Introduction

A total of 57 million deaths occurred worldwide during 2008; 36 million (63%) were due to chronic non-communicable diseases (NCDs), principally cardiovascular diseases, diabetes, cancer and chronic respiratory diseases. (1) Nearly 80% of these NCD deaths (29 million) occurred in low- and middle-income countries. NCDs are the most frequent causes of death in most countries in the Americas. Currently, WHO projections are that the burden of NCDs will account for a significant increase in the number of global deaths in this current decade, 2010 to 2020. (2)

The principal causes of NCD-related deaths globally in 2008 were cardiovascular disease (17 million deaths, or 48%); cancers (7.6 million, or 21%); and respiratory diseases, including asthma and chronic obstructive pulmonary disease (COPD), (4.2 million), while diabetes-related complications accounted for an additional 1.3 million deaths. Of particular significance, over 80% of cardiovascular and diabetes deaths, and almost 90% of deaths from COPD, occurred in low- and middle-income countries. (3)

More than two thirds of all cancer deaths occur in low- and middle-income countries. The high burden of premature death is also a major concern. Approximately 44% of all NCD deaths worldwide occur before the age 70. This prevalence is higher in low- and middle income countries compared with high-income countries (48% vs 26%). The burden of NCD among younger adults is a particular concern among people aged less than 60 in low- and middle-income countries who experience 29% of NCD deaths occur, compared to 13% in high-income countries. (1,3)

NCDs are largely caused, by four behavioural risk factors that are driven by economic transition, rapid urbanization and 21st-century lifestyles. These are tobacco use, unhealthy diets, lack of physical activity and the harmful use of alcohol. (3) These risk factors are known to cause almost 80% of all NCD-related deaths. These risk factors are inordinately prevalent in low- and middle-income countries, and disproportionately affect poorer people within all countries, consistent with the pattern of socioeconomic determinants of health. (3-5) Economic estimates project that the NCDs will cost $30 trillion US over the next 2 decades. (6) Poverty often exposes people to behavioural risk factors for NCDs, and the resulting NCDs concomitantly underpin the downward spiral into poverty. Therefore unless the interventions aimed at tackling the NCD epidemic are successful, the most affected nations and communities will continue to be adversely affected, undermining the millennium development goal of reducing poverty. (7) Additionally, as noted by the UN Secretary General, the NCD epidemic is also adversely impacting Goals 4 and 5 of the MDGs, which relate to women's and children's health. (8)

Behavioural risk factors, including tobacco use, physical inactivity, and unhealthy diet, are responsible for about 80% of coronary heart disease and cerebrovascular disease (3). More specifically, in terms of attributable deaths, raised blood pressure is the principal factor leading to 13% of global deaths, followed by tobacco use (9%), raised fasting blood glucose levels (6%), physical inactivity (6%), and overweight and obesity (5%) (4). It is important to note that the definition of raised blood glucose was not based on the presence or absence of diabetes, but rather on fasting blood glucose levels above 'ideal' values within each population studied, the latter invariably being well within normal glucose ranges. (9)

NCD mortality in the Caribbean

Chronic diseases are now the leading cause of premature mortality In Latin America and the Caribbean (LAC), accounting for nearly half of deaths among persons aged less than 70 years, and for two out of three deaths overall. Chronic diseases contributed to almost 50% of disability-adjusted life years lost in the Region. The most recent data describing the leading causes of death in the Caribbean are available from CAREC (2000). (10). A more recent review of mortality in the Caribbean was prepared for the 2007 Caribbean Community (CARICOM) Heads of Government summit in Port of Spain but did not include data for Grenada or Jamaica for the years 2000, and 2000 to 2004, respectively, nor were actual country-specific data available. As such this earlier CAREC report is the most comprehensive regional information at present and details trends in mortality across the region between 1985 and 2000 (Table 1). The 4 leading causes of death in the Caribbean in 2000 were all NCDs — heart disease, cancer, stroke, and diabetes, and they accounted for 47 percent of deaths in 1980 and 51 percent in 2000.

During the 15-year period reviewed, the 4 principal causes of death in the Caribbean were heart disease, cerebrovascular disease, cancer and diabetes-related complications. Heart disease invariably was the first-ranked cause of death with mortality rates ranging between 102.5 and 114.0 per 100, 000, and diabetes the fourth cause of mortality. Diabetes rates demonstrated a clear trend to increased mortality from a rate of 36.2 through 50.0 per 100,000, reaching 64.9 per 100,000 by 2000. There were interchanges in ranking between cancers and cerebrovascular diseases during the 15-year period.

Table 1: Ten leading causes of death: all genders – CAREC member countries 1985 1990 1995 2000

Rank	1985			1990			1995			2000		
	Cause	n	rate	Cause	n	rate	Cause	n	rate	Cause	n	rate
1	Heart dis.	6504	107.2	Heart dis.	6629	109.5	Heart dis.	7206	114.0	Heart dis	6764	102.5
2	Cerebrovasc. dis.	4997	82.3	Cancer	4943	81.6	Cerebrovasc. Dis.	6056	95.8	Cancer	6301	95.5
3	Cancers	4924	81.1	Cerebrovasc. dis.	4804	79.3	Cancers	5593	88.5	Cerebrovasc. dis	4286	64.9
4	Diabetes	2199	36.2	Diabetes	3025	50.0	Diabetes	3280	51.9	Diabetes	4264	64.6
5	Hypertensive dis.	1854	30.6	Hypertensive dis.	1869	30.9	Hypertensive dis.	1983	31.4	HIV dis. (AIDS)	2624	39.8
6	Accidents	1543	25.4	Acute respiratory infections	1354	22.4	Accidents	1649	26.1	Hypertensive dis.	2596	39.3
7	Acute respiratory infections	1462	24.1	Accidents	1273	21.0	Acute respiratory infections	1506	23.8	Accidents	1524	23.1
8	Nutritional deficiencies and anemia	1016	16.7	Urinary tract dis.	896	14.8	HIV dis. (AIDS)	1238	19.6	Assault (homicide)	1147	17.4
9	Urinary tract dis.	918	15.1	Nutritional deficiencies and anemia	703	11.6	Assault (homicide)	1190	18.8	Acute respiratory infections	1060	16.1
10	Intestinal infectious dis.	720	11.9	Intestinal infectious dis.	602	9.9	Urinary tract dis.	744	11.8	Chr. Lower respiratory dis.	783	11.9
	Symptoms, signs and ill-defined conditions	3280		Symptoms, signs and ill-defined conditions	3375		Symptoms, signs and ill-defined conditions	2094		Symptoms, signs and ill-defined conditions	1788	
	All other deaths	9109		All other deaths	8382		All other deaths	10680		All other deaths	9899	
	Total deaths	38526		Total deaths	37855		Total deaths	43219		Total deaths	43036	

Caribbean Epidemiology Centre (CAREC), PAHO/WHO 2005

More recent data have been published in the World Health Organisation report (3) on NCD-related mortality in the Caribbean and these are presented for 14 of 15 CARICOM member states in Table 2. Actual NCD-related deaths in 2008 ranged from around 200 deaths in men and women in Antigua, Dominica and St. Kitts and Nevis, through intermediate numbers in Barbados and the Bahamas at around 700 deaths in either sex, to much higher numbers in the larger countries such as Trinidad and Tobago, Jamaica, Guyana and Haiti. The standardised death rates give a much clearer picture correcting for differences in population size and age structure. The lowest NCD-related mortality was reported by Jamaica (497.7 per 10^5), while modestly higher rates (between 500 – 600 per 100,000) occurred in Antigua, the Bahamas, Belize and St. Lucia. Similar NCD-related mortality rates (between 600 – 700 deaths per 100,000) were reported in Barbados, Dominica, St. Kitts and Nevis and St. Vincent and the Grenadines, as well as Suriname. Data from Grenada, Guyana and Haiti indicated extremely high NCD-related mortality in excess of 700 deaths per 10^5 population, while the highest overall mortality was reported by Trinidad at nearly 900 deaths per 10^5. Cancer mortality rates generally ranged between 100 to 200 deaths per 10^5 population, with the highest rate reported by Grenada (214.6 per 10^5). This indicates quite marked variation in NCDs and related mortality in the region,

As Caribbean populations age, there are concomitant increases in the burden of NCDs, which are inextricably age-related. There are clear trends to population ageing in the region, with the proportion of adults aged 60 years and older in the Caribbean (including Francophone and the Spanish Caribbean) increasing from 8.1% in 1975, to 9.9% in 2000, with projections for further increases to 16.1% by 2025 and 23.8% by 2050. (11) Projections are that 25% of the populations of Barbados and Cuba will be older than 60 years by 2025.

Table 2. Comparable estimates of NCD mortality in the Caribbean region in 2008.

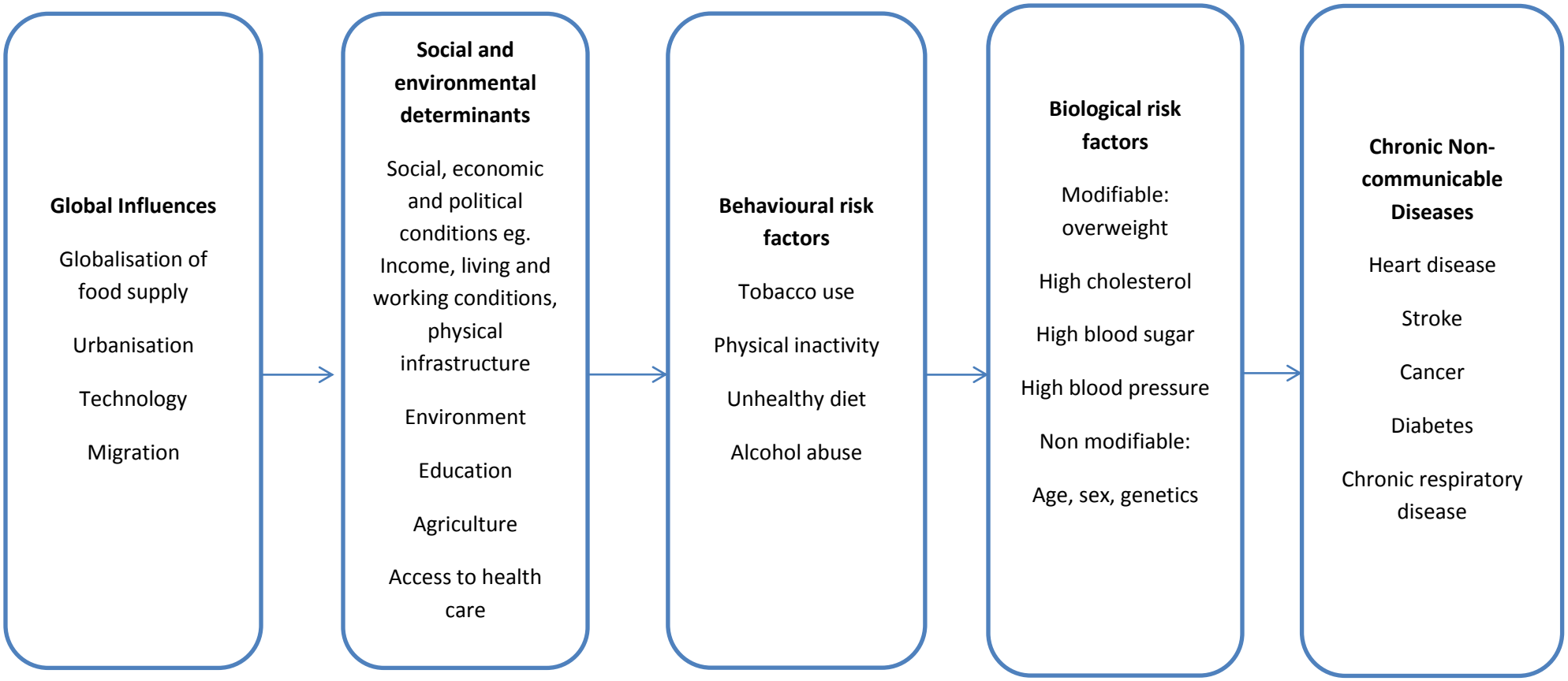
(World Health Organisation, 2011).

Country	Total NCD deaths ('000s)		NCD deaths (<70 years); (% of all NCD deaths)		Age standardised death rates (per 10^5)	
	Males	Females	Males	Females	All NCDs	Cancers
Antigua	0.2	0.2	47.5	45.3	544.1	123.0
Bahamas	0.7	0.6	60.3	47.5	530.1	130.5
Barbados	0.8	0.8	40.5	31.2	633.2	193.9
Belize	0.4	0.4	52.0	46.8	507.4	110.9
Dominica	0.2	0.2	42.0	30.6	681.9	190.9
Grenada	0.3	0.3	58.5	38.2	722.1	214.6
Guyana	2.3	2.0	60.1	54.8	735.0	85.1
Haiti	20.0	17.5	54.5	49.1	796.9	119.0
Jamaica	6.3	8.0	37.9	29.0	497.7	125.8
St. Lucia	0.4	0.4	43.6	38.0	596.9	155.3
St. Kitts & Nevis	0.2	0.2	40.7	22.8	620.9	160.5
St. Vincent & the Grenadines	0.3	0.3	46.3	35.4	648.9	134.6
Suriname	1.3	1.1	52.5	45.2	696.4	107.1
Trinidad & Tobago	4.1	3.7	54.2	44.9	895.6	157.5

Determinants of NCDs

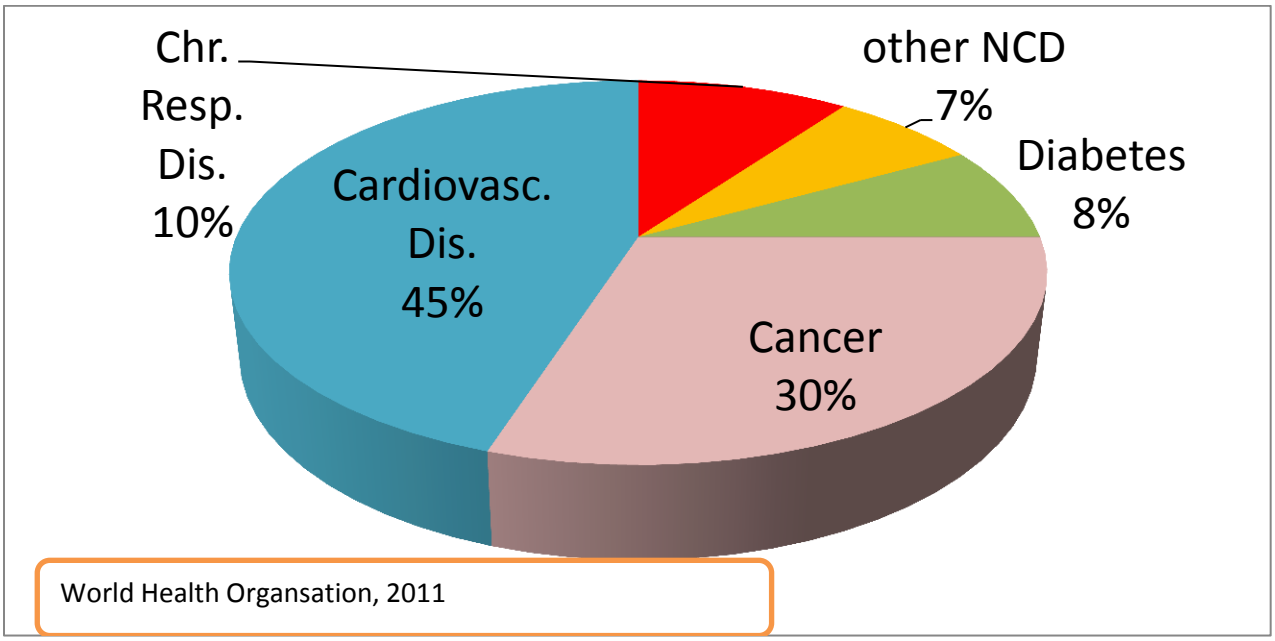
NCDs have increased globally as a direct result of globalisation and related changes in food production, distribution and access to food products and fast foods, access to modern technologies, migration and increased urbanisation. (Figure 1) Free market policies overseen by the World Trade Organisation have led to a liberalisation of global markets and the right to trade across borders which favour the more advanced economies. Changes in the macro-environment in turn influence social, political and economic conditions at the country and community level which in turn determine key behavioural risk factors such as sedentarism, diet, tobacco use and unsafe use of alcohol, which interact with biological risks to affect likelihood of NCDs.

Figure 1. The determinants of Chronic Diseases



NCDs are highly prevalent in the Americas, and Figure 2 outlines the distribution of the major conditions among the hemispheric populations. Cardiovascular disease affects 45% of adults, followed by cancer (30%). Diabetes affects just less than 10% with projections for a significant increase in prevalence within this generation as a result of the growing burden of obesity.

Figure 2. Distribution (%) of NCDs in the Americas.



Within the Caribbean region, there has long been recognition of the high prevalence of hypertension, diabetes and obesity . (12 – 19) The International Study of Hypertension in Blacks reported a hypertension prevalence in 3 Caribbean countries of around 25% in persons aged 25 – 64 years. (14) Data from Barbados indicate a hypertension prevalence of 50% among adults aged 40 years and older. (18), while prevalent diabetes has been estimated at around 16% among older adults (aged 40 years and older). (19) There are however, challenges with lack of comparability among reports.

The links between sustainable societal development and the adverse impact of NCDs is well recognized. The UN-sponsored Rio+20 conference on sustainable development recognized the importance of NCDs as "one of the major challenges for sustainable development in the 21st century". (20) The direct causal pathways between health and development are also clearly recognized.

Within the Caribbean context, the Heads of Government convened a meeting over a decade ago which produced the Nassau Declaration that 'the Health of the Region is the Wealth of the Region'. (21) The Declaration of Nassau (2001) which emanated from the Twenty-Second Conference of the CARICOM Heads of Government held in Nassau, Bahamas was the first concerted effort of the regional leaders to tackle the growing health challenges of the Caribbean. This Declaration empowered directed action through its recognition of the central role of health in the preservation of human capital, which was in turn critical to the continued economic growth of the Region. A

Task Force on Health and Development was subsequently formed which became the Caribbean Commission on Health and Development, which reviewed the health concerns of the region and enunciated clear directions and strategies. (22)

More recently, the late Prime Minister of Barbados, the Honourable David Thompson declared that "If left to chance, all the gains achieved in the Caribbean during the march from poverty to relative affluence since Independence can be wiped out by CNCDs." (personal communication: 2008)

The Economic Costs of NCDs

The direct and indirect costs of NCDs are significant. Estimates are that the cost of NCDs to low- and middle-income countries will reach nearly US$ 500 billion per year, equivalent to 4% of their current gross domestic product (GDP) if no action is taken. (6) In Latin America and the Caribbean, diabetes alone is estimated to cost US$65 billion per year. (23) There are limited data of the costs associated with the NCDs in the region. Current estimates are that two NCD conditions alone account for between 1.5% and 8.0% of GDP in 4 Caribbean countries, namely the Bahamas, Barbados, Jamaica and Trinidad and Tobago, (Figure 3). (24). It is important to note that these estimates did not include hospital-related costs, and as such the true costs are likely to be significantly higher. There are also social costs to this epidemic, in that many affected individuals (particularly the relatively young), do not have the opportunity to achieve their potential and contribute to society.

Table 3. Estimated economic burden of hypertension and diabetes in 4 Caribbean countries (US $million, 2001)

Condition	Bahamas	Barbados	Jamaica	Trinidad & Tobago
Diabetes	27	38	221	467
Hypertension	46	73	266	250
Total	73	111	487	717
% GDP	1.4	5.3	5.8	8.0

Abdulkadri et al. (2009)

A subsequent report based on data from Jamaica highlights the implications of both the direct and indirect costs of NCDs in 2002. While costs related to care accounted for 90% and 85% of diabetes and hypertension-related costs, respectively, the costs attributable to losses in productivity exceeded US $7 million. This is likely an underestimate as the authors defined productivity loss as 'time off for doctors' visits and hospitalisation. A more accurate figure would be expected to include estimates of impact on the work force, absenteeism, absence from education as well as costs related to caretaker and family-related contributions.

Table 4. Direct and indirect costs of Diabetes and Hypertension care in Jamaica.

Cost	Diabetes	Hypertension
Direct Costs ($ Ja)		
Hospitalizations	135,464,269 (8%)	84,753,708 (7%)
Clinic/Doctors' visits	332,500,000 (21%)	415,652,000 (33%)
Drugs	113,800,284 (7%)	203,519,628 (16%)
Laboratory/Diagnostic tests	873,487,154 (54%)	357,874,984 (29%)
Indirect Costs		
Productivity loss	156,291,639 (10%)	186,339,706 (15%)
Total economic burden	1,611,543,337	1,248,140,027
Value in US $	33,070,867	25,613,380

Caribbean Commission on Health and Development (2006)

NCDs adversely affect individuals and societies by causing disease, disability and death as well as loss of productivity. These outcomes ultimately impose costs on healthcare systems, affect the workforce and ultimately impact development. As such, NCDs have an impact on all sectors of a national development.

The Caribbean response to the NCD Epidemic: The Declaration of Port of Spain

Aware of the potential impact of the growing disease burden in the region, and cognisant of the implications of health to regional development, Caribbean Heads of Government met in 2007, for an unprecedented summit on NCDs. This group comprised the leaders of the 15 CARICOM member states (Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago) and the 5 associate states (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, and the Turks and Caicos Islands). The meeting was the first such activity to take place anywhere in the world, engaging heads of government in Port of Spain, Trinidad. The resulting Declaration which is the definitive framework for tackling NCDs in the Caribbean region is presented in Figure 3.

Figure 3. DECLARATION OF PORT-OF -SPAIN: UNITING TO STOP THE EPIDEMIC OF CHRONIC NCDs

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

Declare -

• 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 Organisation/World Health Organisation (PAHO/WHO) and other relevant partners;

• 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;

• 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;

• 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;

• 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;

• 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;

• 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;

• 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;

• 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;

• 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;

• 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;

• 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 Organisation (CAREC/PAHO);

• 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.

We hereby declare the second Saturday in September "Caribbean Wellness Day," in commemoration of this landmark Summit.

The Caribbean community continued the task of putting NCDs on the global agenda, and as a result of these efforts, the General Assembly in its resolution A/RES/65/238 decided that a high-level meeting of the General Assembly on the prevention and control of non-communicable diseases would be held on 19 and 20 September 2011 in New York. This meeting addressed the prevention and control of non-communicable diseases worldwide, with a particular focus on developmental and other challenges and social and economic impacts, particularly as regards developing countries.

As discussed by Bonita et al. (25), the political declaration crafted at the UN High Level meeting, 'committed member states to a comprehensive set of actions to prevent and treat NCDs, with a specific goal to strengthen national multisectoral plans by the end of 2013'. The need for a 'whole-of-government policy response' was recognized by the writers, as well as the imperative for national governments to collaborate with other sectors in society, to achieve the stated target of a 25% reduction in premature mortality by 2025.

Controlling NCDs: what works?

Community-based programmes aimed at preventing and controlling cardiovascular diseases started in the USA and Europe in the early 1970s. Puska led the very successful North Karelia project in Finland, conducted to in response to inordinately high cardiovascular diseases (CVD) mortality. (26) The programme was deemed successful with demonstrable mortality reduction which was also observed at the national level, providing justification for extension to other NCDs which also have common risk factors. Major reductions have occurred in NCD mortality in several high-income countries as a result of successful prevention and treatment programmes. (27, 28) There continues to be evidence of the importance of CVD interventions. Bandosz et al. (28) estimated that mortality from CVD in Poland was halved during the period 1991 to 2005, with this decrease partly due to appropriate treatments (37%: 13 – 77), and changes in population risk factors (54%; 41 – 65). Stallings-Smith et al. (27) demonstrated reductions in cardiovascular, cerebrovascular and respiratory mortality in response to a national workplace smoking ban in Ireland. Changes have also been demonstrated in the developing world. An ecological study conducted in Cuba documented associations between a mean population-wide weight loss related to an economic crisis in the mid-1990s and declines in diabetes and heart disease. (29) A subsequent rebound in mean population weight associated with high prevalence in overweight and obesity was associated with an immediate 116% increase in diabetes prevalence (and 140% increase in incidence) followed by increased diabetes-related mortality within a 6-year period, as well as increased CVD mortality (29). In sum, specifically targeted interventions have often been shown to be beneficial in select studies or developed setting communities.

Why multisectoral approaches?

It is being increasingly recognised that the NCD epidemic is not solely characterised by increased prevalence and incidence of disease, but also by increasing rates of risk factors and disability. Approaches cannot therefore be constrained to the usual modes of prevention, control and treatment, but must utilise multisectoral strategies at both local and global levels. An example of how multisectoral approaches may be used to reduce NCD risk factors has been presented by the World Bank Health Organisation (2011).

Table 5.Sectors in which actions may be taken to reduce NCD risk factors

Sector	Tobacco	Poor diet and nutrition	Physical inactivity	Alcohol	Unhealthy environment	Pathogens	Injuries and violence
Health	X	X	X	X		X	
Education	X	X	X	X		X	X
Finance	X	X		X	X		
Urban Planning			X	X	X		X
Agriculture	X	X			X		
Industry	X	X		X	X		
Transport			X		X		
					X		X

Meiro-Lorenzo et al. (2011)

This table highlights the need for multisectoral approaches and intersectoral collaboration to tackle NCD risk factors. As an example, national efforts to reduce cigarette smoking in a population will require leadership by the Health sector which will have knowledge and insight about the ramifications of smoking for the population. The role of the Ministry of Health will include central coordination of health promotion and education (with input from the Education sector), advocacy, development of anti-smoking legislation, taxation (with involvement of the Finance sector), activities to counter local tobacco production (input from the Agricultural sector) and activities to counter production and marketing of tobacco products (Industry sector). This paradigm can be extended to approaches to tackling the other key risk factors.

As noted in Figure 1, the determinants on NCDs are far greater than can be addressed by local or even simple national efforts. The need for multilevel engagement to tackle the NCD epidemic has now been firmly enshrined in the official jargon of the field. Alleyne and Nishtar (31) note that the political declaration from the United Nations High Level Meeting of September 2011 on the Prevention and Control of non-communicable diseases mentions the term "multisectoral" 15 times.

Under the heading of "Responding to the challenge: a whole-of-government and a whole-of-society approach" establishes the framework for a multisectoral approach (Paragraph 33), the Declaration states:

> *"Recognize that the rising prevalence, morbidity and mortality of non-communicable disease worldwide, can be largely prevented and controlled through collective and multisectoral action by all Member States and other relevant stakeholders at local, national, regional and global levels, and by raising the priority accorded to noncommunicable disease in development cooperation by enhancing such cooperation in this regard".*

Paragraph 36 of the Political Document outlines the need for whole-of-government approaches and names the relevant sectors;

> *"health, education, energy, agriculture, sports, transport, communication, urban planning, environment, labour, employment, industry and trade, finance and social and economic development".*

Paragraph 37, outlines the contribution and important role played by all relevant stakeholders,

> *"including individuals, families, and communities, intergovernmental organizations and religious institutions, civil society, academia, media, voluntary associations, and, where and as appropriate, the private sector and industry"*

Paragraph 39 outlines the perspective that:

the incidence and impacts of non-communicable diseases can be largely prevented or reduced with an approach that incorporates evidence-based, affordable, cost-effective, population-wide and multisectoral interventions;

Several position statements in the Caribbean region and beyond, implicitly or explicitly also emphasise the importance of multisectoral approaches to tackling the global NCD crisis. The Port of Spain Declaration which historically was the first position statement developed by heads of government highlighted the underpinning multisectoral principles:

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.

The Port of Spain Declaration: An evaluation

A pragmatic question for the region is, how well have we done since Port of Spain? This cuts to the chase of how well do our pithy declarations translate into action. Kirton et al. (32) used various metrics to evaluate the follow up actions of countries which participated in framing the Declaration, and these included 'a country's relative vulnerability to NCDs, its capability to cope with them, leaders' association with the centrally involved University of the West Indies (UWI), the country's level of international institutional inclusion and engagement, its participation in the accountability architecture that monitors implementation and the support from subsequent summits for controlling NCDs'. Professor Trevor Hassell, chair of the Healthy Caribbean Coalition (HCC), the regional NGO which provides support and coordination to the civil society response to the NCD epidemic, assessed the status of country specific implementation of their NCD summit commitments, based on data compiled by UWI. Hassell applied 21 indices to the "15 actionable recommendations" of the declaration and noted that approaching 3 years after the summit, implementation was not only modest but quite mixed, with Jamaica, Trinidad and

Tobago, Guyana and Barbados demonstrating the highest levels of compliance, while Haiti, Turks and Caicos and Montserrat were the least successful at implementation. (Figure A; column 1) Kirton et al. converted the data prepared by Hassell (Healthy Caribbean Coalition Compliance Scores) using summit methodology developed by the G8 Research Group, which demonstrated similar findings as expected. Data are also presented from a University of the West Indies group which worked on an ongoing basis with government officials, reporting on country progress on a 6-monthly basis based on 26 indicators applied to the POS Declaration (Figure A; column 3). Column 4 describes the date of a given country's sign off and ratification of the Framework Convention on Tobacco Control (FCTC). The fourth column titled 'Caribbean Wellness Day' describes the frequency of the event being held in response to the declaration that there should be a national wellness day on the second Saturday in September annually.

Table 6. An evaluation of outputs of the Port of Spain Declaration

Country	Healthy Caribbean Coalition Compliance Scores	Global Health Diplomacy Program Conversion of HCC Compliance	University of the West Indies with conversion	Framework Convention on Tobacco Control	Caribbean Wellness Day
Members				Year of ratification	Frequency of event
1. Jamaica	18	+.86	+.32	2005	3
2. Trinidad and Tobago	15	+.82	+.44	2004	3
3. Guyana	15	+.65	+.36	2005	3
4. Barbados	12	+.61	+.64	2005	3
5. Antigua	05	+.43	-.18	2006	2
6. Suriname	05	+.43	-.17	2008	3
7. Grenada	11	+.40	+.28	2007	2
8. St. Lucia	10	+.26	+.24	2005	3
9. Bahamas	12	+.24	+.11	2009	2
10. Montserrat	03	+.20	+.33	-----	3
11. Belize	08	+.19	-.03	2005	3
12. Dominica	07	+.12	+.38	2006	3
13. St. Vincent and the Grenadines	06	.00	_.45	2010	3
14. St. Kitts and Nevis	06	-.21	-.10	-----	3
15. Haiti	01	-.80	-.83	-----	0
Associate members					
1. British Virgin Islands	09	+.54	+.15		3
2. Bermuda	12	+.53	+.43		3
3. Turks and Caicos	03	+.07	+.33		2
4. Cayman Islands	08	+.05	-.10		3
5. Anguilla	04	-.57	-.61		3

Kirton et al., 2011

The authors suggested a number of factors that affected implementation of the agreements. They cited vulnerability, used to mean a greater burden of NCD related illness as a positive driver for implementation, while vulnerability to disaster (eg Haiti) was a limitation. Higher levels of resources within a country (eg governmental and societal), facilitated implementation of the agreements. Higher national income were positively associated with likelihood of taking action on the agreements of the declaration. The authors also suggested that linkages with the regional University of the West Indies were important, and concluded that where leaders had attended the institution or were still actively engaged with the university, this promoted positive action. They also suggested that another factor was associated with positive action was 'strong linkages with CARICOM'. While it may be difficult to argue that these views are anything other than speculative, they do provide food for thought.

Preliminary efforts have also been made to evaluate outputs related to the POS Declaration as illustrated in Table 7 by the Pan American Health Organization/World Health Organization/Caribbean Community Secretariat. (33) This grid attempts to evaluate progress across the region in different sectors defined as commitment (to the POS Declaration), strategies to tackle risk factors such as tobacco, nutrition and physical activity, as well as education/health promotion, surveillance and treatment. Efforts to advance the outputs agreed in the Declaration, which serve as models for multisectoral collaboration appear to be inconsistent across the Caribbean. Although the evaluation of outputs appears to be largely subjective, Barbados appears to lead the league tables. Many countries appear to have difficulties fulfilling the mandates outlined for nutrition, while there is wide variation in achieving tobacco control outputs.

Table 7.NCD Progress Indicator Status / Capacity by Country in Implementing NCD summit Declaration: Yellow indicated September 2010 update (PAHO/WHO/CARICOM 2011)

POS NCD #	NCD Progress Indicator	ANG	ANT	BAH	BAR	BEL	BER	BVI	CAY	DOM	GRE	GUY	HAI	JAM	MON	SKN	STL	SVG	SUR	TRT	TCI
	COMMITMENT																				
1,14	NCD Plan	X	X	±	√	±	√	±	X	√	√	√	x	√		√	√	±	±	√	
4	NCD budget	X	X	X	√	±	X	X	X	±	X	±	x	X		X	√	X	X	√	
2	NCD Summit convened	X	X	X	√	X	√	√	X	√	±	√	x	√		X	√	X		√	
2	Multi-sectoral NCD Commission appointed and functional	X	X	X	√	±	√	√	X	x	√	√	x	±		X	√	X	±	√	
12	NCD Communications plan	X	X	±	±	X	√	X	X	±	±	√	x	±		X	±	X	X	√	
	TOBACCO																				
3	FCTC ratified	*	√	√	√	√	*	*	√	√	√	√	x	√	*	±	√	√	√	√	*
3	Tobacco taxes >50% sale price	X	X	X	√	X			±	X		√	x	√		±	X	X	√	X	
3	Smoke Free indoor public places	X	√	X	√	±	√	√	√		√	√	x	±		X	√	X	±	√	
3	Advertising, promotion & sponsorship bans	X	X	X	±	X	√	√	√		X	±	x	√		X	X	X	±	√	
	NUTRITION																				
7	Multi-sector Food & Nutrition plan implemented	√	√	√	±	±	X	√	X	√	√	√	x	√	√	±	X	√	X	±	√
7	Trans fat free food supply					X			X					±				X	X	X	
7	Policy & standards promoting healthy eating in schools implemented		√		√	±	√	X	±			±		√		±		X	X	±	
8	Trade agreements utilized to meet national food security & health goals					±			X			±		X				X	X	√	
9	Mandatory labeling of packaged foods for nutrition content		X			X	±		±			±		X				X	±	X	
	PHYSICAL ACTIVITY																				
6	Mandatory PA in all grades in schools				√	√	±		√			±		x				X	X	√	
10	Mandatory provision for PA in new housing developments				√	√			X			X		x				X	X		
10	Ongoing, mass Physical Activity or New public PA spaces	X	X	√	√	√	√	X	±		√	√		√		√	√	√	√	√	
	EDUCATION / PROMOTION																				
15	CWD multi-sectoral, multi-focal celebrations	√	√	√	√	√	√	√	√	√	√	√	x	√	√	√	√	√	√	√	√
10	≥50% of public and private institutions with physical activity and healthy eating programmes		X			X		X	X			±					±	X	X	X	
12	≥30 days media broadcasts on NCD control/yr (risk factors and treatment)		√		√	X	√	X	±			√		√		√	±	X	X	X	
	SURVEILLANCE																				
11, 13, 14	Surveillance: - STEPS or equivalent survey	X	X	√	√	√	±	√	X	√	±	±	x	√		√	±	X	±	±	
	- Minimum Data Set reporting	X	X	X	X	X	√	√	X	√	X	X	x	X	X	X	X	√	√	X	X
	- Global Youth Tobacco Survey	X	√	√	√	√	X	√	±	√	√	√	√	√		±	√	√	√	√	
	- Global School Health Survey	√	√	√	±	±		√	±		√	√	x	√		±	√	√	√	√	
	TREATMENT																				
5	Chronic Care Model / NCD treatment protocols in ≥ 50% PHC facilities	X	√	√	±	±	±	X	±	X	±	±	x	√		X	√	X	X	√	
5	QOC CVD or diabetes demonstration project	±		√	√	±	±	±	√	X	√	√	±	√		±	√	X	√	√	

√ In place ± In process/partially implemented X Not in place * Not applicable □ No information

Multisectoral models in the Caribbean: National Commissions for NCDs

One output of the Port of Spain Declaration was its second action point: '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'.

A case study of the Barbados National CNCD Commission

We present case studies from the very limited data available to demonstrate multisectoral efforts in the Caribbean. Barbados serves as an exemplar of a state that has made progress in enacting the outputs. Perhaps this is not surprising as this country was ahead of the proverbial curve in developing strategies to tackle the NCD epidemic at a national level and had established its national NCD Commission in January 2007, even before the Caribbean summit. It therefore might be said to have anticipated the Declaration, and also led the global response with the establishment of its national commission with oversight for approaches to management of NCDs. The terms of reference for the Barbados National Chronic Non-Communicable Disease Commission are listed as follows:

In sum, these terms outline the basis for a national multisectoral response to the NCD epidemic nationally in Barbados. There is recognition of the role of the underlying risk factors of diet, environment, physical activity, tobacco use and other factors relevant to promotion of healthy lifestyles. Food access and quality is particularly important in the small island nation states of the Caribbean, particularly Barbados, where most of the food consumed is imported. The Commission has been empowered to broker involvement of the relevant sectors, mobilize resources for its programme of work, develop ongoing monitoring and evaluation of its work programmes, guide research, establish networks, and lead strategic planning. It is noteworthy that many of these constructs have been mirrored in the political declaration of the UN HLM.

Figure 5. Terms of reference for the Barbados National Commission for CNCDs

1. To advise the Minister of Health on Chronic Non-Communicable Disease (CNCDs) policies and legislation e.g. in relation to food availability, affordability and importation, environmental and work place issues, measures to increase participation in physical activity, tobacco control and other strategies to promote healthy life styles.

2. To broker effective involvement of all relevant sectors in programme implementation including the private sector, public sector, non-governmental organizations and civil society, including faith-based organizations.

3. To assist in the mobilization of resources to facilitate implementation of prevention and control programmes.

4. To recommend relevant research especially in relation to behaviour change and the prevention and management of CNCDs, and including monitoring and evaluation of CNCD programmes, using for example, information generated from the records departments of the polyclinics and the Queen Elizabeth Hospital [*the sole national tertiary care health facility*].

5. To promote the establishment of collaborations and partnerships with the UWI, CAREC, CARICOM, PAHO / WHO, CFNI and other international institutions and organizations, as appropriate for the pursuit of these goals.

6. To review the regional strategic plan and determine the applicability of priorities, expected results and activities to Barbados relative to the CNCDs.

7. To monitor regional and international trends and provide direction for national responses.

There have been many outputs from the Barbados Commission as outlined in a review of its first 3 years (January 2007 – May 2010):

No smoking initiatives

- Increase taxation of tobacco products
- Ban on importation of duty free cigarettes
- Ban on sale of cigarettes to minors
- Support for placement of large rotating graphic pictorial warning labels on cigarette packages – Caribbean Tobacco Control Project
- Legislation to ban smoking in public places

These outputs are in line with the third Declaration of Port of Spain, and have been led by the Ministry of Health, Barbados, with collaboration by civil society and other government departments to achieve the outputs accomplished.

National Strategic Plan, 2009-2012 for combating chronic diseases

- Improved organization and managerial structure of the Commission
- Improved epidemiological data collection
- Health information systems and research
- Risk factor reduction
- Health promotion
- Enhanced quality of treatment and care of chronic diseases

Co-sponsorship of Healthy Caribbean 2008; civil society chronic disease conference

- Held October 2008
- Sponsored , supported and funded by CDB, PAHO, NCCNDs/MOH, IAHF, HSFB
- 120 participants, 19 disciplines and 16 Caribbean countries represented
  Healthy Caribbean coalition: a civil society network to combat chronic diseases formed, and Declaration and Action Plan produced

The creation of the Healthy Caribbean Coalition arose out this meeting which involved regional stakeholders and received input and funding from several local, regional and international agencies.

National Nutrition Improvement and Population Salt Reduction Programme

- Population salt intake assessed together with sources of salt intake in the Barbadian diet
- National education programme
- Re-formulation of food and drink products
- Specific policies and initiatives to make “salt intake the undesired and hard choice”
- Reduction of portion sizes, and the eating of more fruit and vegetables with an avoidance of saturated fats and trans fats

This effort has involved academia, the media, the Government Information Service, the National Nutrition Centre, healthcare providers, food manufacturers (who have actually reformulated select products) and food distributors.

Caribbean Wellness Day

- Played a lead role in planning and organising CWD at the local level
- Physical Activity Task Force launched CWD 2009

Contract oversight and the Barbados National Registry

- The Commission has provided oversight for implementation and execution of the Barbados National Registry – a chronic disease registry
- Components: stroke, heart and cancer
- Chair of Commission is Chair of the Professional Advisory committee of the BNR
- BNR satisfies items 4,5, and 8 of TOR of the Commission and is the single most important development in establishing a truly effective national CNCD programme

This effort represents a unique link between academia and government, where the University leads and executes a national surveillance programme on behalf of the Government.

Workshops and educational programmes

- workshop for faith-based organizations
- Workshop on trans fats

Supported CNCD educational programmes of the Barbados Workers' Union

Publications

- National Strategic Plan, 2009-2012
- "Battling the hidden enemy" – a salt reduction scene setting brochure for opinion leaders
- Nutrition Guide for School Children

The National CNCD Commission of Barbados has therefore established a programme of work aimed at tackling the NCDs locally through coordination of a national response, and serves as a model for the region. The work outputs include advocacy against cigarette smoking which was associated with legislation to ban smoking in public places which has been enacted locally. The development of a national NCD strategic plan is in process, while the oversight of the national surveillance system for heart attack, stroke and cancer is in line with the recommendations of the POS Declaration.

Sickle cell disease in Jamaica: a multisectoral case study

A model for the care of persons with sickle cell disease has evolved in Jamaica which comprises several elements leading to a successful multisectoral collaboration. The informal structure of the programme is outlined in Figure 6.

Figure 6. Multisector collaboration in Sickle Cell Disease management in Jamaica.

Academia: the Sickle Cell Unit located at the Tropical Medicine Research Institute of the University of the West Indies provides outpatient care while simultaneously conducting medical research.

Government: the network of Ministry of Health hospitals provide the majority of inpatient care nationally.

NGOs: The National Health Fund has designated sickle cell disease for coverage which will ensure that patients will benefit from access to medications at reduced or no cost. The CHASE (Culture, Health, Arts, Sports and Education) Fund also supports research into SCD. This charity uses 20% of funds raised to support health-related causes.

Private sector: Specific pharmacies have partnered with care providers (eg the Sickle Cell Unit) to ensure the availability of specific drugs such as Hydroxyurea.

Community: There is an advocacy and patient support group, the Sickle Cell Support Club which articulates matters and provides services relevant to persons with SCD.

Another example of a key player in regional multisectoral collaboration in the Caribbean may be found in the Healthy Caribbean Coalition (HCC). This non-governmental organisation is a civil society alliance for combatting chronic disease. The alliance was established following a Caribbean civil society conference on chronic diseases, Healthy Caribbean 2008 – a wellness revolution conference.

Structure:

1. Secretariat (Sagicor funded - Barbados) – overseen by a full-time manager
2. President
3. Volunteer Coordinators according to key strategic areas based in Barbados and other Caribbean Countries
4. Board of Directors - representation from across the Caribbean (meets monthly)

Key Partners include:

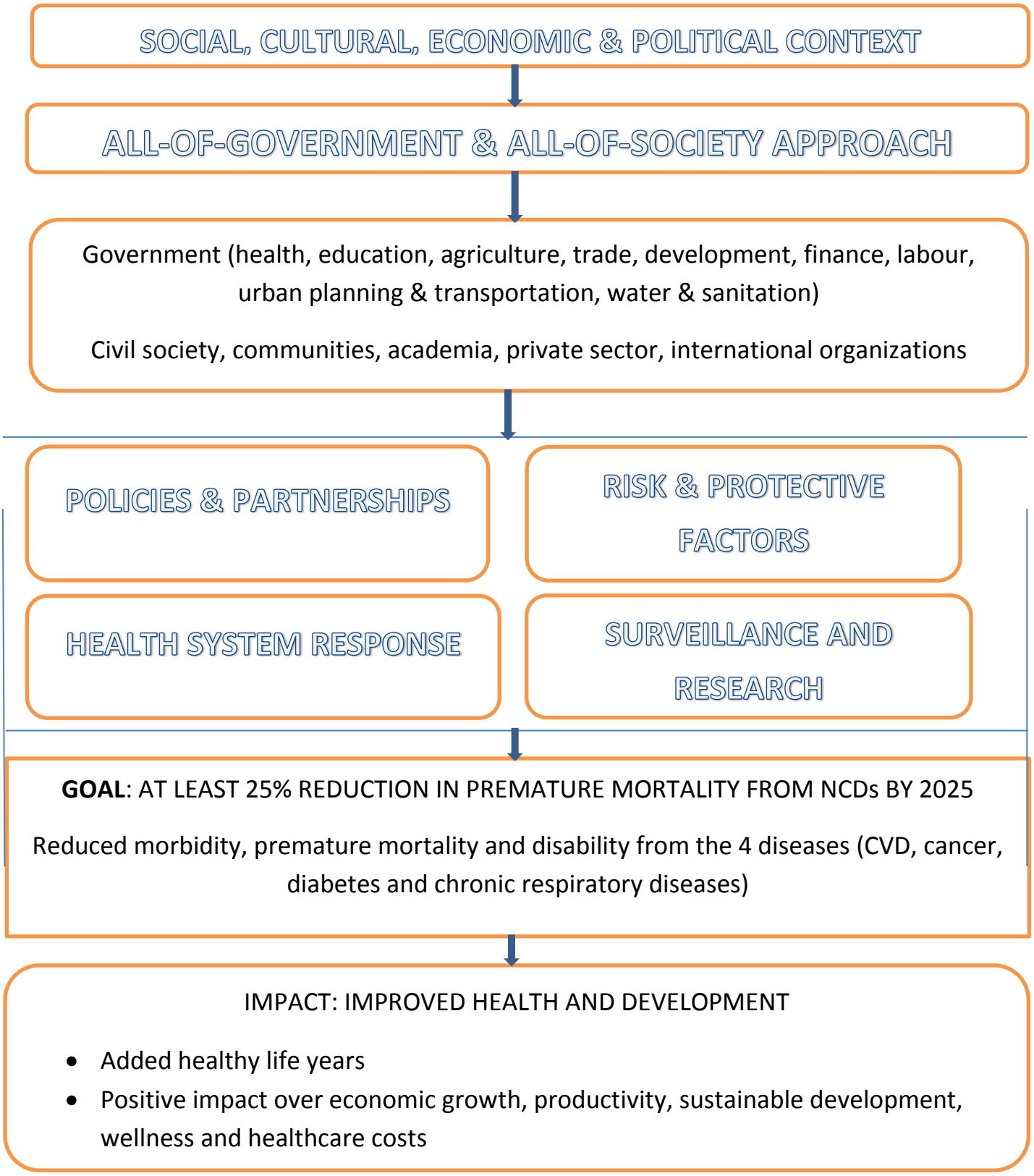
1. Health NGOs across Caribbean
2. Not for Profits across the Caribbean
3. Private Sector across the Caribbean
4. Other civil society actors
5. Regional collaborating agencies
    1. CARPHA
    2. PAHO
    3. CARICOM
6. International collaborating agencies include
    1. NCD Alliance
    2. Health Action Partnership International
    3. American Cancer Society

It must be specifically noted that the PAHO/WHO used the HCC as a model for the establishment of the Healthy Latin American Coalition.

The HCC is therefore a successful model of civil society engagement throughout the Caribbean region with the objective of tackling the NCD epidemic through public engagement, education, health promotion and advocacy.

In sum, there are working models of multisectoral engagement in the Caribbean region. To address the NCD epidemic, it will be critical that there is robust national government involvement (including Ministries of Health, Education, Energy, Agriculture, Sports, Transportation, Communication and Works, Environment, Urban and Rural Planning, Environment, Industry, Trade and Commerce, labour and Employment, Finance, Social and Economic Development). There also needs to be regional buy-in at the highest levels of governance through CARICOM and its agencies. These should include (and not be limited to COHSOD, COTED and CARPHA). The involvement of external agencies in health (PAHO/WHO), education - UNESCO, agriculture - IICA, food and nutrition – FAO, would be beneficial. Civil society's involvement would be a cornerstone of any successful enterprise through local organisations, and agencies which have influence throughout the region such as the Healthy Caribbean Coalition. Other elements of civil society that must be engaged include the church, and education groups/agencies. Academia is a also major player that must be engaged as pointed out by Kirton et al. (32) in their review of factors influencing the uptake of objectives of the Port of Spain Declaration. PAHO/WHO present a model which provides an overview of this strategy (Figure 7).

Figure 7.Regional Framework for NCD Prevention and Control (PAHO/WHO, 2012)



Challenges for the Region:

In 2012, the World Health Assembly endorsed the health goal of reducing preventable mortality from NCDs by 25% by 2025 (the 25 by 25 goal) his target follows sequentially on from the political declaration at the UNHLM in 2011 to prevent and tackle NCDs, a major task without clear strategies, funding support and operational leadership.

In response to the political declaration of the UN High Level Meeting, PAHO/WHO has developed a regional NCD strategy (2012 -2025) to 'reduce avoidable mortality, morbidity, risk factors, and costs associated with NCDs—thus promoting well-being and improving productivity and development prospects in the Region'. [Refer 29] The core elements of this strategy are presented in Figure 7.

Figure 7. Core elements of the regional PAHO/WHO strategy for NCDs (2012)

(a) Integration of NCDs and risk factors into national and regional development and economic agendas.

(b) An all-of-society approach for NCDs that promotes strategic alliances both within the health sector and with sectors outside of health, involving governments, civil society, academia, the private sector, and international organizations.

(c) Emphasis on health promotion, education, and prevention—as well as early detection, timely treatment, and quality of care for persons who already have NCDs or who display warning signs in terms of the presence of risk factors.

(d) Recognition of the social determinants of health, including equity, education, gender, ethnicity (particularly regarding indigenous populations), migrant status—as well as economic, cultural, and environmental factors—all of which contribute significantly to the presence of NCDs.

(e) Consideration of a lifecourse approach in NCD policies and programs.

(f) Reorientation of health systems based on chronic care, including providing training and capacity-building and paying special attention to integrating NCD prevention and control into primary health care.

(g) Application of the best available evidence, based on public health relevance and impact, using data from surveillance and research, in developing and formulating programs and policies and in defining further research.

It has also been recognised that a number of strategies create clear benefit, and these have been presented in the strategic plan as Best Buys.

Best Buys include:
• Protecting people from tobacco smoke and banning smoking in public places;
• Warning about the dangers of tobacco use;
• Enforcing bans on tobacco advertising, promotion and sponsorship;
• Raising taxes on tobacco;
• Restricting access to retailed alcohol;
• Enforcing bans on alcohol advertising;
• Raising taxes on alcohol;
• Reduce salt intake and salt content of food;
• Replacing trans-fat in food with polyunsaturated fat;
• Promoting public awareness about diet and physical activity, including through mass media.

In addition to **Best Buys**, there are many other cost-effective and low-cost population-wide interventions that can reduce risk factors for NCDs. These include:

• Nicotine dependence treatment;
• Promoting adequate breastfeeding and complementary feeding;
• Enforcing drink-driving laws;
• Restrictions on marketing of foods and beverages high in salt, fats and sugar, especially to children;
• Food taxes and subsidies to promote healthy diets.

Should these outcomes be achieved as a result of multisectoral interventions, it would redound to the benefit of the region.
The Commonwealth Secretariat: Establishing multisectoral approaches to NCDs in the Caribbean.

The Commonwealth Secretariat's mission is to work as a trusted partner for all Commonwealth people as:

a force for peace, democracy, equality and good governance

a catalyst for global consensus-building

a source of assistance for sustainable development and poverty eradication

This third objective underpins this institution's remit to tackle NCDs, a mission that it is presently operationalizing. (33) The Commonwealth Secretariat serves over 50 countries with a population of nearly 2 billion, and is therefore uniquely placed to harness global resources to tackle the challenge of the NCD epidemic. It must be noted that PAHO/WHO strategy (2012) may be used to action the outputs of the Port of Spain Declaration among other deliverables. The PAHO/WHO strategic plan may also serve as a model for the work of the Commonwealth Secretariat in the region.

Recommendations:

The Commonwealth Secretariat should advance its work in the Caribbean to promote multisectoral engagement by hosting a regional meeting with government representatives, civil society and regional institutions.

The Commonwealth Secretariat should support the regional efforts of CARICOM and PAHO/WHO as well as civil society (represented by agencies such as the Healthy Caribbean Coalition), and academia (represented by the University of the West) through engagement with these agencies.

The Commonwealth Secretariat should align its regional agenda for NCDs with the ongoing efforts of PAHO/WHO and CARICOM.

The Commonwealth Secretariat is uniquely placed to advance the fight against NCDs in the Caribbean by mobilizing international technical assistance and resources through its good offices, in support of the declarations of the United Nation's High Level Meeting.

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