

## CHRONIC DISEASE PREVENTION

# Global strategies to prevent chronic diseases<sup>1</sup>

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Chronic, non-communicable diseases such as heart disease, stroke, cancer and diabetes, despite being the leading global causes of death and disability, are notably absent from international development discussions and actions. This paper makes four points. First it reaffirms the critical importance of chronic diseases as causes of ill health globally – and especially in low- and middle-income countries – and their potential, and underappreciated, constraint on economic and social development in all countries. Secondly, it emphasises the unrealised potential for the prevention and control of all major chronic diseases. Thirdly, it considers the absence of chronic diseases from the Millennium Development Goals (MDGs) and how best to align the chronic disease agenda with the MDG agenda. Fourthly, it highlights the importance of operational research to support the implementation of global strategies for the prevention and control of chronic diseases, rather than more epidemiological, clinical or laboratory research.

## The burden of chronic diseases

Since the early decades of the last century chronic diseases have been the leading causes of death and disease in most wealthy countries. Only recently has it been appreciated that these diseases are now the leading cause of death in all regions of the world, except Africa.

This year there will be an estimated 58 million deaths, 35 million of which will be due to chronic diseases. Approximately 16 million of these chronic disease deaths will be premature, i.e. occurring under the age of 70 years. Of all chronic disease deaths 80% occur in low- and middle-income countries, and the death rates in these countries are considerably higher than in high-income countries. The burden of chronic diseases (as measured by disability adjusted life-years) is increasing, now accounting for nearly half of the global burden of disease (all ages). While the proportion of

burden from chronic diseases in adults in developed countries remains stable at over 80%, the proportion in middle-income countries has already exceeded 70%. Surprisingly, almost 50% of the adult disease burden in the high-mortality regions of the world is now attributable to chronic diseases.<sup>2</sup> Population ageing, urbanisation and changes in the population distribution of risk factors, in response to local and global forces, have accelerated the epidemic of chronic diseases in low- and middle-income countries.<sup>3</sup>

Cardiovascular diseases will account for approximately 16 million deaths in 2005 and for 13% of the disease burden among adults over 15 years of age. Coronary heart disease and cerebrovascular disease (stroke) are the two leading causes of mortality and disease burden among adults over age 60. An estimated 7.5 million cancer deaths will occur this year. Lung cancer is the most readily preventable cancer with an estimated 1.5 million deaths reflecting the emergence of the tobacco epidemic in low-income and middle-income countries.

Although we are most comfortable with epidemiological expressions of the burden of chronic diseases, from a policy perspective the social and economic burdens are at least of equal importance. Unfortunately, and in contrast to considerable work on the impacts of infectious diseases – for example, by the Commission on Macroeconomics and Health<sup>4</sup> – there have been few systematic studies of these impacts of chronic diseases. The recent Macroeconomics and Health Report for Central and Eastern Europe highlights the importance for this region of reducing adult mortality, with the expected gains being much greater than for reductions in childhood mortality.<sup>5</sup>

The impact of chronic diseases on social institutions will, fortunately, never be as acute as HIV/AIDS; it will be less visible, but in the long term they will have enormous adverse effects on societies. There is considerable evidence from wealthy countries of the costs of specific chronic conditions – diabetes,<sup>6</sup> cardiovascular diseases<sup>7</sup> and, increasingly, obesity,<sup>8</sup> for example, have received much attention. Recent, albeit limited, data from five low- and middle-income countries highlight the impact of cardiovascular disease on the middle-aged workforce, just as was apparent in wealthy countries when these epidemics were at their peak in the middle decades of last century; this report also stresses the equal importance of cardiovascular disease to women and men.<sup>9</sup> The forthcoming World Health Organization report, *Preventing Chronic Diseases: A Vital Investment*, will present estimates of the economic impact of heart disease, stroke and diabetes on the economies of several countries.<sup>10</sup>

## The causes of chronic diseases are known and they are preventable

An impressive body of research has identified the causes of the major chronic disease epidemics, with the notable exception of breast and prostate cancers. The current distribution of the major risk factors for chronic diseases are indicators of future health status, and 5 of the top 10 risks worldwide are specific to chronic diseases.<sup>11</sup> These major chronic disease risk factors – tobacco use, inappropriate diet and physical inactivity (primarily expressed through unfavourable lipid concentrations, high body mass index, and raised blood pressure) – explain at least 75 - 85% of new cases of coronary heart disease.<sup>12</sup> In the absence of elevations of these risk factors, coronary heart disease is a rare cause of death, at least until the very oldest age groups. Unfortunately, the vast majority of the populations in almost all countries are at risk of developing chronic diseases because of higher than optimal levels of the main risk factors. Only about 5% of adult men and women in wealthy countries are at low risk with optimal risk factor levels. There are only a few very poor countries in which these factors have not yet emerged as major public health problems.

It is not surprising, given the extensive knowledge on the causes of chronic diseases, that they are on the whole preventable. Application of this knowledge has had a major beneficial impact on chronic disease death rates in many wealthy countries, especially for cardiovascular disease and, to a lesser extent, lung cancer in men.<sup>13</sup> These declines account for the rapid increases in life expectancies in adults in many wealthy countries, even though much of this benefit has accrued to the more advantaged segments of these populations.

## Chronic diseases and the Millennium Development Goals

The absence of chronic diseases from the MDGs is notable, given their domination of the global mortality and burden of disease patterns in all regions except Africa, and their contribution to health inequalities. The origin of the MDGs in the international development discourse in the 1990s helps explain this absence. The United Nations conferences in the 1990s focused on a narrow range of health concerns around maternal and child health issues and infectious diseases, and came up with a set of targets that concentrated attention on these issues. There is a need to both develop acceptable chronic disease prevention

and control targets and at the same time work towards broadening the health development agenda in line with the complexities of the health situation in all countries.

There are several reasons to attempt to align the chronic disease agenda with the MDGs. First, the MDGs represent a compact between rich and poor countries and this key concept of partnership can be used to further the chronic disease prevention and control agenda, especially given the emerging evidence on the economic implications of chronic diseases, which are probably of equal importance to other causes of ill health in perpetuating poverty. Secondly, there is a real danger that an overriding commitment to the MDG agenda will distort resource allocations for countries, donors and the WHO, away from the social and economic reality. As poor countries build their health systems to provide prevention and control services to achieve key MDG goals, these same services could readily be used for chronic disease prevention and control programmes. Finally, monitoring of MDG 6 will in future include trends in health-adjusted life expectancy (HALE). Since chronic diseases are major contributors to HALE, their relevance to the MDGs is reinforced.

The reasons for the neglect of chronic diseases by international development agencies are complex. In all countries there is the inevitable priority given by health systems to acute infections, especially those like severe acute respiratory syndrome (SARS), which can have major and rapid adverse economic impacts. There is a misconception that chronic diseases are still the preserve of men in wealthy countries, despite the irrefutable evidence to the contrary. The notion that these conditions are caused by 'lifestyles' totally under the control of individuals not only persists in most countries but in some is the dominant paradigm for health, despite the overwhelming importance of the social, economic and cultural environment in determining human behaviours. Since the major determinants of chronic diseases are not under the direct control of individuals, the case for government leadership in the chronic disease agenda is strong.

## Research priorities for chronic diseases

Essentially, the causes of chronic diseases are known and there is little need for research to identify new and unknown causes. However, further research is required to explore the many variations in the occurrence of chronic diseases, both within and especially among countries.<sup>14</sup> Of particular interest is life course research examining influences that accumulate over a lifetime, and complementary attempts to explain socioeconomic inequalities in risk, between both individuals and regions.

A critical research issue is the need for a comprehensive analysis of the non-health effects of chronic diseases. Cost-of-illness studies are only a start. More important is further assessment of the direct and indirect economic effects of chronic diseases on societies, communities and families and on already stretched health services. These impacts will only increase as societies age.

A major priority for new research is prevention policy and programme effectiveness and issues of importance for the spread of the chronic disease epidemics to poor populations. Policy-directed research will have the biggest public health payoff in the short term, as it has had for tobacco control. There is an urgent need for epidemiologists and other public health scientists to explore the applicability of new research methods to the underlying social, economic and cultural determinants of chronic diseases. Some of the required research is more a matter of academic interest; some may in time provide extra leads to effective public health action. However, the unresolved issues should not detract from the urgency of applying what we know, especially in low- and middle-income countries that will bear the brunt of the global chronic disease epidemics.

## Strategic issues

The main issue for policy makers, at all levels of public health in low- and middle-income countries, is how to deal with the growing burden of chronic diseases in the presence of persisting communicable disease epidemics. Furthermore, this challenge must be faced even where health system resources are already inadequate. Although considerable policy gains can be made very cheaply, especially inter-sectorally, extra resources must be found, just as for infectious disease prevention and control. This requires a greater share of national resources for health care, better use of existing resources, and new sources of funding. A special tax on tobacco products for disease prevention and control programmes is a readily available source of new funds, and experience with these forms of funding is growing.

Another critical policy issue concerns the appropriate balance between primary and secondary prevention and between the population and high-risk approaches to primary prevention. If the goal is to increase the proportion of the population at low risk and to ensure that all groups benefit, the strategy with the greatest potential is the one directed at the whole population, not just people with high levels of risk factors or established disease.<sup>15</sup> All other strategies will, at best, only blunt the epidemics and probably increase inequalities; they will not prevent the epidemics. The ultimate public health policy goal is the reduction of population risk, and since most of the population in most countries is not at the optimal risk level, it follows

that the majority of prevention and control resources should be directed towards this goal in the entire population. Evidence is available in support of the cost-effective policies required for the task of making the small – but powerful and surprisingly rapid – shifts in risk distributions in entire populations in a favourable direction.<sup>9</sup> Similarly, management decisions based on measures of overall risk are more cost-effective than those based on single risk factors.

Untold lives are lost unnecessarily because of inadequate acute and long-term management of chronic diseases. Relatively cheap interventions for chronic diseases are available,<sup>16</sup> and single combination pills including aspirin and drugs for blood pressure and cholesterol lowering for possible use in chronic care are under development.<sup>17</sup> Even in wealthy countries, however, the potential of these and other interventions for secondary prevention is far from fully utilised. The situation in poorer countries is even less satisfactory. There are many opportunities for co-ordinated chronic disease risk reduction, care and long-term management. Smoking cessation and the identification and management of diabetes, for example, are just two priorities. Cost-effective interventions, such as the use of aspirin in people with myocardial infarction, would prevent a quarter of the deaths associated with heart attacks and are usually much more cost-effective than more radical interventions.

A coherent policy framework, encompassing legislation, regulation and mass education, is critical for chronic disease prevention and control, since individual behaviour change is difficult in the absence of conducive environmental alterations. A suggested stepwise framework for a comprehensive response to chronic disease prevention and control is under development and can be modified according to national needs, goals and targets.<sup>10</sup>

Unfortunately, the global and national capacity to respond to chronic disease epidemics is woefully inadequate. Few countries have implemented comprehensive prevention and control policies and development of capacity, especially for policy and programme development and implementation research, has not kept pace with the epidemiological transition. The gaps between the needs for chronic disease prevention and control and the capacity to meet them will grow even wider unless urgent steps are taken.

The WHO and governments cannot confront the challenges of chronic disease prevention and control alone. The WHO Global Strategy on Diet, Physical Activity and Health is the strategic framework within which the WHO and Member States can work together across sectors in preventing chronic diseases. This population-wide prevention strategy is based on extensive consultations with stakeholders: Member

States, the United Nations and intergovernmental organisations, civil society and the private sector.

Globally, there is still only limited advocacy for the prevention and control agenda and what there is tends to be fragmented. The lack of unified advocacy for health promotion compares poorly with the growing dominance of commercial and consumer groups that have placed treatment at the centre of health policy debates and funding priorities. Broader alliances of major health professional bodies, NGOs, consumer groups and others are needed to promote the prevention of major risk factors for chronic diseases and to track progress to agreed national and global goals – perhaps modelled on the MDGs. Since the determinants of chronic diseases are multisectoral, advocacy and action must extend well beyond the health sector. The involvement of NGOs in articulating the demand for speedy implementation of policies and programmes relevant to chronic disease control is critical for catalysing policy change and for mobilising communities to ensure that the benefits flow to the entire population.

While the pace of globalisation of the major risks for chronic diseases is increasing, progress towards prevention and control is slow. Sustained progress will occur only when governments, international agencies, NGOs and civil society acknowledge that the scope of public health activities must be rapidly broadened to include chronic diseases and their risk factors. Chronic disease prevention and control advocates should use the MDG framework and experience as a model for their own efforts, which should be synergistic with, but not in competition with, the infectious disease agenda.

Finally, most of the facts in this paper are known to many policy makers and politicians. Yet action is limited. There is a serious need for research into the most effective levers for policy change around the chronic disease agenda. With this knowledge we could identify the best advocacy approaches and the best entry points and partners for the multisectoral actions that are required. Will childhood obesity, for example, provide the spur for action? It is often said that chronic diseases began to be taken seriously in wealthy countries as a response to their direct impact on politicians. Will we have to wait for a generation of middle-aged politicians in low- and middle-income countries to be struck down by heart attacks and strokes before these issues are taken seriously? The fact that the WHO and many of its partners are now taking chronic diseases more seriously provides hope that we may be able to shortcut this process.

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