

The Barbados National Registry for Chronic Non-communicable Disease (the BNR)

The BNR team has collected data on all stroke and acute myocardial infarction (MI: heart attack) events occurring in Barbados since July 2008 (stroke) and July 2009 (acute MI). Here we present the cost to the Ministry of Health (MoH) of hospitalised strokes and acute MI in Barbados dollars (BBD \$) for 2012.

Methods

In this cost-of-illness study, healthcare costs for hospitalised CVD patients and 1-year survivors were estimated and compared with those from the Barbadian population, using participants in a national, population-based risk factor survey of adults ≥ 25 years (the Health of the Nation Survey). Differences between the CVD patients and the Barbadian controls (such as age, sex, level of education, and so on) were reduced through statistical weighting, resulting in similar distributions of these characteristics, and minimising their influence on our cost comparison.

Results

Cost analysis

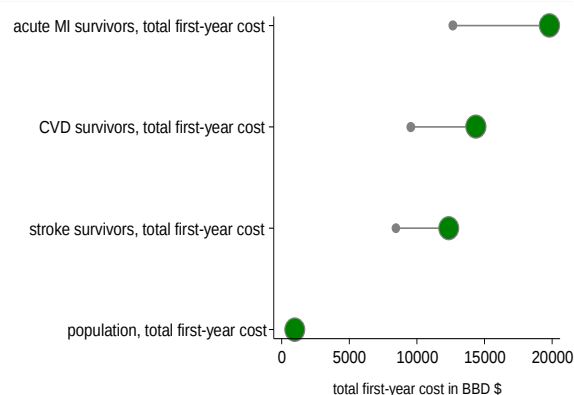
Most of the excess healthcare cost for CVD patients in Barbados in the first year post-event was in the emergency phase, at almost \$10,000 per patient (2012 BBD\$). For the approximately 700 hospitalised CVD patients per year, this translates to a total emergency CVD cost to the Ministry of Health of BBD \$7.0 M per year (about 2.8% of the QEH total expenditure in 2012–13). Follow-up costs to 1 year post-event of about BBD \$3000 per patient make for an additional cost of about BBD \$810,000 for the approximately 270 CVD survivors per year. Sensitivity analyses showed little change in mean costs, indicating the robustness of the estimates.

Country comparisons

- Cost-of-illness study comparisons across countries are difficult due to methodological differences

- Mean per-patient emergency costs for **stroke** were $\approx$ \$9000 for Barbados; vs $\approx$ \$7500 for European countries and $\approx$ \$4000 for low and middle income countries (BBD\$ 2012)
- In contrast, per-patient **stroke** costs for the first year post-event in were $\approx$ \$12,000 for Barbados; vs \$23,000–\$30,000 for European countries and \$40,000–\$60,000 for the USA (BBD \$ 2012)
- Importantly, in-hospital **stroke** death rates were $<20\%$ for European countries vs $>40\%$ for Barbados (see BNR Briefing Report 1)
- **Acute MI** results followed a similar pattern, with similar/lower emergency costs for Barbados than Europe and the USA, but higher hospital death rates.

Figure 1. Cost (green* circles; 2012 BBD\$) of total first-year costs, for the adult population of Barbados and 1-year survivors.



*grey circles=lower bound of estimate (see technical note).

Conclusions

Barbados's first-year post-event excess costs for CVD in 2012 were lower than in European countries and the USA. In a country with high in-hospital CVD fatality, future health analyses should investigate spending efficiencies as well as the cost of improving outcomes. Assessment of healthcare spending on prevention is urgently needed to facilitate a lowering of the human cost from poor outcomes and, especially in this ageing population, avoidance of a high financial cost to the country's Ministry of Health for future treatment.



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Technical footnote: Further details of cost calculations

Emergency cost was computed for each patient from total hospital bed-days and hospital. For the total first-year, post-event cost, the number of visits to polyclinics and other public (free) healthcare centres (e.g. outpatient department, rehabilitation services) were added and costed. Medications were not included, apart from thrombolytic agents used as “clot-busting” therapy for ischaemic stroke and certain acute MIs.

Charges from the only tertiary public hospital on Barbados, the Queen Elizabeth Hospital (QEH), were used as a proxy for cost. The study data were collected mainly in 2012; in that year, charges used at QEH had not been updated since 2006, so a range of charges was used to compute cost. The lower end of the range was taken as the non-resident QEH charge (as this was higher than the resident charge), updated to 2012 using the Barbados Central Bank’s published annual inflation rates. The upper end of the range was computed from the mean charges from private institutions across the island for each procedure. The “true cost” is thought to lie somewhere between the known QEH charge underestimate and the upper limit, private cost (as that should include a profit margin). In this report, upper limit costs are discussed in the text, while the figure shows both the lower (grey circle) and upper limits (large green circle).

Costs were estimated for the population as well as for CVD survivors, thus enabling computation of “excess cost” by subtracting the general population cost from the survivor cost.

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For more information See the Annual Reports for the BNR for the years 2009–2015 or contact the BNR Registrar Mrs Lauren Maul (see BNR contact details below right).

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