



Working on Non-Communicable Diseases

Low- and middle- income countries are now beginning to experience epidemics of non-communicable disease while the 'traditional' epidemics of communicable disease have not yet receded. Here a husband brings his wife to a private hospital in India for a check-up.



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Massive rises and falls in the occurrence of non-communicable diseases (NCDs) have been observed in affluent countries over the last century as well as more recently in so-called transitional countries, particularly in central Europe and the former Soviet Union, where there are sufficient data to establish trends. There is growing evidence that the epidemiologic transition is now occurring in many low- and middle-income countries (LMICs), which are beginning to experience epidemics of non-communicable disease while the 'traditional' epidemics of communicable disease have not yet receded. This is driven in part by the inexorable process of urbanization, involving movement of individuals from rural to urban environments, which results in profound changes in patterns of diet, exercise and exposure to pathogens within short periods within the lifetimes of cohorts of migrants. Little is known about the relative importance of these different components in driving specific disease trends. Moreover, almost nothing is known about the consequences of the 'double burden' of an increased level of NCDs in populations where infectious diseases continue to have a profound impact.

More generally, very little is known about the causes,

distribution, and effective means of prevention and control of non-communicable diseases in LMICs. The 'causes of causes' of NCDs are poorly understood, and distributions of risk factors for common chronic diseases are not known. Nor is it known which genes modify individual susceptibility to chronic diseases, but research using a Mendelian randomization approach has considerable potential to investigate causal mechanisms. Effective prevention is possible, but much greater research is needed on the best means of sustainable and affordable implementation and the evidence base for health promotion interventions for chronic diseases in LMICs is very limited.

These issues were discussed in a series of papers in *The Lancet*, which posed a series of questions for the September 2011 UN High-Level Meeting on NCDs. The authors, who include several School staff, concluded that:

- NCDs threaten economic and human development; action on NCDs will support the Millennium Development Goals;
- The global crisis requires a global multisectoral response to the underlying causes;

- Strong leadership is essential: tackling NCDs should be part of both national and international health and development agendas to protect the current and future generations and reduce inequalities;
- Population-wide multisectoral preventive interventions, such as tobacco control and salt reduction, are cost-saving and will have a rapid effect;
- Improving primary health care for the prevention and treatment of people at high risk of NCDs is cost-effective and will reduce the burden on health systems; and
- Efficient use of existing resources and new innovative financing methods are needed, not a new global fund.

The School is playing a major role in the global movement for the study, prevention and control of NCDs, feeding substantially into the debates leading up to the High-Level Meeting. The School has many experienced NCD researchers, many of whom are already carrying out a wide range of work in low- and middle-income countries. These include several studies in Africa, such as the RODAM project which will be studying populations based in rural and urban Ghana

as well as Ghanaian migrants to London, Amsterdam and Berlin, focusing on type-2 diabetes and obesity. Other NCD work is being done by the infectious disease research groups in Uganda, Malawi and elsewhere in Africa. Studies being conducted through the South Asia Network for Chronic Disease, a centre of excellence of the Public Health Foundation of India, are focusing on cardiovascular disease and diabetes, but also include a wide range of other NCDs. There is ongoing work in Latin American countries on obesity, cancer and injuries.

The European Centre on Health of Societies in Transition is recognized as the leading centre for research on health in central and eastern Europe and the former Soviet Union and has provided important new insights on, in particular, the role of alcohol in the high burden of premature mortality in this region and the activities of multinational tobacco companies. Its work is now extending into other middle-income countries undergoing major social and economic transitions, especially in Asia. School staff are involved in co-ordinating the International Study of Asthma and Allergies in Childhood which involves more than 250 centres in over 100 countries.

Other School centres which are addressing non-communicable diseases globally include the Centre for Global Mental Health, the Global Change and Health Centre, and the International Centre for Eye Health. Other global research on NCDs being conducted by School staff includes work on climate change, agriculture, food and nutrition, cancer, disability, and injury. There is also a substantial research programme using Mendelian randomization to investigate causal mechanisms.

The School aims to establish itself as a global centre for non-communicable disease research in low- and middle-income countries, bringing together researchers from across Departments and Faculties, and their research collaborators, in order to strengthen the School's NCD research portfolio through the sharing and dissemination of information, knowledge and expertise. There are considerable advantages in addressing non-communicable diseases as a group, rather than in a piecemeal fashion. There are common methodologies (particularly epidemiology); there are also common causes (e.g. socio-economic factors, smoking, diet, occupation), and common approaches to their control (e.g. legislation). It is also intended that this initiative will be extended to include as many researchers and networks as possible, on a global basis.



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Asthma affects 235 million people worldwide and the prevalence is rising; and it is the most common non-communicable disease among children.