

Building population health indices with the MACBETH socio-technical approach.

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Abstract: Monitoring the health of a population not only helps detecting emerging patterns of illness and disease, but also provides valuable information to drive health related policies and the planning of health services. Formal assessment tools, such as population health indices (PHI), which aggregate multiple population health (PH) indicators, often suffer from theoretical meaningfulness. Common critical mistakes in developing a PHI can be avoided by following the principles of multi-criteria value modelling, with health indicators or dimensions as the criteria. Under this technical framework, the added value to health of improving performance on a criterion is measured by a value-function and the relative importance of performance improvements in different criteria is measured by relative weights. The judgemental information to define value-functions and weights can be elicited with MACBETH (the Measuring Attractiveness by a Categorical Based Evaluation Technique) throughout a two-stages participatory process: firstly, a Delphi panel formed by a large number of experts and stakeholders can be used to agree upon the shapes of the value-functions or and “qualitative” weights; subsequently, this information will guide the definition of final value functions and weights in a decision conferencing with a small strategic group. This socio-technical approach was successfully applied in the development of two PHI, one at the municipality level in Portugal and another at the regional level in Europe. The PHI outputs, for each indicator and at different levels of their aggregation, e.g. health dimensions, areas of concern and components, allow investigating health geographic inequalities and identifying where there is higher need for health policy intervention.