the Coordination Mechanisms

The determinants and implications of NCDs are spread across diverse sectors within and outside Government. Hence, an effective coordination mechanism is key to the successful implementation of the different strategies. The coordination mechanisms proposed in the different Action Plans need to be reviewed taking into account, aspects, such as:

- The need for high level support with sufficient authority to facilitate and drive the efficient and effective implementation of the strategies in the Action Plans;
- Revisiting the role and responsibilities of the stakeholders and setting their different levels of accountability;
- The need for close monitoring of implementation through process indicators and periodic reporting to ensure accountability;
- The need to assess the progress and performance of each stakeholder. The outcome of the assessment can help to influence priority-setting and resource allocation.

5.3 Evaluation of the Action Plans

Evaluation of the Action Plans is fundamental to the prevention and control of NCDs, as its outcomes can be used to enhance the efficiency and effectiveness of the measures. Hence, the Plans developed by MoHQL need to be evaluated after their implementation period. This will help the Ministry among others to:

- Ascertain to what extent the objectives of the different Action Plans have been achieved, and what changes are needed to improve them;

- Assess the achievement of the objectives contained therein, the resource requirements and the efficiency and adequacy of the measures taken;
- Identify factors that prevented the successful implementation of the different strategies and activities;
- Use the valuable information from the evaluation when developing future Action Plans.

5.4 Financing of Activities

MoHQL should review the current financing arrangement of activities in the Action Plans. All the activities should be costed and their financing strategy established prior to implementation. Also, it should ensure that the budget allocation, along with funds received from International Organisations, such as WHO, for Prevention and Control of NCDs are optimally used for the intended purposes. It should investigate to identify the reasons for under spending and take remedial actions. This will help in achieving the maximum outcomes from scarce financial resources.

5.5 Specific Recommendations

5.5.1 Physical Activity

- There is a need for the Ministry to identify the reasons for the non-implementation of the strategies and activities of NAPPA 2004-2006 and NAPPA 2011-2014 and take corrective action. The Ministry may consider rolling over all the uncompleted strategies and activities in a new Action Plan along with new objectives and targets. In the meantime, the Ministry should continuously educate the population on the frequency, duration, intensity and types of physical activity necessary for better health;
- Promote a culture of regular exercise and healthy activities in our young generation. MoE and the Ministry of Youth and Sports can play a significant role in this context. They can launch massive prevention and sensitisation campaigns in schools. The main objective of such campaigns will be to inculcate the value and importance of keeping fit.

5.5.2 Nutrition

Many of the uncompleted strategies and activities of NPAN 2009-2010 has been rolled over in NPAN 2016-2020 and which the Ministry intends to complete within the timeframe. To achieve the target, it should ensure that the new Nutrition Taskforce together with the Nutrition Committee set up for that purpose regularly reviews the implementation status and takes corrective actions wherever needed. Continuous monitoring and reporting are vital.

5.5.3 Tobacco

- With the increase in prevalence of smoking, it is important for the Ministry to ensure that strategies developed under NAPTC 2015-2018 are implemented and that their implementations are monitored and evaluated;

- There is also a need to finalise the amendments of Tobacco Regulations;
- Intensive mass media campaigns should be carried out on a regular basis to discourage smoking among young people and adults;
- The quality of cigarettes in the market needs to be assessed. This will help in determining the impact of cigarette smoke on the environment;
- Expedite matters in relation to the ratification of the Protocol on illicit trade.

5.5.4 Salt

- To be in line with international practices, the use of salt should be regulated to ensure food manufacturers, bakers and retailers produce healthier products with low salt content;
- Intensify the awareness campaign on salt reduction by using nutrition education materials and pamphlets distributed to the population during health promotion talks.

5.5.5 Alcohol

According to WHO, the harmful use of alcohol is a significant contributor to the global burden of disease and is listed as the third leading risk factor for premature deaths and disabilities in the world. In Mauritius, over the period 2009 to 2015, the prevalence of alcohol consumption has increased. In that respect, the formulation of an Action Plan on alcohol consumption needs to be finalised.

5.5.6 Screening

- Establish a tracking system to follow up cases referred to other health institutions;
- A yearly realistic target with regard to the number of persons to be screened should be set and the Ministry should ensure that it is met.

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