

Cardiovascular Disease I: Policy

Chairpersons: J St John, M Frankson

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Economic burden of cardiovascular disease in a small island developing state

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Objective: To estimate the cost of hospitalised stroke and acute myocardial infarction, major causes of mortality in Barbados with known poor outcomes, to the Ministry of Health.

Design and methods: In this cost-of-illness study, healthcare costs for patients diagnosed in 2010–2011 were compared with those for a sample of the Barbadian population (≥ 25 years). Hospitalised patient data on hospital stay, ward (intensive care *vs* other), surgical procedures and diagnostics were from the national cardiovascular disease (CVD) registry. Those who survived to one-year and the population sample were interviewed about these factors over the previous year. Propensity score matching was used to adjust for con-founders. Costs were calculated in international dollars (US dollar purchasing power in the US for that year; Int\$2012).

Results: Annual per person excess healthcare cost from CVD in 2012 was Int\$ 3949–5527 for emergencies and Int\$ 936–1734 in the post-emergency to one-year phase, totalling Int\$2.9–\$4.4 M (3% of the single public hospital's total annual expenditure).

Conclusions: First-year post-CVD per-patient cost in Barbados was lower than in European countries and the United States of America. These countries have lower in-hospital stroke fatality ($< 20\%$) than Barbados ($> 30\%$), where less than 4% of the total hospital budget is spent on two of the island's major causes of mortality. This study provides baseline costs for future health economic assessments to investigate levels of spending needed to increase prevention and improve outcomes.

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The consumption and revenue effects of increased taxation on cigarettes: A case study of Grenada

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Objective: To assess the consumption and revenue effects of increased taxation on cigarettes in Grenada.

Design and Methods: A purposive sampling method was used to ensure data availability and geographical representativeness. The average price per pack of 20 for the most sold brands of cigarettes was calculated based on data collected from three of the five major supermarkets on the Island. Sales data were derived from customs and excise records. Simulations were conducted such that the excise tax-rate was increased to affect a 5%, 10% and 15% fall in consumption. The paper utilized the World Health Organization (WHO) Tax Simulation Model (TaXSiM) to conduct the analysis.

Results: The results show that to achieve a 5% fall in consumption, excise taxes should be increased to 117% of the CIF value, from a baseline of roughly 100% of CIF. The analysis also shows that total government revenues will grow by 8.7% and excise tax revenues are expected to increase by 11.12%, as a result. The average price per pack of cigarettes will move from EC\$3.20 to EC\$3.80. In the 10% and 15% consumption reduction scenarios, excise taxes must be increased to 133% and 150% of the CIF value, respectively, pushing the average price to EC\$4.40 and EC\$4.90, respectively.

Conclusion: The results show that consumption can be reduced alongside growth in government revenues. This result aligns with the literature which indicates that taxation can be an effective means of pursuing the public health objective of reduced incidences of smoking-related illnesses *via* reduced consumption. Indeed, it offers a win-win solution.

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The Barbados tax on sugar sweetened beverages: An assessment of the political processes behind implementation and early effect on retail prices

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Objective: In 2015, the Government of Barbados implemented a 10% tax on sugar-sweetened beverages (SSBs). We explore factors that led to implementation, and assess changes in retail prices following the tax.

Design and Methods: We conducted 25+ key informant interviews, triangulated with a document review. Our analysis was informed by theories of the policy process, in particular Kingdon's Multiple Streams Approach. To explore whether retail prices changed, we used data from the largest supermarket chain in Barbados, with seven months of post-tax data. Linear regression was used to evaluate the changes.

Results: Key factors in placing the tax on the policy agenda included: 1) the importance of "policy entrepreneurs," 2) interactions between the two "problems" the tax was seen to address, and 3) the unified resistance to international corporations. Early implementation has been characterized by: 1) pragmatic concerns around identifying SSBs, 2) limited resources to implement a health messaging campaign and 3) corporate strategies including possible reformulation and lobbying.

Conclusions: Pragmatic concerns around implementation and resources for health messaging campaigns may be important for other countries to consider in advance of introducing a similar policy. While the tax seems to be associated with a price change in SSBs, companies appear to be absorbing a portion of the tax.

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Validating the annual monitoring of the 2007 CARICOM Heads of Government Summit Declaration on chronic non-communicable diseases

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Objective: Monitoring of national responses to the 2007 CARICOM Non-communicable Diseases Summit Declaration has occurred from 2008 to 2015, using a 26-indicator grid, completed annually by NCD focal points. Our objective was to assess the validity of responses to the grid compared to in-depth interview data and document reviews.

Design and Methods: Seven national case studies on policy responses to the Declaration were undertaken, in early 2015. In-depth, semi structured, interviews were conducted with stakeholders from multiple sectors, including Ministry of Health. Policy documents were identified and reviewed. Findings were compared to responses to the 2014 NCD grid.

Results: The findings from the grid and from the cases studies agreed closely. Out of a total of 182 indicators (26 across 7 countries) there was a lack of agreement on nine (4.9%). All the disagreements arose from the difference between policy statements and implementation. For example, where two grid responses indicated the existence of a national NCD plan, stakeholder interviews found no evidence of implementation. Similarly, one grid response indicated an active NCD commission, whereas stakeholder responses indicated this was not the case.

For 17/26 indicators the self-reported grid data aligned exactly with the evidence collected in country from the stakeholders. The indicators for surveillance and treatment had 100% validation.

Conclusions: Overall, the monitoring grid provided an accurate assessment of the national situation but with possible tendency to over-report on some key areas. These findings have contributed to the design of a new monitoring grid, expanded to 50 explicitly defined indicators, and implemented in 2016.

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Evaluating Implementation of the CARICOM Heads of Government Non-communicable Diseases Summit Declaration of 2007

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Objective: Non-communicable diseases (NCDs) are a threat to Caribbean social and economic development. In 2007, the Caribbean Community (CARICOM) Heads of Government held the first ever summit on NCDs, resulting in the Port-of-Spain NCD Declaration. This paper describes the evaluation, begun in 2014, with the overall objective to learn lessons that will accelerate further implementation of the Declaration.

Design and Methods: A mixed-methods evaluation included: new analyses of disparities in NCD mortality, new quantitative and qualitative data collection to assess national and regional NCD policy responses, including seven in-depth national case studies and economic modelling on tobacco and alcohol taxes.

Results: There were marked disparities in NCD mortality trends between CARICOM countries, with available data suggesting that only eight are on course to meet the 2025 World Health Organization (WHO) target of a 25% reduction in premature NCD mortality. No CARICOM member had fully implemented all the mandates from the Declaration, with 10 implementing less than half, and most

lacking a well-functioning NCD commission. Where good implementation was found, *eg* Caribbean Wellness day and STEPS surveys, active guidance from regional institutions was a key factor. Feasible national tobacco and alcohol tax increases could more than fund WHO NCD ‘best buy’ interventions.

Conclusion: All-of-society and all-of-government responses at national and regional levels are weak. The disparities in trends in NCD mortality require further investigation to inform interventions. The core findings are being considered by multi-sectorial groups of CARICOM stakeholders, and recommendations for action will be considered by Heads of Government in 2017.