deprivation are necessary. In this study, we present the first step in the development of an index to investigate the effects of spatial concentration of deprivation on health status and mortality in Brazil. Our goal was to obtain a summary indicator of deprivation in the environment surrounding each household by census tract.

Methods Neighborhood conditions at the smallest level available (census tracts) were characterized using data from the latest edition of the Brazilian Census (2010). We selected variables that measure the deprivation of the area surrounding a household. These were lack of paving, street lighting, sidewalks, presence of open sewage and accumulated waste. Confirmatory factor analysis (CFA) using a Structural Equations Model approach was performed to reduce the number of variables and test the existence of the two underlying dimensions: sanitary conditions and infrastructure. Factors were extracted as index variables through regression scores and classified in population quintiles, as categories of deprivation intensity. QGis and ArcGIS were used to plot these deprivation factors on a map for face validity and analysis of overlap with other similar indexes (i.e. Human Development Index and MPI-Multidimensional Poverty Index).

Results The 2 77 576 census tracts in Brazil, cover a population of approximately 97,613,505 in 56,528,865 households CFA identified the two factors proposed, with good indexes of fit and model specification (x^2_8=11606.06; CFI=0.98; RMSEA=0.07; p<0.05). To test the index in use, we analyzed the distribution of deprivation throughout the regions and federative states of Brazil. The quintiles of census tract showed a clear geographic pattern, with most deprived areas (the fifth quintile) concentrated within the poorest regions of each state (as classified by the MPI).

Conclusion The selection of variables was based on an extensive theoretical framework, combining a variety of aggregate variables with coverage for more than 98% of the Brazilian population. This data-reduction demonstrates there are underlying deprivation factors which means there is considerable potential for creating a small area deprivation index using other indicators of material deprivation for the whole of Brazil at the census tract level. Use of the census will enable replication with future versions of the census. Therefore, it will be crucial for monitoring inequalities in health and mortality in Brazil.

RF19 ABSTRACT WITHDRAWN

RF20 COMPARING STRATEGIES TO PREVENT STROKE AND ISCHEMIC HEART DISEASE IN THE TUNISIAN POPULATION: MARKOV MODELING APPROACH USING A COMPREHENSIVE SENSITIVITY ANALYSIS ALGORITHM

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Background Premature heart disease and stroke are generating a large and growing burden of disease and death in low and middle income countries. Though eminently preventable, debate continues about whether to prioritise primary, secondary or tertiary prevention.

The application of mathematical models in medicine and population health has proven useful, offering the potential to analyse and compare the effectiveness of different interventions to prevent future cardiovascular disease. We therefore developed a comprehensive algorithm of sensitivity analysis on Markov model applied to evaluate the impact of three interventions to reduce Ischemic Heart Diseases (IHD) and Stroke deaths: (i) improving medical treatments in acute phase, (ii) secondary prevention of stroke by increasing the prescribing of statins, (iii) primary prevention using health promotion to reduce dietary salt consumption.

Methods We developed and validated a Markov model for the Tunisian population aged 35–94 years old over a 20 year time horizon.

We compared the impact of specific treatment of stroke, life style and primary prevention on both IHD and stroke deaths. We reported the total number of CVD deaths (ischemic stroke and IHD deaths) that may be prevented or postponed for each specific scenario.

We then undertook extensive sensitivity analyses using a probabilistic multivariate approach and a simple linear regression metamodeling using R software.

Results The model forecasts a dramatic mortality rise, with approximately 1 11 000 cumulative IHD and Stroke deaths *(95% uncertainty interval 107,000–115,000)* predicted in 2025 in Tunisia.

Dietary salt reduction offered the potentially most powerful preventive intervention. This population level strategy might reduce IHD and stroke deaths by 27%, compared with 3% for secondary prevention following stroke and 1% for medical strategies for primary prevention.

The metamodeling highlighted that that the initial development of a minor stroke substantially increased the subsequent probability of a fatal stroke or IHD death.

Conclusion The primary prevention of cardiovascular disease via a reduction in dietary salt consumption appeared much more effective that secondary or tertiary prevention approaches applied after disease had manifest in individual patients.

Our simple but comprehensive algorithm offers a potentially attractive methodological approach that might now be extended and replicated in other contexts and populations.

RF21 LIVING WITH MULTIMORBIDITY IN GHANA: A QUALITATIVE STUDY GUIDED BY THE CUMULATIVE COMPLEXITY MODEL

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Background Defined as the co-occurrence of more than two chronic conditions, multimorbidity has been described as a significant health-care problem: a trend linked to a rise in non-communicable disease and an ageing population. Evidence on the experiences of living with multimorbidity in middle-income countries (MICs) is limited. In higher income countries

(HICs), multimorbidity has a complex impact on health outcomes, including functional status, disability and quality of life, complexity of healthcare and burden of treatment.

Methods This study aimed to explore the perceptions and experiences of women living with multimorbidity in the Greater Accra region, Ghana: to understand the complexity of their health needs due to multimorbidity, and to document how the health system responded. Guided by the cumulative complexity model, and using stratified purposive sampling, 20 in-depth interviews were conducted across three polyclinics in the Greater Accra region. The data was analysed using the six phases of Thematic Analysis.

Results Overall four themes emerged: 1) the influences on their health experience; 2) seeking care and the responsiveness of the healthcare system; 3) how patients manage healthcare demands; and 4) outcomes due to health. Spirituality and the stigmatisation caused by specific conditions, such as HIV, impacted their overall health experience. Women depended on the care and treatment provided through the healthcare system despite inconsistent coverage and a lack of choice thereof; although their experiences varied by chronic condition. Women depended on their family and community to offset the financial burden of treatment costs, which was exacerbated by having many conditions.

Conclusion The implications are that integrated health and social support, such as streamlining procedures and professional training on managing complexity, will benefit and reduce the burden of multimorbidity experienced by patients with multimorbidity in Ghana.

RF22 HIV AND TYPE 2 DIABETES (T2DM): A QUALITATIVE EXPLORATION OF THE BURDEN OF CARE EXPERIENCED AND PERCEIVED BY PERSONS LIVING WITH THE COMORBIDITIES

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Background Research exploring the intersection of communicable and non-communicable diseases, as well as, the lived experiences of persons with multiple chronic morbidities, is limited. This study sought to explore how persons living with HIV (PLHIV) and Type 2 diabetes (T2DM) experience and manage the burden of treatment related to these comorbidities in the context health systems and culture in small island developing states.

Methods Participants with a diagnosis of both HIV and T2DM for more than 2 years were purposively selected with the assistance of HIV treatment centres on the islands of Barbados and Trinidad & Tobago. Twenty individual, face-to-face semi-structured interviews (10 in each country) explored self-care, health care delivery, socioeconomic support and internal resilience. A total of 13 females and 7 males aged 39–65 years were interviewed. All interviews were audio-taped and transcribed verbatim. Data was analyzed using thematic analysis with constant comparison. ATLAS.ti(7) data management software used to manage the data analysis process.

Results Aspects of T2DM self- care such as daily blood glucose monitoring and controlling diet were more onerous than perceived minimal HIV care actions of adhering to oral antiretroviral therapy ('you just take your medication and go') and clinic visits. While HIV was experienced and perceived as having lower physical workload than T2DM, there was a higher psychological workload throughout the disease trajectory, particularly related to stigma and discrimination in health care settings and in general. T2DM's lower psychological workload was perceived as due to the absence of stigma and discrimination attached to the disease, but adhering to multiple modalities to controll blood glucose increased the physical workload. The impact of having HIV on social determinants such as housing and employment, increased the psychological burden, and impacted on participants' internal resilience. A preference for centralised integrated care (instead of de-centralisation to clinics throughout the health care delivery system), with a more holistic approach within health care settings on both islands was also identified by participants (i.e. having comorbidities such as diabetes also checked and treated at routine HIV clinic visits).

Conclusion Integrated communicable and non-communicable care models which assess both physical and psychological workload should be considered in healthcare, especially since HIV treatment now follows a more chronic treatment pathway. In addition, addressing stigma and discrimination in the general population as well as in health care delivery settings, and their impact on health outcomes for PLHIV, is still an area for public health concern within the Caribbean.

RF23 WHO KNOWS BEST? PERSPECTIVES OF PROFESSIONAL STAKEHOLDERS AND COMMUNITY PARTICIPANTS ON HEALTH IN LOW-INCOME COMMUNITIES

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Background Health inequalities in the UK have proved to be stubborn, and health gaps between best and worst-off are widening. While we have an understanding of how the main causes of poor health are perceived among different stakeholders, similar insight is lacking regarding what solutions should be prioritised. Furthermore, we do not know the relationship between perceived causes and solutions to health inequalities, whether there is agreement between professional stakeholders and people living in low-income communities or agreement within these different societal groups.

Methods Q methodology was used to identify and describe the shared perspectives ('subjectivities') that exist on i) why health is worse in low-income communities ('Causes') and ii) the ways that health could be improved in these same communities ('Solutions').

53 purposively selected individuals from low-income communities (n=25) and professional stakeholder groups (n=28), for example, academics, policymakers, public health professionals, financial service practitioners, ranked ordered sets of 34 'Causes' statements and 39 'Solutions' statements onto quasi-normal shaped grids according to their point of view. These 'Q' sorts were followed by brief interviews. Factor analysis was used to identify shared points of view (patterns of similarity between individuals' Q sorts). 'Causes' and 'Solutions' were analysed independently.