

# Working Document for Summit of CARICOM Heads of Government on Chronic Non-Communicable Diseases

## Stemming the tide of Non-communicable diseases in the Caribbean

### Executive Summary

This Working Document for the Summit of CARICOM Heads of Government on the Chronic Non-communicable Diseases begins by outlining the objectives and purpose as articulated by Prime Minister Douglas to the 18<sup>th</sup> Intersessional Meeting of the Conference of Heads of Government in February, 2007.

#### 1. Purpose:

- 1.1 Establish and agree on a regional approach to the prevention and control of noncommunicable diseases and, in this regard, evaluate the Caribbean situation within the global context;
- 1.2 Examine the burden of the main diseases - heart disease, stroke, cancer, diabetes and hypertension; their risk factors - smoking, unhealthy diet, physical inactivity and alcohol abuse and the evidence for the application of interventions; and
- 1.3 Propose solutions that can be taken at the level of the health sector and those With major policy implications that fall within the purview of Heads of Government.

#### 2. Expected Outcomes:

- 2.1. Clear appreciation of the real and present problem posed by the non-communicable diseases in the Caribbean in terms of health and development;
- 2.2 Clear understanding of the modifiable risk factors for the non-communicable diseases that can be addressed in the current environment;
- 2.3 Information on the interventions that can be taken to modify those risk factors;
- 2.4 Understanding of the insufficiency of the measures usually taken to modify individual behaviour and a real appreciation of the ***policy decisions that lie uniquely at the level of Heads of Government*** that need to be taken to address the problem through application of those interventions and change of the enabling environment; and
- 2.5 Collective decisions on steps to be taken and the monitoring mechanisms necessary for follow up.

The Working Document describes the history of cooperation in health in the Caribbean which has found expression in many initiatives such as the Caribbean Cooperation in health (CCH) which has as two of its priority areas, the non-communicable diseases and HIV/AIDS. Cooperation in this latter has led to the formation of the Pan Caribbean Partnership against HIV/AIDS (PANCAP) It was the 2001 Nassau Declaration of the Heads of Government ‘The Health of the Region is the Wealth of the Region’ that gave rise to the Caribbean Commission on Health and Development which showed that the major health problems of the Region were NCDs, HIV/AIDS and the health sequelae of injuries and violence.

The Working Document outlines the magnitude of the problem on NCDs globally, in the Americas and in the Caribbean. In 2005, some 35 million people died from NCDs in the world, they account for over 50 percent of all deaths in the low and middle income countries and 80% of all the NCD deaths occur in these countries. In Latin America and the Caribbean, two of every three deaths are attributable to the NCDs. In the Americas, the Caribbean is the Region that has the worst mortality and morbidity profile for NCDs, they represent the most important cause of morbidity and are the most common causes of death.

**At least 25% of Caribbean adults are obese, some 25 % are hypertensive, prevalence of diabetes is over 10% in at least four countries, and there is evidence that the situation is worsening.**

**The modifiable behavioral risk factors that cause NCDs in the Caribbean are the same as those seen elsewhere - tobacco use, abuse of alcohol, lack of physical activity and inappropriate diet. The later two are evident in the prevalence of obesity which has reached epidemic levels.**

Re diet, Caribbean populations have more calories available per capita than needed, are way over-target for per capita consumption of fats, oils and sugars, and under target for consumption of fruits and vegetables. The reversal of this requires trade, agriculture and education policies, among others, to be changed to take promotion of health more into account. A major conclusion is that action on the common behavioural risks that cut across specific diseases is critical to improving health and preventing chronic NCDs.

There are considerable and increasing costs to the epidemic of NCDs. Data from the Bahamas, Barbados, Jamaica and Trinidad and Tobago show that the costs for diabetes range from 0.5 to 5.2% of GDP and for hypertension from 0.9 to 3.5%. This does not include the tremendous other social costs that result from such insults as the amputations that are done for the complications of diabetes.

Unfortunately, the countries examined do not have in place the policies, budget or services needed to address the problem of NCDs. The Caribbean has a wealth of local organizations that deal with NCDs and these represent a powerful force for accelerating a region wide response to the epidemic.

**The Caribbean response must be a comprehensive, integrated set of actions which address the primary prevention by impacting on the modifiable risk factors and instituting**

**or strengthening the services needed for the diagnosis and treatment of the NCDs and their complications.**

Thus, recommendations are made for the policy initiatives-legislation, regulation and taxation to address smoking and alcohol abuse, physical inactivity and inappropriate diets as well as instituting the proven cost-effective measures for secondary prevention and treatment of these diseases and their complications. Among the general measures recommended are the naming of a “Caribbean Wellness Day”, the formation of national NCD Commissions and strengthening the relationships with the social partners locally and regionally.

The monitoring and follow up of the recommendations should be done by CARICOM and its partners such as PAHO, perhaps via the joint CARICOM/PAHO CCH secretariat.

## **Background**

### Introduction.

This Special Conference of Heads of Government represents a culmination of multiple efforts to engage Caribbean leaders in a concerted effort to stem the epidemic of non-communicable diseases, the worst in the Americas. Concerted action can now arrest the grave economic and social consequences of this epidemic which is as grave as or graver than any of the epidemics of communicable diseases that have shaped history. It is possible to stop it. Other countries have done so by implementing comprehensive and integrated programs for prevention and control. The Caribbean can and must do as well or better.

### **Objectives and expected outcomes**

These were spelled out by Prime Minister the Hon Dr.Denzil Douglas at the 18<sup>th</sup> inter-Sessional meeting of the Conference of Heads of Government in February 2007.

#### **2. Purpose:**

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- 2.3 Propose solutions that can be taken at the level of the health sector and those With major policy implications that fall within the purview of Heads of Government.

#### **2. Expected Outcomes:**

- 2.1. Clear appreciation of the real and present problem posed by the non-communicable diseases in the Caribbean in terms of health and development;

- 2.6 Clear understanding of the modifiable risk factors for the non-communicable diseases that can be addressed in the current environment;
- 2.7 Information on the interventions that can be taken to modify those risk factors;
- 2.8 Understanding of the insufficiency of the measures usually taken to modify individual behaviour and a real appreciation of the ***policy decisions that lie uniquely at the level of Heads of Government*** that need to be taken to address the problem through application of those interventions and change of the enabling environment; and
- 2.9 Collective decisions on steps to be taken and the monitoring mechanisms necessary for follow up.

Many of these actions will be achieved optimally through cooperation among the Caribbean countries

### **Cooperation in Health in the Caribbean**

There is a long tradition of cooperation among Caribbean countries in addressing the health problems of the Region. One of the oldest conferences of ministers is that of the Ministers of Health which was institutionalized in 1969 under the aegis of CARIFTA. The ministers have continued to meet at least annually, now under the umbrella of COHSOD, to seek regional solutions and strengthen mutual cooperation.

Cooperative action in health in the Caribbean received a major fillip with the establishment of the Caribbean Cooperation in Health (CCH) which was launched by the Ministers of Health in 1986 and had as its major objectives:

- 1) Identifying priority health areas and using them as vehicles to optimize the use of resources and to foster technical cooperation among countries:
- 2) Developing projects in the priority areas as a way to solve critical health problems and as vehicles for improving the overall health delivery system
- 3) Mobilizing all national and external resources to address the most important health problems of the neediest groups
- 4) Encouraging cooperation among countries, agencies and institutions to improve technical cooperation in health.

The CCH has gone through various iterations and is now in its third phase, but the major thesis still remains that Caribbean health can be improved through actions taken universally and collectively. Currently, the priority areas for action under the CCH are the following: Chronic Diseases; Mental health; Strengthening health Systems; human Resource development; Family and Community Health Services; Food and Nutrition; Communicable Diseases (including HIV/AIDS) and Environmental Health. Of special note is that in relation to Chronic Diseases, the cited Goals are to reduce deaths from them by 2% per year OR to reduce the disability, morbidity and mortality due to priority chronic diseases. The major objective in this program area is to strengthen capacity at the country and regional level for the prevention and control of chronic diseases and their risk factors.

The possibility of success in the CCH rested on the twin strategies of aggressive promotion of the initiative regionally and internationally and the development of specific projects. It also built on the previous efforts of the Caribbean community to formulate regional plans and strategies, such as that on Maternal and Child health which was first introduced in 1975 and through emphasizing the risk approach, the careful selection of priorities, coordination of targeted activities and monitoring and evaluation of the health services delivery has played a significant role in the improvement of maternal and child health of which the Region can be justly proud. The successes of the Expanded Program on Immunization (EPI) in the elimination of indigenous poliomyelitis, measles and rubella in the Caribbean are perhaps the most notable achievements of CCH, in which the countries, CAREC, PAHO/WHO and partners all played key roles towards making the region the first in the world to eliminate measles, the benefits of which continue to accrue year after year. The Region now faces a larger and more complex challenge in the NCDs.

With the appearance of the epidemic of HIV/AIDS and the realization of its actual and potential impact on so many aspects of Caribbean health, the Region again went to a cooperative framework and created a Pan Caribbean partnership against HIV /AIDS (PANCAP), which has been designated a best practice in regional responses to the HIV/AIDS epidemic. This approach which has not inhibited individual action at the level of the countries has seen the strength of establishing a partnership through which there may be not only the sharing of expertise but a collective approach to mobilizing the many and multiple resources needed to address the epidemic. The profile and success of PANCAP has many lessons for action against major health problems in the Caribbean. It demonstrates the value of a solid technical approach based on health and economic data plus the mobilization of the political support at both the sectoral level and at the level of Heads of Government.

### **The Nassau Declaration**

But the most recent and perhaps most far-reaching manifestation of the determination of the Caribbean to focus on its health problems has been the Declaration of Nassau in 2001 which emanated from the Twenty-Second Conference of the CARICOM Heads of Government held in Nassau, Bahamas in 2001, which declared that “**The Health of the Region is the Wealth of the Region**”. This Declaration was important not only for the striking and positive nature of its title but also for the directions it gave for approaching the health problems of the region. It recognized that health, through its contribution to the formation of human capital was important for maintaining or spurring the economic growth of the Region. In addition it called for an orientation of the health services to address the most important health problems and to face the needs of the most vulnerable groups of our populations. It also emphasized the need to strengthen the regional institutions and recognized that many of the advances made to date were the result of cooperative action among institutions, countries and agencies in the Caribbean.

It also directed that a Task Force on Health and Development be formed, which subsequently became the Caribbean Commission on Health and Development. This Commission on the basis of a series of Working Papers and careful analysis of the Caribbean data produced its Report which was presented to the Heads of Government in 2005. It identified as the major health problems the chronic non-communicable diseases which were often co-morbidities of the

growing epidemic of obesity, HIV/AIDS and the health sequelae of injuries and violence. In addition it noted the need to strengthen the health systems as was noted in the Nassau Declaration and particularly the management of the services as well as highlighting the human resource issues, particularly public leadership and workforce capacity. A strong health system is needed whatever the problem to be faced.

The major conclusions of the Commission with respect to the chronic non-communicable diseases were summarized thus

- 1) Cardiovascular diseases are by far the leading cause of death in the Region with stroke, coronary heart disease and diabetes. Coronary heart disease has become a major problem in Barbados and Trinidad and Tobago
- 2) Although cancer comprises a small proportion of the mortality burden, the absolute burden is similar relative to industrialized countries and it should be noted that cancer is actually listed now as the third cause of death.
- 3) Formal cost of illness calculations that capture all major conditions cannot be performed at this time, but indicative exercises as in this report are feasible and demonstrate the potentially enormous costs of the NCDs
- 4) Effective medical therapy for CVD in the primary care setting is feasible and could substantially reduce the CVD burden in the near term. However, primary prevention through controlling the known risk factors such as (smoking) hypercholesterolemia and obesity with its co morbidities has to be the principal approach.

The recommendations followed fairly closely the conclusions and may be summarized thus?

- 1) Case management of the NCDs especially at the primary health care level must be improved.
- 2) Primary prevention must emphasize the development of policies that address reducing tobacco use, diet and exercise. All countries should ratify the Global Framework Convention on tobacco control.
- 3) The Caribbean must establish systems for the surveillance of the risk factors for NCDs
- 4) The programs for cancer prevention should focus on the preventable behavioral and environmental factors that account for the majority of the cancers of the lung, breast, cervix and colon.

However it is of particular relevance that the Nassau Conference instructed that a **Regional Strategic Plan for the Prevention and Control of the Chronic Non-communicable Diseases** be submitted for approval by March 2002. This plan was actually prepared and approved by the ministers of Health meeting in COHSOD. It was developed with wide participation and has already been adopted by the COHSOD and by the Heads of Government. It identified the following priority areas of focus:

- Quality of care
- Screening of groups at high risk
- Improved information systems
- Development of policies and comprehensive programs for NCD prevention and control
- Promotion of health life styles

The activities developed in these areas were elaborated within the following principal strategies:

- Forming NCD networks and stimulating research
- Creating reliable information systems to facilitate monitoring and evaluation
- Mobilizing resources for the area
- Marketing and communicating the importance of NCDs
- Fostering community participation, including strengthening of relevant NGOs

However, the Plan has not gained the traction that the seriousness of the problem warrants. This has been due in part to the unavailability of resources for its implementation, no clarity as to its ownership as well as the lack of some of the key elements for its implementation, such as the establishment and legitimization of the proposed Regional Task Force on NCDs.

The Caribbean is not beginning de novo in this area and this current effort to mobilize regional effort to prevent and control the non-communicable diseases can build on the following;

- The presence of national plans in many countries
- The Regional Strategic Plan as mandated by the Heads of Government
- The incorporation of NCD as a priority area of the CCH
- The Global Framework Convention on Tobacco Control
- The Global Strategy on Diet, Physical activity and Disease adopted by the World Health Assembly
- The PAHO Regional Strategy and Plan of Action for an integrated approach to the prevention and control of Chronic Diseases

### **Other bases for optimism about regional action in NCDs**

In addition, there are other very cogent reasons for optimism that on this occasion it will be possible to galvanize more regional action in this area:

- a) the clear interest of the Heads in this aspect of the Commission's Report, especially the economic aspect of the problem and the evidence that the cost of dealing with the non-communicable disease can represent a major economic burden
- b) The noted success of the region in adopting a regional approach to the epidemic of HIV/AIDS. The highest levels of Caribbean governments have become actively involved in the fight against HIV/AIDS. They have established specific national structures to deal with the epidemic, many of them have elected to borrow to implement their national programs and a pan-Caribbean entity has been formed ( PANCAP) to coordinate the efforts of the many actors involved in HIV/AIDS in the Caribbean.
- c) Recent developments in countries and also by the existence of several organizations which deal with one or the other of the NCDs. For example;

- Barbados convened a successful national consultation on NCDs in 2005 and has implemented several of its key recommendations-the establishment of the National Commission on non-communicable diseases.
- Trinidad and Tobago also convened a national consultation on NCDs in 2006 and some of the recommendations have been reflected in the national budget
- There are numerous local voluntary organizations in the countries which are devoted to the NCDs. There are Diabetes Associations and Foundations, Heart Foundations and analogous bodies, Cancer Societies and many others. If mobilized, these can represent a potent force within civil society for the kinds of local and regional action that can sustain momentum for addressing the problem of NCDs.

## **The problem of chronic non-communicable diseases (NCDs)**

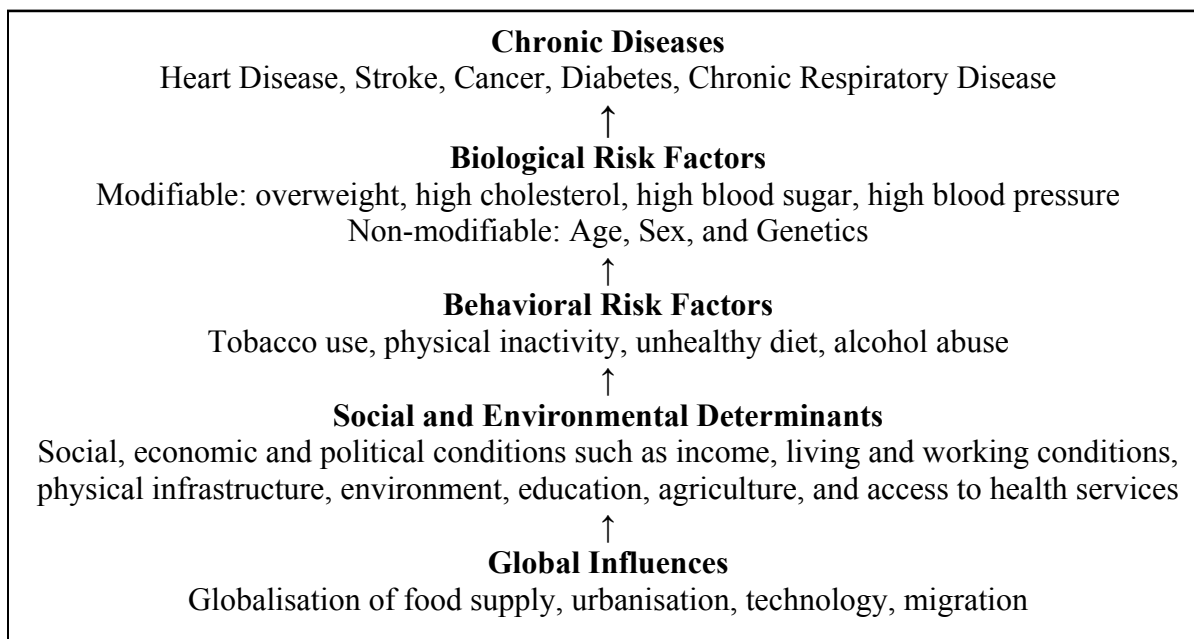
### **The Global and Regional situation**

Globally and in the Caribbean, the chronic diseases of concern are heart disease, stroke, cancer, diabetes and chronic respiratory diseases. *(NB the terms non-communicable diseases (NCDs) and chronic diseases are used interchangeably throughout the document)* These are caused by biological factors such as high blood pressure, obesity, high blood sugar, and high blood cholesterol. In turn, these are caused by lifestyle-related, socially determined risk factors, namely unhealthy diet, physical inactivity, tobacco use and alcohol abuse, compounded by poor environments and air pollution for many. While lifestyle or health behaviors are important as risk or protective factors for chronic diseases, these are heavily influenced by social determinants, such as availability/pricing of healthy and unhealthy foods, taxes, the built environment, security and safety considerations, advertising and marketing of unhealthy foods and products. Access to medical care through effective, efficient health services is fundamental to the management of chronic diseases and their complications.

The key determinants for chronic disease are illustrated below in Figure 1. The determinants are categorized within biological and behavioral risk factors, environmental conditions, and global influences. Analysis of the problem tree in the chart shows that the chronic disease epidemic that we face results largely from the structure of today's society and environment. Further, the solutions lie in comprehensive approaches that address both population level interventions, like taxes on tobacco or appropriate agriculture policies, combined with individual level interventions, like health education and improved management of chronic diseases.



**Figure 1: Chronic Diseases (NCDs) and their Determinants**



The World Health Organization (WHO) estimates<sup>1</sup> that over 35 million people per year die of chronic disease, which is about 60% of all deaths, and double the number dying from all infectious diseases, maternal and perinatal conditions, combined (1). With the exception of the African region, chronic diseases are the most important cause of death in all the other regions in the world. Further, 80% of the deaths from chronic diseases occur in low and middle income countries.

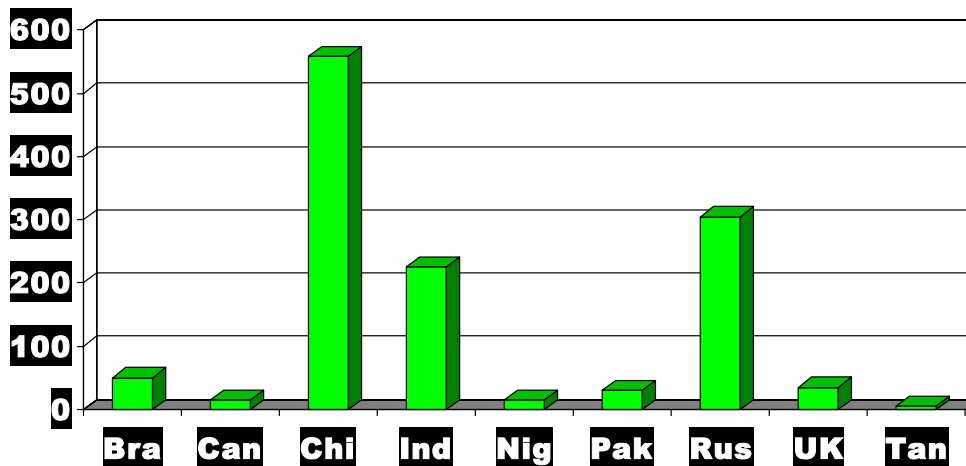
This problem has very serious impact including poor quality of life for affected individuals and family, premature death, and large, under-appreciated economic effects on families, communities and countries. It is estimated, for example, that China will forego over \$US550 Billion in national income in the next 10 years because of heart disease, stroke and diabetes, while Russia will forego some \$US300 Billion (Figure 2). Economic and other costs of NCDs in the Caribbean are considered on page 28.

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<sup>1</sup> World Health Organization. *WHO Global Report. Preventing Chronic Diseases—A Vital Investment*. Geneva: WHO; 2005

Figure2

## Projected National Income Lost from Heart Dis, Stroke, Cancer, Diabetes, 2005-2015, \$USBN



Globally, the risk factors are growing and the response is inadequate. **Over one billion people are overweight or obese in the world today.** Despite some of the successes with some aspects of prevention, such as the Framework Convention on Tobacco Control (FCTC), the problem of chronic disease has been generally neglected in international health and development work. The Millennium Development Goals (MDGs), which address AIDS, Tuberculosis and Malaria, are silent on chronic diseases and the health consequences of injuries and violence, though for the Caribbean region and many other countries, these conditions constitute the larger burden by far, whether measured in health or economic terms. This has led some Caribbean countries to call for a “MDGs+” approach for the Caribbean to include explicit targets for chronic disease and injury prevention.

### Common Myths

Several widespread misunderstandings contribute to insufficient attention to chronic diseases. The first myth is that chronic disease is a problem of richer countries. However, four out of five chronic disease deaths are in low to middle income countries.

Second is the notion that low and middle income countries should control infectious diseases before chronic diseases. The truth is that while combating infectious diseases, they are facing

rapid increases in risk factors and deaths from chronic diseases, especially in urban settings, as well as injuries and violence, and alcohol and drug use epidemics.

Third is the myth that chronic diseases mainly affect the rich. However, except in the poorest countries, poor people are more likely than the wealthy to be affected, more likely to die, and face proportionately more financial burden from chronic disease.

Another myth is that chronic diseases are a problem of the elderly. However, almost half of chronic disease deaths occur in those <70years, and there is major concern about increasing obesity in childhood, and reports of diabetes in adolescents - previously unheard of - have begun to mount worldwide.

Yet another myth is that chronic diseases affect men more than women, however, chronic diseases, including heart disease, affect women and men almost equally. Heart disease is the largest cause of death in women.

A persistent myth is that people with NCDs are at fault and to be blamed because of their unhealthy lifestyles. However, individual responsibility, while important, only has full effect where people have equitable access to healthy choices. Poor people have limited choices about the food they eat, their working conditions and access to health care. Governments have a crucial role to play in improving health by altering the social and physical environment *to help make the healthy choice the easy choice.*

Yet others believe that chronic diseases cannot be prevented, or that they are too expensive. However, if the known risks are controlled, at least 80% heart disease, stroke and diabetes, and 40% cancers are preventable, and a full range of cost-effective interventions are available for prevention and control.

Finally, two common myths are “my grandfather smoked and lived to 90 years”, and “everyone has to die of something”. These are really half-truths. While some people who smoke will live a normal lifespan, the majority will have their lives reduced in length and quality. And while everyone has to die, death does not need to be slow, painful or premature, as is so often the case with the chronic diseases.

## **Region of the Americas**

The epidemic of chronic diseases threatens economic and social development in the Americas<sup>2</sup>. While deaths from infectious diseases, perinatal conditions, and nutritional deficiencies are expected to decline by 3% over the next 10 years, deaths due to chronic diseases are projected to increase by 17% by 2015 (WHO 2005). In Latin America and the Caribbean (LAC), chronic diseases are now the leading cause of premature mortality, accounting for nearly

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<sup>2</sup> PAHO/WHO: Regional Strategy and Plan of Action on an Integrated Approach to the Prevention and Control of Chronic Diseases, Including Diet, Physical Activity, and Health. CD 47/17, 2006

half of deaths <70 years, and for two out of three deaths overall<sup>3</sup>. Chronic diseases contributed to almost 50% of disability-adjusted life years lost in the Region (ibid).

The chronic diseases of greatest importance in the Americas Region are: cardiovascular disease (including hypertension, ischaemic heart disease and stroke) cancer, chronic respiratory diseases, and diabetes. In the first decade of the 21st century, cardiovascular diseases are expected to claim 20.7 million lives in the Americas<sup>4</sup>. Predictions for the next 20 years include a tripling of heart disease and stroke mortality in Latin America. Hypertension is one of the most important risk factors for heart disease and affects 8-30% of the population. Cancer accounts for 20% of chronic disease mortality, and in 2002 there were an estimated 459,000 deaths due to cancer<sup>5</sup>; a 33% increase since 1990, with major increases projected to 2020. Thirty-five million people in the Region are currently affected by diabetes, and WHO forecasts an increase to 64 million by 2025<sup>6</sup>. Additionally, the societal costs of diabetes in Latin America and the Caribbean were estimated at \$US65 billion in 2000.

The “nutrition transition” in the Americas is characterized by relatively low consumption of fruits, vegetables, whole grains, cereals, and legumes, coupled with a relatively high intake of foods rich in saturated fat, sugars and salt, among them milk, meats, refined cereals, and processed foods. This dietary pattern, combined with less physical activity, is a key factor in the rise of obesity. Surveys show that in 2002, 50-60% of adults and 7-12% of children less than 5 years of age were overweight or obese (2). Overweight among adults was 45% and 65% in Canada and the USA, respectively (2).

Furthermore, 30-60% of the hemisphere’s population does not reach minimum recommended levels of physical activity - 30 minutes per day of walking or equivalent<sup>7</sup>, which can reduce the risk of heart attack by a half. For adolescents, this lack of physical activity is particularly disturbing. As occupations shift from manual labor and agriculture to the service sector, physical activity levels have declined. Increased urbanization and motorized transport, policies that promote car-dependent suburbs, lack of attention to needs of pedestrians and cyclists, increasing use of labor-saving devices in domestic life, and the growing use of computers at work and for entertainment also contribute. At the same time, concern is deepening worldwide about global warming, and the need to decrease use of motorized transport and increase use of walking and cycling for example.

Tobacco consumption is the single leading risk for avoidable death in the Americas, causing over one million deaths each year. Approximately one-third of all deaths from heart disease and cancer can be attributed to tobacco. More than 70% of smokers start smoking before the age of 18 years. In the 2002 youth tobacco survey, smoking varied between 14-21% in the Caribbean to

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<sup>3</sup> Murray C, Lopez AD. *The global burden of disease*. Cambridge, Mass, USA: World Health Organization, Harvard School of Public Health and World Bank, 1996.

<sup>4</sup> Pan American Health Organization. *Health in the Americas. Volume I*. 2002 ed. Washington, DC: PAHO; 2002.

<sup>5</sup> World Health Organization and International Union against Cancer. *Global Action against Cancer Updated Version*. Geneva: WHO; 2005

<sup>6</sup> Barceló A, Aedo C, Rajpathak S, Robles S. The cost of diabetes in Latin America and the Caribbean. *Bulletin of the World Health Organization* 2003;81(1):19-28

<sup>7</sup> World Health Organization. *Sedentary lifestyle: A Global Public Health Problem*. Geneva: WHO; 2002

40% in the Southern Cone countries (4). Among the youth, 23% and 25% from the USA and Canada respectively, reported using tobacco products in 2002<sup>8</sup>

In addition to these modifiable risk factors, inadequate access to quality health services, including clinical prevention and diagnostic services, along with difficult access to essential medicines are significant factors which contribute to the burden of chronic diseases. The poor often face several health care barriers including the inability to afford user charges for health care, financial barriers for necessary prescription drugs, and lack of transportation to reach health services. In addition, vulnerable populations may face communication barriers, inhibiting the benefits of services.

### **What works – saving lives, improving productivity, and avoiding health costs**

The above analysis points to a large and worsening epidemic of chronic diseases and risk factors. However, it is by no means a future without hope, as the knowledge currently exists – if applied, to prevent and control chronic diseases: to save lives and avoid suffering and disability, to improve productivity, and to decrease the upward spiral of avoidable health care costs. This has been shown in many countries such as the USA, Canada, Australia, where heart disease has been reduced by 70% in the past 30years, and in middle income countries like Poland, which has made substantial gains. In the USA alone, WHO estimates that 14 million cardiovascular disease deaths were averted between 1970 and 2000. The challenge is for others to follow suit.

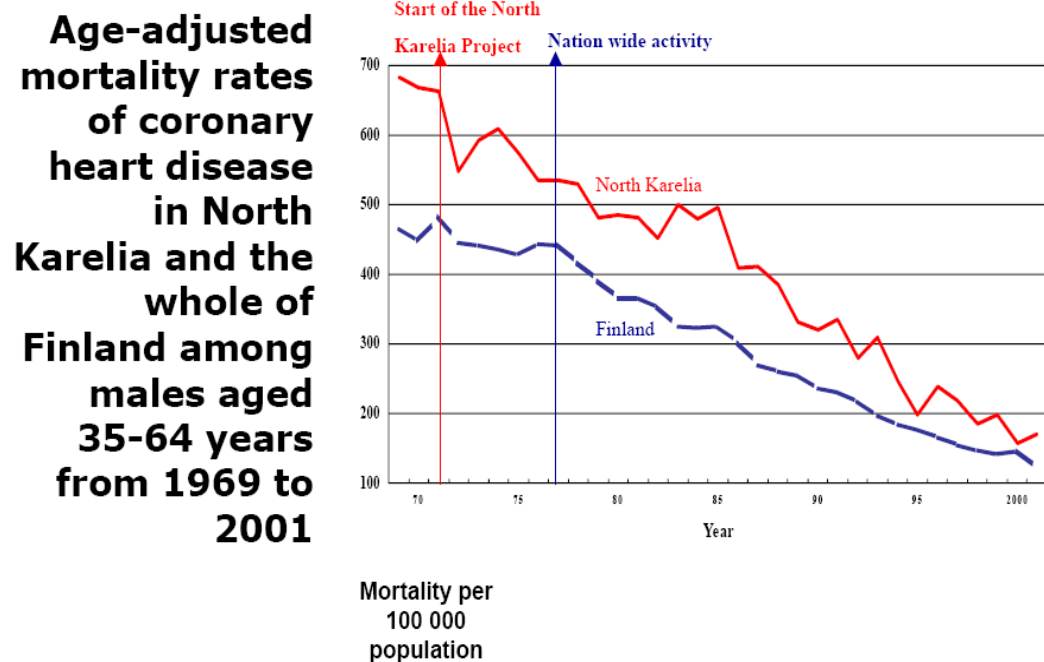
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<sup>8</sup> Global Youth Tobacco Survey Collaborative Group. Special Report: Tobacco use among youth: a cross country comparison. *Tobacco Control* 2002;11:252-270

Data from Finland (Figure 3) show a major decline in coronary heart disease over last 30 years.

**Figure 3**

## Finland: Dramatic Declines in NCD Mortality



Countries that have made significant gains in NCD prevention and control have done so mainly as a result of comprehensive, integrated approaches that encompass interventions directed at the whole population and individuals, and that focus on common underlying risk factors (e.g., tobacco, diet, physical activity, alcohol), cutting across specific diseases. The concepts of comprehensive and integrated programs are critical to success, and avoid excessive focus on individual diseases and treatment protocols.

Encouraged by the successes of some countries, **WHO has proposed a global target of 2% reduction in death rates per year from chronic diseases, over and above current trends.** This would save approximately 36 million lives, mostly in low and middle income countries, and result in appreciable economic dividends for those countries. The CCH-3 has also adopted the target of a 2% reduction in NCD death rates per year for the Caribbean.

The policy approaches shown to be cost-effective in prevention and control are summarized below in a continuum - from public policies that promote the conditions for health, through prevention policies, to policies in the health sector. This spectrum of comprehensive interventions roughly matches the problem tree of chronic diseases, risk factors and social determinants. However, interventions at the level of the population as a whole, such as tobacco taxes, are the most cost effective, compared with interventions for individuals.

## **Interventions in chronic disease prevention and control**

### ***Interventions***

- Laws and Regulations
- Tax and Price Interventions
- Improving the built environment for physical activity
- Advocacy, communication and information

### ***Site of intervention***

- Community
- School
- Workplace

### ***Interventions for management and control***

- Screening – Cardio vascular disease, diabetes, Blood Pressure, some cancers
- Clinical prevention – focus on overall risk
- Disease Management
- Rehabilitation
- Palliative care

WHO conducted a regional review of the cost-effectiveness of chronic disease interventions in the Americas region. The most cost-effective strategies were those that were population-based, and included increasing tobacco taxes to the highest regional tax rate of 75%. The average cost effectiveness (ACE) for this intervention was \$19 per DALY (Disability adjusted life year). Legislation to decrease salt content in processed foods, plus appropriate labeling and enforcement, and legislation and health education to reduce cholesterol were also cost effective with an ACE of \$127 and \$135 per DALY respectively. The least cost-effective were interventions directed to individuals, such as nicotine replacement therapy with an ACE of \$3,083 per DALY, and the provision of statin drugs and education on lifestyle modification delivered by physicians to patients whose cholesterol concentrations exceeded 220mg/dl with an ACE of \$1,326 per DALY<sup>9</sup>.

Environmental and multi-sectoral interventions are also cost-effective. For example, it has been demonstrated that replacing the 2% of energy that comes from trans-fat (industrially hydrogenated vegetable oils) with polyunsaturated fat would reduce cardiovascular diseases (CVD) by 7% to 40% and would also reduce type 2 diabetes. Because trans-fat could be eliminated or significantly reduced by voluntary industry action, the cost amounts to no more than \$0.50 per person per year. Legislation that mandates reduced salt content in manufactured foods is also cost effective and when accompanied by an education campaign can reduce blood pressure at a cost of \$6.00 per year.

There is a strong evidence-base for the cost-effectiveness of disease prevention and early detection interventions. Cardiovascular diseases, some cancers and diabetes can be prevented or delayed by:

- . changes in diet and lifestyle
- . screening for risk or for early manifestation of disease

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<sup>9</sup> World Health Organization. *The World Health Report, 2000 – Reducing Risks, Promoting healthy life*. Geneva, Switzerland, World Health Organization, 2002,

- treatment of precursor lesions or earlier treatment of disease, and
- pharmacological interventions

Routine preventive health exams in primary care settings are a recommended approach for chronic disease prevention. The essential assessments include: blood pressure measures; calculation of body-mass index; lipid profile; blood glucose testing; for women, screening for cervical cancer and for breast cancer; and screening for colorectal cancer. In addition, the current evidence suggests that opportunistic screening should be conducted to detect pre-diabetes in overweight individuals aged 45 years or older.

For those already diagnosed with a chronic condition, cost-effective treatments are available. For example, medications such as aspirin and beta blockers are low-cost and effective measures to reduce the chance of recurrence of heart attacks. For people with diabetes, interventions include controlling blood sugar, ensuring access to insulin for people requiring it, blood pressure control (with or without medication), and foot care and eye care for the prevention of amputations and blindness, respectively. For cancer control, treatment is cost-effective for cervical, breast, oral, and colorectal cancers and includes surgical removal of tumors, chemotherapy, and radiation therapy.

## **The Caribbean situation**

The Caribbean comprises a group of 30 nations and territories with a population of some 34 millions. The CARICOM countries and associates comprise some 16 millions in 20 countries and territories. Except in Haiti, indicators such as life expectancy and infant mortality are fair to good, for these low and middle income countries, compared with many richer countries that took a more market-based approach to health. However, as pointed out in the CCHD report, the health situation today is dominated by chronic, non communicable, lifestyle related diseases, HIV/AIDS and injuries and violence, with huge and rapidly growing cost burdens. The ageing populations in the region also increase the risk of NCDs. Like elsewhere in the world, unhealthy diet, physical inactivity, tobacco use, and alcohol abuse are the main modifiable risk factors for the NCDs. It should be noted, however, that the unhealthy lifestyles are largely socially-determined.

Data from CAREC and PAHO show that the **Caribbean is the region of the Americas affected worst by the epidemic of chronic disease**. The human and economic cost burden of these conditions is not sustainable and could undermine development of these small, fragile countries. The CCHD also described two systemic priorities, namely health information systems, critical to good policy making, and human resources, particularly public health leadership and workforce capacity, where proximity to the north has led to a huge exodus of health workers.

The countries can be divided into three groups based on population: >250,000; 50,000-249,000; and <50,000. This has implications for health services organization, as the first tend to have the most decentralized arrangements, while the second and third groups have problems of critical mass and need shared services more. While primary health care is fair in all countries,



and needs to be preserved, geography also influences access to specialist care and there can be considerable attraction to seeking care that is across the waters.

A major adverse influence on health is the advertising and propaganda from the north affecting Caribbean life styles. Data from CFNI show that the Caribbean has seen nothing short of an explosion or epidemic of obesity emerging in the region over the last 30 or so years, where upwards of half to two thirds of the adult population is overweight or obese. The easy availability and heavy promotion of high fat, sugary, salty foods, combined with more sedentary lifestyles and increasing motorization, is at the heart of this. While there were insufficient calories per capita in the 60s, that has changed so today there are more calories than are needed (though far too many children still go to school hungry in the mornings), with high proportions from fats and oils and sugar, while at the same time, fruits and vegetables, and roots and tubers, necessary for good health, have declined in consumption. The reversal of this requires trade, agriculture and education policies to be changed to take promotion of health more into account.

The English and Dutch-speaking countries (pop. 7 millions), coming together as CARICOM over 30 years ago, have placed a high value on social development. They adopted health care systems funded from general taxation, with models similar to the UK systems. Universal primary health care and education were adopted as policies, as well as provision of water, sanitation and nutrition. Collective approaches to policy making in health and education, such as the Caribbean cooperation in health (CCH), and regional institutions, such as CAREC, CFNI, UWI, CXC, PANCAP also contributed positively. The cooperation in the training of doctors and other health professionals via UWI has been a very positive factor in health, and in regional integration. New changes such as the CSME will also have positive and negative consequences for health, e.g., movement of people and the ready transmission of disease, pointing to the need for a Caribbean public health information system with portable electronic medical records.

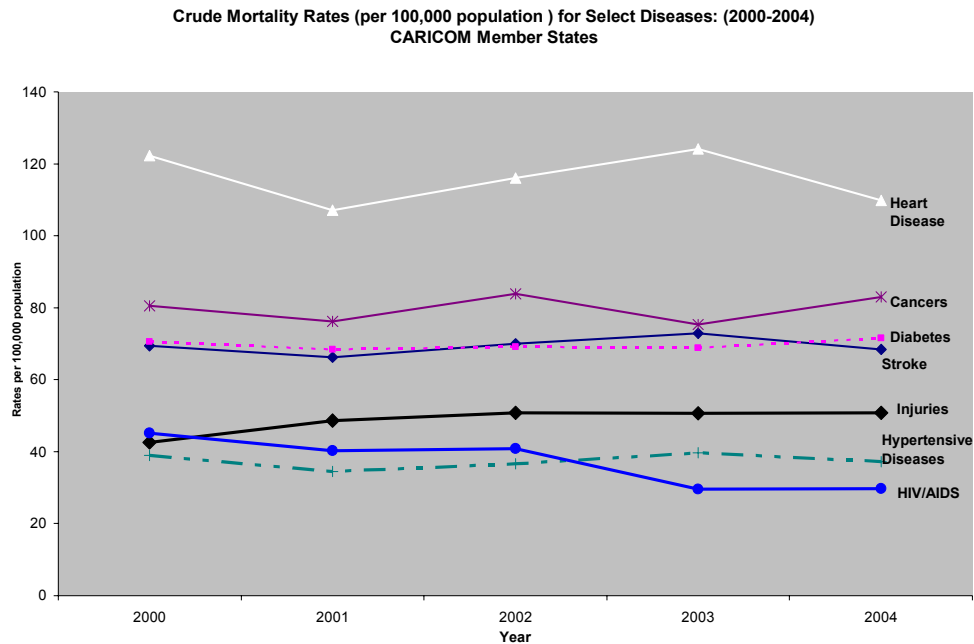
**The Caribbean must seek to make the healthy choice the easy choice.** Fiscal and taxation policies on tobacco and alcohol are proven internationally to be the best way of reducing consumption, while increasing revenue for governments. Agriculture policies that emphasize quantity and yield over quality are not health promoting. Fiscal policies that make healthy foods (like whole wheat products or unpolished rice) more expensive than white flour or rice, which are less healthy, make it harder for poor people or people with diabetes to manage their situations. Education systems and policies that focus mainly on intellectual development and place little value on physical activity, for example, undermine the overall goal of each person being as physically, mentally, socially and spiritually healthy as they can be. Urban planning and transport policies which do not make provision for cycle paths and pedestrians, contribute significantly to a less physically active population. The longer the delay in implementing tough measures against drinking and driving is the longer the carnage on the roads will go on. Health needs to be considered in all policies to realize a healthy, productive citizenry.

### **Main causes of death**

Figure 4 below shows the main causes of death 2000-2004 for CARICOM member countries (minus Jamaica). Heart disease, cancer, diabetes, stroke, injuries, hypertension and HIV/AIDS were the top causes of death in that order. Important gender differences not shown on the chart

include: for men, heart disease and cancer still are #1 and #2, respectively. But injuries are #3, and HIV/AIDS is #6. For women, heart disease is #1, but diabetes and cancer tie for #2 spot.

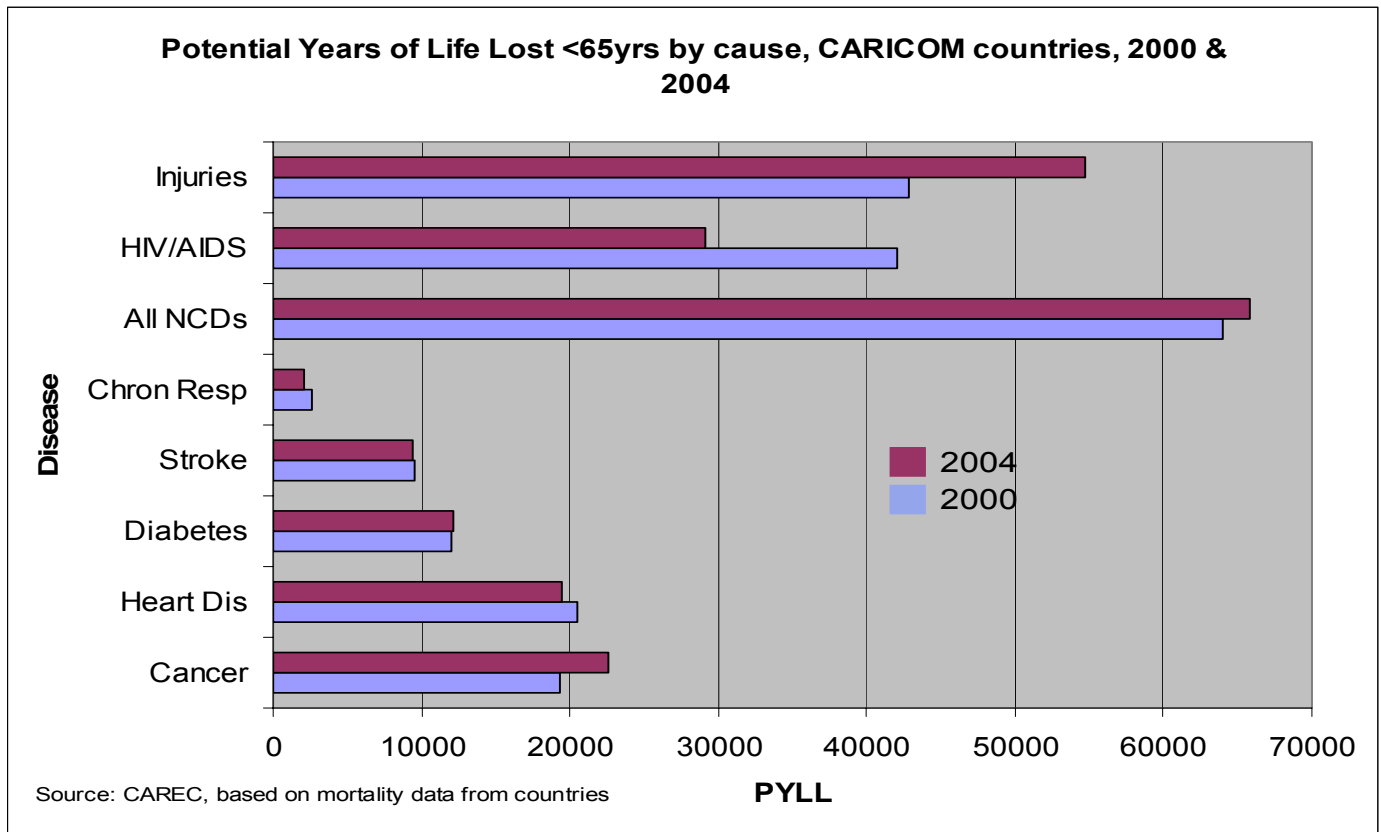
**Figure 4**



### **Potential Years of Life Lost**

In addition to crude mortality rates, another measure of population health is potential years of life lost (PYLL) before 65 years of age. Figure 5 shows PYLL by cause for the CARICOM countries in 2000 and 2004. Both in 2000 and 2004, NCDs were the largest cause of PYLL with over 65,000 person years of life lost in 2004. PYLL due to HIV/AIDS decreased by approx 25% between 2000 and 2004, probably as a result of the expansion of anti retroviral treatment for people with HIV. PYLL due to injuries, which include traffic fatalities, homicide and suicide, increased by 27% over the period.

Figure 5

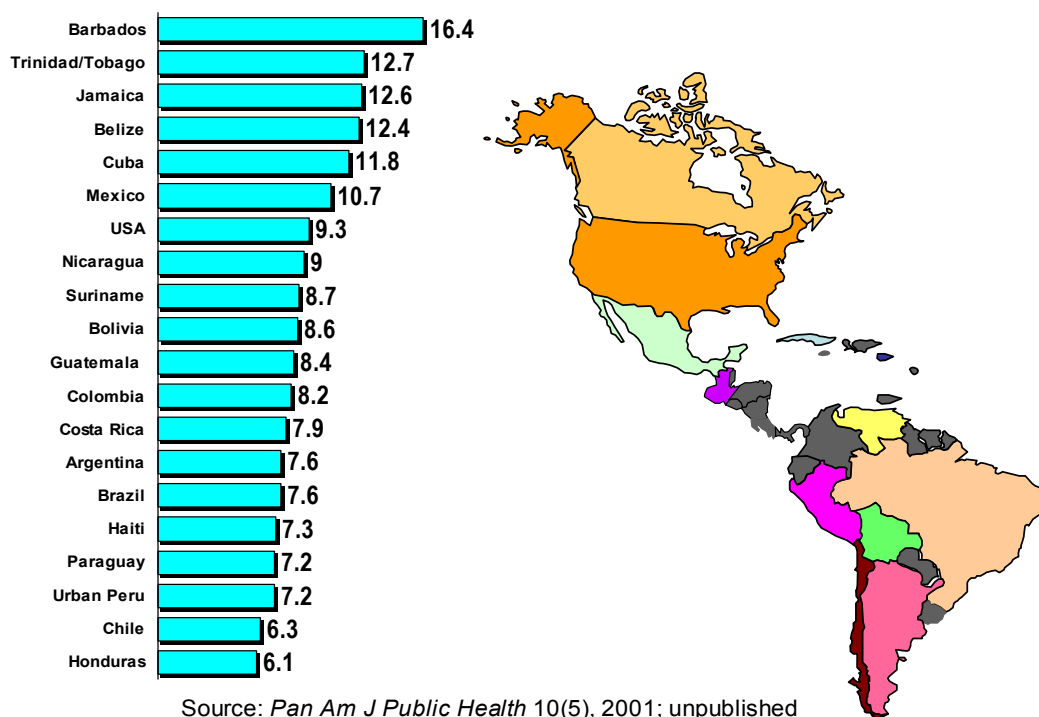


**Morbidity**

Diabetes and hypertension are of particular concern in the Caribbean. The Figure below shows the prevalence (%) of diabetes in the Americas. The five top spots are occupied by Caribbean countries, Barbados, T&T, Jamaica, Belize and Cuba.

**Figure 6**

Prevalence (%) of diabetes among adults in the Americas



Source: *Pan Am J Public Health* 10(5), 2001; unpublished (CAMDI), Haiti (Diabetic Medicine); USA (Cowie, Diabetes Care)

## Hypertension

If there is one constant in epidemiological studies in the Caribbean, it is the high prevalence of hypertension. Pioneering work of Stuart and his colleagues over 40 years ago demonstrated the high prevalence of hypertension in Jamaica and in other Caribbean countries.<sup>1011</sup> The landmark St James cardiovascular disease study in Trinidad by Miller et al, also showed hypertension to be highly prevalent in Trinidad in the 80s<sup>12</sup>. This elevation of blood pressure is seen even in Caribbean citizens who migrate to the UK. It is interesting to note that there is a blood pressure gradient between West Africa, the Caribbean and the USA, with the black populations in West Africa having the lowest and the USA black population the highest levels of blood pressure.<sup>13</sup> It

<sup>10</sup> Stuart K L, Hypertension in the tropics. *Br. Medical Journal*.1968; 5584:103-105

<sup>11</sup> Miall WE, Kass E H, Ling J, Stuart KL. Factors influencing arterial pressure in the general population in Jamaica. *Br. Medical Journal*, 1962;5303: 497-506

<sup>12</sup> Miller G, Maude G, and Beckles G. Incidence of hypertension and non-insulin dependent diabetes mellitus and associated risk factors in a rapidly developing Caribbean community: The St. James survey (Trinidad). *J. Epid Comm Hlth* 1996; 50:497-526

<sup>13</sup> Gulliford M. Epidemiological transition and the socio economic inequalities in blood pressure in Jamaica. *Int. J. Epidemiology*;2003;32:408-409

is also a universal finding that hypertension is the risk factor that leads to most cardiovascular disease and tends to be commoner in females.

The designation of hypertension has often varied according to the form of measurement and the levels of blood pressure taken to denote hypertension and many of the reports use self reported hypertension. The most recent community surveys done with standardized measurement of blood pressure found that in adults 25-64 years of age the prevalence of hypertension was 27.2% in Barbados, 24% in Jamaica and 25.9% in St. Lucia.<sup>14</sup> The interrelation of risk factors is important and data show clearly that blood pressure increases with the degree of obesity. (Forrester T, Personal Communication)

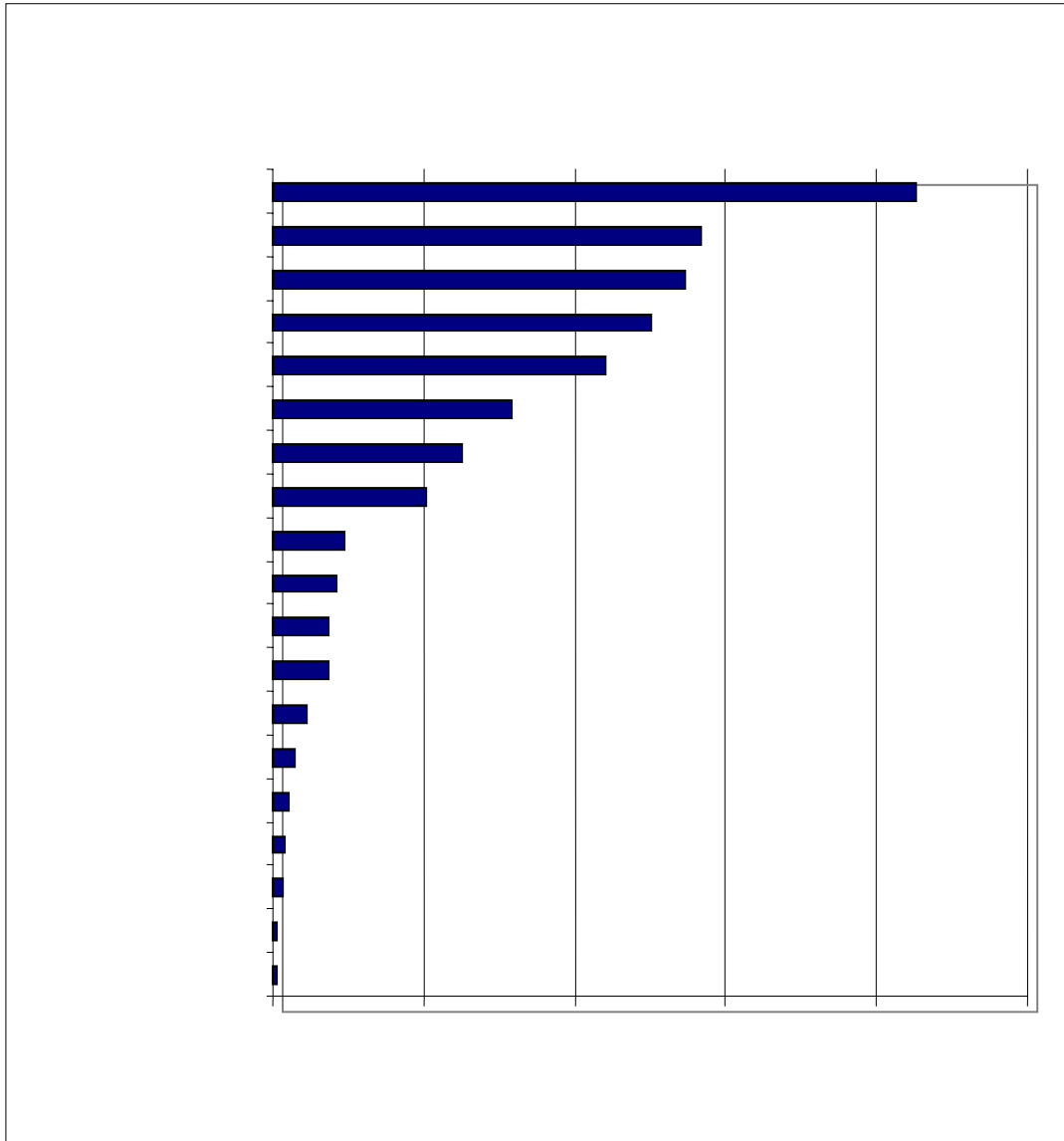
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<sup>14</sup> Cooper R, Rotimi C, Ataman S, McGee D, Osotimehin B et al. Hypertension prevalence in seven populations of African origin. *Am J Public Health* 1997; 87:160-168

**Risk factors: Obesity, Unhealthy Diet, Physical Inactivity, Tobacco Use, Alcohol abuse**

Figure 7 shows the mortality attributable to risk factors in Latin America and the Caribbean. Such data as are available for specific Caribbean countries show an almost identical picture.

**Figure 7**



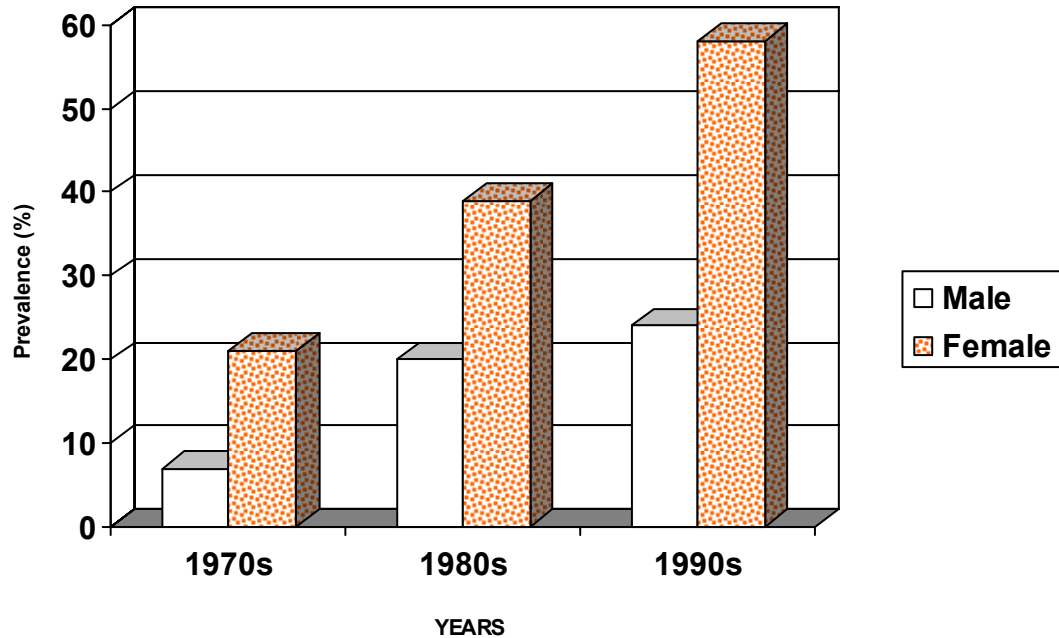
Source: Global burden of Disease and Risk Factors. Eds Lopez AD et al Oxford University Press and the World Bank, 2006(Extracted by Dr.Alafia Samuels)

**Obesity**

Figure 8 shows that during the last few decades obesity has risen to epidemic proportions in the Caribbean, particularly among females. Although there has been a global increase in obesity, the Caribbean trend is most worrisome because of its incidence and rapidity. Because the Caribbean

trend is so alarming it should be instructive to examine the patterns of the two major causes of obesity – food intake and physical activity.

**Fig 8 - Trends in Adult Overweight/Obesity in the Caribbean**

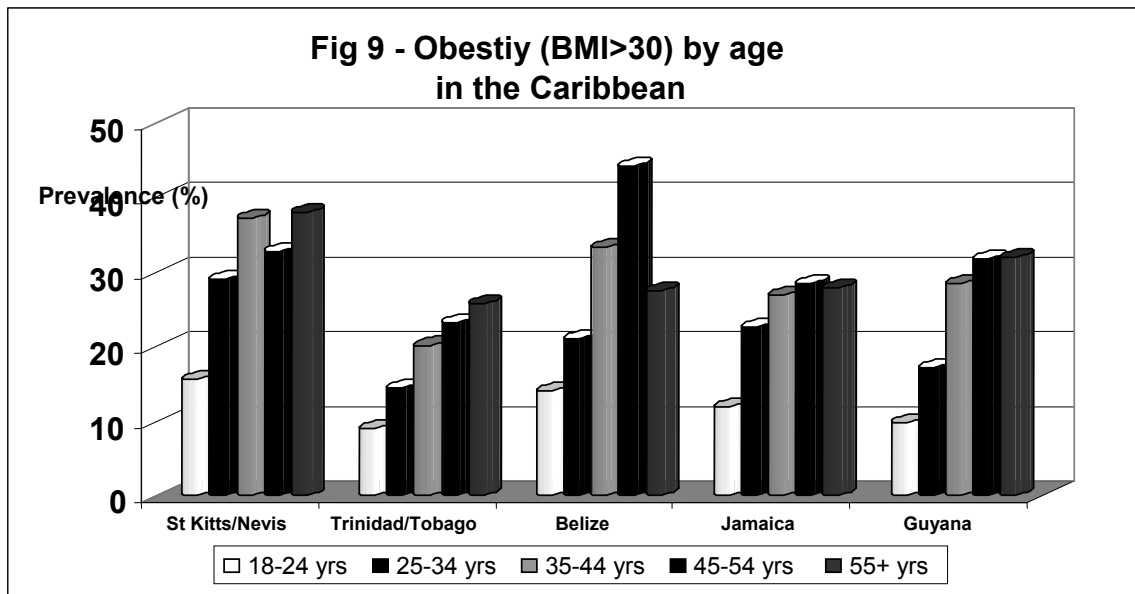


SOURCE: Compiled from data and references in CFNI, 2001.

More detailed examination of country-specific data shows that there is a high prevalence of overweight (BMI>25) and obesity (BMI>30) in all countries. There are also consistent gender differences showing that about 25% of adult Caribbean women are seriously overweight i.e. obese, and this is almost twice as many as their male counterparts (CFNI, 2001). Not surprisingly, this is reflected in the diabetes mortality data discussed earlier.

Obesity and overweight tend to increase with age as shown in Figure 9 below. What is becoming of more concern is the increase in childhood obesity and the occurrence of diabetes in adolescents, for which obesity is the major risk factor.

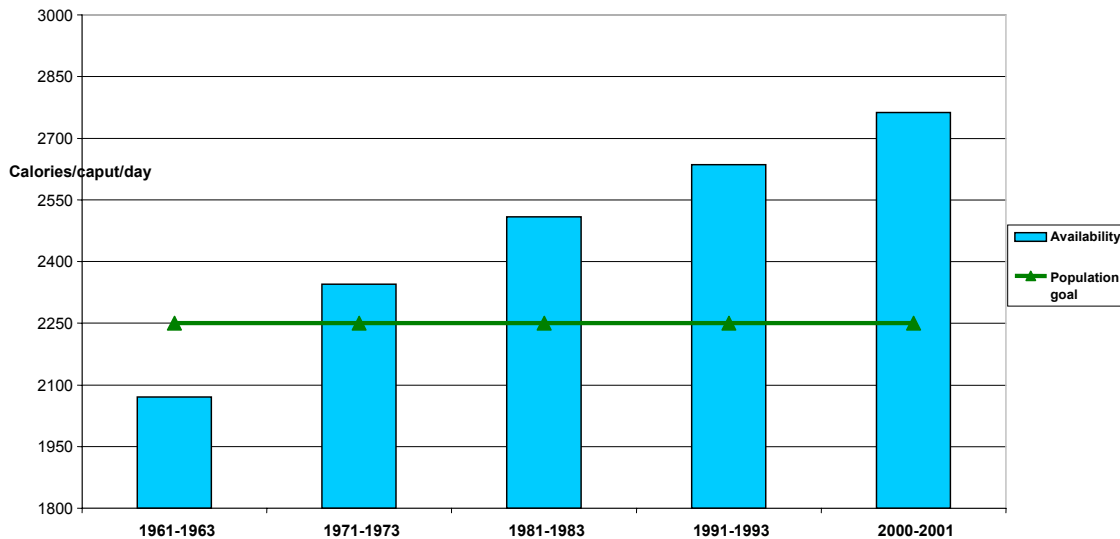
**Fig 9 - Obesity (BMI>30) by age in the Caribbean**



## Trends in Food Availability/Intake

Estimates of energy intake can be gleaned from analysis of FAO's data (FAO 2002). Figure 10 shows the increasing availability of calories per person in the Caribbean and this represents an over-supply of energy to meet nutritional needs. Using a recommended daily allowance of 2250 kcals in 12 countries, during the decade of 1960 there was an overall insufficiency of calories and this was reflected in the high rates of under-nutrition that existed at that time. From the 1970s onwards the average availability of calories per person increased rapidly.

**Fig 10 - Trends in Energy Availability by decade in the Caribbean**



Source: CFNI based on FAO data

The excess availability of calories, which was critical for the decline in under-nutrition, also contributed to the consumption of high-energy foods in large sections of the Caribbean<sup>15</sup>. Two major contributors to this over supply of calories are fats and sugars. For fats the region now has available more than 160% of average requirement, for sugars the excess is 250%. Both global and local forces drive these excesses in fat and sugar consumption. This is not just a public health issue, the economic and political ramifications are profound. In view of the huge excess of fats and sugars available and consumed in the Caribbean, policy makers must note the strong, scientifically sound evidence, based on longitudinal data that excess calories from soft drinks, for example, are directly contributing to the epidemics of obesity. Although some controversy surrounds the role of fat, much research has linked growing obesity rates with a growing consumption of snacks, fat foods and soft drinks and with the consumption of high energy diets.

<sup>15</sup> Henry, F. Public Policies to control obesity. Paper for the Caribbean Commission on Health and Development. October 2004.



## Physical Activity

Not many studies are available of levels of habitual physical activity in Caribbean populations, though the pattern of decline in work-related and leisure time physical activity is similar to the rest of the hemisphere. Lack of facilities, concerns about safety and security, traffic congestion, are among the reasons cited by people in focus groups of surveys. Physical activity and fitness is non-pharmacologic and protective against cardio vascular diseases, cancer, diabetes and hypertension. In the St James cardiovascular study, where fitness at baseline was measured, men who were unfit were 2.5 times more likely to have a heart attack compared with men who were fit<sup>16</sup>. This finding is in keeping with the general guideline of walking 30minutes per day or equivalent to cut the risk of a heart attack in half.

## Tobacco

Tobacco is a product in that it is harmful when used as directed. Decades of experience have and numerous studies have shown it to be a very addictive substance, which causes considerable human and economic suffering. Table 1 below shows the rates of tobacco use in countries of the Caribbean.

**Table 1**

Tobacco usage rates (%) in CARICOM countries, during period 2002-07

<b>COUNTRY</b>	<b>ADULT &gt;15YRS</b>	<b>YOUTH 13-15YRS</b>
Antigua & Barbuda	NA	3.6
Bahamas	NA	5.2
Barbados	8.9	6.4
Belize	NA	14.7
Dominica	NA	11.5
Grenada	NA	10.2
Guyana	NA	8.1
Haiti	NA	14
Jamaica	NA	NA
St Kitts & Nevis	NA	4.6
St Lucia	18.9	12.7
St Vincent &Grenadines	11.5	13.8
Suriname	NA	6.9
Trinidad & Tobago	21.4	12.9

Source: PAHO Pan American  
Tobacco Information System  
NA==Data not available

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<sup>16</sup> Miller G, Cooper F, Beckles G. Cardiorespiratory fitness, all-cause mortality, and risk of cardiovascular disease in Trinidadian men—the St James survey. *Int. J Epid* 2005 34(6):1387-1394

Based on widespread international experience, and reflected in the Framework Convention on Tobacco control (FCTC), the more effective policies for tobacco control include taxation (at least 50% of pack price), smoke free workplaces, restrictions on advertising, restrictions on sales to minors, warning labels, restriction on promotion and sales to minors.

Appendix 1 shows the status of countries in CARICOM with respect to ratification of the FCTC. Trinidad & Tobago, Jamaica, Guyana, Barbados, St Lucia, Belize, Antigua & Barbuda and Dominica have signed and ratified the convention, however, implementation of the measures in the convention has been slow. Bahamas, Grenada, Haiti, St Kitts & Nevis, St Vincent & the Grenadines have signed but not yet ratified. And Suriname has not yet ratified. Priority needs to be accorded to ratification for those that have not yet ratified, and to implementation in country for those that have ratified.

### **Alcohol**

Alcohol causes a long list of harmful effects on the body, directly or indirectly. About 40% of the ill effects of alcohol are via chronic NCDs, especially its contributions to cardiovascular diseases, diabetes, high blood lipids, neuro-psychiatric conditions, stomach ulcers and cancer, and liver cirrhosis. A large part of the societal harm of alcohol is via injuries, whether unintentional, such as traffic fatalities, or intentional, such as homicide or domestic violence, and via lost productivity.

Based on widespread international experience, the more effective policies for alcohol control include taxation, restrictions on minimum age of purchase (e.g., 21yrs in USA), monopolies by the Government on sales, restriction in hours or days of sale, restrictions in the points of sale, control of levels of alcohol in drinks, limits of blood alcohol for driving, suspension of the driving license, etc. Less effective policies include voluntary codes of practices in the bars, promotion of activities without alcohol, education on alcohol in the schools and universities, messages on public media, warning labels on bottles.

### **Gender and the NCDs**

The epidemiological data have always shown the sex differentials clearly<sup>17</sup>. Hypertension and diabetes are commoner in women than men in the community surveys or in the self reported data. In every survey obesity is commoner in females and as Figure 9 shows, there is a 2.5 times differential. Given the close relationship between obesity and diabetes and hypertension this sex differential is not surprising. All surveys show that women report more illnesses than men and make greater use of the health services. The paradox is that in spite of this, life expectancy at birth is consistently higher in females. Recent PAHO data show a life expectancy for Caribbean females of 73.2 years and for males of 68.4 years.

The gender dimension is not as easily determined as there are data to show that much of the obesity in women is derived from their reproductive roles in that they gain weight during pregnancy and do not lose it easily. It is of interest that studies in Barbados indicate more women being comfortable with their obese state. Women play critical roles in the nutritional status of the

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<sup>17</sup> Hagley KE. Chronic Non-communicable diseases and their impact on women. West Ind Med. Journal, 1990;39:4-11

families and often make the decisions on the foods to be purchased and the intra-familial distribution of that food.

There are two important gender aspects that are relevant. First there is the problem of the elderly widow who is left alone because her spouse has died prematurely from a non-communicable disease and there may be no adequate social support system. The other is related to the gender derived role of the woman as care giver. Antrobus points out

*“Women are the traditional health providers. Indeed they were the pioneers of modern, scientific medicine in their whole approach to the use of herbs and other remedies, experimenting and building on the indigenous knowledge of their group, until they were supplanted by male scientific and economic interests. ..Women’s role in the health services can be seen as an extension of this domestic role of care-taking”<sup>18</sup>*

It is this latter role that will be of increasing importance in the Caribbean as the population lives longer and there is the increase in the Nods which by definition will require long term care and attention. This is yet another reason for aggressive prevention of the NCDs

### **The economic other social costs of NCDs**

The common perception is that NCDs are the problem of the wealthy, developed countries, but the data from the Caribbean demonstrate clearly that this is not so. It is now clear from the international literature that the NCDs affect the poor disproportionately, particularly because the indirect costs represent for them a much greater burden. These diseases occur for the most part in persons of working age and there is clear evidence of reduction of labor supply and productivity as a result of premature mortality as well as increased morbidity which will affect individuals, households and the country as a whole. Both the premature mortality and perhaps the morbidity will also have the effect of reducing the returns to investment in human capital. Premature death means that the returns to investment in education for example will be reduced.<sup>19</sup>

The standard approach to measuring the reduction of human capital is through estimating the direct and indirect cost of illness. The direct costs represent the cost of medical care in terms of prevention, diagnosis and treatment. The indirect costs measure the loss of productivity as a result of premature mortality and morbidity.

The costs of hypertension and diabetes were measured in four Caribbean countries, Bahamas, Barbados; Jamaica and Trinidad and Tobago and the results are given in Table 2. These data come with several assumptions, the major one being that it assumed that all patients needing therapy receive it. These assumptions have been explained in the original article. This study represents one of the few attempts to estimate the costs of these diseases in low or middle income countries.

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<sup>18</sup> Antrobus P. Women, Health and Development. Mimeograph. Distinguished Lecture Series of the Pan American Health Organization, January 29,1990

<sup>19</sup> Adeyi O, Smith O, Robles S. Public policy and the challenge of chronic Non-communicable diseases. The World Bank, 2007

The cost figures presented in the Table show variations in the distribution of direct and indirect costs of diabetes and hypertension across the four countries. The estimated total costs of diabetes ranged from a low of US\$27 million for Bahamas to a high of US\$484 million for Trinidad and Tobago. The direct cost component constituted a significant proportion of the total costs for Barbados and Jamaica. In the case of Trinidad and Tobago, the indirect cost component was the major contributor to total costs. Overall, in the year 2001, the cost of diabetes represented 0.5%, 1.83%, 2.66% and 5.21% of the Gross Domestic product (GDP) for Bahamas, Barbados, Jamaica and Trinidad and Tobago, respectively. The high cost for Trinidad and Tobago may also be a reflection of the prevalence and severity of the disease there.

Except for Trinidad and Tobago, the total costs of hypertension are higher than those for diabetes for each country. The Bahamas still had the lowest total cost (US\$46 million) while Trinidad and Tobago recorded the highest (US\$259 million). For hypertension, the direct cost is consistently higher than the indirect cost, although the difference between these two cost items was minimal for Trinidad and Tobago relative to those of the other three countries. As a proportion of the GDP, the total costs of hypertension represented 0.86%, 2.79%, 3.21% and 3.51% for Bahamas, Trinidad and Tobago, Jamaica and Barbados, respectively.

**Table 2**  
**Economic Burden of Diabetes and Hypertension in Selected Caribbean Countries (2001)**

<b>Cost Item</b>	<b>Bahamas</b>	<b>Barbados</b>	<b>Jamaica</b>	<b>Trinidad and Tobago</b>
<b>DIABETES</b>				
<b>Direct Cost (US\$)</b>	16,745,343	34,905,372	170,433,990	128,702,050
<b>Indirect Cost (US\$)</b>	10,523,286	2,895,766	38,361,390	355,696,731
<b>Total Cost (US\$)</b>	27,268,629	37,801,138	208,795,380	484,398,781
<b>Percentage of GDP (%)</b>	0.50	1.83	2.66	5.21
<b>HYPERTENSION</b>				
<b>Direct Cost (US\$)</b>	30,030,643	50,833,110	188,195,080	137,932,296
<b>Indirect Cost (US\$)</b>	16,339,814	21,822,867	63,452,410	121,549,768
<b>Total Cost (US\$)</b>	46,370,457	72,655,977	251,647,490	259,482,064
<b>Percentage of GDP (%)</b>	0.86	3.51	3.21	2.79

These data were provided by **Dr.O Abdullahi Abdulkadri**

The only published study on the cost of diabetes in Latin America and the Caribbean, estimated a productivity loss of \$US 65 billion which was about %3.5 of GDP. For the four Caribbean countries analyzed above, the estimate for the total direct and indirect costs in that study were approximately \$US 1 billion<sup>20</sup>, as opposed to approximately \$US 0.75 billion here. The message is clear that these diseases can impose a very high economic cost on the Caribbean countries.

There is still debate as to whether the prevalence of these diseases is higher in poor countries in general, but it seems however that the direct costs may be lower in poor countries and among the poor in general as they access the services less than the rich. But the indirect costs are definitely higher for the poor and given their low income, represent a much greater burden. The data are not clear but it is plausible that the high costs of these diseases, especially the high indirect costs, may contribute to individuals at the lower end of the economic ladder falling into a poverty trap or make it difficult to escape from it.

There are additional data on costs from the Caribbean which give cause for concern. For example, the treatment of persons with chronic renal failure with dialysis is becoming more common and is representative of the phenomenon of the clamor for access to the more sophisticated and expensive therapies for treatment that are available in developed countries. One study from Barbados shows that the total cost per patient per year was US\$18,327 for the first year and US\$ 17,029 thereafter<sup>21</sup>. In Antigua and Barbuda, the cost only the consumables for dialysis is approximately \$US 8,000 per year. This is a considerable investment for Caribbean countries. Drug costs are also significant. In Barbados for example it was estimated that 65% of the budget of the Queen Elizabeth hospital and 65-70% of the \$BDS 50+ million budget of the Barbados Drug Service are devoted to the NCDs with the vast majority being spent on diabetes and hypertension.

The human cost can be seen in the complications of these diseases. Over a quarter of diabetics over the age of 40 have significant eye disease with many being blind. Amputations represent another dreaded complication and over the last seven years over one thousand Barbadians have undergone amputations because of diabetes.

### **The case for Government involvement**

It is often felt that these diseases represent a failure of individual agency and there should be less state or government involvement in their treatment and especially in middle income countries there is the argument for expenditure from private sources.

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<sup>20</sup> Barceló A, Aedo C, Rajpathak S, Robles S. The cost of diabetes in Latin America and the Caribbean. Bulletin of the World Health O 2003: 81;19-27

<sup>21</sup> Adamakoh SA, Adi CN, Fraser HS, Nicholson GD. Dialysis in Barbados: the cost of hemodialysis provision at the Queen Elizabeth Hospital. Pan AM J Public Health 2004: 16 :350-355

However, the argument for strong state involvement has been well put by Suhrcke and collaborators;<sup>22</sup>

- The health or social costs of individual unhealthy behaviors are externalities that are borne by society at large or at least by the families (quasi externalities)
- Parts of the population, in particular children, are not yet the rational economic actors that economic theory assumes and therefore need government support
- Information is a public good and will in general be undersupplied; therefore there is a case for governments to intervene to provide information.

***The basic conclusion is that the NCDs, here Diabetes and Hypertension, represent a major economic burden to the Caribbean as well as causing major social dislocation as a result of both mortality and morbidity***

## **The response to the epidemic of NCDs**

### **The region of the Americas**

The *Regional Strategy on an Integrated Approach to the Prevention and Control of Chronic Diseases Including Diet, Physical Activity, and Health* (September 2006), was approved by the PAHO Directing Council. Closely related strategies are the *Regional Strategy and Plan of Action on Nutrition in Health and Development, 2006-2015* and the *Regional Strategy on Health Promotion*. The target is a 2% annual reduction in chronic-disease death rates from the major chronic diseases, which will result in the lives of over three million people being saved over the next 10 years, thus enabling them to discharge their social and work-related responsibilities. The Strategy is comprehensive, requiring a combination of interventions for the population and individuals. It is integrated, spanning prevention and control strategies focusing on the major chronic diseases and cross-cutting risk factors (especially diet, physical activity, tobacco, and alcohol). Finally, it is intersectoral, because most of the major determinants of the chronic-disease burden lie outside the health sector. Consequently, the Strategy uses four lines of action (surveillance & response, advocacy & policy, health promotion & disease prevention, and integrated management of chronic diseases & risk factors) and in its implementation will mobilize and deepen a range of partnerships both inside and outside of the Organization.

In 1998, the countries of the Americas formed themselves into a network dedicated to prevention and control of chronic diseases. The Network is named CARMEN (*Conjunto de Acciones para la Reduccion y Manejo de Enfermedades Non Transmisibles*) and currently comprises 22 countries and territories. The network includes all the countries in the Americas, except some from the Andean area and several from the Caribbean. A major biannual CARMEN meeting is planned for November 4-8 in T&T, which will develop national and sub-regional action plans for the biennium 2008-09. Within PAHO/WHO, coordination of program implementation is via an Inter-programmatic Working Group bringing together national, sub-regional, regional, and global levels of the PAHO/WHO. Canada and the USA (CDC) are major supporters of CARMEN and of chronic disease prevention in several countries.

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<sup>22</sup> Suhrcke M, Nugent R, Stuckler D, Rocco L. Chronic Disease: and economic perspective. London: Oxford Health Alliance, 2006

Many countries in LAC have embarked on a variety of prevention programs, especially in the Southern Cone, e.g., Brazil, Chile, Argentina, Uruguay. A range of other initiatives have also sprung up, from the Physical Activity Network of the Americas (RAFA), through the “five-a-day” fruits and vegetables network, to the Ciclovias network (Cycleways), which now has 15 sites in the Americas. In Central America, with support from PAHO and CDC, there has been a major Central American Diabetes Initiative (CAMDI), which has measured the levels of diabetes, hypertension, obesity, etc., in those countries, and is now moving to an intervention phase.

Some private sector companies and foundations, concerned about the rising tide of chronic disease, are also entering the arena. State Farm Insurance company “lose 50 million pounds” campaign, is aimed mostly at black America. Ovation/United Health insurance has launched a \$US15million NCD prevention program aimed at developing countries. Some major food manufacturers are also beginning to take steps to systematically provide healthier lines of food and drink at affordable prices.

### **The Caribbean response to date**

Arising from the implementation of the WHO Strategy for the Prevention and the Control of non communicable chronic diseases, the WHO needed to conduct a survey to evaluate national capacity for prevention and control of NCD. Such surveys were conducted in 2001 and 2005. In addition, in preparation for the CARICOM Summit, an additional survey was conducted in 2007 to provide an up to date picture of the national responses.

Within the Americas, based on the results of the survey, the countries with the least developed NCD response are those in the Caribbean and Central America, although the Caribbean has the highest burden of disease. According to the results of the 2005 survey, for nine countries of the Caribbean which participated, all indicated that they had national health policies, but only three have concrete policies for NCD and their determinants and risk factors. Only three had assigned an exclusive budget for the prevention and the control of the NCD, and six had a NCD unit. In general, the data from the interviews indicates that those interviewed assign much importance to chronic NCD, but the health systems lacked the capacity to take effective measures. Other general findings are the lack of behavioral risk factor surveillance systems, which are critical to understanding the epidemic, and for prevention policy and planning. Quality of care was also relatively weak, e.g., guidelines, norms for coverage and quality of care of NCDs, which is critical to prevention of complications of NCDs and risk factors, e.g., amputations, blindness, and end stage renal disease.

The results are summarized in Appendix 1 and the gaps in national response at policy, planning, program levels, etc., lead naturally to identification of actions that need to be included in the National Plans of Action.

Among the regional health institutions, CAREC is responsible for monitoring mortality trends in the countries, for behavioural risk factor surveillance and has conducted capacity building to those ends using the standard PAHO/WHO STEPS surveillance system. CAREC also was the home of the landmark St James cardiovascular disease study in the 1980s, which demonstrated the significant problem of cardiovascular disease and the causes. CAREC has also been the

coordinating agency for the Caribbean strategic plan for cervical cancer prevention and control 2003-07, approved by Ministers of Health in 2002. CFNI has intensified programming against obesity and nutritionally related NCDs, conducts nutritional surveillance of populations, and has been an advocate with governments and private sector for action on obesity. CFNI also has a range of capacity building activities as well as guidelines for dietary management of diabetes, obesity, etc. CHRC has conducted studies of quality of care of NCDs and has developed guidelines for management of hypertension and diabetes, the latter in collaboration with PAHO/CPC Barbados office. UWI has also conducted a variety of studies on NCDs, especially via the Chronic Disease Research Centre (CDRC) in Barbados, and the Tropical Medical Research Institute (TMRI) in Jamaica. OECS and PAHO/CPC Barbados office have collaborated in the conduct of drug utilization reviews.

### **The participation of local theme organizations**

There is also a long tradition of involvement of civil society in matters of health in the Caribbean, often supplementing the activities of the public and private sectors. In view of this, diabetes, heart, cancer and analogous organizations in the Caribbean were consulted and in spite of the shortness of the notice, several provided excellent suggestions as to what the outcome of the Summit should be and the commitments which the Heads of Government should make. These may be summarized as follows;

#### **General**

- Establish an annual Caribbean wellness day
- Establish national NCD Commissions and national NCD registries
- Support the Regional Strategic Plan
- Establish a mechanism for monitoring and evaluating the progress on the commitments made
- Establish the mechanism for monitoring the NCD risk Factors
- 

#### **Specifically with respect to the major risk factors**

##### ***Smoking***

- Agree to establish deadlines/target dates for passage of the legal provisions related to the Framework Convention on tobacco control. Ratification is not enough
- Increase taxes on tobacco, with the proceeds going to anti-smoking programs
- Ban smoking in public places and in the workplace
- Ban sale of duty-free tobacco products
- Strengthen health messages on cigarette packages
- Educate the public, but especially school children on the ills of smoking

##### ***Diet***

- Establish partnerships with the food industry to stimulate the provision of healthier foods to the public
- Educate school children specifically about healthy diets
- Ban sale of sodas in school canteens
- Standardize food labeling in the region
- Investigate the trade issues which affect the provision of healthier diets



### ***Physical activity***

- Provide walking spaces in all new housing developments and create new ones where possible
- Make physical education mandatory in schools

There were several recommendations relating to the support for the provision of cheaper medications and ensuring regular supplies.

If the outcomes for the Summit as articulated by Prime Minister Douglas are to be achieved there must be commitment to a series of measures which point the way forward.

### **The Way Forward**

It cannot be overstated that curbing the chronic disease burden and providing quality of life to those already affected by disease requires complex coordinated interventions which cannot be managed by any single sector. The true results of reduced prevalence and improved quality of life will require concerted multi-sectoral efforts and time.

The emphasis on policy tools such as legislation, regulation and taxation are a must so as to clearly reflect political commitment to meaningful policy implementation. These are needed immediately in the respective areas.

Whilst some countries of the community have begun to take the appropriate measures to address some of the determinants of chronic diseases, there are many yet to put in place mechanisms to seriously effect chronic disease prevention and control. This Summit can help to identify opportunities for effective joint action.

All countries have ratified the Framework Convention on Tobacco Control; however, few have made significant progress with implementation steps. Steps are being taken at the regional level to strengthen physical education activities in schools. Policies with respect to diet however remain lacking partly because of the unequal levels of nutrition sufficiency in many countries and the contribution of fast foods and vended foods and alcohol sales to GDP. In a region whose economies for centuries were dominated by sugar, alcohol consumption is still glamorized. Further action in all these areas are needed

It seems clear that there are urgent and immediate steps which need to be taken. Some of these steps will bring immediate results whilst others will more time and more resources to see results.

### **The focus of Action**

The way forward requires the identification of policies and the implementation of programs for:

- A. The prevention and
- B. The management and control of chronic non-communicable diseases.

It is critical to make this distinction. While it is of fundamental importance to prevent the NCDs, the increasing life expectancy in the Region will mean that the health services will continue to

manage and control these diseases. Thus attention must also be paid to the strengthening of the health services to apply the cost –effective interventions known to be appropriate for the management of these diseases. **However the emphasis at the operational level must be the development of comprehensive integrated programs of prevention, control and management of the NCDs**

**The primary prevention of these diseases** is based on the acknowledgement of the most significant risk factors and addressing them:

Tobacco;

Inadequate physical exercise;

Diets conducive to obesity;

Alcohol

Thus the following ACTIONS are recommended, taking account of the specific mention of those that lay *“uniquely at the level of the Heads of Government”*.

**Addressing the Risk factors (See also Appendix 3 for a summary of the policy environments for the four main NCD risk factors)**

***1) Tobacco and alcohol***

Address legislation to:

- a) Increase taxes on tobacco products and alcohol, with the proceeds directed to support the prevention and treatment of the diseases they cause.
- b) Ban cigarette and alcohol sales within geographic proximity of schools.
- c) Ban smoking in schools.
- d) Ban smoking in all government buildings and public transportation.
- e) Advocate for the banning of cigarette advertising.
- f) Curtail the promotion of alcohol products targeting women and children.
- g) Establish firm deadlines/target dates for passage of the legal provisions related to the Framework Convention on Tobacco Control which has been ratified.

***2) Physical activity***

Adopt policies to increase physical activity:

- a.) Make physical education compulsory in schools.
- b.) Ensure that new schools are endowed with adequate facilities for physical education.
- c.) Finance the organization of wellness centers parallel to the health centers.
- d.) Create healthy exercise spaces with adequate personal security, which has been effective in a number of Caribbean countries.
- e.) Through tax relief give support to employers for the establishment exercise facilities at the worksite.

***3) Improve Dietary Practices through***

- a) A mandatory standard of meals at public eating places - schools, office cafeterias, fast food stores and restaurants - eliminating trans fats, reducing salt and sugar content in common foods, beverages, especially those sold to children.
- b) Providing low cost healthy school meals.

- c) Establishment of community based networks to facilitate training in the preparation and use of healthy foods.
- d) . Mandate the RNM to investigate more thoroughly the trade issues which impact on the ability to regulate food imports, reducing those that are less healthy.

**4) *In the case of cancer***

Provide for primary prevention through policies to increase screening for precursor conditions to uterine cancer in women of reproductive age group and older women and protection against uterine cancer in younger women through availability and access to the HPV vaccine, bearing in mind that vaccine will take 10-20 years to have a significant effect, so that screening and treatment of precancer will need to continue.

**For secondary prevention;**

- Organize the health services to apply the clinical protocols that have been demonstrated to be cost-effective for secondary prevention particularly in the case of cardiovascular disease

**B The management and control of NCDs**

- Provide the screening programs, especially at the primary care level for the early detection and treatment of the NCDs
- Strengthen the health services with the human and financial resources to apply the established cost-effective protocols for diagnosis and management of these diseases, which for the most part will require long term treatment.
- Establish collaborative measures for the treatment of patients with cancer
- Ensure the uninterrupted provision of medication for the treatment of NCDs especially for the poor.

**Other General Recommendations**

There is a set of general recommendations which will enhance the possibility of prevention and control of the NCDs

- 1) Form National Level Commissions on NCDs with wide stakeholder participation of Government, Business and Civil Society with clear responsibility to assist in the implementation of relevant policies and track their implementation as well as being strong advocates for the prevention and management of NCDs
- 2) Mandate CAREC as the appropriate regional health institution to establish a system of behavior and risk factor surveillance in the Region in collaboration with PAHO/WHO, CFNI, UWI and other partners, and to strengthen the capacity of countries to measure baselines and monitor and evaluate the impact of programs, including mortality surveillance.

3) Adopt a specific day as **“Caribbean Wellness Day”** This could represent a focal point for engaging the Caribbean people in not only concern for their own wellness, but for examining the measures being put in place to change the enabling environment to protect and preserve their health

### **Involvement of Partners.**

In matters of health, the Pan American/World Health Organization has been the natural partner with the Caribbean countries and forms part of the Secretariat of the Caribbean Cooperation in Health with CARICOM. The active involvement of PAHO/WHO will be critical for the success of the initiatives proposed here. Success in addressing the problem of NCDs will be enhanced by amplifying the web of partners and particularly involving what have been designated the “social partners”. These include the media, the business sector (CAIC) non-governmental organizations (health eg diabetic, cancer, heart and analogous associations), organized labor (CLC) The Universities in the region and the Faith-Based Organizations should be added to this list. There is also the possibility of involving the International Financial Institutions. The Inter-American Development Bank has given pre-approval to the University of the West Indies for a Regional Public Good project focused specifically on the noncommunicable diseases.

### **Monitoring and follow up.**

This will be a critical role for the CARICOM secretariat and the PAHO/WHO, via the joint CCH Secretariat, which should be given the resources to carry out what should be a major undertaking and represent one of the critical areas of functional cooperation as mandated by the Declaration of the Twenty-Eighth Conference of Heads of Government.

**APPENDIX I**

**SECOND GLOBAL SURVEY ON ASSESSING THE PROGRESS OF NATIONAL  
CHRONIC DISEASES PREVENTION AND CONTROL - 2005**

**Number of Countries in the Caribbean responding YES  
(9 Countries participated)**

<b>1- National Focal Point, Unit/Department, and Institute for Chronic Diseases Prevention and Control</b>		<b>3- Policy, strategy, action plan, programme (Cont.)</b>	
Focal point	7	<b>National Programmes</b>	
Unit or department	6	Tobacco control	2
National institute	3	Nutritional/diet	6
National committee	4	Physical activity	2
<b>2- National Act, Law, Legislation, Ministerial Decree for Chronic Diseases Prevention and Control</b>		Alcohol control	1
Tobacco control	3	Hypertension	4
Food and nutrition (NCD related legislation)	4	Diabetes	6
Alcohol control	3	Heart diseases	2
Physical activity	0	Stroke	2
Other	1	Cancer	1
<b>3- Policy, strategy, action plan, programme</b>		Chronic respiratory disease	2
National health policy	9	Other chronic disease	1
National health strategy	9	<b>4- National target</b>	
National integrated programmes	6	Quantitative targets for prevention and control	3
<b>National Policy</b>		<b>5- Implementation of the FCTC and DPAS</b>	
Tobacco control	2	Contracting party to the WHO FCTC	6
Nutritional/diet	5	Implementation action plan of FCTC	1
Physical activity	1	Implementation of DPAS	1
Alcohol control	2	Plans for the implementation of DPAS	2
Hypertension	2	Mechanism for discussion/interaction between national authorities and private sector interests	5
Diabetes	2	<b>6- National health reporting system, survey and surveillance</b>	
Heart diseases	1	Health information system covering chronic diseases and major risk factors	8
Stroke	1	Inclusion of chronic diseases in the annual health report system	9
Cancer	2	<b>Surveys including risk factors (00-05)</b>	
Chronic respiratory disease	1	Tobacco use	6
Other chronic disease	1	Unhealthy diet	6
<b>National Action Plan</b>		Physical inactivity	6
Tobacco control	3	Alcohol consumption	5
Nutritional/diet	4	Hypertension	6
Physical activity	2	Diabetes	6
Alcohol control	1	Overweight and obesity	6
Hypertension	1	Dyslipidaemia	3
Diabetes	1	Heart diseases	4
Heart diseases	1	Stroke	3
Stroke	1	Cancer	3
Cancer	1	Chronic respiratory diseases	1
Chronic respiratory disease	1		
Other chronic disease	1		

## Situation of Chronic Diseases in Caribbean Countries Responding **YES** (9 participations)

### *Tobacco*

Laws or ministerial decrees for Tobacco control	3
National policy for Tobacco control	2
National action plan for Tobacco control	3
Individual national programs for Tobacco Control	2
Contracting party to WHO FCTC	6
Risk factor Tobacco use included in surveillance system	0
National guidelines for smoking cessation	0
Budget for Tobacco use	2

### *Diet*

Laws or ministerial decrees for Food and Nutrition	4
National policy for Nutrition/diet	5
National action plan for Nutrition/diet	4
Individual national programs for Nutrition/diet	6
Survey (00-05) for unhealthy diet	6
Risk factor unhealthy diet included in surveillance system	1
National guidelines for Dietary	2
Budget for Nutrition/diet	4

### *Physical Activity*

Laws or ministerial decrees for Physical Activity	0
National policy for Physical Activity	1
National action plan for Physical Activity	2
Individual national programs for Physical Activity	2
Risk factor physical inactivity included in ss	1
National guidelines for Physical activity	0
Budget for Physical activity	1

### *Alcohol*

Laws or ministerial decrees for Alcohol control	3
National policy for Alcohol control	2
National action plan for Alcohol control	1
Individual national programs for Alcohol control	1
Survey (00-05) for alcohol consumption	5
Risk factor alcohol consumption included in ss	0
Budget for Alcohol consumption	1

### *Obesity*

Implement DPAS	1
Plans for implementation DPAS	2
Mechanism for discussion with private sector DPAS	5
Survey (00-05) for overweight and obesity	6
Risk factor BMI included in surveillance system	1
National guidelines for weight control	0
Budget for Obesity	3

**Summary of results by Countries  
2005 Survey**

Countries	A	B	C	D	E	F	G	H	I	J	Total
Anguilla				✓							1
Antigua and Barbuda											
The Bahamas	✓	✓		✓	✓	✓	✓	✓		✓	8
Barbados			✓	✓	✓	✓		✓		✓	2
Guyana										✓	1
Haiti	✓								✓		2
Jamaica	✓			✓	✓	✓				✓	5
Suriname	✓	✓				✓				✓	4
Trinidad and Tobago	✓		✓		✓						3

✓ Present

A= *National Focal Point, Unit/Department, and Institute for Chronic Diseases Prevention and Control*

B= *National Act, Law, Legislation, Ministerial Decree for Chronic Diseases Prevention and Control*

C= *Policy, strategy, action plan, programme*

D= *National target*

E= *Implementation of the FCTC and DPAS*

F= *National health reporting system, survey and surveillance*

G= *National community-based demonstration programme*

H= *National Protocols/Guidelines/Standards for Chronic Diseases and Conditions*

I= *Quality of care*

J= *Financial Resources*

## APPENDIX I1 continued

### National Chronic Disease Response Survey by PAHO/WHO, 2007: PRELIMINARY RESULTS FOR FIRST EIGHT CARICOM COUNTRIES TO RESPOND

**1 = YES/PRESENT; and 2 = NO/NOT PRESENT**

#### NATIONAL FOCAL POINT, UNIT/DEPARTMENT, AND INSTITUTE

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Focal point?	1	1	1	1	1	1	1	1
Chronic diseases unit?	2	1	1	2	2	1	1	1
National institute?	2		1	2	1	2	2	2
National Advisory group	2	1	1	2	2	1	2	1
Specific advisory group for:								
Hypertension			1			1		1
Diabetes			1			1		1
Heart diseases		1	1			1		
Stroke			1			1		
Cancer			1			1		1
Chronic resp. dis.		1	1			1		1

1=yes                      2=no

#### NATIONAL ACT, LAW, LEGISLATION, MINISTERIAL DECREE

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Tobacco control		1	1		1	1		1
Food and nutrition			1					
Specific food prod.			1					
Settings								
Alcohol control		1	1		1			1
Physical activity								
Other	1							

1=yes                      2=no



POLICIY, STRATEGY, ACTION PLAN, PROGRAMMES

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Ntl. Health Policy	1	1	1	2	2	1	2	2
Ntl. Health Strategy	2	1	1	2	2	2	2	1
Ntl. integrated program	1	1	1	2	2			1
Tobacco Control		1	1		1	1		1
Nutrition/Diet		1	1			1	1	1
Physical activity		1						
Alcohol control					1	1		
Hypertension								
Diabetes		1						
Heart disease								
Stroke		1						
Cancer		1	1			1		
Chronic resp. disease								
Other						1		

1=yes 2=no

INDIVIDUAL NATIONAL ACTION PLANS

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Tobacco control			1		1		1	
Nutrition/Diet		1	1				1	1
Physical Activity								
Alcohol Control		1	1		1			
Hypertension			1					1
Diabetes		1	1					1
Heart Disease			1					1
Stroke			1					1
Cancer		1	1					1
Chronic resp. disease		1						1
Other						1		

1=yes 2=no

INDIVIDUAL NATIONAL PROGRAMMES

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Tobacco control			1		1			1
Nutrition/Diet		1						1
Physical Activity								
Alcohol Control		1			1			1
Hypertension			1					1
Diabetes		1	1					1
Heart Disease			1					1
Stroke			1					1
Cancer		1	1					1
Chronic resp. disease								1
Other								

1=yes 2=no

POLICY ENVIRONMENTS  
TOBACCO CONTROL

Physical

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Health facilities	1	1	1		1			
Edu. facilities	1	1	1		1			
Gov. buildings	1	1			1			
Workplaces (ex.)		1			1			
Workplaces (in.)		1			1			

1=yes 2=no

Tax and Economic

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
(+) Taxes and price of tobacco products	1		1		1	1		
(-) Costs of cessation prog.								

1=yes 2=no

Communications

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Ban of marketing								
Marketing restrictions	1	1				1		
Warning labels	1					1		
Campaigns for high risk populations	1		1			1		

1=yes 2=no

POLICY ENVIRONMENTS  
FOR HEALTHY EATING

Physical

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Access to healthy foods	1							
Limited fat, salt, sugar in processed foods								
Nutritious foods in schools	1	1						
Elimination of trans fats		1						

1=yes 2=no

Tax and Economic

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Making healthy food affordable		1						
Incentives for produce market	1	1						

1=yes 2=no

Communications

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Nutrition information			1		1			
Restrict advertising of unhealthy food	1							
Healthy food campaigns	1	1	1					

1=yes 2=no

POLICY ENVIRONMENTS  
FOR PHYSICAL ACTIVITY

Physical

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Creation of recreational facilities and their access	1	1	1					
Urban planning		1	1					
Physical edu.	1	1			1			
Trails for pedestrians and bicyclers	1							
Alternatives to rapid mass trans.	1							
Outdoor safety								

1=yes 2=no

Tax and economic

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Funding								
Subsidies for public transportation		1						
Commuter parking cash-outs								
More space for pedestrians on streets	1				1			

1=yes 2=no

Communications

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Point of decision prompts								
Messages of weight loss benefits	1	1	1					

1=yes 2=no

POLICY ENVIRONMENTS  
FOR ALCOHOL CONTROL

Physical

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Hours and days of sale	1		1					
Where it can be sold		1	1					
Density of outlets								

1=yes 2=no

Tax and economic

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
(+) taxes and price	1		1		1			
(-) costs for screening and treatment of alcoholism		1						

1=yes 2=no

Communications

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Ban of ads								
Restrictions of ads	1							
Strong warnings	1				1			
Campaigns aimed at high risk populations	1	1						

1=yes 2=no

NON-GOVERNMENTAL ORGANISATIONS

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
NGO involvement		1	1		1	1		1
NGO represent.		1	1		2	1		1
Raising awareness	1	1	1	1	1	1	1	1
Policy development		1	1			1		1
Patient mngt support	1	1	1		1	1	1	1
Education	1	1	1		1	1	1	1
Tech. support		1				1		1

1=yes 2=no

PRIVATE SECTOR

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Private sector involvement		1	1		1	1		1
Private sector represented		1	1		2	1		2
Raising awareness	1	1	1		1	1		1
Policy development		1				1		1
Patient mngt support	1	1	1		1	1	1	1
Education	1	1	1		1	1		1
Technical support		1	1			1		1

1=yes 2=no

NATIONAL TARGET

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Targets set	2	1	1	2	2	2	2	1
Organization involved in setting targets								
Ministry of Health	1	1	1					1
Group associations		1						
Ministry of Education		1	1					
Consumer organizations			1					
Ministry of Finance		1	1					
Medical/Health professional associations		1	1					1
Other ministries	Agriculture	1	1					
Disease-specific associations		1	1					1
Subnational government								1
International NGO'		1	1					
WHO/PAHO	1	1	1					
Other bilateral org.		1	1					
Ntl. NGO's		1	1					
Academic institutions		1	1					
Citizen of community reps.		1						
Others		1						

1=yes 2=no

IMPLEMENTATION OF *FCTC* AND *DPAS*

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Contracting party to WHO FCTC?	2	1	1	2	1	1	1	2
If yes, action plan?		2	2		1	2	1	
Need assistance from WHO/PAHO?		1	1		1	1	1	
DPAS implementation?	1	1	2	2	2	2	2	
If not, any plans to implement?			2	2		1	1	
Does your country have a mechanism to discuss DPAS?		1	2	2	2	1	2	
If yes, what?								
Need any assistance from WHO/PAHO?		1	2	1	1	1	1	

1=yes

2=no

NATIONAL HEALTH REPORTING SYSTEM, SURVEY AND SURVEILLANCE

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTserrat	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
NCD are part of information system?	1	1	1	2	1	2	1	1
NCD's included in annual reports?		1	1	1	1	1	1	1
Data included*	3	1,2,3	2,3	2,3	2,3	2	2,3	2,3
Tobacco use			1		1		1	1
Raised blood glucose			1	1				1
Unhealthy diet		1	1				1	1
Raised blood pressure			1	1				1
Physical inactivity							1	1
Dyslipidaemia			1					1
Alcohol consumption					1		1	1
Heart diseases								
Hypertension					1		1	1
Stroke		1						
Diabetes					1		1	1
Cancer		1	1		1			
Overweight and obesity	1	1	1				1	1
Chronic resp. diseases								
Routine surveillance of NCD?	2	2	1	2	2	2	2	2
Implementation of WHO/PAHO Stepwise?	2	1	2	2	2	1	2	1
Familiar with WHO/PAHO Stepwise?	2		1	1	2		1	1

1=yes 2=no

\* For "data included"portion: 1=risk factors, 2=cause-specific mortality, 3= Morbidity



NATIONAL COMMUNITY BASED DEMONSTRATION PROGRAMMES

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Integrated NCD prevention and control?	1	1	1	2	2	1	2	1
Tackling individual risk factors?	1	1	1	2	2	1	2	1
Children 15 years and younger	1	1	2	2	2	1	2	1
15-24 years		2	1	2	2	1	2	1
25-64 years		1	1	2	2	1	2	1
65+ years	1	1	1	2	2	1	2	2
Women		1	1	2	2	1	2	2
Other		2	2		2	2	2	
Workplace	1	2	2	2	2	2	2	1
School	1	1	2	2	2	2	1	1
Hospital and clinics		1	1	2	2	1	1	1
Community		1	1	2	2	2	2	1
Family		1	1	2	2	2	2	
Others		2	2	2	2	2	2	

1=yes

2=no

NATIONAL PROTOCOLS AND GUIDELINES

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSEERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Hypertension	1	1	1		1	1		1
Diabetes mellitus	1	1	1	1	1	1		1
Heart diseases	1	1	1					
Stroke/ CVA	1		1					
Cancer		1	1		1			
Chronic resp. diseases		1	1					1
Smoking cessation			1					
Weight control								
Dietary		1	1					1
Physical activity								
Other								

1=yes

2=no

QUALITY OF CARE MONITORY SYSTEM

Quality of care monitory system

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Hypertension								
Diabetes		1	1					
Heart diseases								
Stroke								
Cancer		1						
Chronic resp. diseases		1						

1=yes

Quality of care indicators

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Hypertension								
Diabetes		1	1					
Heart diseases								
Stroke								
Cancer		1						
Chronic resp. diseases		1						

1=yes      2=no

Quality of care improvement strategy

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Hypertension								
Diabetes								
Heart diseases								
Stroke								
Cancer								
Chronic resp. diseases								

1=yes      2=no

FINANCIAL RESOURCES

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Budget for NCD's?	1	1	1	2	1	2	2	1
Specific budget for:								
Tobacco use	1		1	2	1	2	2	
Nutrition/ diet	1	1	1	2		2	2	1
Physical activity			1	2		2	2	
Alcohol consumption		1	1	2	1	2	2	1
Obesity		1	1	2		2	2	1
Hypertension	1	1	1	2	1	2	2	1
Diabetes mellitus	1	1	1	2	1	2	2	1
Heart diseases	1	1	1	2		2	2	1
Stroke	1	1	1	2		2	2	1
Cancer	1	1	1	2	1	1	2	1
Chronic resp. diseases		1	1	2		2	2	1
Source of financial support:								
Increase tax on cigarettes					1			
Fund raising activities								
Increase tax on alcohol					1			
Donations from private groups		1	1					
Increase tax on unhealthy imported food		1						
Unspecific resources		1				1		
International financial aids		1	1					
Others	1	1						1

1=yes

2=no

NCDP SERVICES/PROCEDURES  
PROGRAMMES INTEGRATED WITHIN PRIMARY HEALTH CARE SYSTEM

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTserrat	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
NCDPC integrated into health system?	1	1	1	1	1	1	1	1
Components of programs:								
Health Promotion & Primary Prevention	1	1	1	1	1	1	1	1
Management	1	1	1	1	1	1	1	1
Surveillance	1	1	1	1		1	1	1
Home-based Care	1	1	1	1		1		1
Any efforts to integrate care for NCD's?	1	1	1		2	1	1	1
Mecanisms to link different levels of care:								
Policy for integrated care								
Information systems						1	1	1
Specific Guidelines/pathways	1	1	1			1	1	1
Other, specify		1				1		1
Policy for integrated care						referrals		1

1=yes

2=no

AVAILABILITY LEVEL OF CARE  
ESSENTIAL EQUIPMENT AND FACILITIES IN PHC/STC FOR DIAGNOSIS AND MONITORING

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Blood pressure monitors	3	3	3	3	3	3	3	3
X rays (Lung cancer)	3	3	2	2	2	2	2	3
Digital exam	3	3	3	3	2	3	2	3
Prostate antigen	3	1	2		2	2		3
Glucose monitors	3	3	3	3	3	3	3	3
Hemoglobin A1C	3	3	2	2	2	3	2	3
Monofilament		3				3		
Eye dilation		3	2			2	2	2
PAP smear	1	3	2	1	3	3	3	3
Acid acetic visualization		3	2			2		2
Endoscopy	2	2			2	2	2	2
X rays (Chronic resp. dis.)	3	2	2	2	2	2	2	3
Spirometry	2	2	2		2	2		3
Mammography	2	1			2	2	2	3
Colonoscopy	2	3			2	2	2	2
EKG	2	3	2	2	2	3	3	3
Total cholesterol	3	3	2	2	2	3	3	3
Cholesterol HDL	3	3	2	2	2	3	3	3
Cholesterol LDL	3	3	2	2	2	3	3	3
Triglycerides	3	3	2	2	2	3	3	3

1= PRIMARY HEALTH CARE; 2= SECONDARY OR TERCIARY HEALTH CARE; 3= BOTH

ESSENTIAL PROCEDURES AVAILABLE IN SECONDARY/TERTIARY CARE

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Eye retinal photocoagulation		2	2		2	2		2
Cardiac bypass			2		2	2		2
Angioplasty			2			2		2
Dialysis	2	2	2		2	2	2	2
Cryotherapy for Cervical Cancer	2	2	2			2		2
System for providing community based care for advanced NCD victims?*	1	1	1	1	2	1	2	1
1=PHC **1=yes	2=STC 2=no	3=both						

AVAILABILITY OF ESSENTIAL MEDICINES

Country	ANTIGUA & BARBUDA	BARBADOS	GUYANA	MONTSERRAT	SURINAME	TRINIDAD & TOBAGO	BELIZE	THE BAHAMAS
Is there a List of Essential Medicines?	2	1	1	2	1	1	1	1
Insulin	1	1	1	1	1	1	1	1
Aspirin (100 mg)	1	1	1	1	1	1	1	1
Metformin	1	1	1	1	1	1	1	1
Glibenclamide	1	1	1	1	1	1	1	1
Thiazide diuretics	1	1	1	1	1	1	1	1
ACE inhibitors	1	1	1	1	1	1		1
CC blockers	1	1	1	1	1	1		1
Beta blockers	1	1	1	1	1	1		1
Tamoxifen		1	1	1	1	1	1	1
1=yes	2=no							