

Chronic Non-Communicable Diseases and the Economy

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ABSTRACT

There is no question that chronic non-communicable diseases (CNCDs) pose the single, greatest sustained threat to the stability of health systems worldwide. While undoubtedly the main dimension of the CNCDs challenge is in respect of the health and well-being of the population, it is becoming increasingly obvious that CNCDs are also posing a serious challenge to economies. Health system costs are increasing faster than national income in almost all nations and the main cause is the growing incidence of CNCDs and the diverse spill-over effects. The concern is that if this continues, there will come a time when the economic system will simply no longer be capable of coping with the burden of the CNCDs.

In these circumstances the economist has two major concerns. The first is to understand and explain how CNCDs affect the functioning of the economic system. It is argued that while the analysis will necessarily begin on the qualitative level, for policy purposes it must also be taken to the quantitative level.

The second major concern of the economist is to understand and explain how the working of the economy influences the incidence of CNCDs in particular countries. The author suggests that at a time when the prevention and management of CNCDs are high on the agenda of many nations, it is important to know whether the measures being taken to improve human development and economic well-being are themselves contributing to an increasing incidence of CNCDs particularly in small, vulnerable, open economies.

In this regard, this paper briefly explains how CNCDs affect the economic system and presents some of the estimates of quantitative impact on the economy.

Keywords: Chronic non-communicable diseases, economic system

Las Enfermedades no Comunicables Crónicas y la Economía

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RESUMEN

No hay duda de que las enfermedades no comunicables crónicas (ENCCs) representan la única y mayor amenaza sostenida para la estabilidad de los sistemas de salud a nivel mundial. Si bien no cabe duda de que la dimensión principal del desafío de las ENCCs se presenta con respecto a la salud y el bienestar de la población, se hace cada vez más obvio que las ENCCs representan también un serio reto para las economías. Los costos del sistema de salud están aumentando más rápidamente que el ingreso nacional en casi todas las naciones y la causa principal es la incidencia creciente de las ENCCs y los diversos efectos de desbordamiento. La preocupación es que si esto continúa, llegará el momento en que el sistema económico simplemente no podrá soportar más la carga de las ENCCs.

Según el autor, en estas circunstancias el economista se enfrenta a dos problemas principales. El primero es entender y explicar cómo las ENCCs afectan el funcionamiento del sistema económico. En este punto, se aduce el argumento de que aunque el análisis tendrá necesariamente que comenzar en el nivel cualitativo, por razones de las políticas a seguir, tendrá que ser llevado también al nivel cuantitativo. El segundo problema principal del economista es entender y explicar cómo el funcionamiento de la economía influye en la incidencia de las ENCCs en países específicos. El autor sugiere que en un

momento en que la prevención y el tratamiento de las ENCCs constituyen una prioridad en la agenda de muchos países, es importante saber si las medidas que se están tomando para mejorar el desarrollo humano y el bienestar económico, estén acaso contribuyendo ellas mismas a una creciente incidencia de las ENCCs, especialmente en las economías pequeñas, vulnerables, y abiertas. Al respecto, el autor explica brevemente cómo las ENCCs afectan el sistema económico, y presenta algunos estimados del impacto cuantitativo sobre la economía.

Palabras claves: Enfermedades no comunicables crónicas, sistema económico

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INTRODUCTION

The global epidemiological transition

There has been a global epidemiological transition from communicable diseases to chronic non-communicable diseases (CNCDs) within the last few decades. According to Sir George Alleyne, “All countries have shown declines in infant and childhood mortality and increases in life expectancy at birth, primarily as a result of the control of infectious diseases in the early years of life. As populations have aged and concentrated in large urban areas, chronic and degenerative diseases, particularly cardiovascular disease and cancer, have become more important as causes of morbidity and mortality” (1).

The Caribbean scenario is not significantly different. The region has experienced a similar transition between the 1930s to the present. From the 1930s to the 1960s, infectious diseases were rampant. In the 1970s, however, the infectious disease situation improved. In the 1980s, HIV/AIDS emerged as a major cause of concern in the health sector and from the 1990s to the present, CNCDs have joined HIV/AIDS as a primary cause of morbidity and mortality in the Caribbean. The recent situation is summarized in Table 1.

Table 1: Leading Causes of Death in Caribbean Community (CARICOM) Countries by Sex (2004).

Males (Ranked)	Females (Ranked)
1. Heart disease	1. Heart disease
2. Cancers	2. Cancers
3. Injuries and violence	3. Diabetes
4. Stroke	4. Stroke
5. Diabetes	5. Hypertension
6. HIV/AIDS	6. HIV/AIDS
7. Hypertension	7. Influenza/pneumonia
8. Influenza/pneumonia	8. Injuries and violence

Source: CAREC – based on country mortality reports (2).

Linking CNCDs with the economy: The mechanism of destruction

From Fig. 1, it can be observed that income rests on two main pillars, namely capital and labour. CNCDs systematically, not randomly, undermine each of these pillars. The capital pillar is particularly vulnerable to the treatment of CNCDs. This is because of the slow progression and long duration of



Source: Author’s construct (2011)

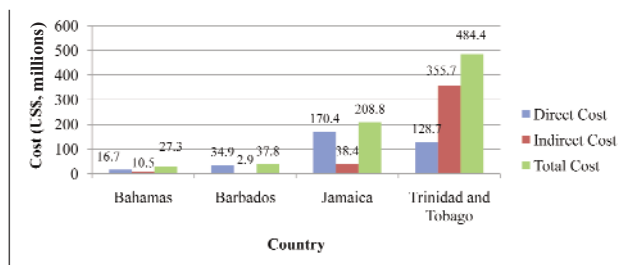
Fig. 1: The mechanism of destruction.

life-long CNCDs which require a management response that is significantly longer than that of other diseases. The labour pillar, on the other hand, is vulnerable to morbidity and mortality and also to caring time. The impact on the labour force is particularly worrying as a significant portion of the CNCD burden takes place among the working-age population. It can also be seen that the level of national income can impact upon CNCDs (1). This bi-directional relationship between CNCDs and the economy will now be explored in greater detail.

DISCUSSION

The negative impact of CNCDs on the functions of the economic system

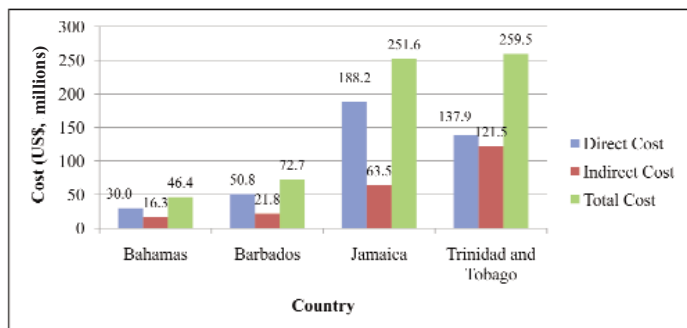
The economic burden of the selected CNCDs, diabetes and hypertension, will now be examined in greater detail for a subset of Caribbean countries. From Fig. 2, it can be ob-



Source: (9).

Fig. 2: The economic burden of diabetes in select Caribbean countries (US\$, millions, 2001).

served that in 2001, the total estimated cost of diabetes ranged from US\$ 27 million in the Bahamas to US\$ 484 million in Trinidad and Tobago while the total estimated cost of hypertension ranged from US\$ 46 million in the Bahamas to US\$ 259 million in Trinidad and Tobago in the same year, as can be seen in Fig. 3. Additionally, when expressed as a



Source: (9).

Fig. 3: The economic burden of hypertension in select Caribbean countries (US\$, millions, 2001).

percentage of Gross Domestic Product (GDP), the total cost of diabetes ranged from 0.5% in the Bahamas to 5.21% in Trinidad and Tobago (exceeding the Latin American and Caribbean average of between 2% to 4% of GDP) while the total cost of hypertension ranged from 0.86% of GDP in the Bahamas to 3.51% of GDP in Barbados.

A new dimension of concern

Within more recent times, concern has shifted somewhat from the impact of CNCDs on the economy, as outlined above, to the possible impact of the economy on the incidence of CNCDs. We have known for a long time that economic development has an important downside – reflected in its impact on the environment. In fact, one of the main worries today is about climate change effects brought about by our quest for higher and higher standards of living. What seems to be equally true is that our pursuit of higher standards of living may itself be responsible for the explosion of CNCDs in many countries of the world.

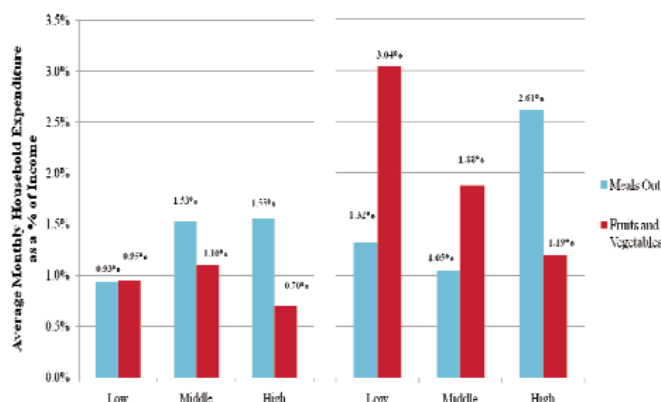
It is therefore important to examine the role that socio-economic forces play in the increasing incidence of CNCDs.

According to Dr David Stuckler, “Macrosocial and macro-economic forces are major determinants of population rises in chronic disease mortality and some prevailing demographic explanations, such as population ageing, are incomplete on methodological, empirical and policy grounds (2). Rising chronic disease mortality rates will significantly reduce economic growth in developing countries and further widen the health and economic gap between the developed and developing world” (2).

The economy as a driver of the CNCD epidemic: The case of Trinidad and Tobago

Trinidad and Tobago is a country which has experienced a more than doubling of real incomes over the period 1997 to 2008 – a phenomenal rise in its standard of living. Some of the changes in behaviour which have been associated with this tremendous improvement in the standard of living in Trinidad and Tobago will now be further examined within the context of CNCD risk factor targeting more specifically, dietary practices, physical activity, tobacco and alcohol use.

In the case of dietary practices, it can be seen from Fig. 4 that over the period 1997/1998, as household income increases, average expenditure on meals out as a proportion of income also increases. The reverse is true for fruits and vegetables that is, with the exception of the middle income category, as income increases, the proportion of income spent on fruits and vegetables decreases. A similar situation can be observed a decade later (2008/2009) whereby average expenditure on meals out as a proportion of income increases as household income increases, with the exception of the middle income category. Again, the opposite holds true for fruits and vegetables with the proportion of income spent on fruits and vegetables decreasing as income increases.



Source: (10, 11).

Fig. 4: Dietary practices – average monthly household expenditure on meals out and fruits and vegetable as a percentage of income in Trinidad and Tobago (1997/1998 and 2008/2009).

This micro-economic situation is similar to the macro-economic situation which demonstrates that as GDP per capita increases, individuals increasingly engage in risky health-related behaviours such as, the increased consumption of meals out/fast foods thus leading to increasing chronic disease prevalence among the population and subsequent chronic disease-related mortality over time.

The cost-effectiveness of prevention

An increase in investment in CNCD prevention can avert 36 million premature deaths worldwide over the next decade; 17 million of these prevented deaths will include persons less than 70 years of age. The prevention of premature deaths can result in gains in economic growth over the next decade for instance: China – \$36 billion (international \$), Russian Federation – \$20 billion (international \$) and India – \$15 billion (international \$) (3).

With specific reference to the Caribbean region, while the epidemiological profiles of the member states of the Organization for Economic Cooperation and Development (OECD) and CARICOM may be very similar, it can be observed from Table 2 that the Caribbean region simply cannot afford to respond in the same manner as the OECD that is, *via* significant increases in total health expenditure

over time. As such, the case for prevention is made even stronger in the Caribbean region.

The Caribbean response to CNCDs

Perhaps, the first major clarion call was made by the Caribbean Commission on Health and Development (CCHD) in 2005, “CNCDs constitute a major disease threat. Improved case management is essential but preventive measures must be addressed simultaneously and aggressively” (4). This was followed by a CARICOM meeting which apportioned responsibility for different dimensions of the regional response to specific countries. We have also seen aspects of the regional response by programmatic and institutional developments that have taken place. Two primary developments are the Caribbean Cooperation in Health (CCH) initiative and the Caribbean Public Health Agency (CARPHA).

The vision of the CARPHA is stated as follows: “A Caribbean in which the health of the people is promoted and protected from disease, injury and disability, thereby fostering the wellness revolution enunciated in the Port-of-Spain Declaration.” While its mission is, “To provide strategic direction, in analysing, defining and responding to public health priorities of CARICOM, in order to prevent disease, promote health and to respond to public health emergencies and to support solidarity in health, as one of the principal pillars of functional cooperation, in the Caribbean Community” (5).

Specific policy recommendations

What seems to be very clear is that in the Caribbean, the response to CNCDs must now take the same form as a response to an epidemic. In other words, essentially it is a public health response that has to be seriously orchestrated. Moreover, the response must be significantly informed by the knowledge of risk factors, in particular those linked to our plans and programmes aimed at improving the standard of living of the population. Specifically, the Caribbean will need to tackle the modifiable risk factors of CNCDs from a socio-economic angle (2). This paper has already pointed to the key for consideration: unhealthy diet, physical inactivity, tobacco use, alcohol use and health promotion and education.

Table 2: Total Health Expenditure (THE) – Select OECD *versus* Select CARICOM Countries (2006)

OECD Countries	THE as a % of GDP	THE/capita (PPP int \$)	CARICOM Countries	THE as a % of GDP	THE/capita (PPP int \$)
Australia	8.7	3119	Barbados	6.6	1208
Germany	10.6	3465	Guyana	5.9	144
UK**	8.2	2815	Jamaica	4.7	307
USA***	15.3	6719	T&T*	4.4	763 (2005)
Average	10.7	4029.5	Average	5.4	605.5

Source: (7, 8)

*T&T = Trinidad and Tobago; **UK = United Kingdom; ***USA = United States of America

CONCLUSION

Given that the economy partly contributes to the CNCD epidemic in the region, preventative public health interventions should work primarily through economic channels to reduce CNCD-related morbidity and mortality in the Caribbean as previously discussed. Health planning should not be undertaken without considering the related economic consequences and similarly, economic planning should not be undertaken without considering the health-related consequences. Holistic planning is required for the overall well-being of society both in terms of a higher standard of living and good health, that is, human development. Planning should be multi-sectoral in nature – the Ministries of Finance and/or Planning should ensure that the Ministry of Health is included in the national planning process.

REFERENCES

1. Pan American Health Organisation (PAHO). Health in the Americas 2007 – Volumes I (Regional) and II (Countries). Washington, DC: PAHO; 2007. [accessed January 12, 2011]. Available from: <http://www.paho.org/HIA/vol2paisasing.html>.
2. Stuckler D. Population Causes and Consequences of Leading Chronic Diseases: A Comparative Analysis of Prevailing Explanations. *The Milbank Quarterly* 2008; 86: 273–326. [Accessed January 12, 2011]. Available from: http://people.pwf.cam.ac.uk/ds450/details/Final_Milbank%20Quarterly.pdf
3. World Health Organization (WHO). World Health Statistics, 2009. Geneva: WHO Press; 2009. [Accessed January 14, 2011]. Available from: http://www.who.int/whosis/whostat/EN_WHS09_Full.pdf
4. Caribbean Commission on Health and Development (CCHD). Report of the Caribbean Commission on Health and Development. Kingston: Ian Randle Publishers; 2006.
5. Caribbean Public Health Agency (CARPHA) Website; 2010. [Updated July 2, 2011; Accessed January 14, 2011]. Available from: <http://www.carpha.org/>
6. Samuels A. Chronic Non-Communicable Diseases – A Priority for the Caribbean. Guest presentation made at the Advanced Health Economics (PUHE 6005) Lecture Session for the Masters in Public Health (MPH) Programme, April 16th, 2010 at the Eric Williams Medical Sciences Complex (EWMSC), Mt Hope, the University of the West Indies (UWI), Trinidad and Tobago; 2010.
7. World Health Organization (WHO). World Health Statistics, 2009. Geneva: WHO Press; 2009. [Accessed January 14, 2011]. Available from: http://www.who.int/whosis/whostat/EN_WHS09_Full.pdf
8. United Nations Statistics Division (UNSD). UNdata Website. [Updated November 19, 2010; Accessed January 14, 2011]. Available from: <http://data.un.org/>
9. Caribbean Community (CARICOM). Working Document for the Summit of the CARICOM Heads of Government on CNCDs. Georgetown, Guyana: CARICOM Secretariat; 2007.
10. Trinidad and Tobago. Central Statistical Office (CSO). Household Budget Survey (HBS) 2008/2009: Volume II – Household Income and Expenditure. Ministry of Planning, Housing and the Environment; 2010.
11. Trinidad and Tobago. Central Statistical Office (CSO). Household Budget Survey (HBS) 2008/2009: Volume II – Household Income and Expenditure. Ministry of Planning, Housing and the Environment; 2010.