Theme I: The epidemiological transition

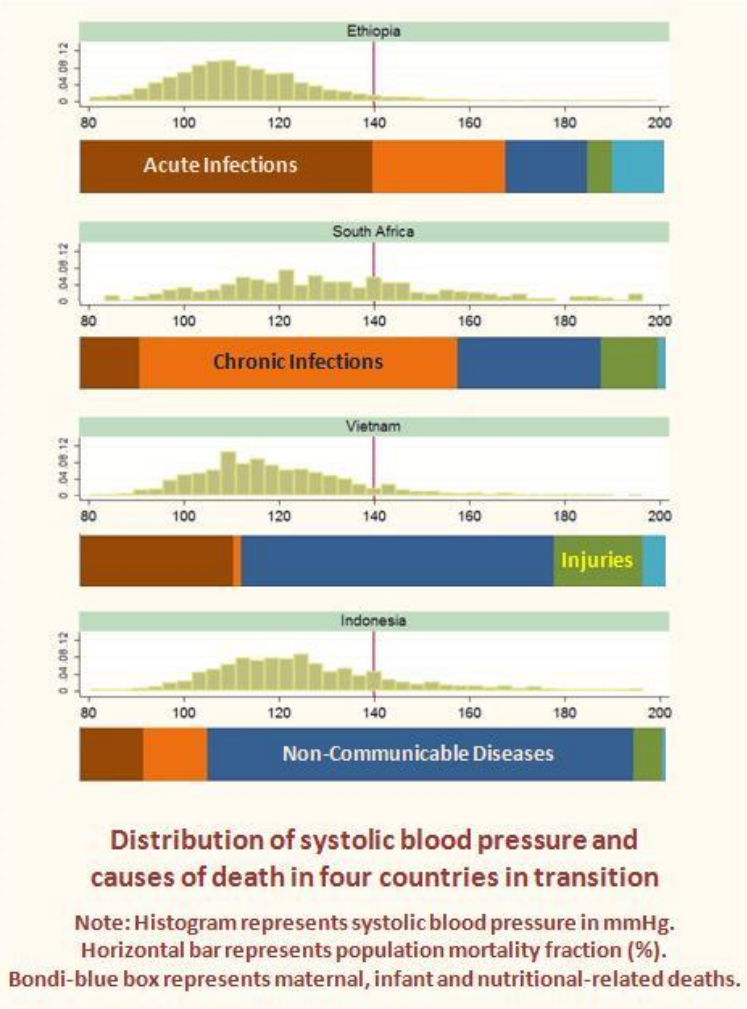
Research aims to contribute to theoretical and methodological development of the epidemiological transition theory (Omran, 1971) by contrasting epidemiological data in disadvantaged communities in developing settings such as in Ethiopia, Vietnam, Indonesia and South Africa to the well-developed environment of northern Sweden. Work conducted within this theme is structured into three research areas:

(1) Development of tools and methodology in population and health surveillance
Research seeks to advance the development of common methodologies and standardised approaches in population and health surveillance in developing settings, facilitate interchanges between countries and contribute to the theoretical modelling of modern phases of the epidemiological transition.

(2) Synthesis of Swedish historical and current population health evidence
Utilises mortality and health and disease data to better understand health and epidemiological transition in Sweden.

(3) Understanding population and health dynamics in developing countries
Work focuses on population dynamics in low-income countries within the setting of demographic surveillance sites (DSS), with the aim to better relate their findings to wider areas and understand population health using standardised methods.

Figure I: Risk factors of today are diseases of tomorrow



Distribution of systolic blood pressure and causes of death in four countries in transition

Note: Histogram represents systolic blood pressure in mmHg. Horizontal bar represents population mortality fraction (%). Bondi-blue box represents maternal, infant and nutritional-related deaths.

The ongoing epidemiology transition occurs at different paces in different countries in the world. In countries with more advanced stages of epidemiological transition, adult deaths are mainly dominated by chronic non-communicable diseases and injuries, as is the case in Indonesia and Vietnam. Infectious diseases remain the leading cause of death in less developed regions, for example in Ethiopia. Many countries such as South Africa and Vietnam are experiencing a double burden of disease, with primarily infectious diseases and emerging chronic non-communicable diseases. The patterns of causes of death are also reflected by the risk factor transition. In countries with predominantly non-communicable diseases, the population systolic blood pressure distribution is located to the right of those countries with more infectious diseases. Prevention and control of non-communicable risk factors can lead to the prevention of potential epidemics of non-communicable diseases in the future, and therefore should become the focus for health authorities in both developed and developing regions.

Research highlights

High quality and comparable longitudinal health and demographic data are needed to understand health transitions in developing settings where vital statistics remain scarce. We are continuously strengthening our collaboration with INDEPTH (International Network for the Demographic Evaluation of Populations and Their Health, www.indepth-network.org) in measuring risk factors, health and morbidity, and mortality in the Health and Demographic Surveillance sites (HDSS) within the network.

Research on non-communicable disease (NCD) risk-factor surveillance in 8 Asian field sites points to an increasing burden of, amongst others, tobacco use, lack of physical activity, inadequate consumption of fruit and vegetables, obesity and high blood pressure among adults aged 25-64 years old. Our involvement in the unique INDEPTH-WHO Study on Adult Health and Ageing (SAGE) allows us to understand health status and well-being of populations over 50 years old in 8 sites in Asia and Africa. Both of these projects show the potential of using HDSS to advance the development and assessment of common methodologies for measuring population health in culturally diverse settings and further our understanding of health and epidemiological transitions in developing settings.

In the absence of routine death registration, verbal autopsy (VA) methods gather information from a caregiver about the signs and symptoms of the deceased's terminal illness. Concerns about inter-observer agreement and lack of standardisation of physician review methods in assessing the VA data preclude meaningful comparisons of cause-specific mortality between regions and over time. We are developing InterVA (www.interva.net) as an alternative approach for verbal autopsy interpretation, which produces comparable and standardised VA-derived cause-specific mortality with the aim to understand mortality patterns in geographically and socio-economically diverse rural settings. We also plan to develop our InterVA model to more specifically assess maternal causes of death, as well as causes of death among neonates and infants.

View CGH publications

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