

A subgroup of stakeholders participated in a group model-building workshop to develop causal maps on the determinants of physical inactivity, unhealthy diet and effective health-care delivery in the Caribbean. Data from the qualitative and quantitative reviews were applied to further develop the causal structures.

Results Stakeholders reinforced the need for upstream interventions including the provision of a healthy food environment and sustainable urban development facilitating active living, supported by fiscal incentives (subsidies) and disincentives (taxes). Stakeholders emphasised car-based development as a major driver of physical inactivity including a lack of infrastructure for active transport, a high social regard for car usage and a lack of social support for physical activity. Unhealthy diet, according to stakeholders, was driven by changing social structures in the home, the marketing and distribution of highly processed foods, and limited access to locally produced fresh fruits and vegetables. The causal maps are serving as the basis for a stakeholder-driven policy simulation model that will be validated against quantitative evidence.

Conclusion The interconnectedness of diabetes determinants highlights the importance of a multi-sectoral response and a systemic approach to decreasing the diabetes burden. The simulation model aims to aid Caribbean policymakers in evaluating the potential impact of different policy options on future diabetes prevalence and mortality. The overall utility of this approach to stakeholder engagement and option appraisal will be assessed and developed further for use in other resource-constrained settings.

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UNDERSTANDING THE PROCESS OF DEVELOPING AND IMPLEMENTING CHRONIC DISEASE POLICIES IN THE CARIBBEAN REGION: A QUALITATIVE POLICY ANALYSIS

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Background The Caribbean, like other middle income regions, experiences a significant burden of non-communicable diseases (NCDs), and responded in 2007 with a heads of government declaration committing to a range of policy measures. In 2015, this multi-method qualitative evaluation study investigated the progress made in seven Caribbean countries; this paper reports the findings of an analysis of the process that helped or hindered the development and implementation of policies.

Methods We conducted analysis of relevant policy documents, and 76 semi-structured interviews with 80 stakeholders from government (ministries of health, education); civil society (academia, agricultural, health and church organisations) and private businesses. Interviews were conducted by two regional teams. The initial pragmatic coding and categorisation of data with the software Dedoose was deductively framed by the WHO NCD Action Plan, and guided by a Multiple Streams policy approach and realist principles. This was complemented by further inductive thematic analysis and synthesis by the authors.

Results Two overarching themes emerged related to the process that guided the development, adaptation and implementation of regional policy goals into local settings. First, stakeholders reported a commonly shared recognition of the need for *multi-sectoral partnerships* but were frustrated by the difficulties of achieving this in practice. Country-specific NCD commissions served as case studies for both positive experiences of achieving ‘whole of society’ collaboration and difficulties in equitable representation and translation into government-led action. In settings with more effective multi-sectoral working it was possible to identify ‘policy entrepreneurs’ who had the profile and traction to promote cross sectoral action. Second, stakeholders highlighted the importance and opportunity provided by *policy transfer*. When comparing policy creation across small islands, most success has been made in areas such as tobacco control that could use an international framework and roadmap as a template. As policy efforts were most advanced in larger, more resource-rich countries, some stakeholders called for more synergetic working on policy solutions across countries. They felt that policy transfer could be improved in a region of relatively small countries but benefitting from a strong regional agenda, cooperation and professional exchange.

Conclusion Stakeholders’ local and regional insight, expertise and experience helped to explain the processes that supported or hindered effective policy-making in different settings or different policy areas. Triangulating their reflections with a document review helped to corroborate and strengthen their assessment, provide contextual information to reports and also identified gaps in documentation and narratives.

OP75

CATALYSING GLOBESITY: AN ANALYSIS OF THE IMPACT OF US FREE TRADE AGREEMENTS ON CALORIC INTAKE FROM A NATURAL EXPERIMENT IN CANADA USING THE SYNTHETIC CONTROL METHOD

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Background Free trade and investment agreements (FTAs) are often implicated in the global pandemics of overweight, obesity, and related diseases. Concerns centre on how FTAs increase population exposure to unhealthy, high calorie diets rich in salt, sugar, and fat. Yet the empirical evidence to support these concerns is limited, both methodologically and substantively. Thus, few existing studies of FTAs and dietary change have accounted for unobserved confounding, and many were unable to differentiate the impact of FTAs from contemporaneous macroeconomic and policy changes. Moreover, few have examined any potential effect of FTAs on total caloric intake, despite its critical role in the aetiology of obesity. Here we address these limitations by analysing a unique natural experiment from the unanticipated implementation of the Canada-US Free Trade Agreement (CUSFTA) in 1989.

Methods We use data from the UN Food and Agricultural Organisation and the synthetic control method to test the hypothesis that CUSFTA increased caloric intake in Canada. We also analyse whether these changes were accompanied by increased US investment and imports in the Canadian food and beverage sector. Finally, we simulate the population impact on weight gain of these changes in caloric intake using

the models developed by Hall and colleagues (2011) and data from the 1990 Canadian Health Promotion Survey.

Results Our analysis identifies a 95.8 kilocalorie per capita per day increase in caloric intake after CUSFTA in Canada compared with the synthetic control. These changes coincided with a \$1,820 million (95% CI: 1,179.2 to 2,464.1) increase in US investment in the Canadian food and beverage sector, and a \$5,258.3 million (95% CI: 4,894.8 to 5,621.8) rise in food and beverage imports from the US. This estimated rise in caloric intake corresponds to an average individual weight gain of 5.7 kg for women and 5.1 kg for men aged 40 and with low physical activity levels, or 2.5 kg for women and 2.2 kg for men aged 40 and who are very active.

Conclusion Our findings suggest that US FTA can substantially alter dietary behaviour by increasing caloric intake. FTA negotiations may be a critical window for shaping dietary behaviours to prevent overnutrition, obesity and related diseases.

OP76

EVALUATING THE HEALTH IMPACTS OF RESTRICTIONS TO INCOME SUPPORT FOR LONE PARENTS: A NATURAL EXPERIMENT STUDY USING UNDERSTANDING SOCIETY

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Background Lone parents experience poorer health and socioeconomic disadvantage compared to coupled parents. The UK Government has restricted access to Income Support, the primary income replacement benefit for lone parents. Under Lone Parent Obligations (LPO), lone parents are transferred from Income Support to Jobseeker's Allowance once their youngest child reaches an age threshold (which has been reduced incrementally), and they must prove they are actively seeking work or face sanctions. We investigated the effects of introducing LPO on the health of lone mothers in the UK.

Methods We analysed 2009–2013 data from Understanding Society, a panel study representative of the UK general population. Our primary outcome was the mental health component of SF-12, with the physical health component and self-rated health assessed as secondary outcomes. We identified two intervention groups: lone parents newly exposed following the cut-off change from seven to five years and from ten to seven years. Each of these intervention groups were compared to two control groups: remaining unexposed (since the youngest child was below the age cut-off), and already exposed (since the youngest child was older than the existing age cut-off). We estimated a pooled LPO effect to increase precision. We conducted a difference-in-difference analysis using linear regression to estimate the 'intention to treat' causal effect, adjusting for maternal age, number of children and maternal education. Multiple imputation was used to address item missingness.

Results Our primary analysis included a total of 2257 participants. Mental health of lone parents consistently declined in intervention groups compared to control groups, whereas physical health and self-rated health showed little change. For lone parents with children aged 5–7 years who were newly exposed, the mental health score of SF-12 changed by -1.39 (95%CI $-4.08, 1.29$) compared to those unexposed and -2.29 (95%CI $-4.57, 0.00$) compared to those remaining exposed. Equivalent figures for the cut-off change from 10–7 years

were -2.45 (95%CI $-5.48, 0.57$) and -1.28 (95%CI $-4.00, 1.45$), while for the pooled effect were -2.13 (95%CI $-4.17, -0.10$) and -2.21 (95%CI $-4.13, -0.30$). A complete case analysis and inclusion of males within the analytical sample led to similar results.

Discussion Increasing conditionality attached to the receipt of welfare benefits adversely impacted mental health of lone mothers but had no short-term impacts on physical health. Our study had limited statistical power and was only able to investigate short-term effects, but the pattern of findings was consistent across comparison groups. Planned extensions to LPO should be reconsidered.

Neighbourhoods and communities

OP77

EVALUATING THE ASSET MODEL: FINDINGS FROM A RAPID REVIEW OF EVALUATION STRATEGIES

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Background Ten years on from Morgan and Ziglio's call to revitalise the evidence base for public health through an asset model, there are still gaps in understanding about how best to evaluate asset-based approaches. The demand for better evidence poses some challenges as asset-based working emerges from radically different traditions from the mainstream deficit model in public health. This paper will present findings from a rapid evidence review on the measurement of asset-based approaches.

Aims The rapid review aimed to improve understanding of categories of measurement in the evaluation of asset-based approaches for health and wellbeing and to identify indicators and frameworks that can be used in practice. The review was part of a project to develop an asset-based theory of change in health, care and wellbeing, funded by the Health Foundation.

Methods Rapid Evidence Assessment techniques were used to produce a map of evaluation approaches and measures. The search strategy used strings of common terms (eg Salutogenesis, Asset Based Community Development) combined with synonyms of measurement/evaluation. Academic databases were searched from 2005 along with relevant websites. Additionally, the results of a previous search were screened and reference lists mined. Publications were included if they explicitly discussed the asset model and measurement. Data were then extracted across various fields including population, conceptual framework, measurement type and application. Findings were summarised in tables, with some additional thematic analysis.

Results 8689 publications were identified and 91 full text articles assessed for eligibility. In total, 33 publications were included in the review. Many of these flagged up the challenges of evaluation and the need for better outcome measurement. Reported research strategies varied considerably from the practical to the theoretical. Also the purpose, level and specificity of measurement ranged from validated indicators through to broad domain frameworks. Seven clusters were identified: Asset Based Community Development; Asset Mapping; Community-based evaluation; Conceptual frameworks for measurement; Resilience; Salutogenesis; Other. One key theme was the importance of communities being involved in the assessment of assets.