HEALTH-RELATED INDICATORS

J-M. Robine
Senior Research Fellow, INSERM, University of Montpellier 1, France

C. Jagger
University of Leicester, United Kingdom

Euro-REVES Group*

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Summary

The multi-dimensional nature of health, clearly illustrated by the profusion of health concepts, reflects the varied causes and mechanisms that allow an understanding of the transitions of health and, as a consequence, the means to meet health targets. However this is also a problem when choosing indicators to monitor population health, since too many indicators may divert attention whilst too few may hide the possible trade-off between the different facets of health. An important first step is to define clearly a conceptual reference framework for such indicators. The framework proposed here is based on a life-course definition of health, and the acknowledgement of different perspectives on health and approaches of assessing health status, as well as the existence of specific conceptual models for each approach. The framework also acknowledges the importance of the dimension of mental health.

The life-course definition of health justifies the use of health state expectancies as the fundamental health indicators for populations since health state expectancies measure the lifetime spent in different health states. Health state expectancies extend the concept of life expectancy to morbidity and disability and allow comparison of populations as well as the estimation of changes over time. Moreover, since health state expectancy is in fact the combination of a life expectancy and a health concept, there are as many possible health state expectancies as health concepts. The relevance of these indicators lies in their ability simultaneously to assess the evolution of mortality, morbidity and disability and thus to assess the likelihood of different health scenarios which have been proposed: “a pandemic of chronic diseases and disabilities”, “a compression of morbidity”, or contradictory evolutions including the scenario of “dynamic equilibrium”.

Calculating health state expectancies relies on period life tables together with the prevalence of health states obtained from the results of censuses and health surveys. In practice, the current differences in national surveys, particularly in the measurement and definitions of health, make direct comparisons difficult. Agreeing a basic conceptual framework for health indicators and thence for health state expectancies will bring harmonization of health information systems a step closer.

1. Introduction

In contrast to mortality, notions such as health or morbidity are difficult to define. The multi-dimensional nature of health is empirically "defined" by the multiplicity of definitions, some of which are largely perceptual whilst others are largely functional. For example, for the World Health Organization (WHO), "Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity" (UN, 1946). Some definitions are more dynamic, for example, Canguilhem (1979) defines being in good health as also "the ability to fall ill and recover".

According to Fanshel and Bush (1970), health is a composite of current state and prognosis (i.e. the probability of movement to other states) that occurs throughout an individual’s life. In this way health is not only, "*the ability to function now, but the outlook for future functional ability*" (Fanshel, 1972). This life-course definition of health is the justification for the use of a new class of indicators, health state expectancies, as fundamental health indicators for populations since they measure the lifetime spent in different health states.

However, health is not always simply good or bad. It is well accepted that health is distributed in a continuum going from a state of perfect health to death, thus each individual makes transitions between health states throughout life, passing ultimately to death. This continuum raises problems of norms and thresholds when defining a bad state of health (morbidity in the strict sense of the word) or good health (sometimes referred to as positive health). Negative states of health need to be classified to distinguish between the most severe and the most minor, the number of classes inevitably being a compromise between precision and conciseness. An example of this is health surveys measuring perceived health by the question: "*How is your health in general? Very good, good, fair, bad, very bad*"(de Bruin et al., 1996). It is also possible

with the use of weighting to combine the lifetime spent in different health states into a single summary measure of population health as proposed by the WHO with the disability adjusted life expectancy (DALE, WHO, 2000).

1.1. Different Perspectives on Health

The health status of a population can be described in different ways: by subjects themselves, researchers, financial administrations, or associations. The basic information -- the individual health status -- may be perceived, diagnosed or measured by different people before being reported by the individual himself (self-report), a family member (proxy, caregiver), a professional (nurse or doctor) or an administrative clerk. Self-reported morbidity largely corresponds to the morbidity recorded by health interview surveys (HIS).

Diagnosed morbidity corresponds to morbidity known by health professionals and testifies to their activity. Measured morbidity corresponds to systematic measurements of a representative sample of the population studied through health examination surveys (HES) for example. The morbidity perceived by the individual himself most closely approaches the idea of need felt by the population. Alongside these three classic levels, behavioural morbidity is often mentioned -- a concept defined through examples such as absenteeism or the recourse to medical care or medication -- which does not integrate well within the classic scheme outlined below.

Perceived morbidity is often qualified by subjective morbidity, and measured morbidity by "objective" or "real" morbidity, although it is clear that a report at any level -- perception, diagnosis or measurement -- may contain a subjective element.

1.2. Different Approaches to Health Status Assessment

During the twentieth century the epidemiological framework changed from communicable and acute diseases to long-term chronic diseases. This epidemiological trend has affected the approach to diseases and health. Beyond the "presence or absence of disease", the classical bio-medical approach, health status may be assessed through perceptual, functional or adaptive approaches. With the functional approach, good health relates to ideas of effective achievement of roles and tasks, the fulfilment, without difficulty, of different human activities. With the perceptual approach, good health relates to ideas such as well-being, a happy attitude to life, or else a full, fruitful and creative life. With the adaptive approach to health, good adaptation testifies to a harmonious relationship with one’s environment.

1.4. The Multi-Dimensional Nature of Health and Morbidity

The profusion of perspectives on and approaches to health clearly illustrates the multi-dimensional nature of both health and morbidity. The search for the perfect conceptual reference framework, permitting classification of all health-related indicators without ambiguity, is therefore likely to be illusory. However the profusion of perspectives and approaches also reflects the varied causes and mechanisms that allow an understanding of the transitions of health and, as a consequence, the means to meet health targets.

Nevertheless, it is necessary to aim for a conceptual reference framework with maximum clarification, although imperfections will still exist.

The framework proposed here is based on five points:

- a life-course definition of health;
- the acknowledgement of different perspectives on health;
- the acknowledgement of different approaches to assess health status;
- specific conceptual models for each approach; and
- the acknowledgement of the specificity of the dimension of mental health.

Each approach to health is defined by one or several conceptual models. We shall now look in more detail at each approach and the conceptual models contained therein.

2. A Reference Framework to Health-Related Indicators

In the second half of the twentieth century, the notion of health changed from "survival", through "freedom from disease" and "individual's ability to perform daily activities" to the current notion of health as "well-being (quality life)".

2.1. The Bio-Medical Approach

The biomedical health model developed in the late eighteenth century when scientific medicine grew and people trusted completely in the healing power of medicine. The approach found favour with the advances in bacteriology, immunology, surgery, diagnostics and particularly progress in pharmacology. The analytic-descriptive approach to diseases played a key role: diseases were considered as separate items, and expertise was highly specialised and divided to meet the requirements of diseases.

During the twentieth century, the bio-medical approach was criticized for its compartmentalization and oversimplification. In this approach, the body is the key element, determining health or illness; psychological and social issues are barely acknowledged. Mental illness represents a grey area between physical health and illness. In this model, health is described as an absence of disease. Health and disease are two opposites and not two endpoints of the same whole.

The disease develops along a clear cause-effect path, such that health recovery is determined by disease-treatment. Treatment is centred on the disease, while mental, emotional or physiological conditions of the individual are independent. Finally, according to this approach only health professionals can heal and recognise diseases (diagnoses) and decide treatment.

Defining bad health by the presence of disease worked well whilst the most common diseases were infectious diseases with known aetiologies. With the move from acute to long-term chronic disease, the biomedical model needs expanding since the presence of disease is not the ultimate endpoint but rather disease results in a clinical picture of partial or total impairments and/or functional limitation of the individual. This disease/disability model is the basis of the functional approach

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Biographical Sketches

Jean-Marie Robine is a senior research fellow at the French National Institute of Health and Medical Research (CR1, INSERM), in Montpellier (France) and head of the *Health and Demography* team.
His work concerns demo-epidemiological changes in populations: one of the research avenues is devoted to the measure of disability and to the evolution of the health status of populations, another one to the study of longevity, with the aim of understanding the relations between health and longevity. In particular, Jean-Marie Robine attempts to measure the impact that the continuation of the increase in life expectancy may have on the health status of the population.

He has been the coordinator of the International Network on Health Expectancy (known as REVES) since it was created in 1989. REVES brings together more than 150 researchers from more than 100 research institutes or universities over 30 countries in the world.

At the European level, Jean-Marie Robine has been the project leader of the Concerted Action Euro-REVES (1994-1997) aiming at examining the difficulties in comparing the calculations of health expectancies already made in Europe [DGXll, Health and Biomedical Research Programme (BIOMED 1)]. He is now driving a project for the health monitoring programme in Europe proposing a coherent set of health indicators for the European Union [DGV, Health Monitoring Programme 1997-2001].

Expert to the World Health Organization since 1995 (Expert Board for monitoring the health situation and its trends), Jean-Marie Robine actively participates in the "WHO programme on Ageing, Health and Development". Since 1996, he has been a co-opted member of the Advisatory Committee on Health Research (ACHR) for the measurement of health, to the Director General of the WHO. He is also a member of the board of EuroHIS, the new project of the WHO-Europe to harmonize health surveys. Since 1995, as coordinator of REVES, Jean-Marie Robine has participated in the Work Group on Public Health Statistics (PHS) and to the "Task Force on Public Health Statistics" set up by Eurostat.
Jean-Marie Robine has just been named as Chair of the "Longevity and Health" Commission of the International Union for the Scientific Study of the Population.

Carol Jagger is a Professor in Epidemiology in the Department of Epidemiology and Public Health at the University of Leicester. Her main research area is in gerontology, particularly the mental and physical health of older people (much of this work being undertaken with the Melton Mowbray Ageing Project, which consists of two cross-sectional studies of all over 75s and an intermediate follow-up of survivors) and the series of censuses of older people in residential care undertaken in Leicestershire. She has been an active member of the International Network on Health Expectancy (REVES) since 1992 and has participated in the Euro-REVES Concerted Action and the latest EURODEM project “Monitoring neurodegenerative disease of Public Health importance in Europe”.

The Euro-REVES Group is made up of Vittoria Buratta, Emmanuelle Cambois, Viviana Egidi, Rosa Gispert, Wilma Nusselder, Niels Rasmussen, and Karen Ritchie. The Euro-REVES group has developed a reference framework to health-related indicators for the Health Monitoring Programme set up by the European Union.