

# Chronic Disease and Ageing in the Caribbean: Opportunities Knock at the Door

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## ABSTRACT

*Amidst rapid population ageing, the incidence and prevalence of chronic diseases and their sequelae demand reflective and critical looks at the issue and the subsequent development of informed age-sensitive responses. This paper reviews the burden of chronic diseases in the Caribbean, and its relationship to ageing and the demographic transition. Inter-linkages between the social determinants of health, poverty, ageing, and chronic disease are illustrated. Suggestions are made regarding directions to be pursued and the emerging initiative regarding chronic non-communicable diseases being spearheaded at the United Nations by CARICOM countries*

**Keywords:** Ageing, chronic disease

## Enfermedades Crónicas y Envejecimiento en el Caribe: las Oportunidades Lllaman a la Puerta

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## RESUMEN

*En medio del rápido envejecimiento de la población, la incidencia y prevalencia de las enfermedades crónicas y sus secuelas, requiere echar una ojeada reflexiva y crítica al problema y al desarrollo ulterior de las respuestas informadas sensibles a la edad. El presente trabajo examina la carga de las enfermedades crónicas en el Caribe, y su relación tanto con el envejecimiento como con la transición demográfica. Se ilustran los vínculos existentes entre las determinantes sociales de la salud, la pobreza, el envejecimiento, y las enfermedades crónicas. Se hacen sugerencias en cuanto a los caminos a seguir y la iniciativa emergente en relación con las enfermedades crónicas no comunicables, encabezada por los países del Caricom en las Naciones Unidas.*

**Palabras claves:** Envejecimiento, enfermedad crónica

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## INTRODUCTION

Chronic non-communicable diseases and ageing are two of the major public health challenges of the current millennium. Non-communicable diseases (NCDs) are increasing in priority on the global agenda (1–8). Cardiovascular disease, cancer, chronic respiratory diseases and diabetes are the leading causes of death and disability, accounting for 49% of the worldwide burden of disease (9). Non-communicable diseases are now the leading cause of death in developing countries with the rate rising fastest in the lower income

countries and projected to increase by 17% over the next 10 years (1, 10). This is occurring despite (a) the many initiatives to reduce the incidence of chronic disease and (b) evidence that preventive actions reduce morbidity and mortality in developed countries (11–13).

## Burden of disease

In Latin America and the Caribbean (LAC), NCDs account for 62% of mortality which is more akin to that of developed countries (86%) compared to that of African states (21%). Non-communicable diseases account for 50% of mortality in persons under age 70 years in the LAC region (14).

Heart disease, stroke and diabetes are the main causes of death in the Caribbean (15). Diabetes and hypertension contribute significantly to heart disease and stroke while diabetes is a major cause of hospital admission for kidney fail-

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ure, blindness and amputation as well as leg ulcers. Fifty per cent of disability-adjusted life years lost (DALY) in the region is attributable to NCDs (16) and studies document the impact of increased disability in later life in persons with chronic disease (17–19).

Early mortality from stroke has been reported to range from 9–16% in the United States of America (USA) and Canada but was 32–38% for six countries in LAC; premature mortality loss being higher for men than for women (18, 19). Attendant lifestyle risk factors in the under 75-year old population have also been documented (20, 21).

Approximately 60% of the older population in the region has at least one chronic disease (17, 19, 22). The prevalence increases with age and in some studies has been reported as over 90% after age 85 years (23, 24). With longer life has come an increased prevalence of disease (25). In older populations, infectious diseases such as HIV/AIDS and tuberculosis may coexist with chronic NCDs (26, 27). Ageing populations and chronic diseases challenge health and social service systems (28).

### Demographic change

The rise of NCDs is related to the ageing of Caribbean populations (17, 19, 29) [Tables 1 and 2]. The demographic

Table 2: Caribbean Ageing Situation: Elderly as a per cent of population – 2007

<b>Incipient ageing</b>	<b>Under 6%</b>
Haiti	
<b>Moderate ageing</b>	<b>6–8%</b>
Belize	
Guyana	
Dominican Republic	
<b>Moderate to Advanced</b>	<b>8–13.5%</b>
Trinidad and Tobago	
Bahamas	
Jamaica	
Suriname	
<b>Advanced</b>	<b>Over 13.5%</b>
Barbados	
Guadeloupe	
Martinique	
Cuba	

Source: World Population Ageing 1950–2050. United Nations, 200/07

tunities. A significant demographic change has been an increase in life expectancy which is now eight years higher than the average for developing countries. The population which once had a large percentage of dependent children has shifted to one with fewer dependent children and more working age adults (15–59 years). While the speed and magnitude of ageing is significant, so is the accompanying feminization

Table 1: Ageing in the Caribbean – 2007

Countries	Total 60+ (Thousands)	%	Ageing Index	2005–2010 % Growth Rate 60+	LE at Birth	LE/60	LE/80	Median Age
Caribbean	4406.4	11.1	40.8	2.7	68.7	21.0	8.4	28.0
Bahamas	32.3	9.8	35.4	3.5	72.1	21.4	8.7	27.6
Barbados	36.8	13.6	74.0	2.3	76.4	21.2	7.7	34.7
Belize	16.9	6.0	17.0	3.2	71.7	21.2	8.1	21.2
Cuba	1823.4	16.1	87.4	2.8	78.6	22.5	8.7	35.6
Dominican Republic	557.6	6.5	20.4	3.7	68.6	19.4	7.3	23.3
Guyana	5.8	7.7	26.9	2.6	65.4	18.4	7.0	25.7
Haiti	535.5	5.1	16.1	2.1	53.5	17.2	7.0	20.0
Jamaica	276.1	10.3	34.2	1.2	71.1	21.0	8.4	24.9
Netherlands Antilles	27.6	14.9	68.3	3.9	76.9	20.6	7.4	42.8
Puerto Rico	701.2	17.5	81.1	2.4	76.8	22.1	8.8	43.1
St Lucia	15.8	9.7	35.4	1.2	73.1	19.3	7.7	25.6
Suriname	41.6	9.2	31.9	1.8	70.2	18.5	7.1	25.1
Trinidad and Tobago	149.2	11.4	54.9	3.2	70.1	20.1	7.7	29.4
Guadeloupe	65.9	14.5	59.6	3.1	79.2	23.1	9.3	34.1
Martinique	69.6	17.5	84.6	2.4	79.4	23.2	9.6	36.4
St. Vincent/Grenadines	10.9	9.1	32.1	1.6	72.0	18.2	6.1	24.6

Source: UN 2007. LE = life expectancy; Ageing Index = number of persons 60+ per 100 persons under age 15

situation in the region has changed significantly since the 1950s (Figs. 1, 2). At that time, there were large families, high fertility rates coupled with high infant and under five mortality rates, low levels of education and few work opportunities. The Moyne Commission led to the introduction of a number of health and social interventions resulting in marked reductions in infant and child mortality, reductions in fertility and increases in the levels of education and work oppor-

of the older population in particular the old-old (over 80 years). The current half century will be characterized by rapid increases in the old-old [Fig. 2] (29).

As populations age, there is an increasing prevalence of chronic disease although ageing *per se* does not cause disease. However, because persons are living longer they are at increased risk of chronic disease due to longer exposure to risk factors. Consequently, there are increasing needs for healthcare and financing of healthcare (30–32).

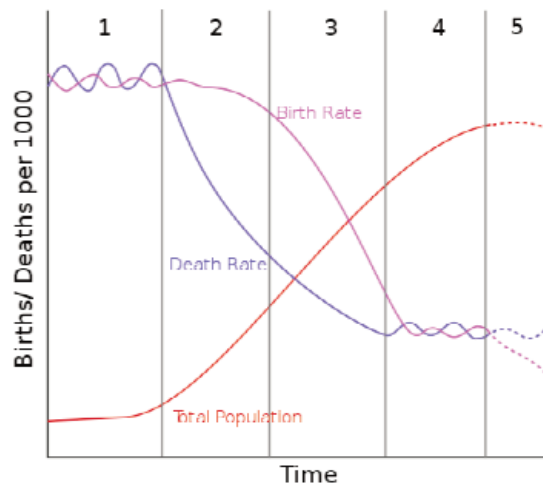


Fig. 1: Demographic transition

Source: [https://www.e-education.psu.edu/drupal6/files/geog030/disease/m7\\_stage5.png](https://www.e-education.psu.edu/drupal6/files/geog030/disease/m7_stage5.png)

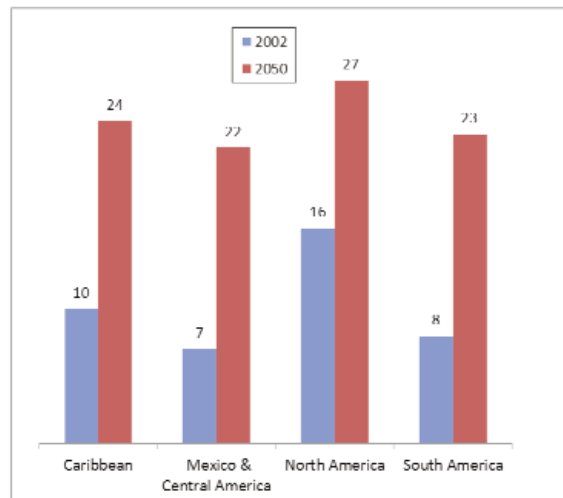


Fig. 2: Per cent of population age 60 years and older

Source: Public Health Agency of Canada

### Social determinants of health and chronic NCDs

The social determinants defined as the conditions in which persons live, work and age are important factors in the development of NCDs (33). Economic and social development including urbanization, mechanization, improved access to food and globalization has been noted to increase risk factors for chronic disease (33) [Fig. 3]. Social determinants impact on active healthy ageing (Figs. 4, 5) and two are particularly important – gender and socio-economic status. When considering the links between increasing NCD prevalence and an ageing population (34–38), these two

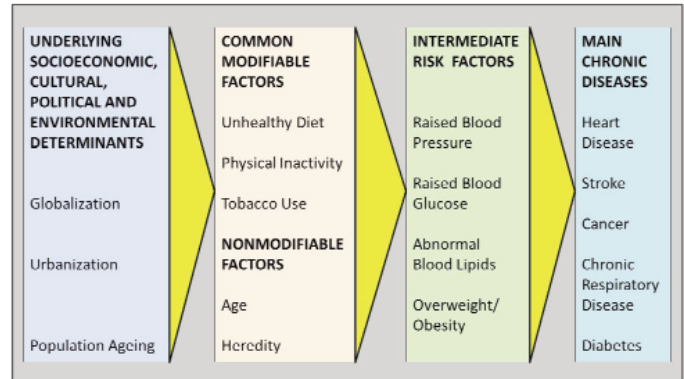


Fig. 3: Causes of chronic disease

Source: Adapted from Public Health Agency of Canada [http://www.phac-aspc.gc.ca/seniors-aines/publications/pro/healthy-sante/haging\\_newvision/vision-rpt/stage-contexte-eng.php](http://www.phac-aspc.gc.ca/seniors-aines/publications/pro/healthy-sante/haging_newvision/vision-rpt/stage-contexte-eng.php)



Fig. 4: Social determinants of health

Source: Adapted from Health Canada, "Health and Environment: Critical Pathways". Health Policy Research Bulletin 2002; 4: 3.

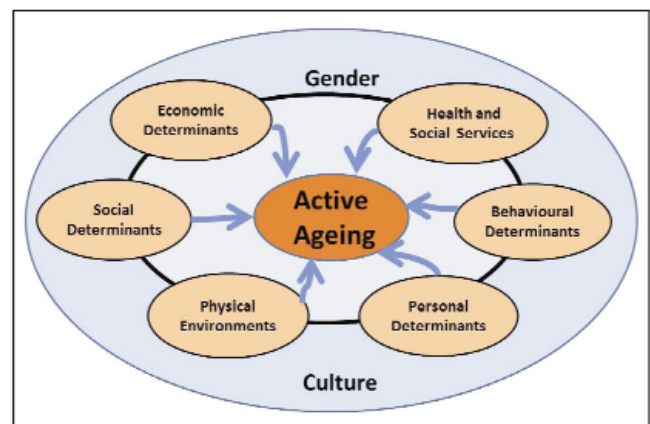


Fig. 5: Determinants of active ageing

Source: Adapted from WHO, 2007. [http://www.who.int/ageing/publications/Global\\_age\\_friendly\\_cities\\_Guide\\_English.pdf](http://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf)

factors, independently and in association with poverty, mediate health and well-being.

There are links between poverty and chronic disease; the latter can help trap households in a cycle of poverty (38). Moreover, older women are at increased risk of poverty (34, 37) due to having had less work opportunities in earlier life and the cultural role of women in staying home, having less education and being the traditional caregivers. Older women are more at risk of widowhood and have increased chronic diseases, which both increase rates of poverty. There is evidence that the old-old are more at risk of being poor and dependent on family (14, 39). The costs associated with a chronic disease can push the family further into poverty. For older persons, the situation is further compounded by lower education and inadequate pensions which limit healthy choices as well as optimal healthcare utilization. Increased presence of behavioural risk factors for NCDs (unhealthy diets, smoking and alcohol abuse) is associated with poverty (39–41).

### Mental health

In addition to social determinants and social well-being, the mental health issues of chronic disease in older persons should be considered. Mental health disorders account for 14% of the global burden of disease (42). In ageing populations, neurological disorders such as dementia and Parkinson's disease increase. In Brazil, neuro-psychiatric disorders have been identified as the leading contributor to the NCD burden (36). At the same time, improved treatment increases the longevity of persons with mental illness. These diseases can further add to the burden of families providing social and financial support. Caregiver burnout and stress should not be ignored.

### The Caribbean response to NCDs and ageing

The Caribbean has, over the past decade, focussed on the issue of chronic disease as a regional issue and is in fact providing worldwide leadership in the fight to reduce NCDs. The Caribbean Commission on Health and Development (CCHD) identified chronic disease as a priority in 2005 (1) and has noted the high levels of chronic disease and risk factors (Figs. 6–8). CARICOM in 2007 launched a regional effort in the fight against chronic diseases with special attention paid to the associated economic costs (15). Chronic disease accounted for US\$82 billion in lost production in 23 countries while the expenditure on interventions was \$5.8 billion (43).

### Prevention for older persons

Treatment of NCDs is both prolonged and costly. Both ageing and chronic disease increase the demand for healthcare. Inadequate treatment in the early stages of disease contributes to problems later. Meeting treatment costs should not be the only focus. Health services must also meet the challenge of promoting healthy behaviours. Prevention

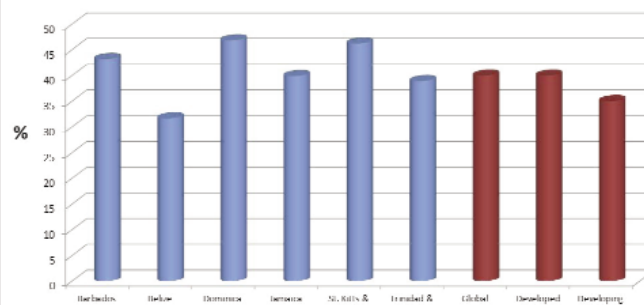


Fig. 6: Elevated blood pressure rates (age 25+ years) – 2008 (SBP > 140 and/or DPB > 90 or on medication)

Source: Constructed using data from WHO Global Status Report on Non-communicable Diseases 2010. [http://www.who.int/nmh/publications/ncd\\_report2010/en/index.html](http://www.who.int/nmh/publications/ncd_report2010/en/index.html)

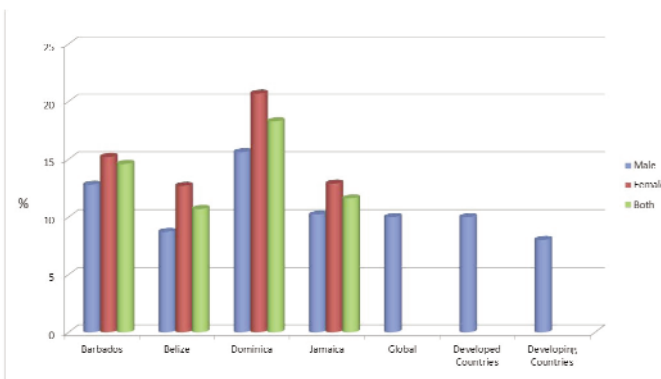


Fig. 7: Age-standardized regional diabetes rates (age 25+ years) – 2008.

Source: Constructed using data from WHO Global Status Report on Non-Communicable Diseases 2010. [http://www.who.int/nmh/publications/ncd\\_report2010/en/index.html](http://www.who.int/nmh/publications/ncd_report2010/en/index.html)

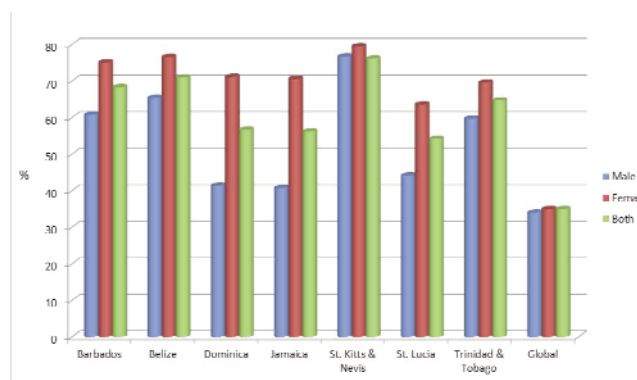


Fig. 8: Age standardized rates of overweight (BMI > 25kgm²; age 25+ years) – 2008.

Source: Constructed using data from WHO Global Status Report on Non-Communicable Diseases 2010. [http://www.who.int/nmh/publications/ncd\\_report2010/en/index.html](http://www.who.int/nmh/publications/ncd_report2010/en/index.html)



programmes that are affordable, acceptable and accessible for older persons are needed. Approaches to be effective should be age sensitive. For example, in designing physical activity programmes for prevention among frail older persons (44), there is need to recognize the ‘geriatric giants’ – falls, immobility, memory problems and incontinence.

Several prevention strategies have been identified as critical to the management and control of NCDs. These include improved healthcare services to facilitate early detection and treatment (45–48). Other important strategies include the reduction of risk through lifestyle interventions, with the emphasis traditionally focussed on younger age groups although increasingly, the importance of prevention especially secondary prevention for older ages is being noted (48).

### **The way forward: What needs to be done?**

The desired outcomes of NCDs reduction include increased survival without disability, increased quality of life and lower healthcare costs. How can this be achieved in a Caribbean population? The way forward is complicated as the burden of chronic disease coexists with an increasingly ageing population, the continued presence of communicable disease and inadequacies of healthcare systems with regard to chronic care. Integrated programmes to promote both healthy active ageing and NCD reduction are needed. Programmes are needed for both today’s and tomorrow’s older persons. For future cohorts of older persons, the aim should be reduction during midlife while the overall efforts at NCD reduction should ensure that younger persons age with less chronic disease.

The model of dealing with chronic disease in the acute care system which currently exists in primary care is not effective at reducing NCDs or geriatric giants and their complications. A shift to continuous chronic care management, incorporating an age-friendly approach, is needed. For this, resources, especially human, are needed. There is evidence that this model works (50–53).

The Chronic Care Model proposed by the World Health Organization (WHO) in 2002, while well-established and successful in high income countries such as the Netherlands and Australia, has not been very successful in middle and low income countries due to inadequate capacity and resources (25). The challenge for the Caribbean is to identify how best to adapt and implement amidst perceptions shared by some health professionals that older persons are not interested in practising self-care and are too stubborn to change (54).

Chronic disease management should include support of coping mechanisms and resources to improve persons’ ability to cope with the demands of their disease. Deteriorating health has social consequences including a decreasing sense of well-being and subsequent withdrawal from activities. Increasing loss of function often leads to loss of autonomy and control and accompanying feelings of low self-worth. Empowering older persons in self-management of both their

ageing process and chronic disease is critical for healthy ageing.

Action is needed on several fronts:

- \* Macro-economic and policy interventions
- \* Population based interventions
- \* Individual interventions using a life course approach which would include targets for each age group

Health and NCD reduction need to be recognized as being important to the development and economic agenda of the region and of each country. Raising the priority of NCDs as a health problem is important (55) given that the Millennium Development Goals do not include a strategy for reduction of chronic disease.

Some activities such as banning smoking need collective action at national level. Health promoters have serious competition as they work with individuals to change behaviour from the aggressive marketing campaigns of “risk factor” advocates such as tobacco, alcohol and fast foods (41, 46, 56). Yet there is evidence that such campaigns reduce disease. The anti-smoking campaigns with the creation of smoke-free environments and the safe sex campaign for HIV/AIDS are examples of societal interventions which have had an impact (26, 46).

Strong sustainable healthcare systems integrating public and private care are important. The healthcare system itself needs to be examined. The six key components: service delivery, finance, governance, technologies, the workforce and information systems all include elements of chronic disease management which can be expanded to be more effective. Regional countries should examine current systems to identify strengths and weaknesses, including available resources and develop improvement plans.

Primary healthcare (PHC) as the first point of contact between individuals and the health system offers the potential for reducing the burden of NCDs while promoting active ageing. Both activities need community intervention including promoting self-management. Interventions in primary care have shown that when large sections of the population access an intervention, there are larger health gains than for individual interventions and, when supported by non-health interventions such as food regulation, urban design and poverty reduction, the gains are even greater (47). Effective PHC must be supported by effective referral systems to secondary and territory systems, thus providing a continuity of care. Amidst scarce resources, the efforts of Caribbean countries can be bolstered by international funding agencies with resources allotted not only for health but for poverty reduction.

Health information systems which facilitate assessment of disease frequency and impact of interventions are vital. Risk factor monitoring should be part of all systems. Inadequate information contributes to poor planning and resource allocation. What are the critical health indicators

needed to effectively measure change in Caribbean countries? Indicators to monitor the ageing situation now exist (57) and these should augment those routinely generated for chronic diseases (57).

Regardless of where funding comes from or where it goes (58), political will and direction is desirable and the vital link between chronic disease and development needs to be appreciated. There is both hope and opportunity due to “the impressive leadership of Caribbean Community member states” (15, 59) in the world pertaining to the issue of preventing chronic diseases including financing when United Nations member states meet in New York in September 2011.

It will be important for political consensus to be translated into country plans including those that address the social determinants and financing. The UN summit proposes to discuss the way forward.

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