

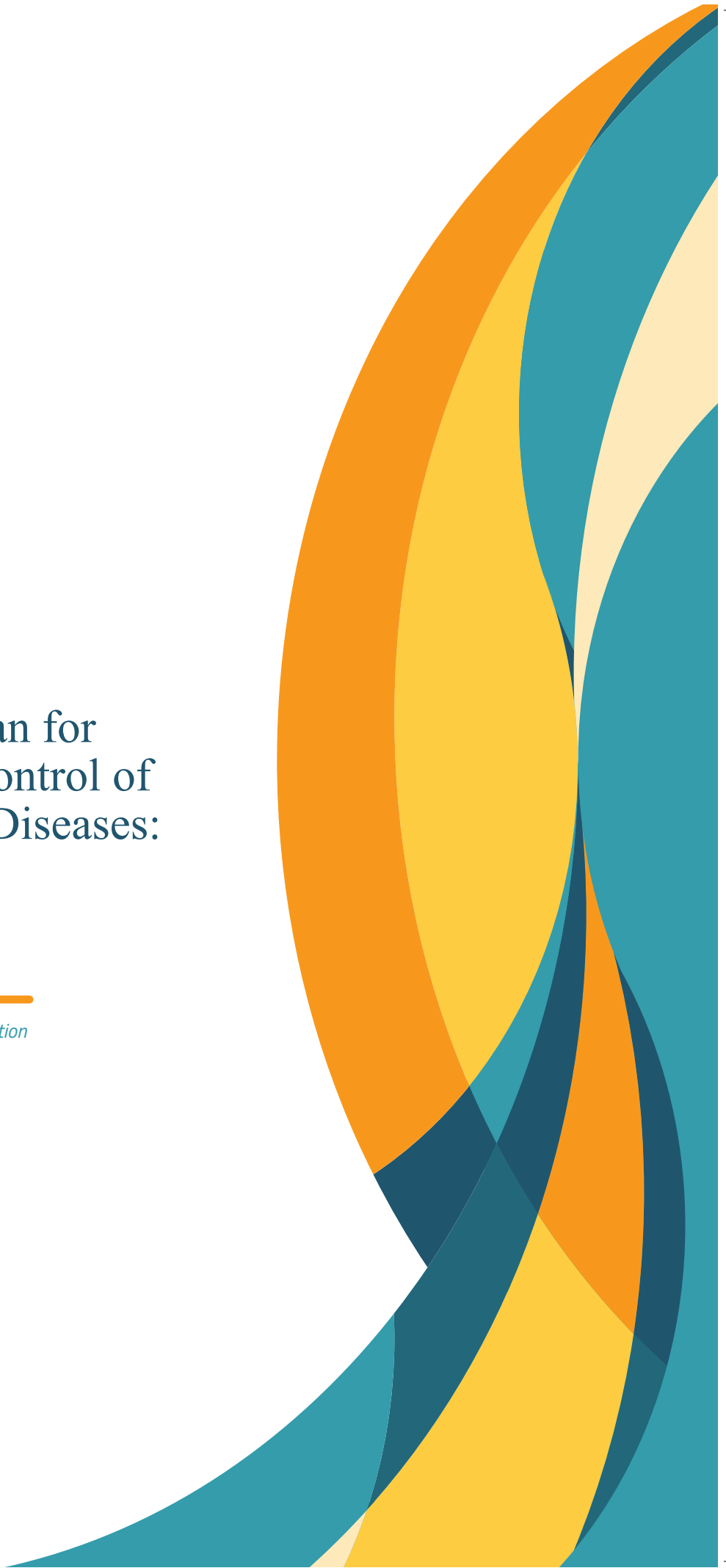


Government of the Republic of Trinidad and Tobago

Ministry of Health

National Strategic Plan for the Prevention and Control of Non Communicable Diseases: Trinidad and Tobago **2017 - 2021**

Working Together to Build a Healthy and Happy Nation



National Strategic Plan for the Prevention and Control of Non Communicable Diseases: Trinidad and Tobago 2017 - 2021

A Publication of
The Ministry of Health, Trinidad and Tobago

Copyright: Ministry of Health, Government of Trinidad and Tobago 2017



www.health.gov.tt



Ministry of Health-Trinidad and Tobago



TrinidadHealth



MoH_TT

Table of Contents

i	TABLE OF FIGURES TABLE OF TABLES	
ii	LIST OF ACRONYMS	
1	FOREWORD	
2	INTRODUCTION	
2	Methodology	
2	Limitations	
2	Regional and International Declarations on NCDs utilised in the NSP NCD	
3	THE HEALTH SYSTEM	
3	The Regional Health Authorities	
4	Role of County Medical Officers of Health in Prevention & Control of NCDs	
5	SITUATIONAL ANALYSIS	
5	Demography	
6	NCD Risk Factors	
6	Common Modifiable Risk Factors	
7	Tobacco Use	
7	Alcohol Use	
8	Physical Activity	
8	Fruit and Vegetable Consumption/ Unhealthy Diets	
8	Intermediate/Biological Risk Factors	
8	Overweight and Obesity	
8	Childhood Obesity	
9	Hypertension	
9	Cholesterol	
9	Elevated Blood Glucose	
9	Raised Risk of NCDs	
11	MORTALITY AND MORBIDITY DUE TO NCDS	
11	Heart Disease	
12	Cancer	
12	Diabetes	
14	SOCIAL DETERMINANTS OF HEALTH AND ECONOMIC BURDEN OF NCDS	
14	Poverty	
14	Gender and NCDs	
14	Economic Burden of NCDs	
15	TRINIDAD AND TOBAGO'S RESPONSE TO THE NCD EPIDEMIC	
15	Policies, Programmes, and Strategies to Respond to the NCD Challenge	
16	Tobacco Use	
16	Reduction in Harmful Use of Alcohol	
16	Unhealthy Diet and Physical Inactivity	
16	Childhood Obesity	
17	Progress Made	
17	Strengthening of Clinical Care Capacity	
17	The Chronic Disease Assistance Programme (CDAP)	
17	Evidence-based National Guidelines/ Protocols/Standards	
17	Surveillance and Research	
17	Population based Surveys	
17	Research	
18	STRATEGIC FRAMEWORK	
18	Purpose	
18	Context	
18	Vision	
18	Goal	
18	Principles/Approaches	
20	PRIORITY AREAS AND TARGETS	
22	KEY PLANNED ACTIONS	
32	APPROACH TO IMPLEMENTATION AND MONITORING	
33	BUDGETARY CONSIDERATIONS	

Table of Contents continued

34 APPENDICES

- 34 APPENDIX 1: SWOT Analysis
- 35 APPENDIX 2: Stakeholder Analysis
- 36 APPENDIX 3: Cross-Sectoral Government Engagement to Reduce Risk Factors
- 37 APPENDIX 4: Roles for Key Government Ministries
- 41 APPENDIX 5: Life Course Factors
- 42 APPENDIX 6: WHO Best Buys
- 43 APPENDIX 7: WHO Global Monitoring Targets
- 45 APPENDIX 8: Declaration of Port-of-Spain

47 REFERENCES

TABLE OF FIGURES

- Figure 1: Declarations and international and regional frameworks used in the development of the National Strategic Plan for the Prevention and Control of NCDs.
- Figure 2: Map of the Regional Health Authorities in Trinidad and Tobago.
- Figure 3: Population pyramids for Trinidad and Tobago for 2000 and 2011.
- Figure 4: Changes in life expectancy in the Caribbean.
- Figure 5: Risk factors of NCDs.
- Figure 6: Prevalence of students who ever smoked cigarettes from GYTS 2000, 2007, and 2011.
- Figure 7: Obesity/Overweight status of children in Trinidad and Tobago in 1999 and 2009.
- Figure 8: Distribution of BMI in secondary school children.
- Figure 9: Four leading causes of mortality in Trinidad and Tobago.
- Figure 10: Prevalence of diabetes in Trinidad and Tobago compared to the regional and global prevalences.
- Figure 11: Cost of cancer, hypertension, and diabetes (TT\$ Millions).
- Figure 12: Mechanisms to operationalise the Health in All Policies approach.

TABLE OF TABLES

- Table 1: Health services delivery.
- Table 2: Common modifiable behavioural risk factors of NCDs.
- Table 3: Distribution of NCD risk factors among persons ages 15-64 years by sex from the 2011 STEPS Risk Factor Survey.
- Table 4: NCD mortality in Trinidad and Tobago.
- Table 5: Priority areas, specific objectives, and targets.
- Table 6: Trinidad and Tobago National Strategic Plan for the Prevention and Control of Non Communicable Diseases.
- Table 7: Stakeholders internal and external to the Government for the response to NCDs.
- Table 8: Cross-sectoral government engagement to reduce risk factors.
- Table 9: Possible roles of government ministries in NCD prevention and control.
- Table 10: Life course factors.
- Table 11: WHO Best Buys.

LIST OF ACRONYMS

AA	Alcoholics Anonymous
AHPC&PH	Advisor, Health Promotion, Communications, and Public Health
ASA	Annual Service Agreement
BMI	Body Mass Index
CARDI	Caribbean Agricultural Research & Development Institute
CAREC	Caribbean Epidemiology Centre
CARIAD	Caribbean Institute on Alcoholism and Other Drug Problems
CARICOM	Caribbean Community
CARPHA	Caribbean Public Health Agency
CBO(s)	Community-based Organisation(s)
CCDE	Certified Caribbean Diabetes Educators
CCH	Caribbean Cooperation in Health
CCM	Chronic Care Model
CDAP	Chronic Disease Assistance Programme
CFNI	Caribbean Food and Nutrition Institute (now incorporated into CARPHA)
CHRC	Caribbean Health Research Council
CMO	Chief Medical Officer
CMO(s)H	County Medical Officer(s) of Health
Corp Comm	Corporate Communications Unit, Ministry of Health
COSTAATT	College of Science, Technology and Applied Arts of Trinidad and Tobago
CPC	Caribbean Program Coordination
CNO	Chief Nursing Officer
CSO	Central Statistical Office
CVD	Cardiovascular Diseases
CWD	Caribbean Wellness Day
DATT	Diabetes Association of Trinidad and Tobago
DERPi	Helen Bhagwansingh Diabetes Education Research and Prevention Institute
DG WHO	Director General, World Health Organization
DHV	District Health Visitor
ENDS/ ENNDS	Electronic Nicotine Delivery Systems/Electronic Non-Nicotine Delivery Systems
EPI	Expanded Programme for Immunisation
ERHA	Eastern Regional Health Authority
FAO	Food and Agriculture Organization
FBO(s)	Faith-based Organisation(s)
FCTC	Framework Convention for Tobacco Control
GAP	WHO Global Action Plan for the Prevention and Control of NCDs
GDP	Gross Domestic Product
GDM	Gestational Diabetes
GMPC	General Manager, Primary Health Care
GORTT	Government of the Republic of Trinidad and Tobago
GSHS	Global School Health Survey
GYTS	Global Youth Tobacco Survey
HED	Health Education Division, Ministry of Health
HiAP	Health in All Policies
HiPTT	Health in Pregnancy in Trinidad and Tobago
HP	Health Promotion
HPRP	Directorate of Health Policy, Research and Planning, Ministry of Health
HPTSS	Health Programmes and Technical Support Services
HPV	Human Papilloma Virus
HR	Human Resources, Ministry of Health
HSHRPDU	Health Sector Human Resource and Planning Development Unit, Ministry of Health
IADB	Inter-American Development Bank
IEC	Information, Education and Communication
IHD	Ischemic Heart Disease
JHMI	Johns Hopkins Medical Institutions
LAC	Latin America and the Caribbean
MET(s)	Metabolic equivalent(s)
MOA	Ministry of Agriculture, Land and Fisheries
MOE	Ministry of Education
MOFA	Ministry of Foreign Affairs
MOH	Ministry of Health
MOHSP	MOH Strategic Plan
MOLA	Ministry of Legal Affairs

MONS	Ministry of National Security
MOPD	Ministry of Planning and Development
MOSYA	Ministry of Sport and Youth Affairs
MOTI	Ministry of Trade and Industry
N&MD	Nutrition and Metabolism Division, Ministry of Health
NAC	North America and the Caribbean
NADAPP	National Alcohol and Drug Abuse Prevention Programme
NCD(s)	Non Communicable disease(s)
NCDNC	NCD National Commission
NCDTAC	NCD Technical Advisory Committee
NCDU	NCD Unit
NCM	National Coordinating Mechanism
NCRHA	North-Central Regional Health Authority
NDC	National Drug Council
NGO	Non-Governmental Organisation
NIHERST	National Institute of Higher Education, Research, Science and Technology
NPTA	National Parent Teacher Association of Trinidad and Tobago
NSDSL	National Schools Dietary Services Limited
NSP NCD	National Strategic Plan for the Prevention and Control of NCDs
NWRHA	North-West Regional Health Authority
OAS	Organization of American States
OVI	Objectively Verifiable Indicators
P&C	Prevention and Control
PA	Physical Activity
PAFNCD	Partners Action Forum on the Prevention and Control of NCDs
PAFWC	PAF Working Committee
PAHO	Pan American Health Organization
PHC	Primary Health Care
PMCD	Public Management Consulting Division
POA	Plan of Action
PTA	Parent Teacher Association
QOC	Quality of Care Project
RHA	Regional Health Authority
ROI	Return on Investment
SCOPE	Sharing Community Ophthalmology Path
SDH	Social Determinants of Health
SHP	School Health Programme
SOP(s)	Standard Operating Procedure(s)
STEPS	WHO STEPwise approach to Surveillance
STPOA	Short Term Plan of Action
SWRHA	South West Regional Health Authority
TCU	Tobacco Control Unit, Ministry of Health
THA	Tobago House of Assembly
TOR	Terms of Reference
TRHA	Tobago Regional Health Authority
TSTT	Telecommunications Services of Trinidad and Tobago Limited
TTANDi	Trinidad and Tobago Association of Nutritionists and Dieticians
TTBA	Trinidad and Tobago Breastfeeding Association
TTCS	Trinidad and Tobago Cancer Society
TTMA	Trinidad and Tobago Medical Association
TTO	Trinidad and Tobago
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USC	University of the Southern Caribbean
UTT	University of Trinidad and Tobago
UWI	University of the West Indies, St Augustine
WHA	World Health Assembly
WHO	World Health Organization
WOG	Whole of Government
WOS	Whole of Society



FOREWORD

The health of a nation is a fundamental determinant of the quality of life of its citizens and directly influences expenditure, productivity, and the achievement of sustainable developmental goals. Health is therefore an instrument of development.

Unfortunately, significant increases in the domestic occurrence of Non Communicable Diseases (NCDs) namely, heart disease, diabetes, cancer and cerebrovascular disease, threaten to erode decades of public sector investment. In recent years, NCDs have become the leading cause of morbidity and mortality in Trinidad and Tobago. Without action, the increasing prevalence of NCDs will continue to unduly burden our health system, consume already scarce resources and severely undermine our socioeconomic advancement.

The good news is that collectively, we have the ability to dramatically reduce the occurrence of NCDs through the implementation of proven cost-effective strategies. While the Government is best poised to implement the broad-based policy and legislative actions necessary, it is clear that a collaborative approach is required. Individuals, stakeholder groups, the wider society and the Government must work collectively and decisively to reduce the threat of NCDs and improve the health of our people.

It is in this context that I present the National Strategic Plan for the Prevention and Control of Non Communicable Diseases. This holistic action-based plan takes into account the entire NCD health care management spectrum. The plan seeks to harness the collective efforts of both the public and private sector in order to synergise and integrate NCD prevention and control at all stages in the life course and engage stakeholders via the whole of society and whole of government approaches. Additionally, it takes into consideration the range of health interventions necessary to combat the prevalence of NCDs including; policy and environmental changes, healthy lifestyle promotion, early detection and treatment of metabolic risk factors, advocacy and community outreach, surveillance, and research.

Fundamentally, the success of this initiative will be determined by our ability to change deeply entrenched habits and accept personal responsibility for our health status. With your support, I am confident that this National Plan for the Prevention and Control of Non Communicable Diseases will become a living blueprint for a more proactive response to our national health needs and be the catalyst for the creation of a society of *happier, healthier, fitter people...living longer and more productive lives.*

The Honourable Terrence Deyalsingh
Minister of Health



The Honourable Terrence Deyalsingh
Minister of Health

INTRODUCTION

The National Strategic Plan for the Prevention and Control of Non Communicable Diseases (NSP NCD) outlines the strategic direction for the response to Non Communicable Diseases (NCDs) in Trinidad and Tobago (TTO), and the strategic outcomes that partners from government, private sector, and civil society will be engaged to collaborate towards their achievement over the period 2017-2021. This plan is in alignment with the national development strategy of the Government of the Republic of Trinidad and Tobago (GORTT), which acknowledges that multiple factors and social determinants combine together to affect the health of individuals and communities including inter alia, where people live, work, play, the environment, genetics, income, education, and relationship with friends and family¹. It utilises key approaches to population health and development including primary health care, universal health coverage, standards of care, integrated management, the Health in All Policies (HiAP), and multisectoral approaches which involve the whole of government (WOG) and whole of society (WOS).

In order to address the varied determinants of health, many of which are outside of the health sector, the plan embraces the following core principles:

1. Prevention-focus
2. Equity
3. Inclusiveness
4. People centred
5. Evidence-based & results-driven

METHODOLOGY

The development of the strategic plan included engagement with partners throughout the process. Through stakeholder consultations, ideas and perspectives of internal and external stakeholders were garnered to facilitate their contribution to and buy-in for the proposed approaches to implementation of the plan.

Data and evidence to guide the development of the plan were gathered from several sources in the Ministry of Health (MOH), the Central Statistical Office (CSO), academia, and research studies on NCDs and their risk factors. In 2012, the results of the 2011 Trinidad and Tobago STEPS NCD Risk Factor Survey (STEPS) were released. This data established baseline on key risk factors, and was utilised in the development of the NSP NCD. The consultative process used in the development of the plan also maximised availability of outcomes of other similar or relevant dialogues, which had taken place in the recent past.

LIMITATIONS

Comprehensive data on the NCD situation in Trinidad and Tobago was difficult to obtain. Several data sources used were dated and the data obtained varied according to the source. This was compounded by the absence of a national NCD surveillance system and lack of collation and analysis of data from the Regional Health Authorities (RHAs). Several proxies were utilised such as using hospital admissions to represent morbidity data. A comprehensive surveillance system will be important to the implementation and monitoring of the NSP NCD. More peer reviewed, policy-related research is needed, as well as collation and analysis of data covering five (5) to ten (10) year periods to generate trends.

REGIONAL AND INTERNATIONAL DECLARATIONS ON NCDs UTILISED IN THE NSP NCD

The NSP NCD is guided by several international and regional frameworks and declarations, which inform the strategic approach adopted in the plan to address our national NCD situation and local determinants of health. These include:



Figure 1: Declarations and International and Regional Frameworks used in the Development of the National Strategic Plan for the Prevention and Control of NCDs.

¹ Ministry of Planning and Development, Government of the Republic of Trinidad and Tobago. 2016. National Development Strategy 2016-2030 (Vision 2030). Retrieved from <http://www.social.gov.tt/wp-content/uploads/2017/01/V2030-as-at-August-29th-2016.pdf>

THE HEALTH SYSTEM

The MOH is the national authority charged with oversight of the entire health system in TTO. The MOH plays a central role in the protection of the population's health and in ensuring that all organisations and institutions that produce health goods and services conform to standards of quality, care, and safety². The health system in TTO comprises several entities, which must work as a cohesive and committed whole. These entities include public, private, and civil society agencies working together to produce the public good called 'population health'. Through collaboration among these entities, public and personal health care services are provided to citizens, with a reach to all communities.

Public health and population based programmes, which focus on wellness and preventive care, are made available through the MOH, the vertical services and national programmes and civil society. Personal health care services at the primary, secondary, and tertiary levels are available through the Regional Health Authorities (RHAs), civil society, and the private sector.

THE REGIONAL HEALTH AUTHORITIES

Responsibility for the provision of clinical health care services in TTO was contracted out from the MOH to the RHAs with the passing of the Regional Health Authorities Act No. 5 in 1994. RHAs are autonomous

Table 1: Health Services Delivery³

Sector	Institution	Type of Health Service		
		Public Health Programmes	Population based Programmes	Personal Health Care Services
Public Sector	Ministry of Health	●		
	Ministry of Health Vertical Services	●	●	
	Regional Health Authorities			●
	Other Ministries, State Agencies		●	
Private Sector	Private for profit			●
	Civil Society		●	●
	Community			●
Public People				Self-Managed Care

bodies that own and operate health facilities in their respective Regions². There are five RHAs in TTO, which deliver public health care services to the population of TTO on behalf of the MOH through a network of one hundred and five (105) health centres located in communities close to the population, and eight hospitals.

The MOH is responsible for corporate governance and leadership of the health sector, policy setting, quality assurance and regulations, monitoring and evaluation, and public health services for the population⁴. The RHAs provide a basket of primary, secondary, and tertiary health services to the population based on national health priorities established by the MOH and on continuing assessment of health needs of the communities served.

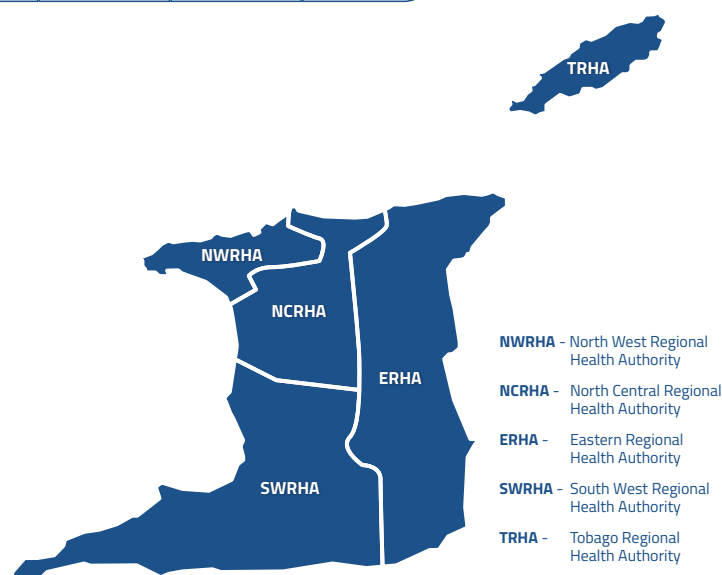


Figure 2: Map of Regional Health Authorities in Trinidad and Tobago³

² Ministry of Health, Trinidad and Tobago. n.d. "Ministry of Health - Overview." Ministry of Health, Trinidad and Tobago. (<http://www.health.gov.tt/sitepages/default.aspx?id=38>).

³ Ministry of Health, Trinidad and Tobago. 2016. The Ministry of Health - Trinidad and Tobago. Retrieved from Ministry of Health, Trinidad and Tobago: <http://www.health.gov.tt>

They follow the policy direction of the MOH, provide services in accordance with the standards of care, SOPs, and guidelines from the Ministry. The Ministry allocates financial resources to the RHAs through Annual Service Agreements (ASAs) for the implementation of these services.

These agreements also serve as a mechanism for monitoring and evaluation.

ROLE OF COUNTY MEDICAL OFFICERS OF HEALTH IN PREVENTION & CONTROL OF NCDs

A key role of the MOH is ensuring that the essential public health functions are delivered to promote and protect the health of the population. The County Medical Officers of Health (CMOSH), senior public health administrators within the MOH, have a critical function of coordinating and monitoring the implementation of these essential public health functions. The Ministry retains other national programmes that are critical to the discharge of these functions that are dedicated to the promotion and protection of the health of the population, thus contributing to social and economic development of the country.

The role of the CMOH in the implementation of the NSP NCD will involve strengthening and renewing the primary care approach for NCD Prevention and Control through:

- Providing leadership for the development and delivery of the primary health response to NCDs at the community level;
- Coordinating the development of strategies to support the delivery of the Ministry's NSP NCD;
- Health situation analysis, health risk assessment, and disease surveillance;
- Primary health care and health promotion principles;
- Social participation and intersectoral collaboration at the community level; and
- Ensuring the timely implementation of the essential public health functions at the county level including:
 - Public health surveillance, research and reporting;
 - Monitoring and evaluation of the implementation of MOH policies, programmes, services and health situation assessment;
 - Health promotion;
 - Facilitating social participation in the response to NCD prevention and control; and
 - Quality assurance and standards of care to track progress in personal and population based services.

⁴ Ministry of Health, Trinidad and Tobago. 2011. "Strategic Plan: Fiscal Years 2012-2016."

SITUATIONAL ANALYSIS

Trinidad and Tobago has experienced an epidemiological transition over the last 40 years. NCDs are now the major health problems, replacing the communicable diseases of the 1960s. Several factors have contributed to this, including an ageing population, urbanisation, and significant changes in the lifestyle of the population.

DEMOGRAPHY

The country's population is approximately 1.35 million, with an estimated 8.6% of the population living in urban areas. Males account for 50.2% of the population, while

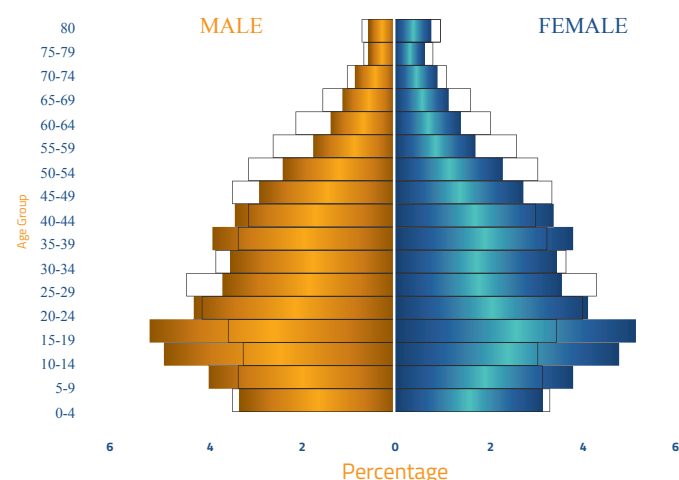


Figure 3: Population pyramids for Trinidad and Tobago for 2000 and 2011*
*2000 – orange and blue; 2011 – grey outline

females account for 49.8%⁵. The population pyramids in Figure 3 reveal the continuing demographic transition of the ageing population. Between 2000 and 2011, while there was growth in the youngest age group (0-4 years), there was significantly more growth in the age group 45-80+ years.

The crude birth and death rates are 12.83 births and 8.23 per 1 000 population respectively. The fertility rate is 1.71 children per woman and the infant mortality rate is 12.0 per 1 000 live births⁵. Life expectancy at birth is 73.9 years for females and 66.5 years for males⁷.

The 2016 Evaluation of the Port-of-Spain Declaration revealed that while overall life expectancy in TTO increased from 64.8 to 69.3 between 1970 and 2010, this increase was far less than the 10-15 year increases

observed in more than seven other Caribbean countries for the same period. Research is needed to determine the reasons for this. Of note also is the earlier onset of NCDs in the population.

Today onset of NCDs is being observed more frequently in the under 45 years age group⁸.

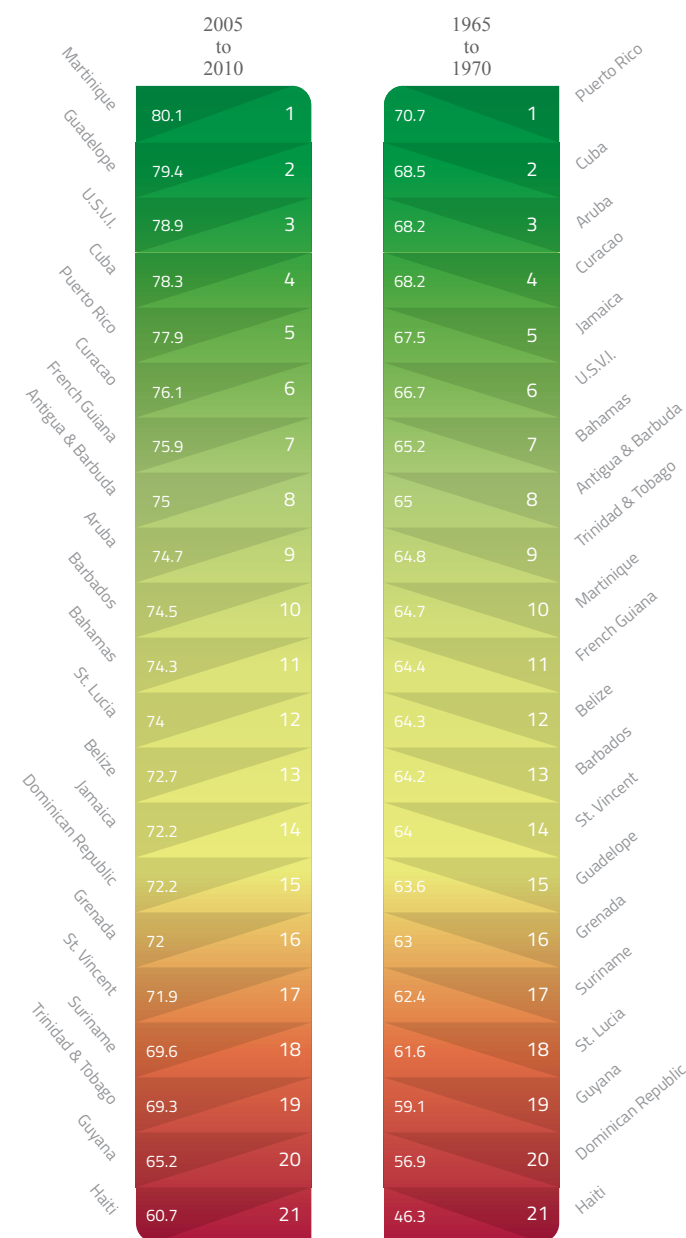


Figure 4: Changes in life expectancy in the Caribbean⁸

⁵ Central Statistical Office, Trinidad and Tobago. 2016. "Population Mid Year Estimates." Central Statistical Office. (<http://cso.gov.tt/data/?productID=31-Population-Mid-Year-Estimates>).

⁶ Central Statistical Office. 2012. "Trinidad and Tobago 2011 Population and Housing Census: Demographic Report." Ministry of Planning and Sustainable Development, Port-of-Spain. (https://guardian.co.tt/sites/default/files/story/2011_DemographicReport.pdf).

NCD RISK FACTORS

The NCD problem is growing rapidly because of the high and increasing prevalence of NCD risk factors in the population. There are several types of factors that increase the risk for the development of NCDs.

Personal factors such as age, ethnicity, and genetic factors are not amenable to change. However, NCDs share common risk factors that are modifiable. Critical actions for prevention and control of NCDs must be directed at the modifiable risk factors which include:

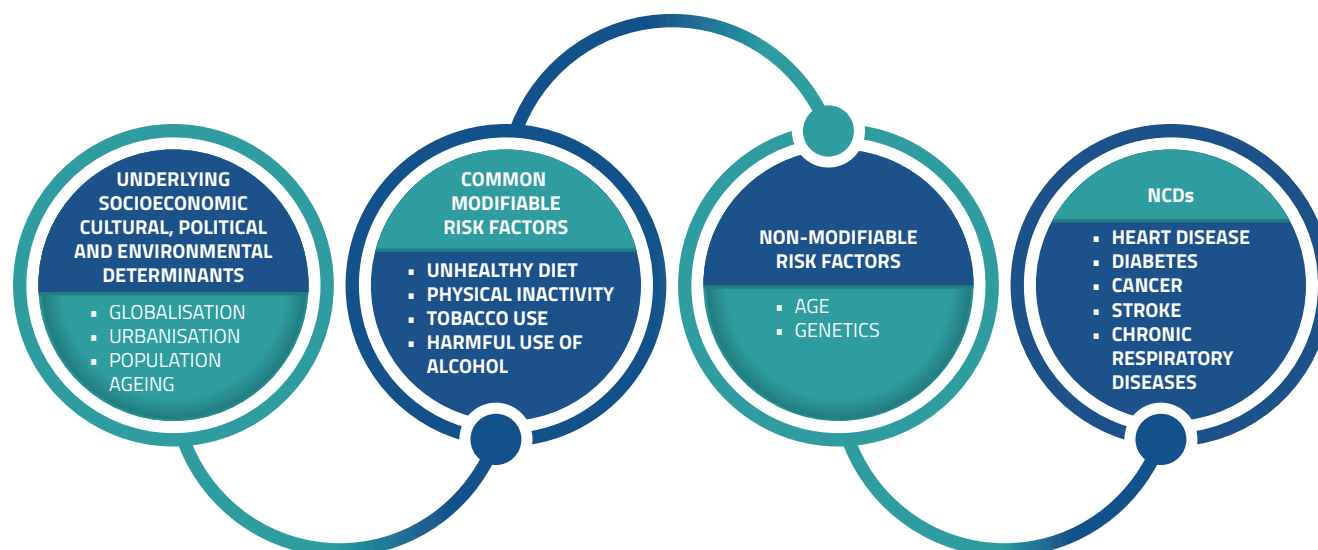


Figure 5: Risk factors of NCDs.

Table 2: Common modifiable behavioural risk factors of NCDs.

NCDs	COMMON MODIFIABLE RISK FACTORS			
	Tobacco	Unhealthy Diet	Physical Inactivity	Harmful Use of Alcohol
Heart Disease	Yes	Yes	Yes	Yes
Diabetes	Yes	Yes	Yes	Yes
Cancer	Yes	Yes	Yes	Yes
Stroke	Yes	Yes	Yes	Yes

⁷ Pan American Health Organization. 2015. "Health Situation in the Americas: Basic Indicators 2015.". (http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=31791&Itemid=270&lang=en).

⁸ PAHO/WHO and CARICOM. (2016). Evaluation of the 2007 CARICOM Heads of Government Port-of-Spain NCD Summit Declaration. Retrieved from <http://www.onecaribbeanhealth.org/wp-content/uploads/2016/10/ACCELERATING-ACTION-ON-NCDS-POSDEVAL-Report.pdf>

⁹ Ministry of Health, Trinidad and Tobago. 2012. "Trinidad and Tobago Chronic Non-Communicable Disease Risk Factor Survey [Pan American STEPS]". (<http://www.health.gov.tt/news/newsitem.aspx?id=394>).

- Modifiable behavioural risk factors: tobacco use, alcohol abuse, unhealthy diets, and physical inactivity;
- Modifiable biological risk factors: obesity, high blood pressure, high cholesterol, and raised blood glucose.

When left unchanged, modifiable behavioural risk factors progress and intermediate biological risk factors (high blood pressure etc.) develop. Without the relevant management and control, these intermediate biological risk factors will progress to chronic diseases such as heart disease, diabetes, cancers, and stroke.

NCD risk factors are also influenced by other factors in the society where people, live, learn, work, love and play. These are referred to as social determinants of health (SDH), and include, but are not limited to, socioeconomic, cultural, environmental and political factors, over which individuals have limited control, and for which action is required by governments, private sector, and civil society.

Data from several national surveys including the 2011 STEPS NCD Risk Factor Survey, the Global School Health Survey (GSHS - 2007 and 2011), the Global Youth Tobacco Survey (GYTS - 2000, 2007, and 2011), and the 2011 Evaluation of School Meals Options revealed that the prevalence of NCD risk factors in the population was high.

TOBACCO USE

About one fifth of the population smoke and the prevalence is much higher among men than among women. The average age of initiation to smoking is around 17 years in both sexes, and manufactured cigarettes are the preferred form of tobacco use. The average number of cigarettes smoked per day was 11.5 cigarettes. In 2004, tobacco was attributable to 7% of all NCD deaths – 9% of deaths due to ischemic heart disease, 61% of deaths due to lung cancer¹¹.

Regarding smoking and youth, while Figure 6 shows that the prevalence of smoking cigarettes among students has decreased steadily over the period 2000 – 2011, there is no room for complacency. The 2011 GYTS showed that 30% of students in Forms 1 to 4 had smoked a cigarette at least once in their lives and 18% were current smokers. The use of tobacco products other than cigarettes had increased from 4.8% in 2000 to 12% in 2011^{12 13 14}.

ALCOHOL USE

Forty percent of respondents to the STEPS survey were current drinkers (defined as having consumed a drink within the 30 days prior to survey implementation), and drinking was found to begin at an early age. The 2011 GSHS showed that in TTO among the 13-15 year olds, 36.4% of students had an alcoholic drink in the month preceding the survey, with 86.5% of these

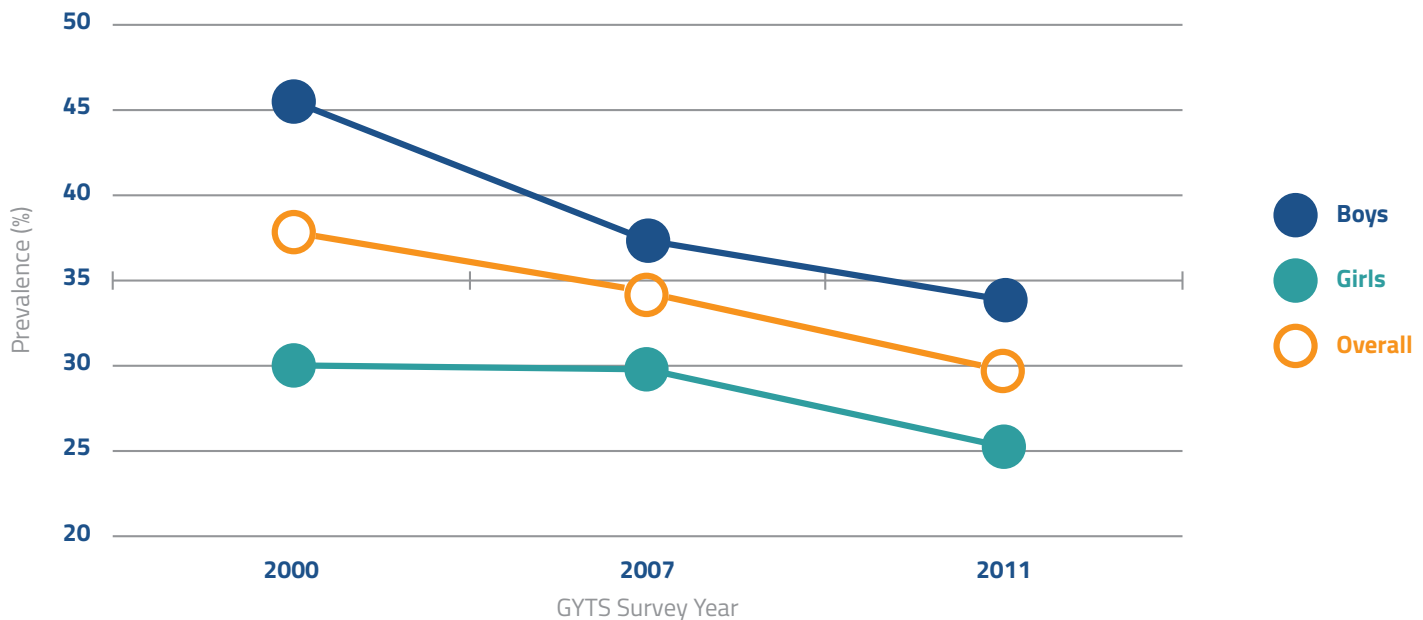


Figure 6: Prevalence of students who ever smoked cigarettes from GYTS 2000, 2007, and 2011^{12 13 14}

¹⁹ World Health Organization. (n.d.). WHO | What is Moderate-intensity and Vigorous-intensity Physical Activity? Retrieved from World Health Organization: http://www.who.int/dietphysicalactivity/physical_activity_intensity/en/

children admitting to having a first alcoholic drink before the age of 14 years¹⁵. Both the 2011 GSHS and the 2011 STEPS surveys also indicate that young people engage in binge drinking (defined as engaging in heavy episodic drinking – five and four drinks for men and women respectively, on any one day in the last 30 days). Further, nearly 60% of alcohol users in TTO either rarely eat food while drinking or do not do so at all⁹. This is noteworthy, because research shows that alcohol is absorbed at an accelerated rate on an empty stomach.

PHYSICAL ACTIVITY

Men spend more time on physical activity (PA) overall. For the age group 15-64 years, men spend more than 100 minutes per day whereas women spent only 14.3 minutes. Twice as many males than females engage in high-level activity (>3000 MET-minutes per week), but more females engage in low or moderate physical activity. Physical activity tends to be seasonal between both genders. This pattern of PA might explain the gender difference observed in relation to body mass index (BMI) levels – a higher percentage of men are overweight when compared to women, and a higher percentage of women than men are obese⁹.

FRUIT AND VEGETABLE CONSUMPTION/ UNHEALTHY DIETS

The results of the STEPS survey confirmed that the diet of the population of TTO is deficient in fruits and vegetables. Ninety percent (90%) of the population have less than five servings of fruit and vegetables daily. With respect to the diet of children, the 2007 GSHS revealed that overall, 51.6% of students usually drank sugar sweetened carbonated soft drinks two or three times per day¹⁶. The 2011 GSHS found that the number had increased to 74.6% of students drinking sugar sweetened carbonated beverages within the past 30 days¹⁵. This, accompanied by the finding from the Evaluation of School Meals options that among the frequently consumed foods, there was an overabundance of staples (carbohydrate rich foods) and a scarcity of fresh fruits or vegetables offered to children in school settings, indicates that unhealthy eating practices continue to be a source of concern amongst our children¹⁷.

INTERMEDIATE/BIOLOGICAL RISK FACTORS

Modifiable behavioural risk factors lead to intermediate risk factors (biological risk factors) which require medical management. These include being overweight or obese, or having high cholesterol, high blood pressure, or high blood sugar.

OVERWEIGHT AND OBESITY

As in the rest of the Caribbean, the prevalence rate of obesity in TTO has been increasing rapidly. Just over fifty-five per cent (55.7%) of the population ages 15-64 years were overweight or obese. Among females, 34% were overweight and 32% obese. Among men, 40% were overweight and 19% are clinically obese. There was a marked increase in obesity over the age of 24 years⁹

CHILDHOOD OBESITY

This is of particular concern due to its impact on the development of risk factors and NCDs later in life. Over the past two decades, TTO has seen the emergence of NCDs such as Type 2 diabetes among its youth. The results of the Survey of BMIs conducted by the Caribbean Food and Nutrition Institute (CFNI) for the MOH in 2010, revealed that overweight and obesity in schoolchildren aged 5-18 years, increased from 11% in 1999, to 23% in 2009 representing an increase of 109%. Over the same 10-year period, obesity in children increased some 400% from 2.4% to 12.5%¹⁸.

This five (5)-fold increase in obesity in children over a 10-year period means that TTO has significant childhood obesity problem that must be arrested immediately, given that it can contribute to higher levels of adolescent and adult obesity. Research has shown that 24% of school-aged children (5-18 years) are overweight or obese and as high as 35% in St George East¹⁷. Figure 8 details this.

Ultimately, this high level of overweight and obesity, beginning from childhood and continuing in adulthood, further contributes to the overall increased risk of NCDs in the population. This leads to increased limb amputations, heart attacks, kidney disease, and blindness, which are increasing health care costs, while at the same time reducing the productive capacity of those affected.

¹¹ United Nations Country Team. 2006. "Common Country Assessment: Republic of Trinidad and Tobago". (<https://www.scribd.com/document/156420644/Common-Country-Assessment-Revised-March-31-Final>).

¹² Alleyne, Leo E. 2000. "Trinidad and Tobago (Ages 13-15) Global Youth Tobacco Survey (GYTS) FACT SHEET". (<http://nccd.cdc.gov/gtssdata/Ancillary/DownloadAttachment.aspx?ID=501>).

¹³ Alleyne, Leo. 2007. "Trinidad & Tobago (Ages 13-15) Global Youth Tobacco Survey (GYTS) FACT SHEET". (<http://nccd.cdc.gov/gtssdata/Ancillary/DownloadAttachment.aspx?ID=502>).

¹⁴ Procope-Beckles, Marilyn. 2011. "Trinidad and Tobago 2011 Country Report Global Youth Tobacco Survey (GYTS)". (<http://nccd.cdc.gov/gtssdata/Ancillary/DownloadAttachment.aspx?ID=1173>).

Table 3: Distribution of NCD Risk Factors among persons ages 15-64 years by Sex from the 2011 STEPS Risk Factor Survey⁹.

Risk Factors	Prevalence by sex %		Overall Prevalence %
	Male	Female	
Tobacco Use	33.5	9.4	21.1
Alcohol consumption	50.6	30.9	40.0
Less than 5 servings of Fruit and Vegetables	92.8	89.3	91.5
Low levels of physical activity (defined as <600 MET - minutes per week)	33.0	57.0	45.4
Overweight/Obesity	52.3	59.0	55.7

*Low levels of physical activity defined as <600 MET** -minutes per week.

** Metabolic Equivalent (METs) are commonly used to express the intensity of physical activities. MET is the ratio of a person's working metabolic rate relative to their resting metabolic rate. One MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1kcal/kg/hour¹⁵.

HYPERTENSION

More than 1 in 5 adults, about one billion people, worldwide have raised blood pressure. Complications from hypertension account for 9.4 million deaths worldwide every year. Hypertension is the most important preventable cause of heart disease and stroke worldwide. Hypertension causes around half of all deaths from stroke and heart disease, and contributes to premature mortality. The higher the blood pressure, the higher the risk of damage to the heart and blood vessels in major organs such as the brain and kidneys.

In TTO, 26.3% of persons surveyed had elevated blood pressure or were currently on anti-hypertensive medication (29.8% of males and 23.1% of females)⁹. A retrospective database study of data collected from 14 793 persons by the Ministry of the People and Social Development over the period August 2006 to January 2008 revealed a self-reported hypertension prevalence of 30.4%⁹. This high prevalence of hypertension increases the risk of mortality from heart disease and diabetes, the two top causes of death in the country.

¹⁵ Ministry of Health, Trinidad and Tobago. 2011. "Global School-based Student Health Survey Trinidad and Tobago 2011 Fact Sheet." (http://www.paho.org/trt/index.php?option=com_docman&task=doc_download&gid=31&Itemid=).

¹⁶ Procope-Beckles, Marilyn. 2007. "GSHS 2007 Report Trinidad and Tobago." (http://www.paho.org/trt/index.php?option=com_docman&task=doc_download&gid=28&Itemid=).

CHOLESTEROL

The prevalence of elevated total cholesterol (≥ 6.2 mmol/L) or being currently on medication for raised cholesterol was 23.5% overall, 28.3% in males and 18.9% in females⁹.

ELEVATED BLOOD GLUCOSE

The prevalence of elevated fasting blood glucose (≥ 6.1 mmol/L) or being currently on medication for elevated blood glucose was 20.5% overall, 19.8% in males and 21.2% in females⁹.

RAISED RISK OF NCDS

With respect to the five critical NCD risk factors - smoking, overweight/obesity, high blood pressure or on medication, consuming less than 5 servings of fruits and vegetables, low levels of physical activity - only 1% of the population had no (0) risk factors. Just over half of the population ages 25 to 64 years (51%), had three or more of the risk factors and are at increased risk of developing NCDs⁹.

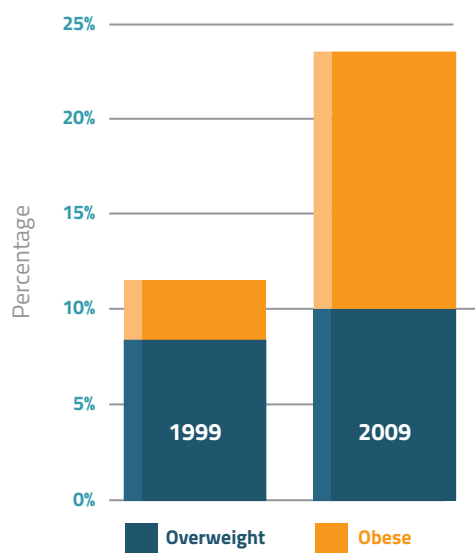


Figure 7: Obesity/Overweight status of children in Trinidad and Tobago in 1999 and 2009 ¹⁸

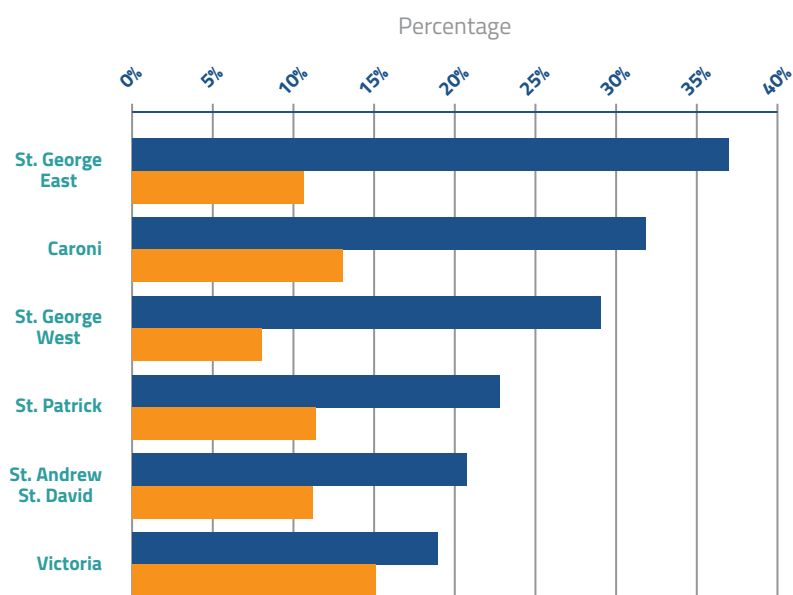


Figure 8: Distribution of BMI in secondary school children ¹⁷.

¹⁷ Caribbean Food and Nutrition Institute. 2009. "2009 Annual Report.". (<http://iris.paho.org/xmlui/bitstream/handle/123456789/2786/AnnualReport09%20CFNI.pdf?sequence=1>).

¹⁸ Ministry of Health, Trinidad and Tobago. 2014. "Interim Nutrition Standard for Food Offered for Sale in Schools in Trinidad and Tobago".

¹⁹ Government of Republic of Trinidad and Tobago. 2008. Trinidad and Tobago Multiple Indicator Cluster Survey 3: Final Report 2008. Retrieved from https://mics-surveys-prod.s3.amazonaws.com/MICS3/Latin%20America%20and%20Caribbean/Trinidad%20and%20Tobago/2006/Final/Trinidad%20and%20Tobago%202006%20MICS_English.pdf

²⁰ Ministry of Health, Trinidad and Tobago. 2015. "Hospital Utilisation Reports".

MORTALITY AND MORBIDITY DUE TO NCDS

NCDs are significant causes of morbidity and mortality globally. The WHO has projected that they account for over 70% of all deaths, with 80% occurring in developing countries. Notably, TTO has one of the highest rates globally for NCDs. They account for over 60% of deaths annually. Of the NCDs, heart disease is the number one cause of death, accounting for a quarter (25%) of all deaths annually, followed by diabetes (now the second leading cause of death) accounting for 14%, cancer (13%), and cerebrovascular disease (10%). Regarding sex and NCDs, annual mortality figures stand at 52% of deaths in males and 41% of deaths in females. Of these deaths, 70% were adjudged to be premature (occurring before age 70), and 4 out of 10 can be prevented as they all share the same modifiable behavioural risk factors including tobacco use, harmful use of alcohol, unhealthy

diets and physical inactivity. The details are shown below in Table 4 and Figure 9 below ²⁰.

HEART DISEASE

Heart disease is the leading cause of death in TTO, and is also the leading cause of premature death in both men and women. Analysis of age standardised premature mortality due to cardiovascular disease (CVD) in TTO revealed that between 2000 and 2008, the age adjusted mortality rates from CVD declined for both men and women, more so in women than in men. Further research will need to be conducted regarding what contributed to this reduction. One suggestion is that the introduction of the Chronic Disease Assistance Programme (CDAP), which ensures free access to essential medications for managing the major NCDs,

Table 4: NCD Mortality Rate in Trinidad and Tobago²⁰

NCD	Number of deaths in 2015	% of Deaths in 2015	2015 Cause-specific death rates (per 100,000 population)
Heart Disease	2673	25%	198.0
Diabetes	1497	14%	110.9
Cancer	1390	13%	103.0
Cerebrovascular Disease	1069	10%	79.2
NCDs Overall	6629	62%	491.2

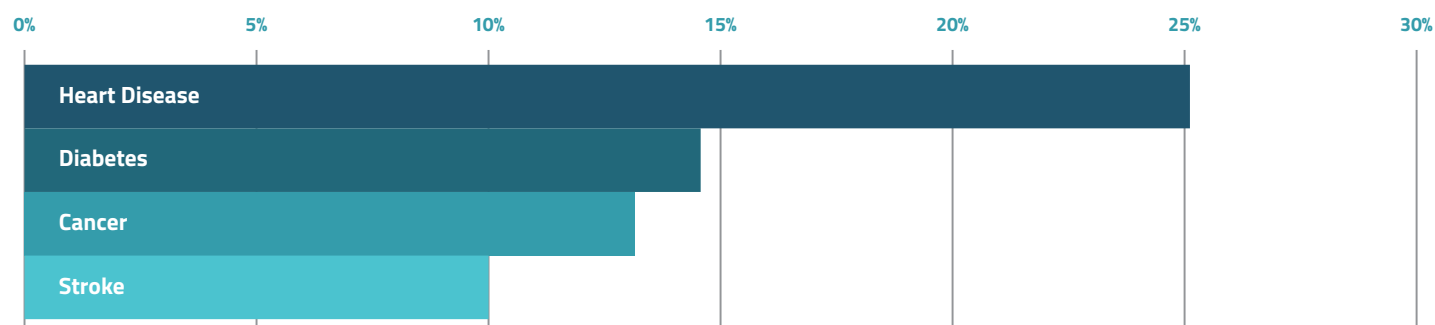
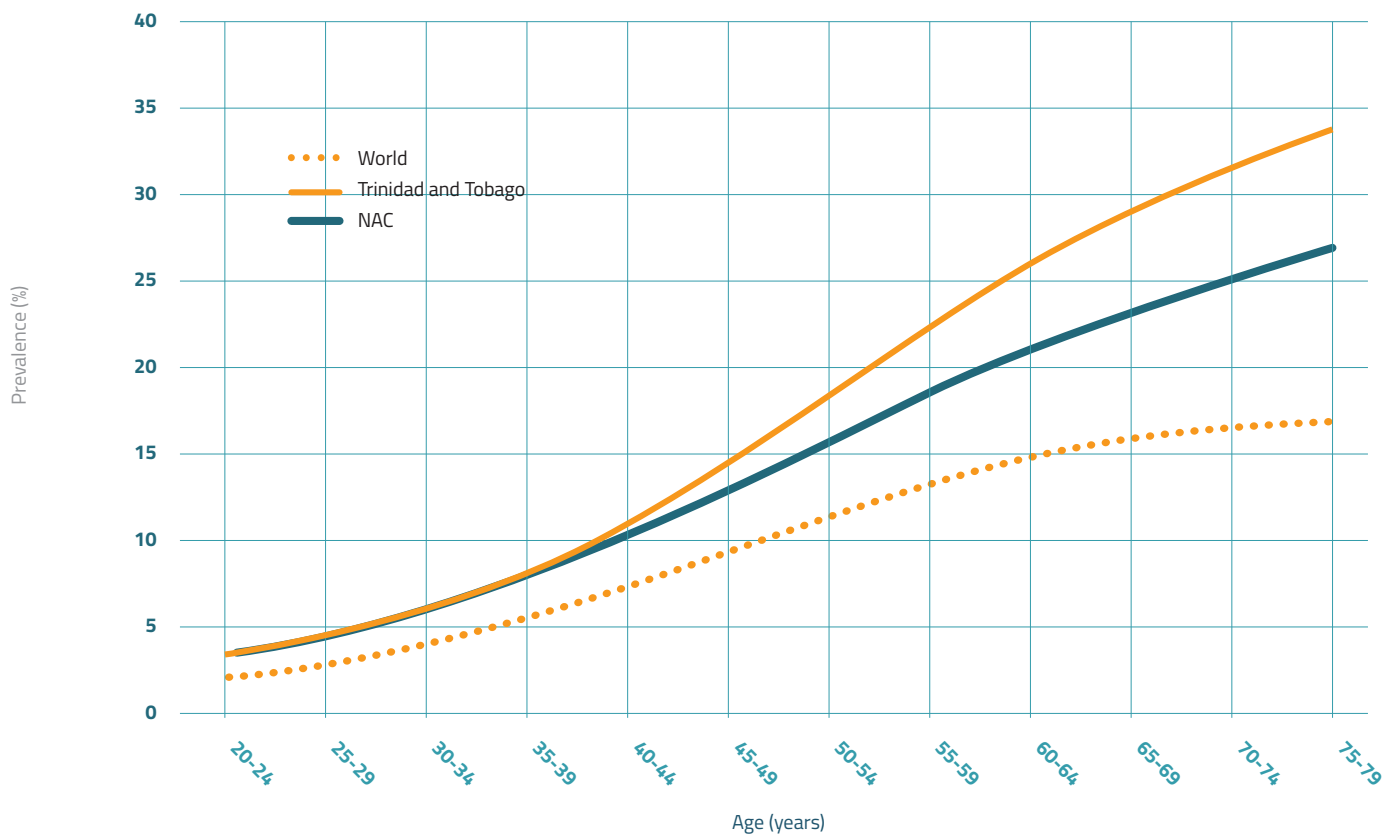


Figure 9: Four leading causes of mortality in Trinidad and Tobago²⁰

²¹ Pan American Health Organization. 2013. "Trinidad and Tobago Cancer Profile." (http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=23013&Itemid=270&lang=en).

²² Social Investigations Division, Ministry of the People and Social Development. 2014. "Research Note: Cancer Volume 1, Issue 5." (<http://www.mpsd.gov.tt/sites/g/files/g728121/f/201404/Research%20Note%20-%20Cancer1.pdf>).



Source: IDF Diabetes Atlas, 7th Edition 2015

Figure 10: Prevalence of Diabetes in T&T, compared to the prevalence regionally and globally²⁵.

played a role in the reduction as the period of time reviewed coincides with the period of time over which CDAP was available.

CANCER

Trinidad and Tobago has one of the highest cancer mortality rates in the Caribbean ²¹. Between 2001 and 2008, the annual number of deaths from cancer increased progressively from 1,201 to 1,417. In 2008, mortality was shown to be higher for men than women. In the case of the men, prostate cancer was the most prevalent (34%), followed by lung cancer (13%), colorectal cancer (12%), pancreatic cancer (6%), and stomach and non-Hodgkin lymphoma cancers (both 4%). Breast cancer was identified as the leading cause of cancer death among women (23%), followed by cervical and colorectal cancers (each 11%), ovarian cancer (7%), and lung and pancreatic cancers (each 5%) ²².

Cervical cancer is preventable through HPV vaccination. However, HPV vaccination rates in TTO have been low

since the vaccine's introduction in 2013. In 2015, only 45.6% of the target population received the first dose of the HPV vaccine, and of those, only 48.8% completed the series (22.3% of the overall target population) ²³. This indicates that there will be little reduction in cervical cancer rates in the future, if vaccination rates and pap smear screenings are not increased.

DIABETES

TTO ranks among the countries with the most prevalent and fastest-growing cases of diabetes ²⁴. In adults ages 20 to 79 years, there are approximately 140 300 cases of diabetes. The prevalence of diabetes is 14.5%, with about 88 – 90% of patients having Type 2 diabetes. There are approximately 39,400 undiagnosed cases of diabetes ²⁵. Approximately 1 594 deaths are attributable to diabetes, and 50% of deaths occur before age 65 .

TTO has a very high rate of diabetic complications ²⁵. Foot infections are the most common complication of diabetes requiring hospital admission, accounting

²¹ Pan American Health Organization. 2013. "Trinidad and Tobago Cancer Profile." (http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=23013&Itemid=270&lang=en).

²² Social Investigations Division, Ministry of the People and Social Development. 2014. "Research Note: Cancer Volume 1, Issue 5." (<http://www.mpsd.gov.tt/sites/g/files/g728121/f/201404/Research%20Note%20-%20Cancer1.pdf>).

²³ Expanded Programme on Immunisation, Ministry of Health, Trinidad and Tobago. 2015. "Immunisation Report."

for 14% of all hospital admissions in TTO²⁷. There are over 500 amputations per year. Diabetic retinopathy is the leading causes of adult blindness in TTO, with approximately 10% of diabetics having sight-threatening lesions²⁵.

Gestational diabetes (GDM) is also of interest because, in addition to being detrimental to mothers and babies as it increases the frequency of perinatal morbidity and mortality, there is an established relationship linking maternal obesity and diabetes with an increased predisposition to the development of childhood diabetes. This therefore results in a vicious cycle in which obesity and diabetes result in more diabetes. GDM also indicates a significant risk of future maternal diabetes and CVD²⁸.

The Health in Pregnancy in Trinidad and Tobago (HiPTT) team, led by researchers from the Helen Bhagwansingh Diabetes Education Research and Prevention Institute (DERPi) and the University of the West Indies, St Augustine (UWI), estimate that of the 20 000 pregnancies in T&T each year, 1 in 5 are complicated by diabetes – 1 000 cases of diabetes, and 3 000 estimated cases developed during pregnancy²⁹.

²⁴ Johns Hopkins Medicine. 2012. "New and Comprehensive Study of Diabetes Care in Trinidad and Tobago Released." Johns Hopkins Medicine. (http://www.hopkinsmedicine.org/news/media/releases/new_and_comprehensive_study_of_diabetes_care_in_trinidad_and_tobago_released).

²⁵ International Diabetes Federation. 2015. "Trinidad and Tobago | International Diabetes Federation." International Diabetes Federation. (<http://www.idf.org/membership/nac/trinidad-and-tobago>).

²⁶ Trinidad and Tobago Health Sciences Initiative. 2014. "Diabetes Outreach Programme Collaboration Final Report for Completion: January 31, 2014."

²⁷ Islam, Shariful, Patrick Harnarayan, Shamir O. Cawich, Steve Budhoooram, Vinoos Bheem, Vijai Mahabir, Shiva Ramsewak, Imran Aziz, and Vijay Naraynsingh. 2013. "Epidemiology of Diabetic Foot Infections in an Eastern Caribbean Population: a Prospective Study." *The Permanente Journal* 17(2):37-40.

²⁸ Pan American Health Organization. 2016. Hyperglycemia and Pregnancy in the Americas. Final report of the Pan American Conference on Diabetes and Pregnancy (Lima Peru: 8-10 September 2015). Washington, DC: PAHO. Retrieved from http://iris.paho.org/xmlui/bitstream/handle/123456789/28208/9789275118832_eng.pdf?sequence=5&isAllowed=y

²⁹ Teelucksingh, S., Ramsewak, S., Sirjusingh, A., Chamely, S., Mallalieu, K., Chow, H., & Lutchmansingh, F. 2016. Health in Pregnancy in Trinidad and Tobago.

SOCIAL DETERMINANTS OF HEALTH AND ECONOMIC BURDEN OF NCDs

POVERTY

Poverty is one of the drivers of NCDs, and developing NCDs can lead to catastrophic health expenses leading families to impoverishment. The poor often find it challenging to purchase healthy food options and the aggressive marketing and accessibility of cheap obesogenic foods facilitates their continued high consumption and the trend of increasing obesity. On the other hand, the economic burden due to NCDs is very high.

GENDER AND NCDS

Gender should be considered when planning to address NCDs in T&T. During the Men’s Health Caravan project, the MOH learned that men are less likely than women to seek health care, follow a health regime, and prefer to receive health promotion information from other men. On the other hand, women generally access public health services, prepare the food, have high levels of NCDs themselves, and are responsible for taking care of all persons in the family with NCDs. This challenge is not insignificant, as approximately 41.6% of the labour force comprises women³⁰. More qualitative and quantitative research is needed to distil the contribution of the socio-cultural factors on the lifestyles of the citizens of TTO and the implications for the growing epidemic of NCDs.

ECONOMIC BURDEN OF NCDS

The recent study, Rapid Assessment of the Economic Dimensions of Non-communicable Diseases in Trinidad and Tobago, conducted by RTI Interational for the Inter-American Development Bank (IADB) Trinidad and Tobago, estimated that the economic burden from diabetes, hypertension, and cancer to TTO is

about TT\$8.7 billion annually. This represents a cost of approximately 5% of the current GDP. .

Figure 11 below details the cost of healthcare services and productivity losses related to cancer, hypertension, and diabetes in TTO. Diabetes had the highest total cost of about TT\$3.5 billion, followed by hypertension at TT\$3.3 billion. The total cost of cancer was TT\$2 billion, which was largely due to many fewer cancer patients compared with the number of diabetic and hypertensive patients³¹.

The proportion of indirect cost versus health care services differ across the NCDs as indicated in the IADB Assessment. Indirect cost was 58% of the hypertension cost and 65% of the diabetes cost. The highest proportion of 90% was estimated for cancer³¹.

Prevention through lifestyle modification and medication management can substantially reduce the complications, mortality, and productivity losses related to diabetes and hypertension. Investment in prevention interventions are urgently needed to decrease the incidence and reduce the substantial economic burden³¹.

Diabetes and hypertension are due to highly modifiable behavioural factors and prevention interventions can reap huge benefits. A 50% reduction, which can be achieved through sustained prevention interventions, can result in savings of almost TT\$2.0 billion in just labour productivity. Cancers also have substantial productivity losses because of the higher proportion of deaths at younger ages. Interventions for prevention and early identification of cancers can have substantial benefits to the economy; a 20% reduction in cancer mortality can reduce productivity losses by about TT\$360 million³¹.

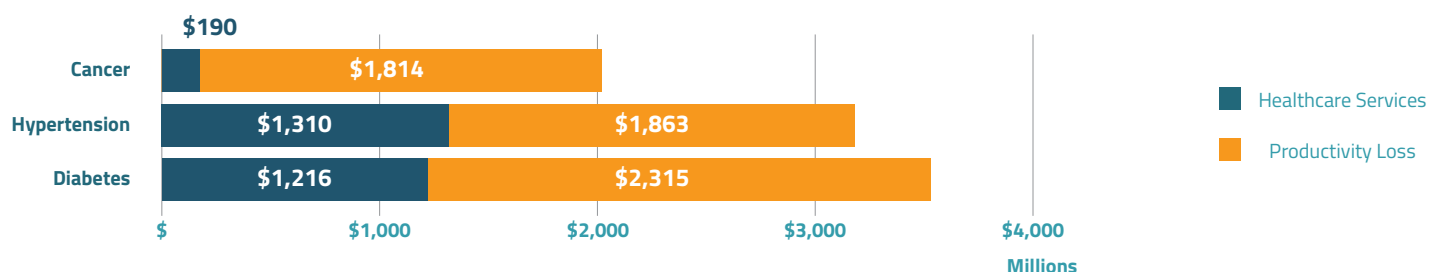


Figure 11: Cost of cancer, hypertension, and diabetes (TT\$ Millions)³¹

³⁰ Central Statistical Office. 2016. CSO | Statistics. Retrieved from Central Statistical Office, Ministry of Planning and Development: <http://cso.gov.tt/statistics/>

³¹ RTI International. 2016. Rapid Assessment of the Economic Dimensions of Non-communicable Diseases in Trinidad and Tobago.

³² Poon-King, Celia M. 2015. "Framework for Creating a Tobacco and Related Products Surveillance System and Estimation of the Quantity, Volume, and Turnover of Licit and Illicit Tobacco Products in Trinidad and Tobago."

³³ Ministry of Health, Trinidad and Tobago. 2011. "World Diabetes Day." Ministry of Health, Trinidad and Tobago. (<http://www.health.gov.tt/news/newsitem.aspx?id=298>).

TRINIDAD AND TOBAGO'S RESPONSE TO THE NCD EPIDEMIC

In TTO, the MOH and its divisions use a variety of approaches to operationalise the multisectoral collaboration approach. These include:

- Cabinet committees
- Intersectoral committees, working groups, and joint actions

The MOH has utilised all of the above strategies to create opportunities for public, private, and civil society participation in the response to NCDs, and to catalyse development of healthy public policies in all sectors of government. Some mechanisms utilised include:



Figure 12: Mechanisms to operationalise the Health in All Policies approach.

1. Cabinet Appointed Committees using a 'Whole of Government' approach, which involves joint action by public sector, private sector, NGOs, and civil society groups to establish Committees of Cabinet with mandates in relation to NCD prevention, management, and control. These include:
 - Technical Advisory Committee on Chronic Diseases
 - Partners Forum Committee for Action on Chronic Diseases (the Partners' Forum)
 - Committee on the Social Determinants of Health
2. Ministry of Health Committees with representation from different public sector ministries and agencies:
 - The Quality Council
 - Tobacco Control Committee
 - Smoking Cessation Sub-Committee
3. Collaboration with NGOs and Civil Society groups: At the programmatic level, the MOH has been collaborating with a wide range of civil society partners in their outreach programmes to raise awareness and provide increased access to screening for NCDs risk factors. Several NGOs work in partnership with the MOH and the RHAs to support the implementation of health promotion campaigns, e.g. Fight the Fat and Check Yourself... Know Your Number campaigns, the National Wellness Fest and Caribbean Wellness Campaign.

Engagement of Civil Societies: The MOH provides funding to several NGOs to assist in NCD prevention activities at the primary health level in communities. Further many other NGOs and private sector organisations collaborate with the MOH, its Vertical Services, RHAs and the THA in bring prevention and

public education programs to communities throughout TTO.

POLICIES, PROGRAMMES, AND STRATEGIES TO RESPOND TO THE NCD CHALLENGE.

The MOH has developed a suite of population based health policies in collaboration with its partners, guided by key international and regional resolutions, frameworks, and strategic approaches from the UN, WHO, PAHO, and CARICOM. The GORTT has participated in the development of several regional and international treaties and resolution in relation to NCD prevention and control. Progress made by TTO since the Declaration of Port-of-Spain and the 2011 UN High Level Meeting on the Prevention and Control of Non Communicable Diseases include:

Tobacco Use ³²

- i. The **Tobacco Control Act**, developed using FCTC framework, was passed in 2009 and enacted in 2010 resulting in, among other things, the banning of smoking in public spaces and the prohibition of the promotion and sale of tobacco products to children.
- ii. Development of a **smoking cessation programme at the primary care level**. Training of a cadre of one hundred primary care professionals in smoking cessation techniques and twenty-five (25) primary care managers in designing tobacco dependence treatment programmes integrated into health centre programmes.
- iii. Establishment of two (2) **smoking cessation clinics** integrated into primary care health services

³⁴ Caribbean Public Health Agency. 2014. "CWD." Caribbean Public Health Agency. (<http://carpha.org/Media-Centre/Caribbean-Wellness-Day>).

³⁵ Johns Hopkins Medicine. 2012. "New and Comprehensive Study of Diabetes Care in Trinidad and Tobago Released." Johns Hopkins Medicine. (http://www.hopkinsmedicine.org/news/media/releases/new_and_comprehensive_study_of_diabetes_care_in_trinidad_and_tobago_released).

in two (2) health centres – the Chaguanas Health Centre, and the Arima Health Centre.

- iv. The **Tobacco Control Regulations** intended to deal specifically with the packaging and labelling of tobacco products was developed and passed in 2013. Implementation is expected to be enforced in 2017.
- v. Establishment of a dedicated Tobacco Control Unit in 2014 to enforce and monitor the implementation of the Tobacco Control Act and the Tobacco Control Regulations.

Reduction in Harmful Use of Alcohol

- i. **National Policy on Alcohol** developed.
- ii. The National Alcohol and Drug Abuse Prevention Program (NADAPP), in collaboration with CARIAD, OAS, and the National Drug Council (NDC), trained persons from the health sector, other public sector agencies, and NGOs in **alcohol and drug use prevention and treatment**.
- iii. Development and enactment of legislation for the use of the breathalyser. Enforcement of laws to prevent drunk driving, for example, increased use of breathalyser.

Unhealthy Diet and Physical Inactivity³³

- i. Campaigns targeting healthy eating and active living developed and implemented in varied settings from 2008 to present.
 - **Move Into SHAPE T&T** campaign implemented post Declaration of POS from 2008 to 2010, and NCD health education campaign promoting:
 - Screening for NCD risk factors
 - Healthy weight
 - Avoiding use of tobacco and alcohol
 - Physical activity
 - Eating healthy.
 - **National School Health Policy** drafted.
 - **Workplace Health Promotion Policy for Public Sector Agencies** drafted. Workplace Healthy Lifestyle initiative developed and piloted in the MOH and implemented in public sector workplaces with focus on Staff Health Assessment and health education.
- Research on childhood obesity in TTO
 - **Survey of BMI and Evaluation of School Meals Options** conducted in primary and secondary schools in 2009.

- Survey of BMI repeated in 2017.

- **Primary School Nutrition Quiz** to build health literacy about NCD risk factors and healthy lifestyles developed and implemented from 2008 to present.
- ii. The **“Check Yuhself ...Know Your Numbers”** Campaign, developed by MOH over the period 2011 to 2014, was implemented in all RHAs and in settings outside the health centres (in workplaces, schools, farmers’ markets, FBOs, and other community settings). This created increased access for persons to receive health screening for key biological risk factors of NCDs - blood pressure, blood sugar, BMI, cholesterol level. The campaign also increased awareness about the actions to be taken to get to recommended target values. Over the period 2011 to 2014, over 25,000 persons were screened for NCD Risk Factors in programmes conducted by RHAs, the Health Education Division, and NGO partners.
- iii. **Fight the Fat Campaign, 2012-2014.**
 - Three cohorts of persons (approximately 75) including public sector workers, NGO partners, and persons from FBOs were trained as Lay Health Promoters, and NCD Peer Educators.
- iv. **Caribbean Wellness Day (CWD)**
 - Caribbean Wellness Day is commemorated annually and used to catalyse joint actions by multiple sectors for NCD prevention and control. Celebrations have been expanding annually throughout the country since it started in 2008, and now each RHA develops and implements coordinated programmes of activity to highlight critical actions for NCD prevention and control in alignment with the CARICOM framework³⁴.

Childhood Obesity

- i. **Childhood Obesity Camps, themed ‘Healthy Me’** implemented to empower children assessed as overweight or obese to build healthy lifestyles skills and work toward achieving health targets for improved well-being. The camps concentrate on three (3) main thematic areas: Healthy Me, Active Me, Loving Me. The camps have been implemented in community settings, in collaboration with a coalition of partners from RHAs, NGOs, other sectors, and academia annually from 2012 - 2015.
- ii. The **Draft Childhood Obesity Prevention Policy** has been developed.
- iii. **Nutrition Standards for Food Sold to Children in Schools** developed.
- iv. **School Health Education programme, “Healthy Me”**

³⁶ Johns Hopkins Medicine. n.d. “Trinidad and Tobago Health Sciences Initiative: Johns Hopkins Medicine International.” Johns Hopkins Medicine. Retrieved April 25, 2016 (http://www.hopkinsmedicine.org/international/international_affiliations/latin_america_caribbean/trinidad_tobago_health_sciences_initiative.html).

³⁷ Barnoya, J., & Yan, Y. 2013. Trinidad and Tobago and cardiovascular disease mortality. Possible causes and implications.

for reduction of risk factors of NCDs was developed and introduced at primary school level.

- v. **Healthy Lifestyle Clinic for Management of Children with NCDs** established in 2012, at the Wendy Fitzwilliam Children Hospital to treat and support children assessed as obese in the schools and/or referred for management of diabetes or other NCDs. A multidisciplinary team comprised of paediatric endocrinologists, paediatricians, nutritionists, and nurses serve the clinic.

Progress Made

- i. Over 2,000 primary school students have participated in the **School Health Caravan**. BMI was assessed to monitor risk profile of children.
- ii. **Companion Healthy Lifestyle Reader** developed to provide information about healthy eating and physical activity and chronic diseases.
- iii. Over 250 teachers of participating schools were screened for NCD risk factors.
- iv. Over the period 2010 to 2016, over 350 primary schools participated in the National Primary School Nutrition Quiz. This quiz serves to evaluate learning after exposure to the school health education caravan and use of the companion Healthy Lifestyle Reader for Primary Schools.
- v. Annually, at least six (6) Childhood Obesity/Healthy Lifestyle Camps are conducted.
- vi. Specialist paediatric clinics introduced in 2014 at two health centres in the NWRHA to focus on the health and development of children. These clinics include childhood obesity prevention services implemented by a multidisciplinary team of health professionals.

STRENGTHENING OF CLINICAL CARE CAPACITY

The Chronic Disease Assistance Programme (CDAP)

- i. The GORTT expanded the **CDAP**, which provides citizens afflicted with NCDs with approximately 51 prescription drugs, free of charge, at all public health facilities and most private pharmacies nationwide. Since 2008, it now includes the provision of free blood glucose testing strips to diabetics ³³.

Evidence-based National Guidelines/Protocols/Standards

Guidelines for the management of diabetes, hypertension, and depression in primary care have been approved. These guidelines were disseminated to the RHAs, and health care workers in the RHAs were trained.

- i. The MOH also has SOPs and treatment and care protocols for NCDs in secondary care.
- ii. The Maternal and Child Health Manual was revised, published, and distributed to stakeholders in 2015.
- iii. **Diabetic and cardiology outreach programmes initiated.** Through collaboration among many ministries, academic institutions in TTO, the Johns Hopkins Medicine International (JHMI), and local organisations the following was achieved ^{26 35 36} :
 - a. **Cardiology outreach programme.** Clinicians completed 24 months of comprehensive cardiology education and training in cardiac catheterisation, electrophysiology, echocardiography, and preventive medicine.
 - b. **Diabetes outreach programme.** Programme development and evaluation can now be guided by the data collected from 16,920 patients. Three white papers developed based on evidence collected on the state of care of diabetics, barriers to self-care of diabetics, and the prevalence of obesity in primary school children.
 - c. The **diabetic retinopathy screening** pilot programme was undertaken in SWRHA.
 - d. 2112 individual patient diabetes education sessions were conducted.
 - e. The **Certified Caribbean Diabetes Educators (CCDE) course** was adapted for T&T.

SURVEILLANCE AND RESEARCH

Population based Surveys

- i. The **PAHO/WHO STEPS Non Communicable Diseases Prevalence and Risk Factor Survey (STEPS)**, which was undertaken in 2011 ⁹ :
 - a. established baseline data on NCD risk factors for chronic diseases in the population that would allow tracking trends over time, and monitoring achievement of targets, and
 - b. determined prevalence rates for diabetes, hypertension, and elevated cholesterol.
- ii. **Evaluation of School Meals Options and Survey of BMIs** completed.
- iii. **GSHS and GYTS** conducted.

Research

- i. A national research agenda for NCDs has been developed and implementation is being scaled up.
- ii. MOH and PAHO conducted a review of CVD data over the period 2004–2010. Results showed that CVD mortality declined by 18.8 over the last 10 years ³⁷.

STRATEGIC FRAMEWORK

A. PURPOSE

To provide strategic direction to an effective, coordinated national response to the priority NCDs, namely heart disease, diabetes, cancer, and stroke, and associated risk factors. It facilitates utilisation of the “whole of government” and “whole of society” approaches to achieve the goal. The Strategic Plan provides the outcomes to which the efforts of all stakeholders must be focused.

CONTEXT

The NSP NCD is aligned with numerous frameworks and other strategic plans at many levels. At the national level, prevention, and control of NCDs have been identified as a priority on the Health and National Development Agenda of the Republic of Trinidad and Tobago³⁸.

NCDs formed one of the priorities in Caribbean Cooperation in Health (CCH) III and in the new CCH IV (2016-2020). Emphasis was placed on translating the commitments of the GORTT to the NCD agenda at different levels, particularly an ensuring its alignment with the Port-of-Spain Declaration (2007)³⁹. This Declaration influenced the development of the UN Political Statement on NCDs in 2011.

The other strategic frameworks that informed this Strategic Plan were:

- PAHO Regional Strategy - Integrated Approach the Prevention and Control (P&C) of Chronic Diseases including Diet, Physical Activity & Health, 2007
- Political Declaration of the High Level Meeting of the UN General Assembly on the Prevention and Control of NCDs, 2011 (Resolution A/RES/66/2)
- CARICOM Strategic Plan of Action (POA) for the P&C of NCDs, 2011-2015
- WHO Global Plan of Action for the P&C of NCDs, 2013-2020
- PAHO Regional POA on NCDs, 2013-2019
- Outcome Document of the High-level Meeting of the UN General Assembly on the Comprehensive Review and Assessment of the Progress Achieved in the Prevention and Control of NCDs, 2014 (Resolution A/RES/68/300)

C. GOALS AND STRATEGIC PRIORITIES

Vision

Happier, healthier, fitter people...living longer and more productive lives.

³⁸ Ministry of Planning and Development, Government of the Republic of Trinidad and Tobago. 2006. -Vision 2020 Operational Plan 2007-2010. Retrieved from <http://www.transforme.gov.tt/sites/default/files/sites/default/files/library/documents/Vision%202020%20Operational%20Plan%202007-2010.pdf>

³⁹ CARICOM. 2007. “DECLARATION OF PORT-OF-SPAIN: UNITING TO STOP THE EPIDEMIC OF CHRONIC NCDs.” (<http://caricom.org/media-center/communications/statements-from-caricom-meetings/declaration-of-port-of-spain-uniting-to-stop-the-epidemic-of-chronic-ncds>).

Goal

By 2025, reduce the burden of preventable mortality (before the age of 70) due to heart diseases, diabetes, cancer, and stroke by 25%

AND

In five years, reduce the prevalence of:

- i. High blood pressure by 20%;
- ii. High cholesterol by 20%;
- iii. High blood sugar by 20%;
- iv. Adult overweight/obesity by 10%;
- v. Adolescent overweight/obesity (ages 13 – 15 years) by 12%;
- vi. Child overweight/obesity by 15%;

Principles/Approaches

- **Multisectoral Action** - the solutions for addressing the epidemic lie outside the health sector. It is imperative that all sectors be engaged in a broad based response with full participation of the relevant government sectors, civil society, private sector, and the media. Partnerships, strategic alliances, and networks among and within sectors must sustain the response.
- **Health Promotion** - empowering individuals and communities to take advantage of an enabling environment to control, improve, and maintain physical, mental, social, and spiritual well-being.
- **Primary Health Care and Prevention**- with due consideration to the spectrum of services for prevention, treatment, care, rehabilitation, and support, utilising evidence based standards of care. Services must be reoriented to be patient-centred, with seamless coordination among levels of care and incorporation of health promotion and disease prevention along the life course (Appendix 5).
- **Evidence-based** – policies, programmes, strategies or interventions based on the latest scientific evidence and/or best practice, proven cost effectiveness, affordability, and public health practices, taking cultural considerations and national experience into account e.g. WHO Best Buys (see Appendix 6).
- **Equity and Universal Health Coverage** – all people should have access, without discrimination, to nationally determined sets of the needed promotive, preventive, curative, and rehabilitative basic health services and essential, affordable, quality medicines without it causing financial

hardships and/or impoverishment. This is based on the human rights approach which recognises that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being, without distinction of race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other

status, as enshrined in the Universal Declaration of Human Rights.

PRIORITY AREAS AND TARGETS

There are four priority areas in this National Strategic Plan for Prevention and Control of NCDs:

TABLE 5: PRIORITY AREAS, SPECIFIC OBJECTIVES, AND TARGETS.

PRIORITY AREAS	TARGETS
<p>Priority Area #1: Risk Factor Reduction and Health Promotion</p> <ol style="list-style-type: none"> 1. Specific Objectives <ol style="list-style-type: none"> 1.1. Reduce use of tobacco, ENDS/ENNDS and related products 1.2. Reduce the harmful use of alcohol 1.3. Increase availability, accessibility and consumption of healthy foods 1.4. Increase levels of physical activity <p>Priority Area #2: Comprehensive and Integrated Care and Management for NCDs</p> <ol style="list-style-type: none"> 2. Specific Objective <ol style="list-style-type: none"> 2.1. Provide quality, people-centred, evidence-based care for the integrated management of NCDs and their risk factors, using a PHC approach (Health Promotion, Prevention, Primary Care Management, and Treatment). 	<ul style="list-style-type: none"> ▪ Reduce proportion of adults (aged 18+ years) and adolescents engaging in insufficient physical activity by 20%; ▪ A 5% relative reduction in mean population intake of salt/sodium; ▪ Increase the prevalence of adult (aged 18+ years) population consuming \geq five total servings (400 grams) of fruit and vegetables per day by 20% by 2018; ▪ Reduce the harmful use of alcohol among persons 15+ years by 10% and among youth aged 13-15 years by 10%; and ▪ Reduce the prevalence of current tobacco use in persons aged 15+ years by 10% and among adolescents 13-15 years by 10%. <ul style="list-style-type: none"> ▪ Implement the comprehensive chronic care model/NCD treatment protocol for at least 70% of all primary health care facilities; ▪ Implement self-management education based on guidelines for the treatment and care for 80% of persons with NCDs; ▪ Admissions to hospitals for heart attacks and strokes reduced by 30%; ▪ Rate of diabetes-related lower-limb amputations decreased by 20%; ▪ Maintain universal access (CDAP) for availability of essential medicines for the treatment and care of NCDs in the public and private sectors; ▪ At least 70% of eligible people receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes; ▪ Increase by 50% the proportion of persons who are aware of their disease status with regards to hypertension, diabetes dyslipidaemia and cervical cancer; and ▪ Increase by 50% the proportion of persons with hypertension, diabetes, and dyslipidaemia for whom the condition is controlled in keeping with recommended targets.

PRIORITY AREAS	TARGETS
<p>Priority Area #3: Surveillance, Monitoring and Evaluation, and Research</p> <p>3. Specific Objective</p> <p>3.1. Strengthen national capacity for surveillance of NCDs, their risk factors, determinants and consequences, as well as for monitoring of health interventions and national programme implementation; and promote research for prevention and control of NCDs.</p> <p>Priority Area #4: Governance, Policy, and Advocacy</p> <p>4. Specific Objective</p> <p>4.1. To ensure effective leadership, and governance for multisectoral coordination, partnerships, and healthy public policies for implementation of the strategic plan.</p>	<ul style="list-style-type: none"> ▪ Foster and develop the research capacity, agenda and database for NCDs with government sectors, academia, civil society, private sector, and the NGOs within the first two years e.g. the DERPi research project to conduct maternal diabetes screening and early detection and management; ▪ Scale up the screening for cervical cancer to a national programme; ▪ Develop and implement National Chronic Disease Surveillance System and Unit within the first two years; ▪ Improve the quantity and quality of NCD data by at least 90% based on international criteria; ▪ Institutionalise the analysis of international, regional, and local trends and targets in prevalence of the NCDs and their risk factors and the degree of implementation of national NCD programmes; and ▪ Develop and implement a monitoring and evaluation plan for all the components and programmes under NCDs and the continuous tracking of the core targets, strategic priorities, and outcomes for NCDs. <ul style="list-style-type: none"> ▪ Develop and institute all of the appropriate governance arrangement to effectively manage, operationalise, and monitor all the components, programmes and strategic priorities and outcomes under NCDs; ▪ Foster strategic partnerships with wider government sectors, academia, civil society, private sector, and the NGOs for the design and implementation of NCD programmes; ▪ Incorporate and institutionalise the concept of “Health in all Policies” to the wider government and society with an appropriate portfolio of policies for an effective NCD prevention and national response; ▪ Adequate sustainable and predictable funding to support the NCD programmes secured; ▪ Ensure all of the components are adequately staffed and supported with the required resources; and ▪ Reduce/eliminate the use of soft drinks in schools by implementing the National Nutrition Standards for Foods Offered to Children.

KEY PLANNED ACTIONS

TABLE 5:
Trinidad and Tobago National Strategic Plan for the Prevention and Control of Noncommunicable Diseases

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS
1 Risk Factor Reduction and Health Promotion	1.1 Reduce the prevalence of current tobacco use in persons aged 15+ years to 13% and among adolescents 13-15 years by 10% in 3 years.	1.1.1 Develop policy for Electronic Nicotine Delivery Systems/ Electronic Non-Nicotine Delivery Systems (ENDS/ENNDS)	Policy Brief developed. Draft policy produced and submitted for approval.	MOH –TCU, HPRP	NADAPP Min of Legal Affairs, Min of Education, NPTA
		1.1.2 Draft amendments to tobacco control legislation to include ENDS/ENNDS.	Legislation reviewed and amendments identified. Legal Brief prepared and submitted to CPC for review	MOH – Legal Department, TCU,	MOH Legal Dept., Min of Legal Affairs,
		1.1.3 Strengthen and expand smoking cessation programme in primary care settings.	Cadre of 60 health professionals and NGOs trained in delivering cessation services. 20 primary care supervisors trained to design tobacco treatment programs for its integration into PHC. One (1) additional smoking cessation clinic established at the primary care level.	MOH –TCU, HED RHAs, THA MOH –CMOsH	PAHO, MOH/CMOH RHAs, NGOs, PAHO, NGOs – Cancer Society, Chest and Heart Assoc, Heart Foundation, DATT

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS	
		<p>1.1.4 Develop and implement evidence-based tobacco use prevention public education and awareness program for youth and adults</p>	<p>TORs for consultancy services to develop social marketing / behaviour change interventions promoting smoke-free living in youths developed.</p>	<p>HCU, NCDU,</p>	<p>HED, NADAPP, IADB</p>	
	<p>1.2 Reduce the harmful use of alcohol among persons 15+years by 3% and among youth aged 13-15 years by 5%.</p>	<p>1.2.1 Develop Policy on prevention of harmful use of alcohol by children and youth</p>	<p>TORs for establishment of multisectoral Alcohol Policy committee developed and approved.</p>	<p>MOH, NADAPP, HPRP, HED</p>	<p>UWI</p>	
			<p>Multisectoral Alcohol Policy committee established.</p>	<p>MOH, NADAPP, HPRP</p>	<p>HED, PAHO, UWI, AA,</p>	
				<p>Policy brief for prevention of harmful use of alcohol developed.</p>	<p>MOH, NADAPP, HPRP, HED</p>	
			<p>1.2.2 Draft an alcohol marketing and education strategy targeting prevention of alcohol use and abuse by children and youth.</p>	<p>TORs for consultant to develop alcohol marketing and education. Initiative developed.</p>	<p>MOH, NADAPP, HPRP, HED</p>	

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS
	1.3 Increase availability, accessibility, and consumption of healthy foods and promote physical activity.	1.3.1 Development of policies on marketing of high fat, high sugar, high salt foods, and sugar sweetened non-alcoholic beverages in keeping with WHO guidelines, and policies on access to health nutrition for children along the life course.	Finalize Childhood Obesity Prevention Policy.	MOH-HPRP, HED, N&MD	CARPHA, NSDSL, PAHO, MOE, MOA, NPTA
			National Nutrition Standard for Food Offered in Schools revised and approved.	MOH-HED, HPRP, N&MD, CMOsH	RHAs, CARPHA, NSDSL, PAHO
			Guidelines for use of National Nutrition Standard developed.		RHAs, MOE, MOA, NPTA, UWI, USC, TTANDi
			National School Health Policy revised and submitted for approval.	MOH-HED, HPRP, N&MD, SHP, HACU, CMOsH	PAHO, CARPHA, UNICEF
			Young Child Feeding Policy finalised and submitted for approval.	MOH- CMO, AHPC&PH HPRP, N&MD, CMOsH RHAs	CARPHA, PAHO, TTANDi, Paediatrician Assoc
			Consultation on Young Child Feeding Policy conducted.		
			Review of implementation of new WHO Growth Monitoring Standards in the RHAs.	MOH- CMO, AHPC&PH N&MD, HED, CMOsH RHAs	CARPHA, PAHO, TTANDi, Paediatrician Assoc
			Assessment of equipment and records/ forms for implementation of WHO Growth Monitoring Standards conducted.		
		1.3.2 Establish baseline for population sodium and Trans fat intake.	Salt Study proposal revised and submitted for approval.	MOH- AHPC&PH, CMO, HPRP, HED CMOsH	PAHO, CARPHA
			TORs for Consultant /Researcher to conduct Salt Study developed and approved.		

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS
			<p>Consultant retained.</p> <p>Trans fat study reviewed and submitted for approval.</p> <p>TORs for consultant to conduct Trans Fat Study developed and approved.</p> <p>Consultant /Researcher to conduct Trans Fat Study retained.</p> <p>PAHO Trans-fat Fee Americas Strategy adopted.</p>	<p>MOH- CMO, AHPC&PH, HPRP, HED CMOsH</p>	<p>PAHO, CARPHA</p>
			<p>Policy Brief on marketing of high fat, high salt, high sugar foods to children developed.</p>	<p>MOH- CMO, AHPC&PH, HPRP, HED, N&MD, CMOsH</p>	<p>PAHO, CARPHA, TTANDi, Corp Comm, MOE</p>
			<p>Consultation on Policy on marketing of high fat, high salt, high sugar foods.</p>	<p>MOH- AHPC&PH CMO, HPRP, HED CMOsH</p>	
		<p>1.3.3 Implement Workplace Health Promotion policy promoting physical activity and access to healthy foods in public sector Ministries</p>	<p>Workplace Health Promotion policy revised</p>	<p>MOH - HED, HPRP, HR, CMOs</p>	<p>PAHO, CARPHA, RHAs</p>
			<p>Action plan for implementing Workplace Health Promotion programme developed. Survey of existing Workplace Healthy Lifestyle programmes in government ministries.</p>	<p>MOH- HED HPRP, HR CMOsH</p>	<p>PAHO, CARPHA</p>
			<p>Workplace Healthy Lifestyle programmes in government ministries.</p>	<p>MOH - HED, HPRP, CMOsH</p>	
			<p>Workplace Health Promotional Tool Kit developed</p>	<p>MOH - HED, HPRP, CMOsH</p>	

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/STAKEHOLDERS
			Manual for Training of Workplace Lay Health Promoters developed	MOH - HED, N&MD, CMOsH, RHAs	
			Consultant for developing Workplace Toolkit and Training Manual retained	MOH- HED, N&MD, CMOsH, RHAs	
		1.3.4 Develop health education and social marketing campaigns promoting healthy eating and active living in collaboration with public, private, and civil society stakeholders.	Healthy Lifestyle School Health Education program reviewed and updated	MOH- HED, N&MD CMOsH, Corp Comm	PAHO, RHAs, MOE, N&MD, DATT, TTANDI, NSDSL, NAMDEVCO, NADAPP,
			Healthy Lifestyle School Health Education programme (for Primary Schools) re. NCDs and their risk factors, implemented in 10 schools in each County.	MOH- HED, N&MD CMOsH, RHAs, Corp Comm	MOE, PAHO, Corp Comm, RHAs, NGOs, and CBOs
			Public Education /Behaviour Change campaign promoting fruit and vegetable use developed.	MOH - HED, N&MD, CMOsH	
			TORs for consultancy services to develop Public Education /Behaviour Change developed and Consultant retained.	MOH- HED, N&MD CMOsH, RHAs, Corp Comm	PAHO, RHAs, MOE, MOA, NGOs and CBOs
			Current Health Education/IEC material promoting healthy eating and active living revised and reproduced.		CARPHA, PAHO, RHAs, MOE
			Seminar conducted for parentVs, teachers, NGOs, and civil society groups to build advocacy for healthy foods conducted.		MOE, NPTA, TTUTA, NGOs

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/STAKEHOLDERS
2. Integrated care and management of NCDs and their risk factors risk factor.	2.1 Standardised SOPs and treatment protocols developed for the major NCDs	2.1.1 Audit adherence to CHRC guidelines for diagnosis, treatment, and support of diabetes and hypertension.	Parent education material in support of Infant and Young Child Feeding Policy and implementation of new WHO Growth Monitoring Standards developed.		CARPHA, PAHO, TTMA
			Audit conducted and report prepared.	MOH- CMO, AHPC&PH, HPRP, THA, CMOsH	PAHO, TTMA, UWI
			Round table/ Symposium on use of standardised treatment protocols conducted for primary care professionals.	MOH - CMO, AHPC&PH, HPRP, CMOsH, RHAs, THA	
		2.1.2 Adoption of Chronic Care Model (CCM) and for use in managing persons with NCDs Trinidad and Tobago.	Review of Chronic Care Model (CCM) conducted. CCM customised for use in Trinidad and Tobago.	MOH - AHPC&PH, CMO, HPRP, HED, CMOsH, RHAs, THA	PAHO, TTMA, UWI
			Twenty five (25) primary care professionals trained as trainers in use of CMM for the management of NCDs conducted	MOH - AHPC&PH, HED, CMOsH, RHAs, THA, HCU	
			At least one (1) workshop on the implementation of CCM in PHC implemented in each county.	MOH - CMO, HPRP, HED, CMOsH	
Evaluate implementation of "Point of care" testing in health centres.					

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS
		<p>2.1.3 Community and settings based NCD risk factor screening programme designed.</p>	<p>Treatment and management protocols for the major NCDs reviewed and recommendations made for the harmonisation of practice across the RHAs.</p> <p>NCD Risk Factor Screening Plan for use in community settings reviewed and updated.</p> <p>Healthy Lifestyle Passport reviewed and amended for use as a self-management tool.</p> <p>NCD Risk Factor Screening Programme in community settings established and implemented in each RHA to screen at least 5 000 persons annually.</p> <p>NCD Risk Factor Screening detailing distribution of risk factors (behavioural and biological) and referrals for follow up care submitted to MOH annually.</p> <p>TORs for design of social marketing campaign promoting annual pap smear, breast self-examination, and accessing annual NCD risk factor screening.</p>	<p>MOH - CMO, CMOsH, HED, HPRP, HR</p> <p>MOH - CMOsH, HED, NCDU, HPRP</p> <p>MOH - CMOsH, HED, NCDU, RHAs, THA</p> <p>MOH - CMO, CMOsH, HED, HPRP, HR</p> <p>MOH - HED, HPRP, AHPC&PH, CMO</p>	<p>RHAs, THA, CARPHA, PAHO, NCD Alliance and other related NGOs and CBOs</p> <p>CARPHA, PAHO, TTMA</p> <p>CARPHA, PAHO, TTMA, NGOs related to NCDs, CBOs</p> <p>PAHO, CARPHA</p> <p>PAHO, RHAs, THA, CARPHA, PAHO, DATT, Cheast and Heart Association, NSDSL, TTANDi, NCD Alliance and other related NGOs and CBOs</p>

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS
3. Surveillance, Monitoring and Evaluation and Research	3.1 Improve quality of NCD data and establish real time NCD surveillance data capture and reporting from public health sector.	<p>2.1.4 Strengthen early detection and treatment of major cancers: cervical, breast, prostate, colon, lung cancer.</p>	<p>Implementation of the HPV vaccine strategy reviewed.</p> <p>Review existing cancer screening programme for cervical, breast, and prostate screening in primary care settings.</p> <p>Standardise cancer screening protocols developed for cervical, breast, and prostate cancers.</p> <p>Review of National Cancer Plan.</p> <p>Identify components for implementation in 2018-2019.</p> <p>Extract key actions from National Cancer Plan and develop two (2) year implementation plan for prevention, early detection and treatment of major cancers by the end of 2017.</p> <p>Host National Symposium of Cancer by end 2017 to share with key stakeholders.</p>	<p>MOH - CMO, EPI, NCDU, HED, CMOsH</p> <p>MOH - CMO, NCDU, Executive Advisor to the Minister of Health, Health Systems Advisor, CMOsH, RHAs</p>	PAHO, TTCS, RHAs, THA
		<p>3.1.1 Surveillance system for NCDs, their determinants and risk factors designed.</p>	<p>NCD Core data set and data capture forms designed and piloted in two (2) pilot sites in at least two (2) RHAs.</p> <p>Community health services reporting matrix redesigned to capture NCD health system indicator data.</p>	MOH - AHPC&PH, CMO, HPRP, NCDU, NSU	RHAs, THA, CARPHA, PAHO, CSO, UWI, private sector

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS
<p>4. Effective leadership and governance for implementation of Strategic Plan, multisectoral action and HiAP as it applies to NCD prevention and control.</p>	<p>4.1 Dedicated budget for NCDs developed.</p>	<p>3.1.2 Track local trends in the prevalence of the NCDs and their risk factors, and analyse the efficacy of implementation of national NCD programmes.</p> <p>4.1.1 NCD governance strategy implemented.</p>	<p>Patient self check assessment for nursing notes designed and piloted in two (2) RHAs.</p>	<p>MOH - HPRP, NCDU, NSU</p>	<p>CARPHA, PAHO, RHAs, THA</p> <p>CSO, IADB, PAHO, UWI, RHAs, THA</p> <p>CARPHA, CSO, UWI, THA</p> <p>CARPHA, CSO, MOE, THA</p> <p>PAHO, CDC, CSO, MOE, THA</p> <p>RHAs, THA, CARPHA, PAHO</p> <p>NSU, RHAs,THA, IADB, PAHO, CARPHA, public sector, NGOs, civil society, private sector</p>
			<p>Strengthen Cancer Registry and update analysis of cancer data to present day.</p>	<p>MOH - CMO, AHPC&PH, HPRP, NCDU, NSU</p>	
			<p>Develop plan for establishment of other NCD registries.</p>	<p>MOH - HED, AHPC&PH</p>	
			<p>Develop plan for implementing STEPS survey.</p>	<p>MOH - CMO, AHPC&PH, HPRP</p>	
			<p>BMI Survey in Schools conducted.</p>	<p>MOH - CMO, AHPC&PH, HPRP, CMOsH, N&MD</p>	
			<p>GSHS and GYTS repeated.</p>		
			<p>Review health centre growth monitoring data on <5 children to establish obesity levels in the 0-5 years population group.</p>		
			<p>Transitional NCD Working Committee identified and TORs issued.</p>	<p>MOH - AHPC&PH, NCD Plan Oversight Committee, CMO, NCDU, HSHRPDU, HR, CMOsH</p>	
			<p>NSP NCD approved.</p>		
			<p>NSP NCD published and widely disseminated</p>		

PRIORITY AREAS	TARGETS	YEAR 1 ACTIONS	OUTPUT INDICATORS	LEAD AGENCY OR INSTITUTION	OTHER SECTORS/ STAKEHOLDERS
			<p>National NCD Symposium convened to bring together researchers and implementers in all sectors towards the achievement of the objectives of the NSP NCD.</p> <p>High-level multisectoral National NCD Intersectoral Mechanism established to coordinate public, private, and civil society response in relation to the NSP NCD.</p> <p>High-level intragovernmental NCD mechanism (reporting to Cabinet) designed.</p>	<p>MOH - AHPC&PH, NCD Plan Oversight Committee, CMO, NCDU</p> <p>MOH - AHPC&PH, NCD Plan Oversight Committee, CMO, NCDU</p>	
		<p>4.1.2 Human Resources Plan for implementing NCD Strategic Plan developed.</p>	<p>TORs for consultant to develop HR plan for supporting implementation of the NSP NCD developed.</p> <p>NCD Unit in the MOH established and positions filled.</p> <p>Consultant retained.</p>	<p>MOH - AHPC&PH, NCD Plan Oversight Committee, CMO, NCDU, HSHRPDU, HR</p>	<p>IADB, PAHO, CARPHA, RHAs, THA, CMOsH, PMCD</p>
			<p>Nursing curriculum reviewed and strengthened in support of the NCD programme needs at the primary and secondary levels.</p> <p>Clinical updates conducted for primary care professionals and allied health professionals in NCD prevention and care.</p>	<p>MOH - AHPC&PH, CMO, NCDU, CNO, HSHRPDU, HR</p>	<p>PAHO, Nursing Council, RHAs, CMOsH, UWI, USC, TTMA</p>

APPROACH TO IMPLEMENTATION AND MONITORING AND EVALUATION

Implementation will be guided by the same principles and approaches selected for the development of the Strategic Plan.

- **Multisectoral Action** - It is imperative that all sectors be engaged in a broad-based response with full participation of the relevant government sectors, civil society, private sector, and the media. Partnerships, strategic alliances, and networks among and within sectors must sustain the response.
 - o Achievement of the WOG and the WOS approaches will be accomplished through a governance structure that includes the establishment of a cabinet level mechanism for inclusion of NCDs on the policy agenda of all ministries and the HiAP approach. Supporting this high-level mechanism, there would need to be a mechanism for the engagement of all sectors simultaneously - the WOG/WOS approach - through the establishment of a Cabinet appointed council, commission, or an analogous body on NCDs, as recommended in the Declaration of Port-of-Spain. The Minister of Health will initiate or leverage meetings of Ministers and/or Permanent Secretaries to monitor the WOG approach.
 - o It is critical that stakeholders, including the public, be kept informed. A communication strategy will be developed in Phase 1, and its implementation monitored throughout the five years.
 - o For meaningful participation of stakeholders and partners, capacity-building opportunities will be integrated throughout the first 2 years.
- **Health Promotion** – individuals and communities will be empowered to contribute to and to take advantage of an enabling environment for their health through their involvement in decision making. The MOH and other government sectors will provide technical guidance with evidence and promote culturally sensitive solutions rather than be prescriptive. The private sector will be urged to take the lead in promoting and advancing the health of the workforce.
- **Prevention-focused Integrated Care** – while this will be centred on the primary care centres there will be due consideration to ensuring that package of services agreed to for treatment, care, rehabilitation, and support are provided. Integration will be sought at two levels:

- o Services must be reoriented to be patient-centred, with seamless coordination among components and levels of care and incorporating health promotion and disease prevention.
- o For individuals, at each contact with the health system, their total needs for NCD prevention and control must be addressed.
- **Evidence-based** – collaboration between policy makers, researchers, and implementers will be critical to setting the research agenda and as importantly to translating the findings taking cultural considerations and national experience into account.
- **Universal Health Coverage** – in applying the principle of equity, rather than equality, emphasis will be placed on increasing the depth of knowledge and understanding, among health and related professionals, of the inequitable distribution of social determinants that exist at the community level. Age, gender, and ethnicity dimensions will be incorporated into the design and execution of policies and interventions.

THE STRATEGIC PLAN WILL BE IMPLEMENTED IN PHASES:

- **Phase I** will last one year – there will be a focus on strengthening the capacity of the MOH to support the national multisectoral response. A dedicated NCD Unit will be established with a multisectoral team and reporting to the Permanent Secretary. Among the first actions for the Unit will be the development of an Action Plan for year 1 and the Monitoring and Evaluation Framework. During this phase, opportunity will be taken to finalise and seek approval for draft policies and to discuss with all sectors their role in the response to NCDs. This phase will also see the completion of the mobilisation for the implementation of the IADB loan.
- **Phase II** will last 3 years and will see the intensification of the implementation of the plan with the execution of Annual Action Plans and the reporting to the citizenry through the Partners Forum plans.
- **In Phase III**, Year 5 the achievements under the Plan will be evaluated and recommendations made. Subsequently, another five-year plan will be developed for the period 2020 – 2025.

The implementation of this plan will build on and optimise on-going efforts of numerous stakeholders in

the public and private sectors. Experiences and lessons learned from CARICOM neighbours and countries in the wider regional and global community will be sought

Robust monitoring and evaluation will be critical to the results-based approach to management and continuous planning and programming of the national response to the NCD epidemic. Monitoring will allow the whole of society to be confident in its celebration of achievement of the targets and evaluation will determine if the interventions selected have been effective and at affordable costs.

This Plan does not include the full monitoring and evaluation framework. Table 5 summarises the targets that will form the basis of the global monitoring and TTO's contribution to this. Development of the detailed framework to facilitate monitoring of the progress towards the specific objectives will be given priority in the first year. This will be comprehensive and aligned to address reporting monitoring commitments made at the global, regional LAC, and CARICOM levels. The aim will be to have and promote with donors the use of "ONE Monitoring Framework", a lesson for efficient use of limited resources, learned from the HIV sector. This needs to be complemented by the building of capacity for monitoring and evaluation among partners in the government and non-government sectors.

BUDGETARY CONSIDERATIONS

While the government has responsibility for the leadership and coordination of the national response, the multisectoral nature of the response requires that the full engagement of many government ministries and agencies as well as from the civil society and private

sector must be accompanied by budgetary inputs from numerous sources.

With respect to the public sector, the GORTT taking into account its national economic and fiscal situation, will endeavour to address its global commitment to "... increase and prioritise budgetary allocations..." for the prevention and control of NCDs. In particular, efforts will be made to adequately resource the national coordinating mechanism (NCM) and the NCD Unit in the MOH. In this regard, the GORTT will explore creative mechanisms to dedicate the revenues derived from tobacco, alcohol, and other such products for the prevention and control of NCDs and for the operations of the "Commissions", as stated in the Port-of-Spain Declaration.

The budget for the national strategic programme will be developed for each annual action plan and submitted for approval within the national budgeting process. It will be important for the NCD Unit to be able to report on the totality of the budget and expenditure on NCDs especially within the public sector.

The availability of the IADB Loan will present a unique opportunity to accelerate the implementation of the strategic framework. However, all loans are finite and have to be repaid. Thus, from the beginning, attention will be paid to the efficiency of the implementation of the loan program of work. In addition, the national coordinating body will collaborate with the NCD Unit to develop a resource mobilisation strategy to ensure the sustainability of the critical interventions after the loan period.

APPENDICES

APPENDIX 1: SWOT ANALYSIS

Strengths	Weakness
<ul style="list-style-type: none"> ▪ Political will and commitment evident. ▪ NCDs are identified as a priority in the national development agenda of the Republic of Trinidad and Tobago. ▪ The MOH has a Strategic Plan for the Fiscal Years 2012-2016, (MOHSP) which is closely aligned and coherent with the direction given for health ▪ Well trained cadres of CMOsH ▪ Adequate network of health centres in terms of numbers; Tobago has highest ratio to population. ▪ Active participation by NGOs, private sector, and academia. ▪ Health Education Unit with experience in addressing wide range of public health challenges ▪ Some baseline data available from the 2011 STEPS survey. 	<ul style="list-style-type: none"> ▪ Incoherence among sectoral policies; missed opportunities for NCD friendly policies. ▪ Several policies to modify NCD Risk Factors are in different draft stages. ▪ There is inadequate ongoing monitoring and evaluation of the national response, including at RHA level. ▪ Gaps in governance - No national coordinating mechanism. ▪ There is no dedicated NCD Unit in the Ministry of Health. ▪ No standing process for joint planning and monitoring of programmes with the MOH and RHAs. ▪ In the absence of a national policy based on the Chronic Care model adopted by CARICOM, each RHA has developed different initiatives to address the NCD prevention, treatment, and care. ▪ Overlap in the functions of the RHAs and the CMOsH with respect to surveillance of population health. ▪ Critical lack of nursing personnel, especially in community health services where knowledge of the multiple cultures and ability to communicate in English are important. ▪ Need to introduce new disciplines to provide comprehensive national response of health promotion, disease prevention, treatment, support, and rehabilitation. <p>Information Systems and Information Technology</p> <ul style="list-style-type: none"> ▪ National Surveillance Unit mandate does not include routine surveillance of NCDs. ▪ Inadequate health information systems and technology support to seamless chronic care across levels and to facilitate monitoring of response. <p>Financing</p> <ul style="list-style-type: none"> ▪ Resource allocation favours secondary and tertiary care. ▪ There is no dedicated budget for NCDs, in particular for promotion, prevention, and research.
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> ▪ Better use could be made of the development and monitoring of the Annual Services Agreement for the acceleration of the evidenced-based actions required to achieve national NCD objectives, indicators, and targets. ▪ CMOsH well trained in public and community health. ▪ Range of training institutions available. With better coordination and joint planning human resource needs as defined in NCD work force plan could be met. ▪ Limited funding available should redirect focus on to primary care. ▪ Revitalisation of multisectoral coordination governance of response to HIV. PPP is one of key strategies for achievement of political priorities. ▪ Agriculture is a new priority. ▪ Local government reform should strengthen community approaches. 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> ▪ Mounting pressure to open additional hospitals and hospital beds. ▪ Current economic climate requires reduction in public expenditure. ▪ Downturn in the economy leads families to purchase cheaper obesogenic foods.

APPENDIX 2: STAKEHOLDER ANALYSIS

Reducing the risk factors of NCDs calls for the engagement of nearly all sectors within, and outside of, the government. It also calls for recognition that the selection of healthy lifestyles is influenced by many factors outside of the control of individuals. The UN Political Declaration on the Prevention and Control of NCDs, recognised that “...the rising prevalence, morbidity, and mortality of non-communicable diseases worldwide can be largely prevented and controlled through collective and multisectoral action by all Member States and other relevant stakeholders at the local, national, regional, and global levels...” and included among the relevant stakeholders, individuals, and communities in addition to that range of stakeholders identified below. This concept is incorporated into the two strategic approaches to which the GORTT has committed:

- **Whole of Society (WOS) approach** – built on the concept that health is everybody’s business. In the case of NCDs, the necessary changes to achieve a reduction in the prevalence of the risk factors require significant changes in the environment where we live, work, and play, and socio-cultural shifts that will not occur without the engagement of all

the sectors and actors. Participation of all sectors and actors is needed at the planning as well as implementation stages in order to mobilise the intellectual capital, expertise, and human and financial resources for creative interventions. Table 7 below provides a glimpse into the number of partners that could be involved in the response to NCDs in T&T.

- **Whole of Government (WOG) approach** recognises that health is both an input for and benefit of development and that it depends to a large degree on the economic, physical, and social environment determinants – factors outside the remit of the public health sector. This calls for joint planning to build into all sector plans the policies, programs and interventions that would facilitate making healthy choices the easy choice .

The WOS and WOG approaches are not new to T&T or to the health sector. Since the mid-nineties, it has been a strategic approach to the expanded response to the HIV epidemic. Since 2011, it has been the approach adopted for the modernisation of the T&T civil service, in which WOG is defined as ⁴⁰:

Government	Non-Government
<p>Ministry of Health Nearly all technical and non-technical units.</p> <p>Regional Health Authorities</p> <p>CDAP</p> <p>Non-Health Ministries/ Government Agencies Ministry of Food Production Ministry of Trade, Industry, Investment and Communications Ministry of Education Ministry of Sport Ministry of Finance Ministry of Community Development Ministry of Legal Affairs</p>	<p>NGOs – Health/NCD</p> <ul style="list-style-type: none"> ▪ Chest & Heart Association of T&T ▪ Diabetes Association of T&T, ▪ T&T Cancer Society ▪ Coalition for Tobacco Control ▪ Family Planning Association of T&T ▪ T&T Heart Foundation ▪ Caribbean Sport Development Agency <p>Non-Health NGOs – women’s organisations, youth and sports organisations; service clubs</p> <p>Private Sector:</p> <ul style="list-style-type: none"> ▪ Insurance companies, ▪ Food & Beverage manufacturers & importers, ▪ Employers’ Confederation ▪ Chamber of Industries and Commerce ▪ Health and Wellness Businesses ▪ Private Hospitals and Labs <p>Trade Unions Professional Associations e.g. TTANDi Media Medical Practitioners Academia - UWI: HEU, Medical Faculty; UTT, CARDI CARICOM Secretariat & CARPHA UN: PAHO, WHO, FCTC, UNDP, FAO, UNFPA</p>

Table 6: Stakeholders internal and external to the Government for the Response to NCDs.

“Public service agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues. Approaches can be formal and informal. They can focus on policy development, program management, and service delivery.”

With regard to an effective response to NCDs, the most common approach to engagement of stakeholders is within the context of the risk factors and disease specific treatment and control elements. Tables 7 and 8 demonstrate that nearly all government sectors need to participate in the efforts to reduce the prevalence of the modifiable risk factors of the NCDs.

APPENDIX 3: CROSS-SECTORAL GOVERNMENT ENGAGEMENT TO REDUCE RISK FACTORS

SECTOR	NCD RISK FACTORS			
	Tobacco	Physical inactivity	Harmful use of alcohol	Unhealthy diet
Agriculture, Lands & Fisheries	✓	X	✓	✓
Public Administration & Communication	✓	✓	✓	✓
Community Development, Culture & the Arts	✓	✓	✓	✓
Education	✓	✓	✓	✓
Housing & Urban Development	✓	✓	✓	✓
Labour & Small Enterprise Development	✓	✓	✓	✓
Energy	X	✓	✓	✓
Environment	✓	✓	✓	✓
Finance	✓	✓	✓	✓
Trade & Industry	✓	✓	✓	✓
Foreign & CARICOM Affairs	✓	✓	✓	✓
Health	✓	✓	✓	✓
Planning & Development	✓	✓	X	✓
Legal Affairs	✓	X	✓	✓

⁴⁰ Ministry of Public Administration 2011

SECTOR	NCD RISK FACTORS			
	Tobacco	Physical inactivity	Harmful use of alcohol	Unhealthy diet
National Security	✓	X	✓	✓
Tourism	✓	✓	✓	✓
Sports & Youth Affairs	✓	✓	✓	✓
Social Development & Family Services	✓	✓	✓	✓
Works & Transport	✓	✓	✓	✓
Rural Development & Local Government	✓	✓	✓	✓
Public Utilities	✓	✓	✓	✓

APPENDIX 4: ROLES FOR KEY GOVERNMENT MINISTRIES

MINISTRY	POSSIBLE ROLES IN NCD PREVENTION AND CONTROL
Health	<ul style="list-style-type: none"> ✓ Brief members of the Cabinet, and of Parliament on the status of the NCD epidemic and the need for multisectoral action. ✓ Convene all ministries to plan and implement WOG plan of action including developing healthier workforce. ✓ On-going surveillance of incidence and prevalence of NCDs and risk factors; monitoring trends and making projections. ✓ Provide treatment, care and management of persons with NCDs. ✓ Develop and implement food, nutrition, and physical activity policies. ✓ House Secretariat for coordinating mechanisms.

MINISTRY	POSSIBLE ROLES IN NCD PREVENTION AND CONTROL
Agriculture, Lands & Fisheries	<ul style="list-style-type: none"> ✓ Review and revise existing policies on food security. ✓ Develop measures to make fruit and vegetables more available and accessible. ✓ Provide incentives to farmers to grow wide variety of fruits and vegetables.
Community Development, Culture and the Arts	<ul style="list-style-type: none"> ✓ Introduce valuing health as integral to development. ✓ Include as component of best village competition. ✓ Competitions for creative use of local agriculture produce in healthy recipes prepared by adults & children and in the local retail food sector
Education	<ul style="list-style-type: none"> ✓ Ensure the implementation, and monitoring and evaluation of health education curricula in primary and secondary schools. ✓ Review policies on participation in physical activity for all students. ✓ Review existing school meals programme; develop policies regarding the quality of food available in and around the school environment (in collaboration with National School Dietary Services). ✓ Train teachers and other staff in health education to promote healthy lifestyles among children. ✓ Establish mechanisms for the involvement of PTAs in healthy lifestyle programme. ✓ Ensure healthy food available on school compounds and campuses. ✓ Engage students in innovative health promotion programmes
Finance	<ul style="list-style-type: none"> ✓ Review fiscal measures in relation to the manufacturing and importation of unhealthy foods. ✓ Increase taxes on tobacco, in accordance with FCTC, and on alcohol and sugary drinks. ✓ Reduce duties on exercise equipment

MINISTRY	POSSIBLE ROLES IN NCD PREVENTION AND CONTROL
Foreign Affairs	<ul style="list-style-type: none"> ✓ Coordinate position on global health issues across diplomatic fora. ✓ Collaborate with MOH on interventions and promote participation of nationals in international health events.
Labour & Small Enterprise Development	<ul style="list-style-type: none"> ✓ Develop policies on health promotion in workplaces and for workers and families. ✓ Liaise with the trade unions on matters relating to health in the workplace. ✓ Strengthen occupational health and safety programmes for worker's health.
Legal Affairs	<ul style="list-style-type: none"> ✓ Update or draft new legislation in support of NCD sensitive policies.
Planning and Development	<ul style="list-style-type: none"> ✓ Establish policies for the development of recreational and green spaces in communities
Public Administration	<ul style="list-style-type: none"> ✓ Ensure each Ministry develops health promotion programs and facilitate participation by civil servants.
Sport & Youth Affairs	<ul style="list-style-type: none"> ✓ Ensure the Involvement of Youth Commissioners in community education programmes. ✓ Integrate health promotion into all child development opportunities. ✓ Develop programmes to encourage participation in sporting activities throughout the life course. ✓ Improve safety and security in community sporting facilities.
Tourism	<ul style="list-style-type: none"> ✓ Promote health and wellness tourism.

MINISTRY	POSSIBLE ROLES IN NCD PREVENTION AND CONTROL
Trade & Industry	<ul style="list-style-type: none"> ✓ Review trade agreements to identify instances where unhealthy choices are being facilitated. ✓ Provide incentives for manufacturing of healthy products using indigenous foods. ✓ Develop policies for food and nutrition labelling. ✓ Develop policies on health promotion in workplaces and for workers and families. ✓ Liaise with the trade unions on matters relating to health in the workplace. ✓ Strengthen occupational health and safety programmes for worker's health.
Social Development & Family Services	<ul style="list-style-type: none"> ✓ Train home-helpers in relevant aspects of the management of chronic non-communicable diseases. ✓ Maintain opportunities for physical activity and social integration among the elderly. ✓ Establish policies for healthy foods and snacks in day nurseries and pre-schools.
Works & Transport	<ul style="list-style-type: none"> ✓ Improve facilities for walking, through the provision of sidewalks where possible. ✓ Ensure that road safety is considered in environmental and other assessments for new projects and the analysis of transport policy. ✓ Review road safety targets and establish national road safety plans. ✓ Provide cycling lanes in appropriate areas.

APPENDIX 5: LIFE COURSE FACTORS ⁴¹

Table 9: Life Course Factors

STAGES OF LIFE	FACTORS CONTRIBUTING TO NCDS
Foetal stage	Slow foetal growth, poor maternal nutritional status, and low socio-economic position at birth
Infancy and childhood	Lack of breast-feeding, inadequate growth rate, inadequate diet, lack of physical activity, low socioeconomic position, and poor education of the mother
Adolescence	Inadequate diet such as low intake of fruits and vegetables and high-energy intake, physical inactivity, and tobacco and alcohol use
Adult	Behavioural risk factors such as high saturated-fat intake, elevated salt consumption, reduced fruit and vegetable intake, tobacco and alcohol use, lack of physical activity, and related biological risk factors

⁴¹ Pan American Health Organization. 2007. "Regional Strategy and Plan of Action on an Integrated Approach to the Prevention and Control and Chronic Diseases".








APPENDIX 6: WHO BEST BUYS ⁴²




Table 10: WHO Best Buys

RISK FACTOR / DISEASE	INTERVENTIONS
Tobacco use	<ul style="list-style-type: none"> ▪ Tax increases ▪ Smoke-free indoor workplaces & public places ▪ Health information and warnings ▪ Bans on tobacco advertising, promotion and sponsorship
Harmful alcohol use	<ul style="list-style-type: none"> ▪ Tax increases ▪ Restricted access to retailed alcohol ▪ Bans on alcohol advertising
Unhealthy diet and physical inactivity	<ul style="list-style-type: none"> ▪ Reduced salt intake in food ▪ Eliminate trans fat ▪ Public awareness through mass media on diet and physical activity & targeted behaviour change programs
Cardiovascular disease (CVD) and diabetes	<ul style="list-style-type: none"> ▪ Counselling and multi-drug therapy for people with a high risk of developing heart attacks and strokes (including those with established CVD) ▪ Treatment of heart attacks with aspirin
Cardiovascular disease (CVD) and diabetes	<ul style="list-style-type: none"> ▪ Hepatitis B immunisation to prevent liver cancer (already scaled up) ▪ HPV Vaccine ▪ Screening and treatment of pre-cancerous lesions to prevent cervical cancer

⁴² World Economic Forum and World Health Organization. 2011. "From Burden to "Best Buys": Reducing the Economic Impact of Non-Communicable Diseases in Low- and Middle-Income Countries." Geneva. (http://www.who.int/nmh/publications/best_buys_summary.pdf).

APPENDIX 7: WHO GLOBAL MONITORING TARGETS ⁴³

Framework Element	Target	Indicator
OUTCOMES		
Premature mortality from noncommunicable disease	 1. A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	1. Unconditional probability of dying between ages of 30 and 70 from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases
Additional indicator		2. Cancer incidence, by type of cancer, per 100 000 population
BEHAVIOURAL RISK FACTORS		
Harmful use of alcohol	 2. At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context	3. Total (recorded and unrecorded) alcohol per capita (aged 15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context 4. Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context 5. Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context
Physical inactivity	 3. A 10% relative reduction in prevalence of insufficient physical activity	6. Prevalence of insufficiently physically active adolescents, defined as less than 60 minutes of moderate to vigorous intensity activity daily 7. Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent)
Salt/sodium intake	 4. A 30% relative reduction in mean population intake of salt/sodium	8. Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years
Tobacco use	 5. A 30% relative reduction in prevalence of current tobacco use reduction in prevalence of current tobacco use	9. Prevalence of current tobacco use among adolescents 10. Age-standardized prevalence of current tobacco use among persons aged 18+ years
BIOLOGICAL RISK FACTORS		
Raised blood pressure	 6. A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances	11. Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure 140 mmHg and/or diastolic blood pressure 90 mmHg) and mean systolic blood pressure
Diabetes and obesity	 7. Halt the rise in diabetes & obesity	12. Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration ≥ 7.0 mmol/l (126 mg/dl) or on medication for raised blood glucose) 13. Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school aged children and adolescents, overweight – one standard deviation body mass index for age and sex, and obese – two standard deviations body mass index for age and sex)

Framework Element	Target	Indicator
BIOLOGICAL RISK FACTORS		
Diabetes and obesity	 7. Halt the rise in diabetes & obesity	14. Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index 25kg/m^2 for overweight and body mass index $\geq 30\text{kg/m}^2$ for obesity))
Additional indicators		15. Age-standardized mean proportion of total energy intake from saturated fatty acid in persons aged 18+ years 16. Age-standardized prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day 17. Age-standardized prevalence of raised total cholesterol among persons aged 18+ years (defined as total cholesterol 5.0mmol/l or 190mg/dl); and mean total cholesterol concentration
NATIONAL SYSTEMS RESPONSE		
Drug therapy to prevent heart attacks and strokes	 8. At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes	18. Proportion of eligible persons (defined as aged 40 years and older with a 10-year cardiovascular risk $\geq 30\%$, including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes
NATIONAL SYSTEMS RESPONSE		
Essential noncommunicable disease medicines and basic technologies to treat major noncommunicable diseases	 9. An 80% availability of the affordable basic technologies and essential medicines, including generics required to treat major noncommunicable diseases in both public and private facilities	19. Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities
Additional indicators		20. Access to palliative care assessed by morphine-equivalent 21. Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply, as appropriate, within the national context and national programmes 22. Availability, as appropriate, if cost-effective and affordable, of vaccines against human papillomavirus, according to national programmes and policies 23. Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt 24. Vaccination coverage against hepatitis B virus monitored by number of third doses of Hep-B vaccine (HepB3) administered to infants 25. Proportion of women between the ages of 30–49 screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programmes or policies

⁴³ World Health Organization. (n.d.). Non Communicable Diseases Global Monitoring Framework: Indicator Definitions and Specifications. Retrieved from http://www.who.int/nmh/ncd-tools/indicators/GMF_Indicator_Definitions_Version_NOV2014.pdf

APPENDIX 8: DECLARATION OF PORT-OF-SPAIN ³⁹

UNITING TO STOP THE EPIDEMIC OF CHRONIC NON-COMMUNICABLE DISEASES

We, the Heads of Government of the Caribbean Community (CARICOM), meeting at the Crowne Plaza Hotel, Port-of-Spain, Trinidad and Tobago on 15 September 2007 on the occasion of a special Regional Summit on Chronic Non-Communicable Diseases (NCDs);

Conscious of the collective actions which have in the past fuelled regional integration, the goal of which is to enhance the well-being of the citizens of our countries;

Recalling the Nassau Declaration (2001), that “the health of the Region is the wealth of Region”, which underscored the importance of health to development;

Inspired by the successes of our joint and several efforts that resulted in the Caribbean being the first Region in the world to eradicate poliomyelitis and measles;

Affirming the main recommendations of the Caribbean Commission on Health and Development which included strategies to prevent and control heart disease, stroke, diabetes, hypertension, obesity and cancer in the Region by addressing their causal risk factors of unhealthy diets, physical inactivity, tobacco use and alcohol abuse and strengthening our health services;

Impelled by a determination to reduce the suffering and burdens caused by NCDs on the citizens of our Region which is the one worst affected in the Americas;

Fully convinced that the burdens of NCDs can be reduced by comprehensive and integrated preventive and control strategies at the individual, family, community, national and regional levels and through collaborative programmes, partnerships and policies supported by governments, private sectors, NGOs and our other social, regional and international partners;

Declare -

- 1 Our full support for the initiatives and mechanisms aimed at strengthening regional health institutions, to provide critical leadership required for implementing our agreed strategies for the reduction of the burden of Chronic, Non-Communicable Diseases as a central priority of the Caribbean Cooperation in Health Initiative Phase III (CCH III), being coordinated by the CARICOM Secretariat, with able support from the Pan American Health Organization/World Health Organization (PAHO/WHO) and other relevant partners;
- 2 That we strongly encourage the establishment of National Commissions on NCDs or analogous bodies to plan and coordinate the comprehensive prevention and control of chronic NCDs;
- 3 Our commitment to pursue immediately a legislative agenda for passage of the legal provisions related to the International Framework Convention on Tobacco Control; urge its immediate ratification in all States which have not already done so and support the immediate enactment of legislation to limit or eliminate smoking in public places, ban the sale, advertising and promotion of tobacco products to children, insist on effective warning labels and introduce such fiscal measures as will reduce accessibility of tobacco;
- 4 That public revenue derived from tobacco, alcohol or other such products should be employed, inter alia for preventing chronic NCDs, promoting health and supporting the work of the Commissions;
- 5 That our Ministries of Health, in collaboration with other sectors, will establish by mid 2008 comprehensive plans for the screening and management of chronic diseases and risk factors so that by 2012, 80% of people with NCDs would receive quality care and have access to preventive education based on regional guidelines;
- 6 That we will mandate the re-introduction of physical education in our schools where necessary, provide incentives and resources to effect this policy and ensure that our education sectors promote programmes aimed at providing healthy school meals and promoting healthy eating;
- 7 Our endorsement of the efforts of the Caribbean Food and Nutrition Institute (CFNI), Caribbean Agricultural Research and Development Institute (CARDI) and the regional inter-governmental agencies to enhance food security and our strong support for the elimination of trans-fats from the diet of our citizens, using the CFNI as a focal point for providing guidance and public education designed toward this end;
- 8 Our support for the efforts of the Caribbean Regional Negotiating Machinery (CRNM) to pursue fair trade policies in all international trade negotiations thereby promoting greater use of indigenous agricultural products and foods by our populations and reducing the negative effects of globalisation on our food supply;
- 9 Our support for mandating the labelling of foods or such measures as are necessary to indicate their nutritional content through the establishment of the appropriate regional capability;

- 10 That we will promote policies and actions aimed at increasing physical activity in the entire population, e.g. at work sites, through sport, especially mass activities, as vehicles for improving the health of the population and conflict resolution and in this context we commit to increasing adequate public facilities such as parks and other recreational spaces to encourage physical activity by the widest cross section of our citizens;
 - 11 Our commitment to take account of the gender dimension in all our programmes aimed at the prevention and control of NCDs;
 - 12 That we will provide incentives for comprehensive public education programmes in support of wellness, healthy life-style changes, improved self-management of NCDs and embrace the role of the media as a responsible partner in all our efforts to prevent and control NCDs;
 - 13 That we will establish, as a matter of urgency, the programmes necessary for research and surveillance of the risk factors for NCDs with the support of our Universities and the Caribbean Epidemiology Centre Pan American Health Organization (CAREC/PAHO);
 - 14 Our continuing support for CARICOM and PAHO
- as the joint Secretariat for the Caribbean Cooperation in Health (CCH) Initiative to be the entity responsible for revision of the regional plan for the prevention and control of NCDs, and the monitoring and evaluation of this Declaration.
- 15 We hereby declare the second Saturday in September "Caribbean Wellness Day," in commemoration of this landmark Summit.

REFERENCES

1. Ministry of Planning and Development, Government of the Republic of Trinidad and Tobago. 2016. National Development Strategy 2016–2030 (Vision 2030). Retrieved from <http://www.social.gov.tt/wp-content/uploads/2017/01/V2030-as-at-August-29th-2016.pdf>
2. Ministry of Health, Trinidad and Tobago. n.d. "Ministry of Health - Overview." Ministry of Health, Trinidad and Tobago. (<http://www.health.gov.tt/sitepages/default.aspx?id=38>).
3. Ministry of Health, Trinidad and Tobago. 2016. The Ministry of Health - Trinidad and Tobago. Retrieved from Ministry of Health, Trinidad and Tobago: <http://www.health.gov.tt>
4. Ministry of Health, Trinidad and Tobago. 2011. "Strategic Plan: Fiscal Years 2012–2016."
5. Central Statistical Office, Trinidad and Tobago. 2016. "Population Mid Year Estimates." Central Statistical Office. (<http://cso.gov.tt/data/?productID=31-Population-Mid-Year-Estimates>).
6. Central Statistical Office. 2012. "Trinidad and Tobago 2011 Population and Housing Census: Demographic Report." Ministry of Planning and Sustainable Development, Port-of-Spain. (https://guardian.co.tt/sites/default/files/story/2011_DemographicReport.pdf).
7. Pan American Health Organization. 2015. "Health Situation in the Americas: Basic Indicators 2015." (http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=31791&Itemid=270&lang=en).
8. PAHO/WHO and CARICOM. 2016. Evaluation of the 2007 CARICOM Heads of Government Port-of-Spain NCD Summit Declaration. Retrieved from <http://www.onecaribbeanhealth.org/wp-content/uploads/2016/10/ACCELERATING-ACTION-ON-NCDS-POSDEVAL-Report.pdf>
9. Ministry of Health, Trinidad and Tobago. 2012. "Trinidad and Tobago Chronic Non-Communicable Disease Risk Factor Survey [Pan American STEPS]". (<http://www.health.gov.tt/news/newsitem.aspx?id=394>).
10. World Health Organization. (n.d.). WHO | What is Moderate-intensity and Vigorous-intensity Physical Activity? Retrieved from World Health Organization: http://www.who.int/dietphysicalactivity/physical_activity_intensity/en/
11. United Nations Country Team. 2006. "Common Country Assessment: Republic of Trinidad and Tobago." (<https://www.scribd.com/document/156420644/Common-Country-Assessment-Revised-March-31-Final>).
12. Alleyne, Leo E. 2000. "Trinidad and Tobago (Ages 13–15) Global Youth Tobacco Survey (GYTS) FACT SHEET." (<http://nccd.cdc.gov/gtssdata/Ancillary/DownloadAttachment.aspx?ID=501>).
13. Alleyne, Leo. 2007. "Trinidad & Tobago (Ages 13–15) Global Youth Tobacco Survey (GYTS) FACT SHEET." (<http://nccd.cdc.gov/gtssdata/Ancillary/DownloadAttachment.aspx?ID=502>).
14. Procope-Beckles, Marilyn. 2011. "Trinidad and Tobago 2011 Country Report Global Youth Tobacco Survey (GYTS)". (<http://nccd.cdc.gov/gtssdata/Ancillary/DownloadAttachment.aspx?ID=1173>).
15. Ministry of Health, Trinidad and Tobago. 2011. "Global School-based Student Health Survey Trinidad and Tobago 2011 Fact Sheet." (http://www.paho.org/trt/index.php?option=com_docman&task=doc_download&gid=31&Itemid=).
16. Procope-Beckles, Marilyn. 2007. "GSHS 2007 Report Trinidad and Tobago." (http://www.paho.org/trt/index.php?option=com_docman&task=doc_download&gid=28&Itemid=).

17. Caribbean Food and Nutrition Institute. 2009. "2009 Annual Report." (<http://iris.paho.org/xmlui/bitstream/handle/123456789/2786/AnnualReport09%20CFNI.pdf?sequence=1>).
18. Ministry of Health, Trinidad and Tobago. 2014. "Interim Nutrition Standard for Food Offered for Sale in Schools in Trinidad and Tobago."
19. Government of Republic of Trinidad and Tobago. 2008. Trinidad and Tobago Multiple Indicator Cluster Survey 3: Final Report 2008. Retrieved from https://mics-surveys-prod.s3.amazonaws.com/MICS3/Latin%20America%20and%20Caribbean/Trinidad%20and%20Tobago/2006/Final/Trinidad%20and%20Tobago%202006%20MICS_English.pdf
20. Ministry of Health, Trinidad and Tobago. 2015. "Hospital Utilisation Reports."
21. Pan American Health Organization. 2013. "Trinidad and Tobago Cancer Profile." (http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=23013&Itemid=270&lang=en).
22. Social Investigations Division, Ministry of the People and Social Development. 2014. "Research Note: Cancer Volume 1, Issue 5." (<http://www.mpsd.gov.tt/sites/g/files/g728121/f/201404/Research%20Note%20-%20Cancer1.pdf>).
23. Expanded Programme on Immunisation, Ministry of Health, Trinidad and Tobago. 2015. "Immunisation Report."
24. Johns Hopkins Medicine. 2012. "New and Comprehensive Study of Diabetes Care in Trinidad and Tobago Released." Johns Hopkins Medicine. (http://www.hopkinsmedicine.org/news/media/releases/new_and_comprehensive_study_of_diabetes_care_in_trinidad_and_tobago_released).
25. International Diabetes Federation. 2015. "Trinidad and Tobago | International Diabetes Federation." International Diabetes Federation. (<http://www.idf.org/membership/nac/trinidad-and-tobago>).
26. Trinidad and Tobago Health Sciences Initiative. 2014. "Diabetes Outreach Programme Collaboration Final Report for Completion: January 31, 2014."
27. Islam, Shariful, Patrick Harnarayan, Shamir O. Cawich, Steve Budhooram, Vinoo Bheem, Vijai Mahabir, Shiva Ramsewak, Imran Aziz, and Vijay Naraynsingh. 2013. "Epidemiology of Diabetic Foot Infections in an Eastern Caribbean Population: a Prospective Study." *The Permanente Journal* 17(2):37-40.
28. Pan American Health Organization. 2016. Hyperglycemia and Pregnancy in the Americas. Final report of the Pan American Conference on Diabetes and Pregnancy (Lima Peru: 8-10 September 2015). Washington, DC: PAHO. Retrieved from http://iris.paho.org/xmlui/bitstream/handle/123456789/28208/9789275118832_eng.pdf?sequence=5&isAllowed=y
29. Teelucksingh, S., Ramsewak, S., Sirjusingh, A., Chamely, S., Mallalieu, K., Chow, H., & Lutchmansingh, F. 2016. Health in Pregnancy in Trinidad and Tobago.
30. Central Statistical Office. 2016. CSO | Statistics. Retrieved from Central Statistical Office, Ministry of Planning and Development: <http://cso.gov.tt/statistics/>
31. RTI International. 2016. Rapid Assessment of the Economic Dimensions of Non-communicable Diseases in Trinidad and Tobago.
32. Poon-King, Celia M. 2015. Framework for Creating a Tobacco and Related Products Surveillance System and Estimation of the Quantity, Volume, and Turnover of Licit and Illicit Tobacco Products in Trinidad and Tobago.
33. Ministry of Health, Trinidad and Tobago. 2011. "World Diabetes Day." Ministry of Health, Trinidad and Tobago. (<http://www.health.gov.tt/news/newsitem.aspx?id=298>).

34. Caribbean Public Health Agency. 2014. "CWD." Caribbean Public Health Agency. (<http://carpha.org/Media-Centre/Caribbean-Wellness-Day>).
35. Johns Hopkins Medicine. 2012. "New and Comprehensive Study of Diabetes Care in Trinidad and Tobago Released." Johns Hopkins Medicine. (http://www.hopkinsmedicine.org/news/media/releases/new_and_comprehensive_study_of_diabetes_care_in_trinidad_and_tobago_released).
36. Johns Hopkins Medicine. n.d. "Trinidad and Tobago Health Sciences Initiative: Johns Hopkins Medicine International." Johns Hopkins Medicine. Retrieved April 25, 2016 (http://www.hopkinsmedicine.org/international/international_affiliations/latin_america_caribbean/trinidad_tobago_health_sciences_initiative.html).
37. Barnoya, J., & Yan, Y. 2013. Trinidad and Tobago and cardiovascular disease mortality. Possible causes and implications.
38. Ministry of Planning and Development, Government of the Republic of Trinidad and Tobago. 2006. -Vision 2020 Operational Plan 2007-2010. Retrieved from <http://www.transforme.gov.tt/sites/default/files/sites/default/files/library/documents/Vision%202020%20Operational%20Plan%202007-2010.pdf>
39. CARICOM. 2007. "DECLARATION OF PORT-OF-SPAIN: UNITING TO STOP THE EPIDEMIC OF CHRONIC NCDs." (<http://caricom.org/media-center/communications/statements-from-caricom-meetings/declaration-of-port-of-spain-uniting-to-stop-the-epidemic-of-chronic-ncds>).
40. Ministry of Public Administration, Trinidad and Tobago. 2011. "Green Paper on Transforming the Civil Service: Renewal and Modernisation." (http://www.news.gov.tt/sites/default/files/Green_Paper_report2_396222110%20%281%29.pdf).
41. Pan American Health Organization. 2007. "Regional Strategy and Plan of Action on an Integrated Approach to the Prevention and Control and Chronic Diseases".
42. World Economic Forum and World Health Organization. 2011. "From Burden to "Best Buys": Reducing the Economic Impact of Non-Communicable Diseases in Low- and Middle-Income Countries." Geneva. (http://www.who.int/nmh/publications/best_buys_summary.pdf).
43. World Health Organization. (n.d.). Non Communicable Diseases Global Monitoring Framework: Indicator Definitions and Specifications. Retrieved from http://www.who.int/nmh/ncd-tools/indicators/GMF_Indicator_Definitions_Version_NOV2014.pdf



