



CHAPTER SEVEN

Preventing Risks and Taking Action

More emphasis on preventing the causes of important diseases is the key to improving world health. Tackling major risks effectively could lead to up to ten years more of healthy life expectancy globally. Although the world faces some common, large and certain risks to health, effective and affordable interventions are available. Very substantial gains can be made for relatively modest expenditures, but bold government policies will be required. They should prioritize the most important risks and shift the main focus to include preventive measures that can be applied to the whole population. For example, governments can decide to aim for increased taxes on tobacco; legislation to reduce the proportion of salt and other unhealthy components in foods; stricter environmental controls and ambitious energy policies; and stronger health promotion and health safety campaigns. Reducing major risks will in turn reduce inequities in society, and promote both healthy life and sustainable development.

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PREVENTING RISKS AND TAKING ACTION

FOCUSING ON PREVENTION MEANS FOCUSING ON RISKS

In order to protect and improve health around the world, much more emphasis is needed on preventing the actual causes of important diseases – the underlying risks to health – as well as treating the established diseases themselves. Prevention can best be achieved through concerted efforts to identify and reduce common, major risks and by taking advantage of the prevention opportunities they present.

This report shows that about 47% of global mortality is attributable to the leading 20 risk factors that have been assessed in earlier chapters, and that more than one third of that burden is attributable to just 10 of those factors. Tackling these risks effectively could lead to almost a decade more of healthy life expectancy globally. The potential improvements in global health are much greater than generally realized – extra years of healthy life expectancy could be gained for populations in all countries within the next decade.

The greatest gains would be in some of the poorest nations – with perhaps ten more healthy life years achievable. The potential benefits extend across all countries and all levels of socioeconomic development. Even in the most developed countries of North America and Europe, another five or so years of healthy life expectancy for the population is within reach.

Looking towards the potential global burden of disease in the next two decades, Chapter 4 showed that reducing risk by 25% will result in large amounts of that burden being avoided. Translated into human terms, this offers the prospect of millions of premature deaths being averted, and of many more millions of people being spared years of disease, disability and ill-health. It might mean, for example, that in the year 2010 more than a million deaths from HIV/AIDS and the loss of 40 million healthy life years related to unsafe sex would be averted, as would more than a million deaths and over 35 million lost healthy life years from cardiovascular diseases related to blood pressure and cholesterol.

However, Chapter 4 also gave a measure of the cost of inaction. It predicted that by the year 2020 there will be nine million deaths caused by tobacco, compared to almost five million a year now; five million deaths attributable to overweight and obesity, compared to three million now; and that the number of healthy life years lost by underweight children will be 60 million, which although less than half the 130 million now, is still unacceptably high.

This report represents one of the largest research projects ever coordinated by the World Health Organization. It has quantified many of the important global risks and assessed the cost-effectiveness of measures to reduce them. The ultimate goal is to support governments in all countries to lower the impact of these risks.

The conclusions have already been described as a wake-up call to health leaders around the world. They are also the basis for building a healthier future for entire populations across the world.

THE WORLD FACES SOME COMMON, LARGE AND CERTAIN RISKS TO HEALTH

Leading 10 selected risk factors as percentage causes of disease burden measured in DALYs

Developing countries	
High mortality countries	
Underweight	14.9%
Unsafe sex	10.2%
Unsafe water, sanitation and hygiene	5.5%
Indoor smoke from solid fuels	3.6%
Zinc deficiency	3.2%
Iron deficiency	3.1%
Vitamin A deficiency	3.0%
Blood pressure	2.5%
Tobacco	2.0%
Cholesterol	1.9%
Low mortality countries	
Alcohol	6.2%
Blood pressure	5.0%
Tobacco	4.0%
Underweight	3.1%
Overweight	2.7%
Cholesterol	2.1%
Low fruit and vegetable intake	1.9%
Indoor smoke from solid fuels	1.9%
Iron deficiency	1.8%
Unsafe water, sanitation and hygiene	1.8%
Developed countries	
Tobacco	12.2%
Blood pressure	10.9%
Alcohol	9.2%
Cholesterol	7.6%
Overweight	7.4%
Low fruit and vegetable intake	3.9%
Physical inactivity	3.3%
Illicit drugs	1.8%
Unsafe sex	0.8%
Iron deficiency	0.7%

There are countless risks to health, but even among the selected major risks in this report, relatively few are responsible for large amounts of the global disease burden. Almost all of them are more common among the world's poor than the better-off. Until now, their true impact has been underestimated, particularly in developing countries.

The picture that has emerged from this research gives an intriguing – and alarming – insight into current and important causes of diseases and death and the factors underlying them. Human behaviour and societies are changing around the world and global changes are having a large impact on people's health.

The table, left, shows the top 10 selected risk factors as causes of disease burden in high and low mortality developing countries and in developed countries. While this table shows the burden attributable to the selected factors at a global level, it does not show the high risks faced by certain sections of the population (for example, the many people whose occupations place them at high risk of life-threatening injury or chronic disease), or the burden resulting from major diseases (such as malaria, tuberculosis and HIV/AIDS which in total cause more than 10% of global disease burden). Also, the combined effects of the risk factors in this table will be less than the sum of their separate effects.

- At least 30% of all disease burden occurring in high mortality developing countries, such as those in sub-Saharan Africa and South-East Asia, is due to just five risk factors: underweight, unsafe sex, micronutrient deficiencies, unsafe water, and indoor smoke. Risks associated with food insecurity, hunger and malnutrition still dominate the health of the world's poorest nations. Most of the childhood deaths in developing countries each year are associated with malnutrition. In addition, the consequences of unsafe sex are fuelling the HIV/AIDS epidemics in Africa and Asia.
- In low mortality developing countries, such as the People's Republic of China and most countries in Central and South America, the top five risk factors cause at least one sixth of their total disease burden. These populations face a double burden of risks. Indeed, the analysis on which this report is

based shows how these countries already face many of the same risks as industrialized countries – tobacco and high blood pressure, for example – while also having to contend with major remaining problems of undernutrition and communicable diseases.

- At the same time in the developed countries of North America, Europe and the Asian Pacific, at least one-third of all disease burden is attributable to these five risk factors: tobacco, alcohol, blood pressure, cholesterol and obesity. The tobacco epidemic alone kills about 2.4 million people every year in industrialized countries. In addition, suboptimal levels of blood pressure and cholesterol each cause millions of deaths annually, and increasing levels of overweight are leading to epidemics of obesity and diabetes.

The world is living dangerously – either because it has little choice, or because it is making the wrong choices. Today there are more than six billion people coexisting on this fragile planet. On one side are the many millions who are dangerously short of the food, water and security they need to live. Developing countries still face a high and highly concentrated burden from poverty, undernutrition, unsafe sex, unsafe water, poor sanitation and hygiene, iron deficiency and indoor smoke from solid fuels. On the other side lies unhealthy consumption, particularly of tobacco and alcohol. The risks from blood pressure and cholesterol, strongly linked to heart attacks and strokes, are also closely related to excessive consumption of fatty, sugary and salty foods. They become even more dangerous when combined with the deadly forces of tobacco and excessive alcohol consumption. Obesity, a result of unhealthy consumption coupled with lack of physical activity, is itself a serious health risk.

All of these risk factors – blood pressure, cholesterol, tobacco, alcohol and obesity – and the diseases linked to them are well known to wealthy societies. The real drama is that they now also increasingly dominate in low mortality developing countries where they create a double burden on top of the infectious diseases that always have afflicted poorer countries. They are even becoming more prevalent in high mortality developing countries.

EFFECTIVE AND AFFORDABLE PREVENTIVE INTERVENTIONS ARE AVAILABLE

Every country has major risks to health that are known, definite and increasing, sometimes largely unchecked; cost-effective interventions exist but are underutilized.

Very substantial health gains can be made for relatively modest expenditures. Chapter 4 examined in detail the cost-effectiveness of many interventions. Some of the most important findings are briefly described below.

- A strategy to protect the child's environment is cost-effective in all settings, with very cost-effective components including some form of micronutrient supplementation, such as vitamin A, iron, and zinc; disinfection of water at point of use to reduce the incidence of diarrhoeal diseases; and treatment of diarrhoea and pneumonia.
- Improved water supply based on disinfection at point of use is cost-effective in regions of high child mortality. While acknowledging that regulated piped water supplies will be the long-term aim of most countries, a policy shift towards household water management appears to be the most attractive short-term water-related health intervention in developing countries.
- Preventive interventions to reduce the incidence of HIV infections, including measures to encourage safer injection practices, are very cost-effective. The use of some

types of antiretroviral therapy in conjunction with preventive activities is cost-effective in most settings.

- At least one type of intervention to reduce the risks associated with cardiovascular disease is cost-effective in all settings. Population-wide salt and cholesterol lowering strategies are always very cost-effective singly and combined. The most attractive combined strategy to reduce the risks associated with cardiovascular disease appears to be the combination of salt reduction at a population level through legislation or voluntary agreements, health education through the mass media focusing on blood pressure, cholesterol and overweight; plus the implementation of an individual risk reduction approach.

Some of the affordable solutions described in this report are closely related to two priority actions that WHO has outlined for the coming years:

- promoting healthy environments for children;
- reinvigorating WHO's work on diet, food safety and human nutrition, linking basic research with efforts to tackle specific nutrient deficiencies in populations and the promotion of good health through optimal diets – particularly in countries undergoing rapid nutritional transition.

- Tobacco, of course, is a major risk for cardiovascular disease. In terms of interventions, the greatest tobacco-related improvements in population health would be a combination of tobacco taxation, comprehensive bans on advertising, and information dissemination activities, all of which would be affordable and cost-effective in most parts of the world. Adding restrictions of smoking in public places increases the costs, but also gains even greater improvements in population health and is still very cost-effective in industrialized countries.

NARROWING THE GAP BETWEEN POTENTIAL AND ACTUAL BENEFIT: A KEY RESEARCH PRIORITY

Despite the availability of cost-effective interventions to reduce risks, this report says there is a large potential benefit that is not realizable with current strategies and technologies. Unacceptably large gaps remain in understanding the effects of exposures on populations at different stages of development. Similar uncertainties apply to how health systems might be better adapted to achieve substantial overall health gains through more affordable preparations and delivery methods. More fundamental research is needed in order to transfer effectively the scientific knowledge on hazards that will help change human behaviour and lower individual risks. If policy-makers are to be more effectively engaged in applying measures that have proven benefits in risk reduction, the political context of knowledge transfer and risk management needs to be better understood and utilized. A key research priority is the development of new interventions, particularly for leading diseases. Together with more efficient primary prevention, these interventions can be expected to reduce substantially the risk burden in all populations.

POPULATION-WIDE PREVENTION STRATEGIES: KEY TO RISK REDUCTION

“It makes little sense to expect individuals to behave differently from their peers; it is more appropriate to seek a general change in behavioural norms and in the circumstances which facilitate their adoption.” (Rose, 1982)

The great potential of prevention strategies that aim to achieve moderate, but population-wide, reductions in risks is yet to be fully recognized. Only a fraction of the benefits

forecast in this report would arise from strategies directed towards the minority of people at high risk above commonly used thresholds (such as severe underweight, hypertension or obesity). However, achieving this potential requires a change in “ownership” of responsibility for tackling these big risks – away from individuals at the extremes and towards governments and ministries of health tackling population-wide risk levels. Not only do governments need to increase non-personal health services, but they must also ensure much broader access to cost-effective personal health services.

GOVERNMENT RESPONSIBILITY FOR HEALTH

REDUCING MAJOR RISKS TO HEALTH WILL PROMOTE SUSTAINABLE DEVELOPMENT

The most important rationale for dealing with major risks is, of course, a humanitarian one. However, it is increasingly clear that investment in health is also a means of stimulating economic growth and reducing poverty. The development goals that challenge governments cannot be reached in the face of widespread ill-health, particularly among poor people. Alleviation of hunger and malnutrition is a fundamental prerequisite for poverty reduction and sustainable development. In many countries, particularly those in sub-Saharan Africa, the AIDS epidemic is a national emergency that undermines development, compounding the impact of conflict, food shortages and other causes of poverty. It drives and perpetuates the poverty of individuals, families and societies. Promoting safe sex to reduce HIV/AIDS must be at the core of public policy, of poverty reduction strategies, of action for sustainable development, and of human security. It requires intensive and concerted action by many different agencies across different sectors, coordinated by government.

REDUCING MAJOR RISKS CAN REDUCE INEQUITIES IN SOCIETY

Almost all the risk factors assessed in this report occur more commonly in the poor, who typically also have less autonomy and fewer resources to reduce risks. While personal services are more likely to be adopted by the well-off, and hence may even increase inequalities, government-directed population-wide changes can benefit whole communities. The benefits of such changes are likely to be greatest in the poor among whom risks are greatest, and thus inequalities will be reduced. Tackling major risks has the potential to substantially reduce inequalities worldwide.

GOVERNMENTS NEED TO PRIORITIZE AND FOCUS ON THE MOST IMPORTANT RISKS

Many major risks require considerable resources to forge the essential social consensus required for tackling them. For example, a mixture of public and private sector agreements and legislation are required to create the social milieu for health gains resulting from tobacco taxation or gradual changes to food manufacturing. Achieving such changes in the social milieu are a substantial challenge for governments. Since all risks cannot be targeted simultaneously, there should be a focus on those with the greatest potential for short and long-term improvement.

There are several other compelling reasons for governments to play a greater role in tackling major risks to health:

- **Reducing major risks to health will promote sustainable development**
- **Reducing major risks can reduce inequities in society**
- **Governments need to prioritize and focus on the most important risks**
- **Exercising stewardship means fulfilling the government's responsibility to protect its citizens**

EXERCISING STEWARDSHIP MEANS FULFILLING THE GOVERNMENT'S RESPONSIBILITY TO PROTECT ITS CITIZENS

Although governments rarely can hope to reduce risks to zero, they can aim to lower them to a more acceptable level, and explain, through open communication with the public, why and how they are doing so. Governments are the stewards of health resources. This stewardship has been defined as “a function of a government responsible for the welfare of the population and concerned about the trust and legitimacy with which its activities are viewed by the citizenry”. The careful and responsible management of population well-being is the very essence of good government. With regard to risks to health, therefore, governments must take a long-term view and have the vision to tackle major, common and complex risks, even if they do not have high public appeal. Governments should not respond disproportionately to risks that are controversial and newsworthy, but rare, yet must still respond appropriately to highly uncertain or unknown risks.

RECOMMENDED ACTIONS

This report offers a unique opportunity for governments. They can use it to take bold and determined actions against only a relatively few major risks to health, in the knowledge that the likely result within the next ten years will be large gains in healthy life expectancy for their citizens. The potential benefits apply equally to poor countries and rich countries, even if some of the risk factors are different.

Bold policies are required. They may, for example, have to focus on increased taxes on tobacco; legislation to reduce the proportion of salt and other unhealthy components in foods; stricter environmental controls and ambitious energy policies; and stronger health promotion and health safety campaigns.

At the same time, governments will need to strengthen the scientific and empirical evidence bases for their policies. They will have to improve public dialogue and communications; develop greater levels of trust for risk prevention among all interested parties; and consider carefully a range of ethical and other issues.

This is undoubtedly a radical approach. It requires governments to see the value of shifting the main focus from the minority of high-risk individuals to include preventive measures that can be applied to the whole population.

For many of the main risk factors there is likely to be good agreement between the general public and public health experts on what needs to be done once a dialogue begins. In some countries, risk understanding may need to be strengthened among the general public, politicians and public health practitioners.

Recommended actions that governments can take in risk reduction have been tailored to suit high, middle and low income countries, but in general the report recommends the following.

- Governments, especially health ministries, should play a stronger role in formulating risk prevention policies, including more support for scientific research, improved surveillance systems and better access to global information.
- Countries should give top priority to developing effective, committed policies for the prevention of large risks to health. The right balance should be struck between population-wide risk reduction and aiming to reduce risk in a smaller number of high-risk individuals. The former has great, often unrealized, potential.

- Cost-effectiveness analyses should be used to identify high, medium and low priority interventions to prevent or reduce risks, with highest priority given to those interventions that are cost-effective and affordable.
- Intersectoral and international collaboration to reduce major extraneous risk to health, such as unsafe water and sanitation or a lack of education, is likely to have large health benefits and should be increased, especially in poorer countries.
- Similarly, international and intersectoral collaboration should be strengthened to improve risk management and increase public awareness and understanding of risks to health.
- A balance between government, community and individual action is necessary. For example, the great potential from community action by nongovernmental organizations, local groups, the media and others should be encouraged and expanded.

REDUCING RISKS, PROMOTING HEALTHY LIFE

In conclusion, it is clear that the world faces some large, common and certain risks to health. Over 20 major risk factors identified in this report are already responsible for about almost half of the total number of global premature deaths occurring each year. The leading 10 of them account for one-third of all deaths worldwide.

Furthermore, although many major risk factors are usually associated with high income countries, in fact over half of the total global burden of diseases they cause already occurs in low and middle income countries.

Most of these risk factors are well understood scientifically, and estimates of their risk probabilities and consequences are available. Many cost-effective interventions are also known and prevention strategies are potentially transferable between similar countries. Thus most of the important scientific and economic information is already available for policy decisions that could significantly improve global health.

What is now required is concerted, government-led action. The result of reducing risks and promoting healthy life will have a wide and lasting social value, even beyond preventing death and disability, for each country.