



CHAPTER SIX

Strengthening Risk Prevention Policies

The two previous chapters have quantified the relative importance of various risk factors in different populations around the world and have proposed intervention strategies for some of them. Without doubt, information on the magnitude of disease and injury burden, and on the availability, effectiveness and cost-effectiveness of interventions is essential for prioritizing policy responses to reduce risks and improve overall levels of population health. Rapid health gains can only be achieved with focused interventions that reach large segments of the populations concerned. However, such strategies must take into account the broader framework of risk management considerations, some of which are highlighted in this chapter. It places the risks and intervention strategies outlined in Chapters Four and Five in the context of other considerations that need to be kept in mind when deciding on measures to reduce risk. A key issue is getting the right balance between efforts targeted on primary, secondary or subsequent prevention; another is the management of uncertain risks. The ethical implications of various programme strategies, including their impact on inequities in population health, must also be taken into account. This chapter argues that governments, in their stewardship role for better health, need to invest heavily in risk prevention, in order to contribute substantially to future avoidable mortality. It then shows how policy-relevant choices can be made and which risks should receive priority, particularly for middle and low income countries.

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STRENGTHENING RISK PREVENTION POLICIES

CHOOSING PRIORITY STRATEGIES FOR RISK PREVENTION

*I*n constructing health policies for the prevention of well-known risks, choices need to be made between different strategies. For instance, will preventing small risks in large populations avoid more adverse health outcomes than avoiding large risks in a smaller number of high-risk individuals? What priority should be given to cost-effective interventions for primary rather than secondary prevention, such as lowering blood pressure distribution by reducing dietary salt intake compared with treatment of people with high blood pressure? Should priority be given to preventing environmental and distal risks to health, such as tackling poor sanitation or inadequate nutritional intakes, rather than the more obvious proximal risks in a causal chain? What is the most appropriate and effective mix of these strategies?

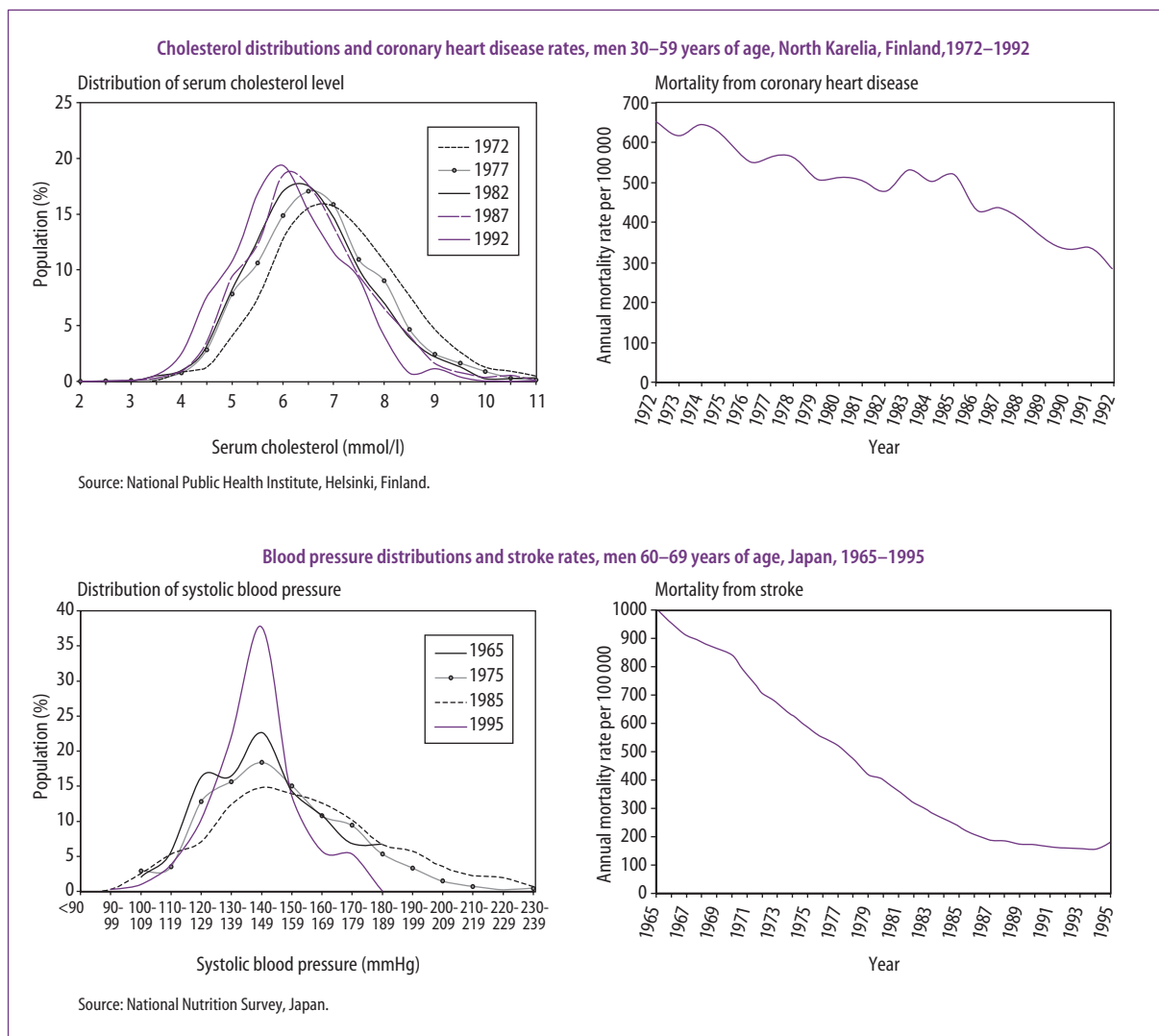
In practice there is rarely an obvious and clear choice. These strategies are usually combined so as to complement each other (1). In general, however, it is more effective to give priority to:

- population-based interventions rather than those aimed at high-risk individuals;
- primary over secondary prevention;
- controlling distal rather than proximal risks to health.

POPULATION-BASED INTERVENTIONS OR HIGH-RISK INDIVIDUAL TARGETS?

There is a “prevention paradox” which shows that interventions can achieve large overall health gains for whole populations but might offer only small advantages to each individual. This leads to a misperception of the benefits of preventive advice and services by people who are apparently in good health (2, 3). In general, population-wide interventions have the greatest potential for prevention. For instance, in reducing risks from blood pressure and cholesterol, shifting the mean of whole populations will be more cost-effective in avoiding future heart attacks and strokes than screening programmes that aim to identify and treat all those people with defined hypertension or raised cholesterol levels, as shown in Figure 6.1 (4–6). A similar approach can be used to modify behavioural risks and environmental exposures. For example, lowering the population mean for alcohol consumption will also predictably reduce the number of people suffering from alcohol abuse (7). Often both approaches are used and successfully combined in one strategy.

Figure 6.1 Case studies of distribution shifting and cardiovascular disease in Finland and Japan



DISTAL OR PROXIMAL RISKS TO HEALTH?

Although most epidemiological research and intervention analysis has focused on the more immediate risks for major diseases, tackling distal risks to health such as education and poverty can yield fundamental and sustained improvements to future health status. Enough is known about the predominant role of distal factors on health and survival to justify vastly greater efforts to reduce poverty and improve access to education, especially for girls. There is huge potential for major health gains through sustained intersectoral action involving other ministries and agencies concerned with development.

PRIMARY OR SECONDARY PREVENTION?

Risk reduction through primary prevention, such as immunization, is clearly preferable as this actually lowers future exposures and hence the incidence of new disease episodes over time. For long-term health gains it is usually preferable to remove the underlying risk.

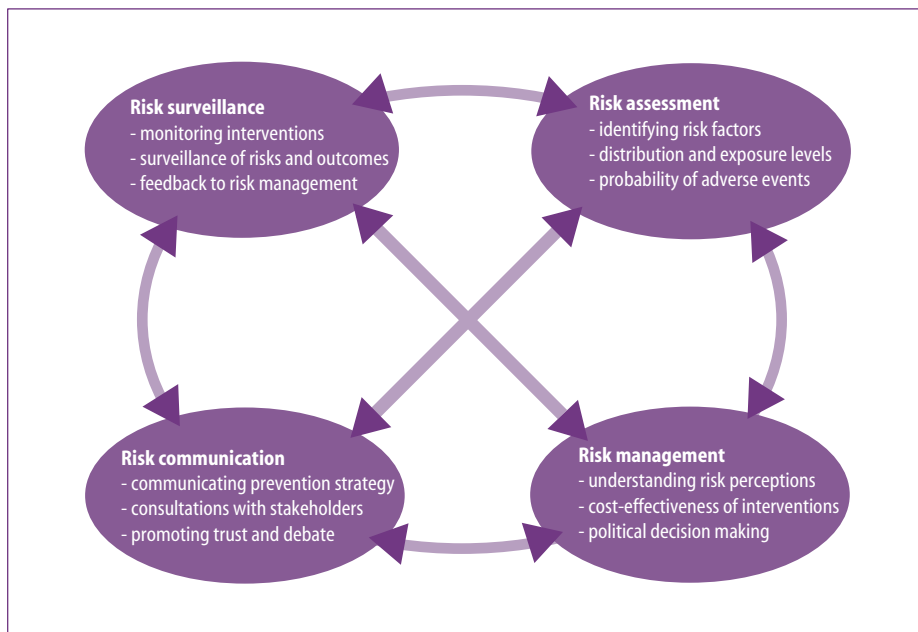
The choices may well be different, however, for different risks, depending to a large extent on how common and how widely distributed is the risk and the availability and costs of effective interventions. Large gains in health can be achieved through inexpensive treatments when primary prevention has failed. Secondary prevention is based on screening exposed populations for the early onset of subclinical illnesses and then treating them. This approach can be very effective if the disease processes are reversible, valid screening tests exist, and effective treatments are available.

MANAGING THE RISK PREVENTION PROCESS

As identifying and preventing risks to health is a political procedure, risk prevention requires its own decision-making processes if determined leaders from ministries of health and the public health community are to be successful (8). Other important factors which determine whether policies are adopted include public perceptions of the risks and benefits involved, perceived levels of dread and scientific uncertainty, how widely the risks are distributed and how inequitable or unfair are the health outcomes (9). Special interest groups and the media also have major roles in influencing these issues. Finally, there are important lessons for achieving success in risk communications that should be more widely disseminated, including the implications for more transparent government and greater openness by the scientific community (10). Successfully tackling risks to health involves many stakeholders from different sections in society, a combination of scientific and political processes, many qualitative and quantitative judgements, a range of intersectoral actions by different agencies and opportunities for open communication and dialogue (11).

Success in risk prevention will be largely determined by the strength of the political leadership from the ministry of health. Risk management is by no means a linear process and, although it typically involves an iterative decision-making process, action will be necessary in all four of the main components of assessment, management, communication and surveillance (see Figure 6.2).

Figure 6.2 Implementing risk prevention



IDENTIFYING PRIORITY RISK FACTORS FOR PREVENTION

The scientific basis for the burden attributable to the main risk factors addressed in this report is reasonably well understood; for these risks, remaining data gaps should not diminish the importance of adopting control policies today if disease burden is to be lowered in the near future. Much of the scientific and economic information necessary for making health policy decisions is already available.

Many of these are also well known, common, substantial and widespread. They are also more likely to have cost-effective risk reduction strategies. Lack of uncertainty and availability of cost-effective interventions for large risks leads to agreement in society about the need for action. Examples would be increasing tobacco consumption, particularly in Asia and Eastern Europe, and the role of unsafe sex in the HIV/AIDS epidemic, particularly in Africa. Many of these risks are common to populations in both industrialized and developing countries, though the degree of exposure may vary.

Risk factors with smaller disease burdens should also not be neglected; although smaller than other factors, they still contribute to the total burden of disease in various regions. Large industrial activity involving coal, ambient air pollution and lead exposure, for example, has health effects comparable to other major risk factors. Some risks, such as occupational ones, are concentrated among certain sectors of society. This implies not only that these sectors are disproportionately affected, but also that the concentration makes targeting risk easier, as successful occupational safety interventions and policies in many regions have shown. For other risk factors, such as childhood sexual abuse, ethical considerations may outweigh direct contributions to disease burden. Even though the burden of disease attributable to a risk factor may be limited, highly effective or cost-effective interventions may be known. Reducing the number of unnecessary medical injections coupled with the use of sterile syringes are effective methods for controlling transmission of communicable diseases. Similarly, reductions in exposure to lead or ambient air pollution in industrialized countries in the second half of the 20th century were achieved by effective use of technology which often also led to energy saving and other benefits. In the case of these risk factors, therefore, the benefits to population health stemming from risk assessment, together with other considerations, provide the best possible policy guides for specific actions.

The management of risk factors or hazards that have uncertain or highly uncertain risk probabilities or adverse consequences, such as exposure to climate change or genetically modified foods, is considered in the next section, in the context of cautionary approaches and the use of the precautionary principle.

The national context is very important for assessing the options for risk prevention. For instance, in many middle and low income countries a lack of scientific expertise and equipment may mean that appropriate data for making local risk assessments are not available. In addition, many risks may also have low priority for any political action. In these situations, public awareness of risk factors may need to be enhanced and knowledge about the most dangerous risk factors brought openly to public attention, while interest groups and the mass media may need to be encouraged to debate publicly local risks to health. Any leadership for political action will have to come from the ministries of health. Collective actions at regional and international levels are also called for, as many risk factors and risks to health are not limited by national borders. This is where the World Health Organization can play an effective advisory and coordinating role.

ASSESSMENT AND MANAGEMENT OF HIGHLY UNCERTAIN RISKS

People who work in the public health arena regularly face surprises and controversies. While these are at times caused by special interest groups, they often reflect unmet challenges to health management capabilities and a lack of preparedness. In these situations prevention becomes a particularly politicized process, which leads to a need for better communications, trust, dialogue, information sharing and planning to contain panic (11, 12). Planning for high uncertain risks should be an important component of the activities of the major organizations entrusted with public health management.

In recent years the public has requested much greater caution in the management of highly uncertain risks, leading to use of the term “precautionary principle”. Considerable debate exists on what the precautionary principle actually means and there is no generally accepted definition. The most basic definition of the precautionary principle is that adopted at the United Nations Conference on the Environment and Development in 1992: “Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation” (13).

Although the principle is widely seen as a part of regulatory action, it is not actually embodied in any international legal agreement. If it has to be used to resolve difficult risks, how will it be interpreted by different group interests? A summary of the features of the “weak”, “moderate” and “strong” positions for and against the possible use of the precautionary principle within regulatory frameworks are summarized in Box 6.1.

It is important to recognize that, because of a lack of scientific knowledge and scarce resources no public agency can prepare for the infinitely large number of eventualities. The risk assessment, risk management and risk communication tools that have been discussed for dealing with many health hazards that are now familiar can nonetheless be helpful, if appropriately employed, in tackling highly uncertain risks.

Box 6.1 Contrasting views of the role of the precautionary principle within different world views of regulation

<i>Weak precaution</i>	<i>Moderate precaution</i>	<i>Strong precaution</i>
Presumption of unfettered market-led development and technological innovation.	Underlying presumption of unfettered market-led development and technological innovation, but recognition that this can sometimes be overthrown by high levels of societal concern.	No presumption of either market-led or technologically driven development.
Regulators intervene only on positive scientific evidence of risk and only use interventions that are demonstrably cost-effective.	Presumption about interventions as under ‘weak precaution’, but with case by case flexibility to shift the need for proof towards the risk creator.	Risk creator has to demonstrate safety of activity. Little acceptance of cost-effectiveness arguments.
Presumption of risk management. Banning very rare.	Underlying presumption of risk management. Banning possible, but only as last resort.	Presumption of risk avoidance. Banning very likely.
Presumption of free trade based on objective scientific criteria. Individual preferences and societal concerns given no weight.	Underlying presumption of free trade on the basis of scientific criteria. Recognition that individual preferences and societal concerns do matter.	No automatic presumption of free trade. Individual preferences and societal concerns are dominant.

Adapted from: (14).

Defining what is “highly uncertain” depends on context. Risks may be highly uncertain because they are:

- hidden risks, that are unstudied or insufficiently thought about. Risks may be hidden because they are unknown or rare phenomena; they are common phenomena that are statistically invisible (which might happen if data are gathered in categories that fail to reveal the risk); or they have been ignored because it was thought that nothing could be done about them;
- surprises;
- fresh controversies. There is inadequate and inconclusive information, but it can be reasonably expected that new information will be obtained which may well resolve outstanding key questions;
- persistent controversies, which endure even after a great deal of research to try to resolve them. Persistence of controversy is likely to be reinforced by differences in political or academic perspectives which inhibit communication between the parties and impede the establishment of common terms and agreement on approaches to information gathering. Special interest groups play a role in fostering controversy.

For any given risk, some or all of these categories can be a part of its development. For example, an unknown risk such as bovine spongiform encephalopathy (BSE) may emerge as a surprise, lead to serious controversies, and later on become familiar.

Assessment and management of highly uncertain risks can be adaptive, based on the following principles.

- Management should start with what is already known, acknowledge openly the major scientific uncertainties, and highlight uncertainties about human behaviour that affect the risk.
- Explicit analysis of what new information might become available on what time scales, and what it might show. A summary of this analysis should form a distinct section of the assessment.
- Development of a plan for acquiring and managing new information and presentation of the plan as a portion of the management options to be considered. Management goals should be defined broadly so that growing knowledge can be effectively utilized; the acquisition of new knowledge should be one of these goals.
- Improving assessment and performance is necessarily iterative; it is impossible to get everything right the first time, especially when uncertainties are large.

There may be threats that are irreversible, affect a large number of people, or rapidly expand the problem. Rapid diagnosis and response are therefore appropriate, and can often prevent major damage from occurring, especially in situations involving irreversible changes or rapid spread of the uncertain hazard. Characteristics of hazards such as persistence, irreversibility, and depth and breadth of impact are thus of particular concern.

Within the realm of highly uncertain risks, it is important to recognize that adaptive management should not be confined to particular, already specified, hazards. Rather, in order to use limited resources effectively, there should be investment in risk management efforts which do not focus on particular hazards but which will improve capabilities for identifying emerging hazards and for coping with them.

The management of highly uncertain risks involves infrastructure development in various international and national public agencies. The aims of such agencies are to search for hidden hazards, maintain a capability for responding to surprises and controversies, moni-

tor the development of surprises and controversies and assess the effects of interventions, manage the development of new knowledge and access to it, and evaluate human behaviour as a contributor to hazards. Agencies that monitor and manage food safety or disposal of toxic waste are examples.

It is not necessarily the case that prioritization requires making the choice between managing known risks and focusing on uncertain risks. The two activities are complementary to a considerable extent. Improved capabilities in managing known risks will be a resource to draw upon when dealing with new risks, and capabilities at detecting risk possibilities, assessing uncertainty, and learning from experience will inform and improve the management of familiar risks. Furthermore, avoiding or reducing some uncertain risks, such as global climate change or toxic chemicals, can be achieved with interventions such as energy efficiency or use of alternative chemicals which may provide other economic benefits.

Risk management is by now an international task. Many risks cross boundaries, so that actions in one country or region have an impact in another. In the case of management of uncertain risks, an important aspect of strengthening capabilities will be partnerships between specialists – experts in dealing with particular hazards – from different countries. But the overall build-up of risk management capability will be fragmented unless there is active coordination involving generalists in the country and associated with international agencies.

ETHICAL CONSIDERATIONS IN RISK PREVENTION

Medical ethics is a well-developed subject but it is mainly concerned with individual patient–doctor relationships and there has been little application of its principles to public health and even less to risks to health (15, 16). However, there is a wide range of ethical issues concerning risk exposures and risk outcomes, mainly to do, firstly, with balancing the rights, freedoms and responsibilities of individuals against achieving greater risk prevention using population-wide approaches and, secondly, protecting those individuals at high-risk exposures. In addition, strong regulatory and legal mechanisms may be required, which can affect both individuals as consumers as well as those in high-risk groups.

There are four fundamental ethical principles that are widely used throughout the world in medical practice, commonly called autonomy, non-maleficence, beneficence and justice (17). Each is a complex ethical principle, but when applied to public health and risk factors they might each be paraphrased respectively as protecting the rights of the individual and informed choice, do no harm or injury, produce benefits that far outweigh risks, and achieve a more equitable and fair distribution of risks and benefits. The application of these principles requires that whole populations and exposed or affected individuals, together with a wide range of other concerned stakeholders, have free and open access to all the information. Freedom should exist for full representation and transparent decision-making. These are all frequently problematic issues in risk management.

When conflict exists between these principles in particular risk situations, one principle – for example distributive justice – may have to override another one. When this is necessary, which one is given priority should be declared and made explicit. If this is not done, the result can be even greater public and professional controversy and a loss of trust in political decision-makers. These principles are ethical guidelines and considerable judgement and negotiation is required for their use in many risk prevention situations. As there is little previous experience of applying these principles to risks to health, especially in developing

countries, few accepted legal requirements or norms based on custom and practice are available. Thus each situation has often to be examined on a case-by-case basis (15).

Conflicts of interest, both personal and corporate, represent an important ethical issue that is receiving increasing international attention. Few organizations have enforceable guidelines for disclosing and handling conflicts of interest, particularly between personal and professional medical roles and between public organizations, such as ministries of health, and private-for-profit companies. For instance, disclosure of personal interests, such as when experts have close links to the global alcohol, tobacco and food industries, is rarely even a voluntary requirement.

RISK COMMUNICATIONS AND THE ROLE OF GOVERNMENTS

The public, particularly poor people, believe that their governments have an important duty to reduce the extent to which they are exposed to hazards and that they should do all they reasonably can to reduce risks, such as making sure that environments, foods and medicines are safe. This is particularly important where individuals have little control over their exposure to risks, because these risks are either not readily apparent or exposure is not under voluntary control (18–20). Although governments cannot set out to reduce risks to zero, they can aim to reduce them to a lower and more acceptable level. In addition, people are naturally anxious to understand how their governments make risk management decisions.

How can governments satisfy the public that they are actively pursuing this objective? How should the relevant risk information be communicated? Some important lessons have been learned on the role of dialogue in risk communication between the public and governments (20, 21). These lessons cover the most effective ways to handle and communicate with the public about important risks and are well illustrated by the recent epidemic of BSE in the United Kingdom (see Box 6.2). Practical guidelines for better communication have also been published (22, 23). The main points can be summarized as follows.

- Release a full account of the known facts. Governments and public agencies are often tempted to present simplified explanations and not to reveal the full facts. In addition, uncertainties included in decision-making are often glossed over and reassuring advice is frequently presented to the public. This is now recognized to be a major mistake. Political credibility and public trust are rapidly lost if the public believes it has not been given the full information on the risks that affect it.

Box 6.2 Important lessons for governments on developing better risk communications

- To establish credibility it is necessary to generate trust
- Trust can only be generated by openness
- Openness requires recognition of uncertainty, where it exists
- The public should be trusted to respond rationally to openness
- The importance of precautionary measures should not be played down on the grounds that the risk is unproven
- Scientific investigation of risk should be open and transparent
- The advice and reasoning of advisory committees should be made public
- The trust that the public has in scientists, experts and professionals, such as chief medical officers, is precious and should not be put at risk
- Any advice to the public from such experts and advisory committees should be, and should be seen to be, objective and independent of government and political influence.

Adapted from: (10), p. 266.

- Information should be released by an independent and trusted professional agency. It is also very important who communicates the information. This should be done by recognized experts who are well qualified in the subject and who are seen to be fully trustworthy, politically independent and without conflicts of interest. For public health in many countries, this important function is often best performed by the chief medical officer. For controversial information, in general, the public does not trust any messages conveyed by politicians or politically appointed spokespersons.
- An atmosphere of trust is needed between government officials, health experts, the general public and the media. This trust has to be developed and fostered. Condescending attitudes and the withholding of information can rapidly lead to public cynicism and accusations of a cover-up or a hidden scandal. Trust is easily lost but very difficult to regain.

The importance of developing trust between all parties has considerable implications for greater open government and its role in civil society. For instance, regulatory agencies need to be seen to be independent from political pressures, scientific information needs to be in the public domain, meetings of scientific advisory committees and their records need to be accessible for public scrutiny, and the mass media need to be free to investigate risks and publish their findings (10).

STRENGTHENING THE SCIENTIFIC EVIDENCE BASE

There have been many scientific advances in risk assessment since the subject was established in the 1960s. However, it started by focusing largely on new technologies and external environmental threats and has only latterly been extended to take into account major biological and behavioural risks to health, such as blood pressure, unsafe sex and tobacco consumption. In addition, the science of risk assessment developed mainly in North America and later in Europe, while to date there has been little application of this science in middle and low income countries. Research studies are needed to see if the lessons learned on risk perceptions and communications in industrialized countries also remain applicable in developing countries. In addition, while some reasonable global data exist, such as for risks leading to cardiovascular diseases (6, 24), data sources for other important risk factors require substantial improvement, especially for most middle and low income countries. There is an urgent need, therefore, to establish new data sources for developing countries.

The most important aspects of strengthening the scientific evidence base in risk assessment and management include the following activities.

- Collection of new scientific data on risk factors and exposures. For the most common and important risks to health, collection of the essential new data needs to be replicated in many more countries. This will require international support for methodological developments in such areas as standardized protocols, data collection instruments, approaches to statistical analysis, data archiving and exchange, and dissemination and use of research findings. Both qualitative and quantitative approaches will be necessary. Ongoing, regular collection of surveillance data is needed, in order to monitor trends in existing risk factors and to detect changes in exposure to risks and health outcomes associated with them.

- Establishment and support of new risk intervention research. Substantial public funding is required to undertake relevant research studies, particularly in developing countries, and to establish and develop regional centres of excellence in risk intervention research, training and advice. New research is needed, firstly, to compare risk perceptions in cross-national studies; secondly, to gather data on the frequency of risk factors and their levels in middle and low income populations; and thirdly, to evaluate the effectiveness and costs of different combinations of interventions. Strong support from the multilateral agencies and international donor and scientific communities will be essential.
- Coordination of research activities in different sectors. Given the complex and interdisciplinary nature of risk intervention research, coordination of both support and funding will be necessary at national and international levels. In countries this may require the establishment of new initiatives, such as research funds, specialized research units, appointment of government scientific advisers, and creation of new and independent scientific advisory committees that are free from political controls.

URGENT NEED FOR INTERNATIONAL ACTION

This report has documented the substantial gains in healthy life expectancy that populations everywhere can expect from even modest reductions in exposure to major risk factors such as underweight, unsafe sex, tobacco use and elevated blood pressure. Scientific uncertainty should not be allowed to delay the control of large and important risk factors, many of which are already causing a large amount of disease burden. This burden is expected to increase dramatically unless widespread action is taken by individuals, civil society, governments and international organizations. For example, the consumption of tobacco could be substantially reduced, particularly in developing countries.

Enough reliable information exists about the causes of disease and injury to act today to reduce drastically the disease burden and achieve the potential gains foreseen in this report. Moreover, substantial agreement on what needs to be done also exists between the international scientific community and those charged with improving the public health. Strategies to achieve these potential gains, particularly in developing countries, ought to involve a question of balance. It is a balance between the priority of sharply reducing the burden from exposures such as underweight and poor water and sanitation, which are largely confined to poorer populations, and the priority of reducing or preventing further population exposure to factors such as tobacco, elevated blood pressure and cholesterol.

To achieve a truly healthier future, risk management strategies will need to focus simultaneously on what are now global risks to health, and not just on the more immediate challenges to survival. The World Health Organization and other parties in international development have a clear role to ensure that scientific knowledge is translated into action and to guide and encourage the global health community (see Box 6.3). This may well require a readiness to overcome opposition from influential special interest groups and powerful corporations that have most to lose from policies aimed at improving risk prevention and strengthening regulatory practices.

As this report shows, much is already known about how to reduce effectively risks to health. That reduction will require sustained policy action and commitment by governments and other partners. Key elements of this commitment will be the creation or strengthening of national institutions to implement and evaluate risk reduction programmes, and more

effective engagement of sectors such as transport, education and finance to capitalize on the potential for greatly reducing population exposures.

Clearly, the world is facing global risks to health. Yet it is equally clear that dramatic reductions in risk and a healthier future for all can be achieved. What is required now is a global response, with strong and committed leadership, supported by all sectors of society concerned with promoting health.

Box 6.3 Examples of successful international concerted action

Scientific uncertainty should not be allowed to delay the control of large and important risk factors, given the evidence that substantial future reductions could be achieved. International partnerships have proved to be a powerful way forward, as the following examples show.

Framework Convention for Tobacco Control (FCTC)

Unless prevention is given a high priority, tobacco will kill about 10 million people each year by 2030 and 70% of the deaths will be in developing countries. The Framework Convention is being developed by the World Health Organization, based on its Constitution, and is currently under negotiation between the great majority of Member States. It will be an international legal instrument to which countries can sign up, to reduce the harm caused by tobacco. It comprises aspects such as advertising, regulation, smuggling, taxation, smoke-free zones and treatment of addiction. As many of these issues transcend national borders, regional and international cooperation is called for. The Framework Convention facilitates a multisectoral approach but also recognizes that the health sector has a leading responsibility to combat the tobacco epidemic. The first full draft Convention was issued in July 2002 and it is expected to be adopted in May 2003. In the next phase individual protocols will be developed.

web site <http://www.who.int/tobacco/>

Stop-TB Partnership

Each year tuberculosis causes two million deaths, many in association with HIV/AIDS. It is a disease of poverty, for which a very cost-effective drug treatment (DOTS) is available. In 2000, ministers from 20 of the 22 countries which account for 80% of the global TB burden issued the Amsterdam Stop-TB Declaration, setting explicit objectives to reduce the disease. The Stop-TB Partnership, which has an open membership of governments, nongovernmental organizations, foundations, individuals and others, is hosted by the World Health Organization. It is an advocacy and advisory public-private partnership that aims to detect 70% of all new infectious TB cases and cure 85% of them by 2005 and to halve deaths from TB by 2010. This called for a global DOTS expansion plan, strengthening of national control programmes, ensuring universal access to TB drugs, and promoting research into new drugs and vaccines.

web site <http://www.stoptb.org>

Global Alliance for Vaccines and Immunization (GAVI)

Following a fall in immunization coverage in many poor developing countries, this new international public-private partnership was launched in January 2000, with an initial donation of US\$ 750 million from the Bill and Melinda Gates Foundation. Other members are governments, UNICEF, the World Bank, nongovernmental organizations and the vaccine industry. It is hosted by the World Health Organization and has a board and specialized task forces. It aims to raise coverage in the 74 poorest countries and to introduce new vaccines, including hepatitis B and Haemophilus influenzae type B. GAVI is making a five-year commitment. By June 2002, over US\$ 900 million had been committed to 60 countries, mainly in Africa and Asia. GAVI has also been seen as a potential model for the new Global Fund to Fight AIDS, Tuberculosis and Malaria.

web site <http://www.vaccinealliance.org>

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