Learning to live with Health Economics

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Chapter II
Economics of health

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2.1 Introduction

Chapter 2 is concerned with the economics of health, including how health is "produced" and how it relates to the broader economy and society. Section 2.2 is concerned with the determinants of health; Section 2.3 with differing viewpoints (illustrated by those of health ministries compared to economic ministries) and the allocation and reallocation of resources for health; and Section 2.4 with how the economic and social determinants of health interact with individual behaviour and public policy.

Section 2.2 consists of three modules, the first two by Professor Greg Stoddart of McMaster University in Canada and the third by Keith Barnard and Herbert Zöllner. Module 2.2.1 is concerned with the interrelationships between health, health care and the economy. It emphasizes that health systems and economic systems are not independent: they are interrelated in several significant ways, which are explored in the module. Health care is often an important influence on health, but it is only one of a broad array of determinants of health. Healthier populations tend to be more productive populations; conversely, richer societies tend to devote more of their resources to health care. The environments in which people live, work and play, including social, economic, cultural and physical environments, interact with more individual factors (such as genetic endowments) to influence how healthy people are and who gets ill. The interactions can be direct, as when rising living standards lead to improved diets. They can also be indirect, as when economic conditions influence the nature and quality of daily environments, for whole societies or for particular groups such as the unemployed, homeless or poor elderly people. Many of the interactions identified in the module are dynamic rather than static, and the factors can reinforce each other (either for good or ill).

Module 2.2.2 emphasizes that all activities and policies that have health *consequences* are the legitimate subject of health policy. Thus, health is everybody's concern. The module is intended particularly to increase the awareness of those outside the health sector about the potentially pervasive effects of both public and private policies and actions on health outcomes. The corollary is that a broader view is required than is sometimes taken of what constitutes health policy and practice: this is relevant for both public and private decision-makers and leaders. It is also desirable that this broader view of health policy be communicated to the general public. More specifically, the module emphasizes that: health policy encompasses much more than solely health care policy; there are many activities and policies outside the health sector as commonly understood that nevertheless have very important health consequences; and these activities and policies can legitimately be viewed as the subject of health policy (indeed they should be so viewed if health outcomes for the overall population and for specific groups are to be maximized). The module reinforces the need for intersectoral collaboration and action to improve health.

Module 2.2.3 takes a rather different approach. The clarity of the first two modules could perhaps lead an inexperienced reader to conclude that the world is a simple place where simple solutions apply. Of course, this is not so, although analytical constructs can often assist decision-makers and other stakeholders to improve their understanding of aspects of complex situations and identify relevant aspects for alternative courses of future action. The third module explores this complexity with particular emphasis on possible futures, how their essential features can be provided in a helpful form and what implications they may have for developments in health policy and practice.

The two modules in Section 2.3 were written by Professor Greg Stoddart from McMaster University in Canada. Module 2.3.1 argues that officials in ministries of health and other agencies, including particularly economic ministries, need to improve their understanding of the complementary nature of health development and economic development. Of course, they may have very different perspectives on specific issues. Since many of the determinants of health lie outside the scope of health ministries (e.g. level of income, working conditions and social infrastructure), coordination and cooperation with other ministries, particularly economic ministries, are critical to improving health policy, practice and outcomes. The module also argues that, since health care has special characteristics, the health care industry cannot be analysed adequately by a thoughtless application of the standard economic approaches applied in other sectors and for other industries. The module seeks to foster increased understanding and appreciation between health and economic ministries of the viewpoints, constraints and objectives of the other. Ultimately, both health and economic ministries (and other agencies) share an overarching goal of contributing to improvements in the general wellbeing of their countries' populations. Improving health or health care (or improvements in other specific functional areas) are important routes for doing this, but they are not the only routes.

Module 2.3.2 provides a conceptual framework for considering the allocation and reallocation of resources for health. Resources are constantly being allocated and reallocated among alternative uses to achieve improved health outcomes. (The issues could also be considered in the context of declining rather than expanding resources.) Intersectoral collaboration for health improvements will frequently require reallocation of resources, including from one sector to another. The module categorizes reallocations of resources into five main types:

1. among health care activities
2. among non-health care activities within the health system
3. between health care and non-health care activities within the health system
4. between the health system and other systems, and
5. among other systems (e.g. from tourism or agriculture to education or transportation).

Three other important aspects of this module are noted. First, another important dimension of the conceptual framework concerns the type of resources to be reallocated. Although financial flows (budgets) are usually the focus of initial attention, it is important to remember that the resources themselves are the "real" things that go into health-influencing activities, e.g. individuals' time, skills, experience and reputation, equipment, supplies and the space provided by buildings. Secondly, decisions to reallocate resources for health improvement can be made at different decision-making levels, and in both the public and private sectors. Thirdly, the framework presented in the module has several possible applications, one of which is illustrated in a case study attached to the module.

Section 2.4 also contains two modules. These are concerned with how the economic and social determinants of health interact with individual behaviour and public policy, and are rather different

although complementary. Module 2.4.1 was prepared by Professor Béatrice Majnoni d'Intignano from the University of Paris and contains a number of challenging features. First she asks: "On what does the health of a nation, of a group, of an individual depend?" She explores the concept of health capital in terms of both individual and collective aspects, and identifies five critical factors: genetic endowment, life risks, the environment to which the individual is exposed, the behaviour of the individual and the social group in which he or she participates, and the health care system, including prevention and health promotion. She provides an illustrative application of these factors to the health trajectory over a lifetime for a man and a woman. Secondly, Professor Majnoni d'Intignano identifies certain industrially induced epidemics which play a key role in health status and health capital in modern societies, either developed or not. She argues that these epidemics are the consequences of the marketing activities and strategies of certain industries in terms of the morbidity, mortality and disability of the targeted groups. Thirdly, she identifies two broad groups among the populations of liberal capitalist economies. There is an apparent health divide between the two groups, which differ in their level of education; and there are elements of the strong social class gradient which are related to educational qualifications. The valuation of their own health, willingness to take risks and attitudes towards professional health services are very different between the two groups, with consequences for their health behaviour, including their use of health care. The module concludes that the divergence between the two groups seems to be universal, differences between them appear to be increasing, and existing inequalities are likely to increase further in the future.

The final module in Chapter 2 (Module 2.4.2), by Professor Björn Lindgren from the University of Lund, Sweden, is concerned with individual behaviour, health capital and public policy. The module argues that, although health is determined by many factors that are beyond the control of the individual (such as heredity, environmental factors and chance), people can still influence their health to a considerable degree. Thus, individual behaviour is one of the determinants of the incidence and prevalence of disease and the costs of ill health. Secondly, the module notes that the health status of an individual over his or her lifetime is significantly influenced by the fact that most individuals lead their lives in families. For example, family members typically care for the health and welfare of other family members. They may provide time and income to invest in health, so that the time and money budget constraints are extended for the individual who lives in a family compared to the individual who is living alone. The relationships between health outcomes for an individual and his or her family circumstances can differ systematically, for example by gender or age. There are interesting questions about the extent to which the factors are interrelated, cumulative and under the control of the individual. Also, what are the relative roles for the individual, other family members, the health care system and wider society? Thirdly, the module argues that public policy measures, assisted by economic analysis of individual health behaviour and the differences in health among people, can contribute to improved public health, either directly through improvements to the environment, or indirectly through changes in the regulation and incentive structures that influence individual health behaviour. Finally, the module emphasizes that the extent to which a society relies on individual or collective approaches to the "production" of health and the emphasis it puts on individual health (the "distribution" of health) depends on historical circumstances and values, economic and social development, and the distribution of income, wealth and other life chances.

2.2 Health and health action

2.2.1 The interrelationship of health, health care and the economy

Greg Stoddart[1]

Key messages

- Health systems and economic systems are not independent. They are interrelated in several important ways.
- Although health care can be an important influence on health, it is only one of a broad array of determinants of health.
- The interaction between the environments (social, economic, cultural and physical) in which people live, work and play and individual factors (such as genetics) have a marked influence on who will suffer ill health. Economic conditions heavily influence the nature and quality of daily environments.
- Healthier populations are more productive populations.

Tutors' notes

This module is intended primarily for the **appreciation** level of skill development. Its goal is to provide a framework to broaden the perspective from which participants view both the health and economic systems.

It can be used with several different groups:

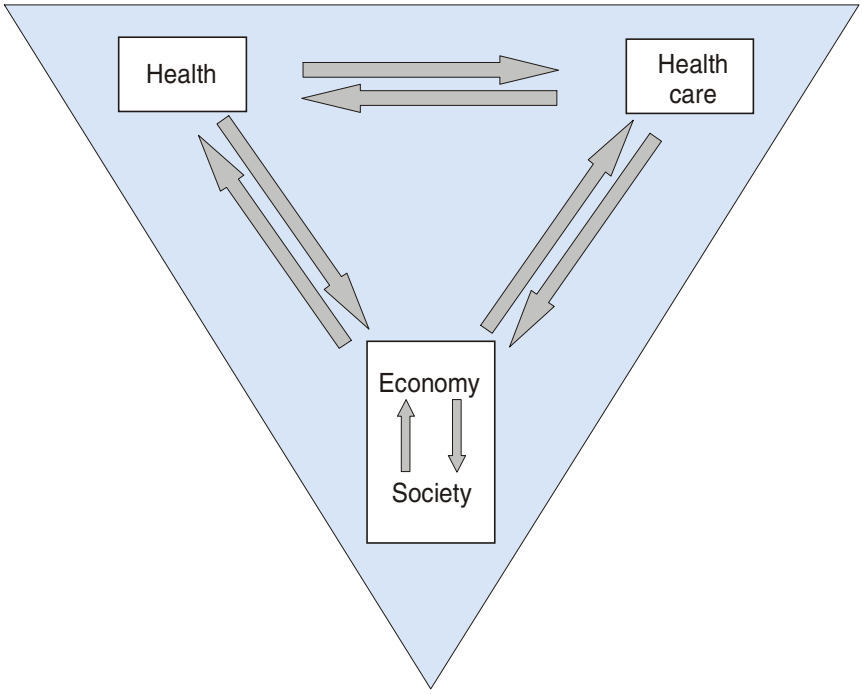
- health care providers – doctors, nurses, etc.
- health service managers and administrators
- civil servants with responsibilities in health or social care ministries
- civil servants with responsibilities in economic ministries
- business and labour leaders from the general economy
- elected politicians.

[1] This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca).

An effective way to use the module would be to convene a workshop with participants from all of the above groups and ask them to undertake the exercises together. Much of the value in this module comes from the realization that social (including health) and economic policies are not separable. Each affects the other. This recognition will be enhanced by first-hand accounts of the importance of the economic sectors for health, and vice versa, delivered by people in those sectors.

In drawing out examples for use with this module, tutors may wish to pay attention to the dynamic nature of economic performance. The effects of contractions as well as expansions in the economy can be traced around the triangle in Fig. 1. Tutors might wish to consider case studies of central and eastern European economies in this regard.

Fig. 1. The macro triangle



It is suggested that tutors spend a few moments at the beginning clarifying the concepts in Fig. 1. Different definitions of "health" can be advanced. The range of activities included in "health care" can be identified. The various dimensions of "economic performance" should be specified (e.g. growth or contraction, inflation/deflation, employment/unemployment, productivity, income distribution, etc.).

In using Exercise 2 with a mixed group as suggested above, an interesting way to proceed would be to ask the participants to suggest policy changes in sectors other than their own, i.e. health sector participants to suggest policy changes in economic sectors, and vice versa.

Introduction

Health systems and economic systems are perhaps the two most complex systems in all countries. Too frequently they are seen as independent systems. In fact, they are closely related in numerous direct and indirect ways. The health of a country's population is influenced dramatically by the level and

type of economic activity and economic policies. Health is also influenced, of course, by the availability of effective health care services, which require a commitment of national resources, both public and private. But health care is only one of the broad arrays of determinants of health, and spending on health care is only one type of investment for health.

Conversely, the health of a nation – defined broadly as its physical, mental and social functioning and ability to cope with life's daily challenges – is one important determinant of national economic performance. Unhealthy societies do not prosper economically and often fail to achieve their economic potential, with adverse consequences for their citizens, including both present and future generations.

The interrelationship of health, health care and the economy is a major theme of WHO's health for all strategy *(1,2)*. This module supports the initiative by encouraging participants to explore possible direct and indirect relationships between health, health care and economic performance in their own countries. It begins with an exercise for participants, then provides some generic examples of the types of linkage between the three dimensions that participants might wish to consider. The examples are not intended to be exhaustive; participants are expected to add to and modify them. The module concludes with a second exercise in which participants are asked, in view of their increased awareness of the interrelationships, to select two policy changes in their own country which might simultaneously improve health and economic performance or at least improve one without adverse effects on the other.

Exercise 1

Identify as many distinct, and potentially causal, relationships as you can between health, health care and economic performance. Use the following questions as a guide for systematic discussion.

Questions

1. In what specific ways can a nation's health influence the performance of its economy, including (i) the performance of private sector enterprises; (ii) overall economic performance as measured by common economic indicators such as GDP growth, unemployment, inflation or income distribution; and (iii) the level of public expenditure required for social programmes, including health care? economic indicators such as GDP growth, unemployment, inflation or income distribution; and (iii) the level of public expenditure on social programmes including health care?
2. In what specific ways can the provision of effective health care services improve the functioning of an economy and the health of a population? In what specific ways might the level and types of expenditure on health care services affect the economy?
3. In what specific ways can the health of citizens and the need for health care be affected by the functioning of an economy, including (i) the performance of private sector enterprises; (ii) overall economic performance as measured by common economic indicators such as GDP growth, unemployment, inflation or income distribution; and (iii) the level of public expenditure on social programmes including health care?

There are three other points in relation to Exercise 1. First, participants should feel free to add other economic indicators that they feel are important. Secondly, participants are requested to illustrate their answers to the above questions with examples, observations and statistics from their own countries. Thirdly, a conceptual framework is provided for this discussion in Fig. 1. This illustrates six distinct types of direct influence which may be explored. By following the arrows around the triangle it is also

possible to trace indirect influences and feedback loops between the three boxes labelled Health, Health Care, and Economic Performance. The following sub-sections provide brief illustrations of the six types of linkage in Fig. 1.

The influence of health care on health

This is the most straightforward of the six pathways. The provision of effective health care services in a timely manner can be expected to improve the health of individuals and populations. Attention must be paid, of course, to evidence-based decision-making in the delivery of services of proven efficacy and effectiveness, and emphasis must also be placed on cost–effectiveness, i.e. providing needed, effective services in the least costly way. It is important to note that the balance and structure of health care systems can have a significant influence on the health gains achieved. For example, systems that emphasize comprehensive primary care rather than highly specialized secondary and tertiary care may have a greater impact on population health. Similarly, the choice of financing method for health care systems can have a significant effect on the health of subgroups in the population, as well as on the overall cost of health care. For example, systems that rely on extensive private financing through out-of-pocket user charges or private insurance may restrict access to care and decrease health gains for lower-income groups, as well as increase health care expenditure relative to publicly financed systems.

The influence of health on health care

The arrows A and B in Fig. 1 may be seen as one subsystem or feedback loop. To the extent that a population's health improves and all other factors remain constant, the need for health care in future should in theory decrease. This is one argument in favour of the emphasis on preventive services, especially those for maternal and child health. In practice, it is seldom possible to make an analysis holding all other factors constant. Moreover, as the average level of health improves for a population, needs are redefined and new needs become apparent or rise to a higher priority. For example, if appropriate primary care services are established, or if life expectancy increases, the need for highly specialized acute, chronic or rehabilitative services will almost certainly be accentuated. This is in part due to the nature of health itself and the fact that there is always room for improvement (especially when social and emotional function as well as physical function are considered), and in part due to the dynamics of health care as an industry in which the momentum of providers as economic agents constantly pushes for more services – of all types – to be delivered.

The influence of health on economic performance

Healthier populations are more productive populations in general. Note that this is *not* a prescription to focus only on the health of those capable of contributing to an economy; social justice is an important policy objective for health in most jurisdictions, requiring that a much broader view be taken. But to the extent that the working-age groups in a population are healthier (e.g. longer life expectancy, lower morbidity, increased ability to cope with daily life and greater resiliency), both the overall output and the quality of output in an economy might be expected to rise. Lower absenteeism in the workforce would be one specific example of this. Good health may also have a feedback effect for individuals and families through higher incomes, which in turn permit higher standards of living and healthier lifestyles. Note also, however, that improvements in health that involve longer life expectancy as well

as, or instead of, improved quality of life will affect the sociodemographic profile of populations in ways that will have implications for public expenditure, on pensions for example.

The influence of economic performance on health

Both for individuals and societies, prosperity is consistently associated with better health through both material and psychosocial pathways, some of which are only recently beginning to be understood. Indeed, the socioeconomic gradient in health – i.e. the observation that groups at each successively higher step in the social and economic ranking of a population are healthier than those immediately below them – is one of the most important and complex research findings concerning the determinants of health. Part of the story is that well performing economies provide incomes to participants that allow higher material standards of living. Another part apparently involves complex psychosocial pathways between improved daily environments at home and work and decreased levels of stress (or increased resources and supports to cope with stress), which in turn affect health. Unemployment provides a vivid example: involuntarily unemployed individuals report more health problems, may be more prone to suicide and violence, and may engage in more health-detrimental lifestyles (e.g. consumption of tobacco and alcohol) than those in work. (This also feeds back through arrow B in Fig. 1 to increased health care expenditure.) Conditions of employment provide another example. How employers structure the workplace, for example to ensure the safety of their employees, or to allow workers flexibility to organize child care or care for older people, can be an important determinant of health. Yet another part of the story is that, aside from individual interactions in the workplace, prosperous economies afford their governments the capacity to improve supportive national programmes in health-determining areas such as education, income support or early childhood development.

Increased output and employment, prosperity, and increased income and wealth do not themselves guarantee health gains, however. For example, industrial production may contaminate the physical and natural environment if it is not monitored and regulated. Or increases in production and consumption may be associated with products that have potentially negative consequences for health, such as tobacco products or less nutritious foods. Furthermore, it is very important for health how the gains from economic growth are distributed. An economy which in the course of its "success" widens the income disparity between rich and poor, or polarizes or marginalizes subgroups, or destabilizes families and other social support networks can be expected to experience health losses instead of gains for significant segments of its population. These effects, and health losses, may be even more serious during periods of economic contraction rather than growth; and thus in certain countries or regions, and over certain time periods, rather than others.

The influence of economic performance on health care

In addition to those influences on the need for health care which may come about indirectly through the influence of economic performance on health (either positive or negative), as discussed above, other specific examples can be noted. Foremost is the observation that a prosperous economy provides the capacity to sustain the delivery of comprehensive and high quality health services to its population. This is especially so in systems which are predominantly publicly financed through taxes and social insurance contributions, but may also be the case in systems that rely on private insurance or direct payments by individuals. Another example is the interrelationship of prices and wages in the health care sector and the general economy. For example, it may be difficult to achieve control of health care expenditure if the overall economy is subject to high rates of inflation. General inflation may drive up

the cost of supplies and equipment and may raise the income demands of health care workers. The process could also operate in reverse: inflation in the health care sector could influence trends in the general economy. A third example might be the spillover effects on health care utilization and expenditure of an expansion in a country's domestic medical goods industry. Growth in a country's domestic pharmaceutical industry, for example, may put pressure on its health care system to make increased use of pharmaceutical products.

The influence of health care on economic performance

An important indirect influence of health care on economic performance is felt through its impact on health described above (arrows A and C). The commitment of resources to health care may also have direct effects on the economy which depend on the alternative uses to which those resources would have been put. Higher spending on health care may mean lower spending on economic infrastructure such as roads or hydroelectric systems, or on other health-enhancing social programmes such as pensions, education or pollution control. The way in which health care systems are organized and financed may also have important consequences. High tax rates or insurance premiums, for example, may lower the disposable income of the working population and affect both savings and consumption. The type of financing mechanism a country uses may also affect the operating costs of its commercial firms, making them more or less competitive internationally. This is the case even within systems which are almost entirely publicly financed but which rely more or less heavily on payroll taxes, for example. The health care system is also itself an industry and therefore a source of employment and incomes. Although this is of considerable importance to the individuals employed in it, and also to the local economies of communities (especially small communities), it is important not to overemphasize the employment creation influence of health care. The value of health care systems comes from what they produce – the maintenance or restoration of health – rather than from what they consume – resources, including the time and skills of talented individuals – that could have been used for other valued outputs in the economy. This is not to deny, of course, that health care systems can also contribute to other socially valuable outcomes, not just health.

Exercise 2

1. In view of the interrelationships among health, health care and economic performance shown in Fig. 1 and illustrated above, suggest two policy changes in either the health system or the general economic system of your own country which might simultaneously improve both the health of the population and the performance of the economy (or would at least improve one of the two, while not weakening the other one). Trace the effects of your suggested policy change around the arrows of the triangle shown in Fig. 1.
2. Why might these policy changes be difficult to implement? Discuss the potential barriers to policy implementation in your country. What can be done to make implementation more likely?

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2.2.2 Health is everybody's concern – a different view of health policy

Greg Stoddart[2]

Key messages

- Health policy encompasses much more than just health care policy.
- There are many activities and policies outside the health sector that nevertheless have very important health *consequences*.
- These activities and policies can legitimately be viewed as the subject of health policy. This view reinforces the need for intersectoral collaboration and action to improve health.

Tutors' notes

This module is intended as a "springboard" for tutors to take one main idea – that all activities and policies that have health *consequences* are the legitimate subject of health policy – and illustrate the far-reaching significance of the idea from their own experience or that of their students.

The module is primarily intended for participants from outside the health sector, such as:

- elected officials and bureaucratic staff from national ministries other than health
- executives of national and international corporations
- representatives of unions and other workers' associations

[2] This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca).

- officials in nongovernmental organizations outside the health sector, and
- the general public.

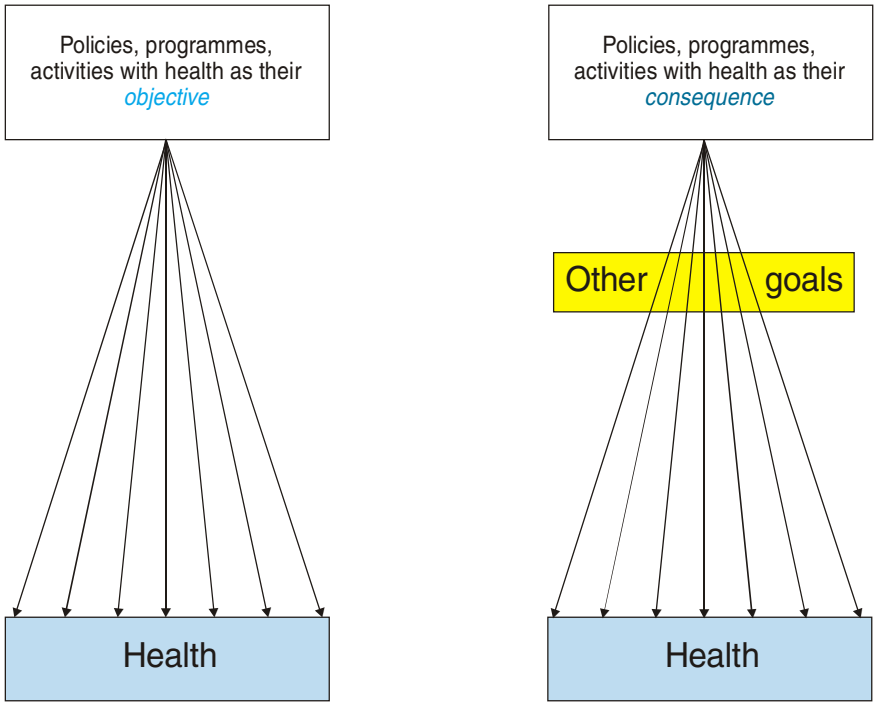
Although the general public is often a difficult audience to reach, it is worth keeping in mind that politicians and others can use and illustrate this idea in public speeches, discussions and other forums.

The basic idea in the module provides a different *appreciation* for actions and policies, where their health effects might otherwise be ignored. However, the topics which the module can lead into offer ample scope for both *appraisal* and *analysis* skills to be developed. For example, the subject of intersectoral action and healthy public policy, which is highlighted in the list of further reading at the end of this module, could generate a discussion of the skills that participants need to acquire. Another example highlighted in the list of further reading is health inequalities. This is a large subject in itself, which includes the idea of socioeconomic gradients in health status within populations, a concept that is central to the analysis of health determinants.

Tutors may wish to use this "springboard" in different ways. Some that were suggested during the development of the module were:

- to focus on the different settings (e.g. family, workplace, school, community, country) in which social policies affect health;
- to highlight dynamic aspects of Fig. 1, beginning with examples of interactions between ministries; and
- to start from an examination of differences between the life expectancies of populations in two or more countries, and try to link them to different policies relating to health, both public and private.

Fig. 1. A different view of health policy



Introduction

This brief module is intended to increase the awareness of those outside the health sector regarding the pervasive health effects of both public and private policies and actions. A corollary is that a broader view of what constitutes health policy may be required of public and private decision-makers and leaders, including elected politicians, bureaucrats, executives of national and international corporations, representatives of unions and other workers' associations, and officials of nongovernmental organizations. Although it is a difficult task, it is also desirable to communicate this broader view of health policy to the general public.

Discussion

It is perhaps not surprising that most people, on hearing the phrase "health policy", think of hospitals, doctors, nurses and the like. The health care system is a critical component of health policy, and in most countries it receives the largest share of resources directed to health as well as the largest share of media coverage about health issues.

But health policy is much more than health care policy. One way to see this is to envision all of the activities (actions, programmes or policies) that have health as their primary *objective*, or at least as one major objective. These go well beyond the activities of health care professionals and the walls of hospitals or clinics. For example, income support may be provided to low-income pregnant women to enable them to feed themselves better and make eating choices that are healthier for their babies. Programmes in which specially trained community volunteers operate telephone helplines for troubled adolescents aim to reduce the number of young people committing suicide. Meal delivery programmes and services that adapt dwellings for the special needs of the elderly contribute not only to their independence but to their health and safety as well. It is important, therefore, to include in health policy all activities that have health as one of their objectives.

Does this go far enough? Many observers would say that it does not. The reason is that there are many activities outside the health sector which, although they do not have health objectives, have very important health *consequences*. Consider the following list, for example.

- Because there are seldom economic incentives (public subsidies or tax concessions) for the recycling and reuse of solid waste, firms do not find it as profitable as they might to engage in it. Consequently, adverse health effects result from contaminated soil and water.
- Short-term contracts and temporary jobs instead of permanent employment help companies compete, but job insecurity is associated with serious emotional, social and physical health outcomes.
- A country's agricultural policies may encourage overuse of fertilizers or the production of high-fat milk, both of which can have health consequences.
- Public policies on taxes and income security may widen the income disparity between rich and poor, or steepen the income gradient in a society. Apart from the concerns this may raise about equity, international experience suggests that greater inequality of income is associated with poorer levels of overall population health.
- Inadequate preschool facilities and programmes for children are not just a barrier to parents participating in the labour market. They can also affect the health, development and life chances of the children.

Almost everywhere one looks – in different settings, in different sectors and at different stages of life – commonplace activities, actions, policies and programmes affect the health of individuals, groups and nations. These varied activities, actions, policies and programmes may not have health objectives, but they do have serious health consequences. And they may therefore legitimately be viewed as the subject of health policy. It follows that health policy-making must involve parties outside the health sector. In other words, health is everybody's business.

This extended view of health policy is illustrated in Fig. 1, where the activities in the top box on the right have consequences that go well beyond the intended goals of the activities and affect health. They may do so to a greater or lesser degree, positively or negatively. Nevertheless, they are all relevant for health policy-making, health practice and potential health action.

Exercise 1

1. Identify the most important programme or policy decision with which you have been involved in the past year. Did it have health as an objective? If the answer is yes, explain the specific health target to be achieved. If the answer is no, consider whether this decision might have health consequences for any individuals or groups.
2. Using today's local newspaper, select several major stories in the news concerning the policies or decisions of governments or private companies. Analyse the potential effects on health of these decisions or policies.

As an aid for this exercise, you may wish to look at Fig. 2. The rows of the chart ask the question, "Does this policy or action have health as an objective?" The columns of the chart ask, "Does this policy or action have health as a consequence?" The consequences could be positive or negative.

Fig. 2. The health objectives–consequences matrix

Does this policy or action have …		Health as a *consequence* (positive or negative)?	
		Yes	No
Health as an *objective*	Yes	A	B
	No	C	D

Medical and hospital services would be in box A, as would other health care services such as pharmaceuticals, rehabilitation and public health. So too would be the examples considered earlier of income support to low-income pregnant women, telephone helplines for troubled adolescents, and services to preserve elderly people's independence. Note that the effectiveness of health care and other health-promoting activities must always be demonstrated and requires constant monitoring and evaluation.

Box B, unfortunately, is all too often not as empty as one would hope or expect. When scarce resources are devoted to policies or practices that have health as an objective (especially when it is *the* objective) but there are no favourable consequences, remedial action is required and reallocation of resources may be appropriate. (Resource reallocation is considered in more detail in Module 2.3.2 below.)

The other examples given above, beginning with the example of economic incentives for recycling and reuse of solid waste, would be in box C, as might many of the examples that participants identify in this exercise.

It is difficult, in fact, to think of policies or actions in box D. This illustrates how pervasively health is interwoven with activities in all sectors.

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2.2.3 Looking ahead to the future

Keith Barnard and Herbert Zöllner[3]

Key messages

- The environment for taking decisions on health has become more complex, uncertain and stressful at all levels.
- Futures work (which goes beyond forecasting and prediction) is a useful approach to addressing complex issues and coping with uncertainties in policy-making.
- It includes the participative development of alternative scenarios and the scanning of developments for new opportunities and challenges.

Tutors' notes

This module is accessible to all audiences and can help to challenge current ways of seeing and doing things.

Emphasis is put on the scenario approach, and the tutor may wish to supplement with aspects of:

- health policy-making (policy environment, partnerships, management of change) from Module 4.2.2 on the political management of public health;
- quantitative modelling (scenario modelling, sensitivity analysis) from Module 5.4.1 on economic modelling and forecasting;
- economic choice (discounting and sensitivity analysis) from Module 5.3.1 on economic evaluation.

Role-playing may be involved in tackling the exercises.

Uncertainty and the policy environment

The policy environment is becoming ever more complex and stressful and is changing rapidly. Important transitions are simultaneously taking place in demography and epidemiology, in the economic, political and international scenes. Challenges range from decentralization to globalization, and time horizons tend to be too short with little room for reflection, critical assessment and longer-term view. Managing change requires new skills and clear vision about what is desirable and feasible. The involvement of and work with key stakeholders are paramount to successful policy development. Skills in consultation, advocacy, negotiation and persuasion as well as dealing with the media are needed. This is particularly so in the relations between the health and other sectors, where each can expect the other to treat its legitimate interests with respect and understanding.

Health is heavily influenced by the increasing pace of political, social and technical change. The challenges facing decision-makers in the health sector are to forecast the repercussions on health of such changes, to exert influence over them and to take decisions now to make them as favourable and harmless as possible in the long term.

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[3] This module was prepared by Keith Barnard of Gothenburg, Sweden (e-mail: barnard@tripnet.se) and Dr Herbert Zöllner, Consultant, Bavarian Public Health Research Center of the Ludwig-Maximilians-University, Munich, Germany (e-mail: ZOL@ibe.med.uni-muenchen.de and h.zollner@gmx.net).

Pressures on high-level decision-makers often emerge in public view as crises when the public and parliamentarians are quick to perceive that ministers, civil servants or professional advisers do not appear to be in control. They often appear to have an imperfect understanding of how the issue is seen from other perspectives, and they have difficulty in reassuring a sceptical public that they are taking the right course of action.

In many cases, at least three stakeholders play out the principal roles in a crisis:

- *scientists*, whose research findings or interpretation of trend data cast doubt on a particular development, practice or policy proposal;
- the *media*, whose handling of the scientists' message is critical to public understanding of the issue and judgment of the government's subsequent handling of it;
- *decision-makers*, who have to weigh up the scientists' message (now in the public domain), the advice they receive from their own professionals and the likely public response to whatever action they might take.

In terms of taking action, since there are often many stakeholders and parallel action by different actors in different organizations (or even sectors) is needed, an old style command and control approach is typically neither feasible nor appropriate.

The challenge is to establish whether these situations necessarily need to become crises. If they can be anticipated, appropriate preparations can be made so that when they break into the public domain, they can be handled – and be seen to be handled – constructively and responsibly. The public and particular stakeholders can thus be assured that health and safety are the priority concern of the government or the agency legally responsible.

There are two types of area, each requiring courageous responses, choices and decisions now:

- areas in which there is political pressure to act right away, but where the long-term consequences are uncertain (i.e. in the case of new diseases);
- areas in which changes are occurring (or are about to occur) in the broader environment of health which are likely to influence health significantly in the long term (new ways of obtaining, processing and disseminating information, advances in biotechnology and changing values and expectations).

Futures work

Sometimes it is easier to foresee developments such as natural and biological phenomena and demographic change. But even in these cases, simple models of prediction and extrapolation may fail, especially when values and behaviour patterns are involved. John Coles, in speaking about foreign policy, says "… policy-making is hard. It needs intellectual rigour, a capacity for innovation, a grasp of political reality, a sense of the future and, quite often, a certain courage" *(1).* Advocating planning and futures work, he states that "… the purpose is not to predict confidently what will happen in the world – a task for which there is little science – but by concentrating minds on alternative scenarios and possible developments to make today's decisions sounder and more likely to stand the test of time."

The purpose of futures work is not to make predictions but to aim at foresight. It is to explore alternative futures so as to support innovative, long-term strategic thinking for pressing issues. Quantitative models are not a substitute but can be useful information components underlying specific aspects of futures work.

Futures work should ideally not be ad hoc events but part and parcel of scanning and foresight intelligence systems that are able to feed health policy-makers and actors with information on future challenges to health and access to health (i.e. both opportunities and threats).

We can best serve our own interest as a society:

- if, when faced with a picture of the future, we keep our minds open (like parachutes they operate best that way) and use them to explore possibilities further, i.e. it becomes an occasion for reflection on the future;
- if we can shake policy-makers out of their comfort zone of current assumptions and ways of responding to challenges and pressures;
- if we keep our sensors active, scanning for early warning signs and weak signals; and
- if we can build broad-based awareness of the significance of acting or not acting on the issues we have judged as demanding attention in our scan of possible futures.

The scenario approach

The preparation of scenarios is a well tried and proven means of addressing complex issues and coping with the inherent uncertainties in policy-making. The term "scenario" is used in various senses, but these only reflect levels of sophistication and detail, especially in the quantification and analysis of the different factors that are taken into account. The basic idea is that a scenario, as a picture of the future, is a synthesis of evidence, ideas and assumptions the nature of which should be immediately apparent to any reader. Scenarios are *not* predictions but products of the imagination of what the future might or could be.

The crafting of a set of scenarios can provide policy-makers with a sense of the range of possible futures. These scenarios would have different emphases and sets of assumptions. One mode of presentation is to write a scenario as if it were history, by projecting forward in time and developing an imaginative account of how history might unfold from the present. The simplest approach is to present two strongly contrasting scenarios which would serve to focus policy-makers' attention and to provoke a response in terms of action to be taken either to create what is desired or to prevent what is to be avoided.

A picture of a desired future which mobilizes people to work together to bring it about can have great political power. In some organizations and settings this is presented as the "vision". Among policy-makers it is also referred to as the "preferred scenario".

The primary target audience for different types of futures work could be:

- the wider community or some groups within it – political activists, top managers and professionals in the health sector, and people in leadership positions in different sectors and civil society generally, who are attracted by an attention-commanding, plausible story or stories of the future;
- within government, policy analysts and advisers who would (or should) expect to see the detail set out transparently so that they could recover for themselves the trail from selection of evidence to argument to conclusions (assumptions about the future) to recommendations; and
- senior policy-makers who, given their limited attention span and absorption capacity (because of the pressures on them), will want simple, succinct statements with a hard content and with clear relevance to decisions they will have to make in the short term.

Scenario-writing is story-telling about possible future situations with a particular purpose: to help policy-makers and other decision-makers to engage with the choices they have to make, and to identify when they will be likely to have to make them and how they can best effect the changes they

elect to make. These decisions are never simple technical choices. They are made in a political, cultural and social, and economic context, and focus on action which ideally enjoys political support, cultural and social acceptability, and affordability with a defensible use of resources.

Scanning the present and the foreseeable future, to support the decision-making process, should therefore have a multiple focus. It must necessarily embrace these key interlocking dimensions of the key actors, context and time dimensions to ensure that the scenarios given to the decision-makers are based on the best possible intelligence.

Annex 1 to this module presents two scenarios that differ considerably regarding their opportunity for health gain. Neither scenario is presented as a prediction but they serve to signal different obstacles and facilitating factors. They differ considerably regarding the opportunities for better health and quality of life that they present. What makes the difference?

The "pathogenic" scenario signals the consequences of a lack of political will, a disregard of the evidence of the effects of present trends, and drift rather than a purposeful focus in policy-making. The "healthy" scenario takes development seriously. This requires the commitment of the whole government, all sectors and all parts of the community.

Developing a foresight capability for policy-making

An understanding of the origins, complexity and far-reaching implications of the changes in train in today's Europe is a prerequisite for building policies that protect and promote health and wellbeing. It is essential that economists, sociologists and other social scientists join with public health experts to pool their perspectives and analyses in ways that will reveal fresh insights and possibilities for intervention.

This means that countries need individually and collectively to build up a foresight capacity that would include monitoring and analysing trends and picking up early warning signals relating to public health, i.e. a comprehensive health intelligence-gathering and analysis function, including multiple focus-scanning.

This is not a one-off effort. The challenge is to produce not a single forecast but alternative scenarios, to repeat the exercise at intervals in relation to key and emerging issues, and to scan and monitor the broader environment of health for change. In this way, evidence can be built up and tested regarding how far our assumptions are holding up and to assess the possible importance of new factors and phenomena (such as technological developments or changing fashions) or for spotting (as yet) weak signals and early warning signs. A judgement may then be made whether there is a need to develop scenarios of possible new futures.

Using research and evidence in looking ahead responds to the demand that policies, service development and professional practice should all be built on the strongest possible knowledge base. In developing a foresight capacity, it is important for evidence to be appropriate. It is particularly important that the evidence resulting from policy sciences and the broad range of social sciences, including that gleaned from appropriate case studies, is not neglected. Further challenges include the development of knowledge in all relevant areas, especially in relation to the demonstration and dissemination of findings as well as education and training.

For the economist, such repetitive scenario production is a form of iterative cost–benefit analysis (of options) under conditions of uncertainty. Whether its use is justified in particular cases will depend on whether it improves the quality of the decisions that are eventually made and implemented. Are

they taken more confidently? Are they seen as more equitable and respecting the values of solidarity and mutuality? Are they seen as feasible and capable of being implemented? Are only a few necessary decisions being taken now, leaving others to be made in the future, possibly in conditions of less uncertainty?

The quality of a foresight capability can be improved by encouraging an inclusive and participative process and discussion that serves (i) to explore the relevance of scenarios and other futures work to the decision-maker's operating environment, and (ii) to elicit the range of perceptions of the costs that would be incurred (and by whom) and of the benefits that might accrue (and for whom) from decisions that would be made under the conditions of different scenarios.

Exercise 1

How uncertain is the future for society in general, for particular groups and for the health care sector? Consider this question from the viewpoint of various stakeholders, such as a decision-maker in the health care system, a medical scientist, a social science researcher, a health care practitioner, a patient and a media commentator. To what extent would their perspectives and concerns be similar, and to what extent would they be likely to be different? Why?

Exercise 2

Please refer to Annex 1 and its two scenarios for 2030 (Business as usual – muddling on *versus* Making policy as though development really mattered).

What are one or two key actions now or during the next year that could tip the balance either towards the first or the second scenario in your country?

What kind of futures work (including scenarios and scanning) could facilitate action? How could this work be organized? Which key stakeholders should be involved? What incentives might they have, or need, to participate?

Exercise 3

In what ways does your country, region or institution attempt to foresee the future? Over how long a period of time?

How successful have such attempts proved to be? Could they be improved? If so, how?

Exercise 4

Choose a report in today's newspaper about a recent significant development, perhaps in health care or the wider health system, perhaps elsewhere.

Were the developments expected or a surprise, in whole or in part?

What were the antecedents of the current developments? How long ago did these antecedents arise? Looking back, could the current developments have been foreseen, wholly or in part? If they were not foreseen, why was that the case?

Looking forward, are there related developments which, although they seem relatively minor now, could be expected to result in major changes in the future? Could feasible adjustments now make a big difference to the course of their developments over the longer term?

Annex 1. Two scenarios

Below are two simplified fragments of "history scenarios": alternative futures, in which people will use whatever health potential they have in attempting to lead satisfying lives that reflect the three dimensions of equity, level of living and social cohesion. They are written from the vantage point of 2030, far enough into the future for the effects of trends to have become clear and for the benefits of policy shifts and changes in culture to come through.

The contrast between them happens to reflect the tension found in the mass media and in public debate between optimistic and pessimistic views of trends and possibilities. They can be depicted as taking the United Nations system seriously as the voice of the world community versus muddling on in a reactive, passive mode to the trends and pressures.

Scenario 1. Business as usual – muddling on

In the early years of the twenty-first century, continuing migration, urbanization, chronic unemployment and falling birth rates were eroding family structures and established communities. Meanwhile the informal economy flourished and violence was endemic, despite strong private security and public law enforcement agencies.

Politicians were unable or unwilling to envisage any alternative to the existing economic and social order. A continuing lack of confidence in the ability of governments and the responsible international financial institutions to manage economic development ensured that the already existing momentum for globalization, privatization and deregulation not only continued but also accelerated. The basic law of capitalism – the obligation to protect and enhance shareholder value – determined that decisions on productive capacity were governed by opportunities to introduce automation and to relocate where labour costs could be minimized.

Virtually all controls on health hazards, whether in the environment or in the sale of goods known to be harmful to health, were relaxed under pressure to remove "unnecessary" production costs or restraint of trade. In health care the profit motive replaced the public service ethic; technological development was skewed in favour of innovations that offered the most promising returns on investment rather than improving the health of the population.

The fleetingly fashionable concept of an enterprise having responsibility for, or accountability to, multiple stakeholders was rejected by governments, industrial pressure groups and think-tanks alike as self-defeating and unworkable. It was deemed to be against individual freedoms. Now, thirty years later, the idea is barely even contemplated and then only by a few communitarian utopians. All the prevailing assumptions about what is best for the economy and society have been shielded from counter-argument by assertions, proclaimed as self-evident, that if the economy were allowed to grow unrestrained by political interference, human ingenuity, individual initiative and spontaneous voluntary action would take care of society's problems.

The reality of our modern times is that only a few have prospered, the well connected, the natural entrepreneurs and perhaps also those with skills that for a time were in great demand. There are fewer and fewer people in regular employment and a growing proportion of those are on low wages. The real level of many benefits provided under social security systems has not been maintained against inflation. Changes in eligibility rules over the years have reduced the number of people entitled to benefits. Lack of income constrains people's access to the potential benefits and conveniences

afforded to consumers by technology, and limits their participation in civil society. Increasing numbers of people are unable to meet their basic needs.

Rising unemployment, job insecurity, low pay and the deterioration of public as well as traditional family and other informal support systems have led to widening income gaps and to greater social inequality. Increased inequality imposes economic, social and psychological burdens which reduces the wellbeing of everyone, even the employed, and threatens social cohesion and solidarity. Social polarization and the marginalization and social exclusion of particular groups, such as young people who have never experienced steady employment, migrants, and minority ethnic groups, have resulted in increased levels of social conflict.

Low levels of remuneration also characterize most parts of the informal economy. While the informal sector may have been beneficial in offering earning opportunities to low-income groups that would not otherwise exist, such people work without the protection of employment legislation or safety standards or any entitlement to social benefits. There are also additional dangers posed by the involvement of organized crime in the informal sector.

For some time now there has been deep fear of the growing violence at home and in the streets, resulting from deteriorating social conditions and economic dislocation. There is also organized violence orchestrated by groups motivated by specific political, economic or social objectives, which includes racial or religious aggression and feeds off expectations that cannot be met.

Violence disproportionately affects women, children, older people, and various poor and socially marginalized groups, especially migrants who are invariably impoverished, unwelcome and reluctantly supported by the receiving countries and communities. As always in periods of economic difficulty, migrants provoke severe hostile reactions. In political terms the population demands even tighter surveillance and policing measures, paradoxically ensuring that despite the cuts in social expenditure, overall public expenditure remains unexpectedly high.

A profile of one family recently appeared in the *samizdat* newsletter of a proscribed radical reform group trying to mobilize support for a return to active democratic government. Its leaders are committed to re-instituting properly funded and organized public services. This profile, used in an edition brought out to mark World Health Day, was prepared by a journalist writing under the name Eric Blair.[4]

Scenario 2. Making policy as though development really mattered

We have seen a remarkable change over the past thirty years both internationally and in the societies of Member States. Closer cooperation between countries, within the United Nations system and within regional integrational institutions such as the Council of Europe and the European Union, has proved to be an effective strategy against any danger of international conflict. The international community has begun to move beyond its first concern with security to the United Nations' other concern, human development; it has been responding to the fundamental ethic of equity at the heart of the United Nations Charter.

[4] Eric Blair was the pseudonym of a rising star in the BBC World Service, George Orwell, willing to put at risk his career in the mainstream media.

Box 1. Survivors' Tales – Dateline Metropolis, 7 April 2030

Anna and her family now live in a shanty town just outside one of the protected enclaves of our capital city. They have been successful in avoiding the violence and involvement in any of the shanty town gangs, but they're not sure how long it will be before they have to move on.

They recently lost their small flat in the enclave itself, that neighbourhood referred to with affection by some of its residents as Wigan Pier. After many months in which they had not found much work, even in the informal economy, they were no longer able to pay the fees to the private security forces.

She says they would have had to move out soon anyway, since the utilities had all been cut off and at least outside the enclave they can collect water more easily and forage for things to sell. In the shanty-towns there are still some United Nations aid points dispensing food rations. These rations are no more than basic, but Anna is grateful for what she gets when she can get it. Of course it means queues and coping with the intimidation of the "heavy boys" as she stands in line. They belong to the gangs of jungle capitalists who are attempting to corner the market in food. Fortunately in the past few weeks the gangs have been mainly engaged in fighting among themselves for control of this area. This has meant less harassment of the United Nations aid workers and those in the queue.

Anna and her family still consider themselves lucky. There are six adults, in reasonable health, none of them addicted to drugs or alcohol. Out of the ten children born, six survive. They have been discussing whether they should solve their cash problems, at least for a while, by selling a kidney or something else, assuming they could pass the health screening involved. There is a booming market in human organs now that medical science has solved the rejection problem – the "new prostitution" as this trade has been sardonically called, giving a new meaning to the idea of selling your body.

How different from Anna's is the life of the affluent few, quartered in luxury homes inside protected compounds seeking perpetual youth and perfect health. On the word of their equally affluent medical advisers, they will quite happily bid for replacement organs at the auctions held in the "transplant bordellos". This is the name cynics give to the tastefully appointed reception areas of the commercial surgical suites where these singular acts of exchange are completed. There are limits to how much of one's body one can sell off in this way. But perhaps more to the point in Anna's mind is that it may be better to act now before the biotechnology corporations develop safe maintenance-free artificial body parts at a price below that which human organs usually fetch at the auctions.

Anna has just buried her grandmother, who at fifty-five fell victim to what they assume was tuberculosis. There was no money to get a proper diagnosis, let alone treatment. Two of the younger children are now showing signs of illness. Anna and the other adults will soon have to decide whether they should sell a kidney or find the money some other way to be able to take them to the medical post; if not, they'll trust to luck.

Eric Blair

Many separate events and issues combined to effect this shift in focus. To cite one case, recognizing the significance of the globalization of the economy, some health policy-makers began to ask the question: can we make the healthy choice the competitive choice and use the market to turn the new global stakeholders into partners in the strategy for health for all? Such questions did not produce instant answers, but in the circumstances they helped to change the terms of debate.

The first visible signs were noted in the very early years of the century. The United Nations system as a whole had been dislocated by the end of the cold war. The learning of new approaches in the new United Nations system was not without difficulty and false starts. But eventually a critical mass of concerned people was formed who were keenly aware that the world was off course politically,

economically and ecologically. This happened in the developed countries in part as a consequence of the flow of information, made possible by global communications. Equally importantly, it resulted from continued pressure from people in developing countries who had understood the issues for a lot longer. In particular, rising ecological awareness and demands for the empowerment of less privileged groups led to the creation of many new interest groups and organizations.

Political leaders were paying much more than lip service when they acknowledged the severe challenges to the stability of the international order and the cohesion of societies. They saw the danger posed by gross differences between population groups in disposable incomes, employment opportunities, access to resources, and freedom from the threat of war or social disturbance. There was also a delayed but cheerful realization that the international community had in fact done the necessary preparatory work for attacking these problems in its various summits and conferences in the 1990s and in the detailed preparations of the individual United Nations programmes, funds and specialized agencies, not least WHO and its commitment to the renewal of the strategy for health for all.

Then many additional positive signs emerged, linked to changing perspectives on participation and governance and the still largely untapped potential in the use of technology in tackling problems. People began to picture how in the future people might use their health potential to lead satisfying lives in a healthy society that manifested high levels of equity, material and other resources for living, and social stability.

Governments taking a fresh look at problems saw that not all changes required massive expenditure. Lack of funds was no longer an automatic justification for taking no action. The intellectual and political paralysis that the preoccupation with funding had induced gave way to much more imaginative and participative responses to hitherto intractable problems. There was a new and beneficent opportunism in public policy, seizing on events and responding to other players, encouraging them to take new initiatives to improve people's quality of life. Governments came to see that there was no reason for making the false choice between greater equity and economic growth; investment in "social capital" and in reducing inequities increased efficiency.

The inequity debate was no longer seen as the politics of envy or the simplistic division of people into self-reliant individuals who were the deserving "haves" and the feckless underclass who were the undeserving "have-nots". The argument had got through to politicians that the phenomenon of differences in health, living standards and quality of life was better understood as a gradient involving a number of different social groups where (with the exception of the group at the top) each was worse off than the groups above them. Reducing inequities was now almost everybody's concern.

In the reshaping of the governance of social and public institutions, attention was given to fostering the development of "reflexive" social actors who could deal with risk and uncertainty and encourage changes in the behaviour of individuals and institutions so that they became more adaptive and self-monitoring.

The reshaping of governance implied new roles for the partners involved in the political process, including interest groups and nongovernmental organizations as well as individual citizens. There was growing political commitment to tapping the energy and resourcefulness of the entire community, and recognition that this would be facilitated by various developments in communications technology. This was seen as essential in moving towards greater democratic participation both in defining problems and priorities and in implementing solutions.

The political rediscovery of poverty in the midst of affluence fuelled the growing interest in strengthening social and economic structures. The importance of social support, the ability to cope

and maintain dignity and the sense of control over one's life were once more fully recognized. There was a readiness to address issues and to consider the implications for social policy. One example was the realization of how fragile social and family support networks had become in most countries in Europe, and a recognition of the diversity in family and community structures.

Policy analysts and political advisers and then politicians themselves came to see that there was a clear relationship between economic performance, income distribution and the health status of a nation; and that inequity in health was strongly associated with social position, occupation, ethnicity, gender and generation.

It was then remembered and fully acknowledged that the major improvements in mortality that had occurred in the developed world were strongly linked to social and economic development. The earlier reductions in infectious disease mortality had been brought about by changes in the environment, better nutrition, and better housing and sanitation. Policy analysts and researchers have been looking again at the connections between the physical environment, urbanization and health.

In recent years improvements in health have been more rapid in countries with smaller income differentials. It has been observed that greater equity is associated with faster economic growth. In social policy terms, education is now recognized as a key factor in promoting not only greater equity, but also greater personal fulfilment and health for individuals.

We can now see clearly that above a certain level of wealth, it is not the richest societies which have the best health but those that have the smallest income difference between rich and poor. Population-wide health improvement is predicated on widely shared economic prosperity, the development of a supportive community life and investment in people.

Public policy debate now focuses on the equity implications of different options, e.g. how to ensure that trends in the use of new technology do not selectively benefit only certain groups in society; and how to move towards a more equitable distribution of income and access to all resources that can help protect, promote and restore health.

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2.3 Structures, ministries and reallocation

2.3.1 The differing viewpoints of health and economic ministries

Greg Stoddart[7]

Key messages

- Officials in national ministries of health and other ministries would benefit from understanding better the complementary nature of health development and economic development, even though they may have very different perspectives on specific issues.
- Many of the determinants of health (e.g. level of income, working conditions, social infrastructure) lie outside the scope of health ministries. Coordination of policies and cooperation with other ministries, particularly economic ministries, are critical to improving health through investments beyond health care.
- Health care has special characteristics which have led the governments of most industrialized countries to remove essential health services from private market allocation, for the most part. Economic tools cannot, therefore, be used uncritically with the health care industry in the way that they are used in other industries and sectors.

Tutors' notes

This module is intended primarily for groups concerned with legislation, such as elected officials and/or bureaucratic staff in health ministries and other ministries, especially finance and other economic ministries. It will work best with a mixed group of participants whose specific examples can help each other to understand the pressures in their own and other ministries.

The main purpose is to foster an *appreciation* by both the health and financial/economic participants of:

- the breadth of the resource allocation problem for achieving wellbeing
- the interrelated nature of health development and economic development
- the specific distinguishing characteristics of the health care sector, and

[7] This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca).

- the effects of the policies of each "side" on the other.

The challenge for tutors is to avoid polarization of the two sides and to facilitate discussion based on the premise that they share the common goal of improving wellbeing for the community, of which health is one important dimension.

The module may also be used with audiences of nongovernmental health care providers or administrators and representatives of the business sector, if the objective is to increase sensitivity to the issues. Again, the learning objective would primarily be at the *appreciation* level.

The subject of the distinguishing characteristics of health care affords the opportunity to approach some health economics concepts which are useful at the *appraisal* and *analysis* levels. Some of the material in the list of further reading at the end of the module might be a bit advanced for audiences with no prior exposure to economics. On the other hand, since concepts like market failure will be familiar to officials from finance and other economic ministries, it may be possible at least to appraise some proposals for health care reform in the light of the distinguishing features of health care that are presented in the module.

Introduction

It is easy to lose sight of the complex interrelationship of health, health care and economic performance illustrated in Module 2.2.1 within the confines and pressures of any one sector. The complementary nature of health development and economic development is sometimes particularly difficult for national officials in ministries of health and ministries of finance to bear in mind, since each typically face serious problems within their own ministries. The issues raised in this module are relevant to the relationship between health and many other national ministries; the finance ministry is chosen for illustrative purposes.

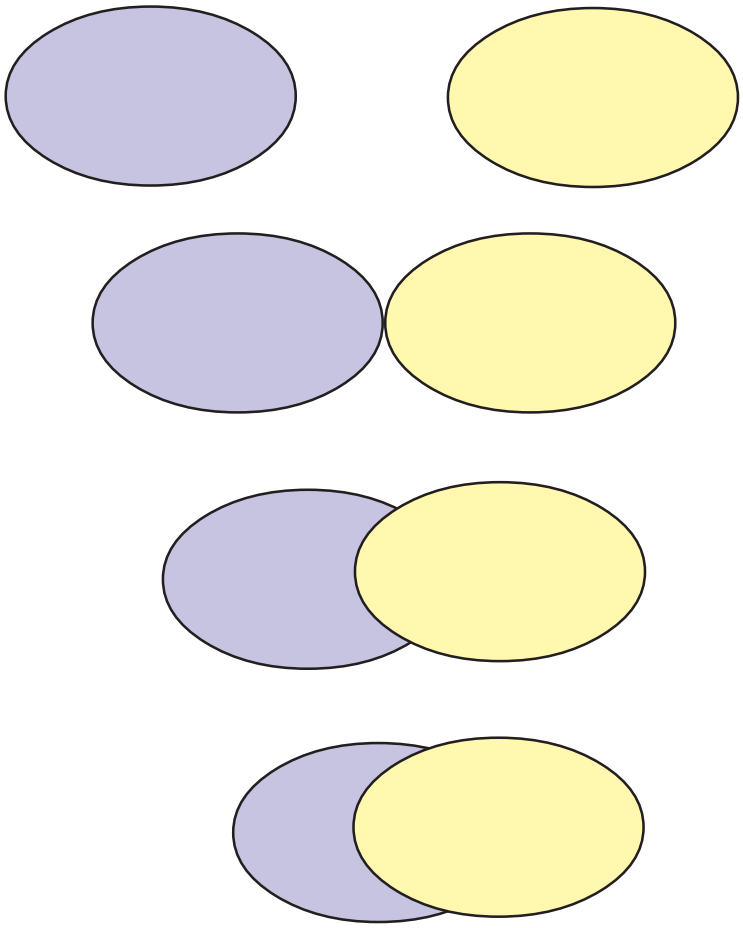
The purpose is to foster an increased understanding and appreciation by both sides of the viewpoint, constraints and objectives of the other, and in the process to recognize some of the special characteristics of the health care sector that differentiate it from other economic sectors. After an initial exercise, the module examines some of the differences which often (although not always) characterize the perspectives of ministries on both sides. Other exercises are then suggested to increase mutual understanding and encourage insights regarding the need for increased cooperation in policy-making between the two sides. One important message of this module is that both need to have a common understanding of key analytic frameworks and concepts to facilitate cooperation. Fig. 1 in Module 2.2.1 is one example of such a framework; Fig. 1 below is another example.

Common perspectives and differences

Ministries of health and ministries of finance share one common, ultimate and over-arching goal: to improve the general wellbeing of their countries' populations. Improving health is one important route for doing so, although it is not the only route. The provision of health services, in turn, is one important route for improving health, although again it is not the only one.

Conceptually, a good place to begin is with an examination of the overall resource allocation problem in any society. This is illustrated in Fig. 2, with special emphasis on the role of health services and other determinants of health. Scarce resources have many competing uses, divided here into three categories: health services, other determinants of health, and other determinants of wellbeing. Within

Fig. 1. How closely related are ministries of finance and health?



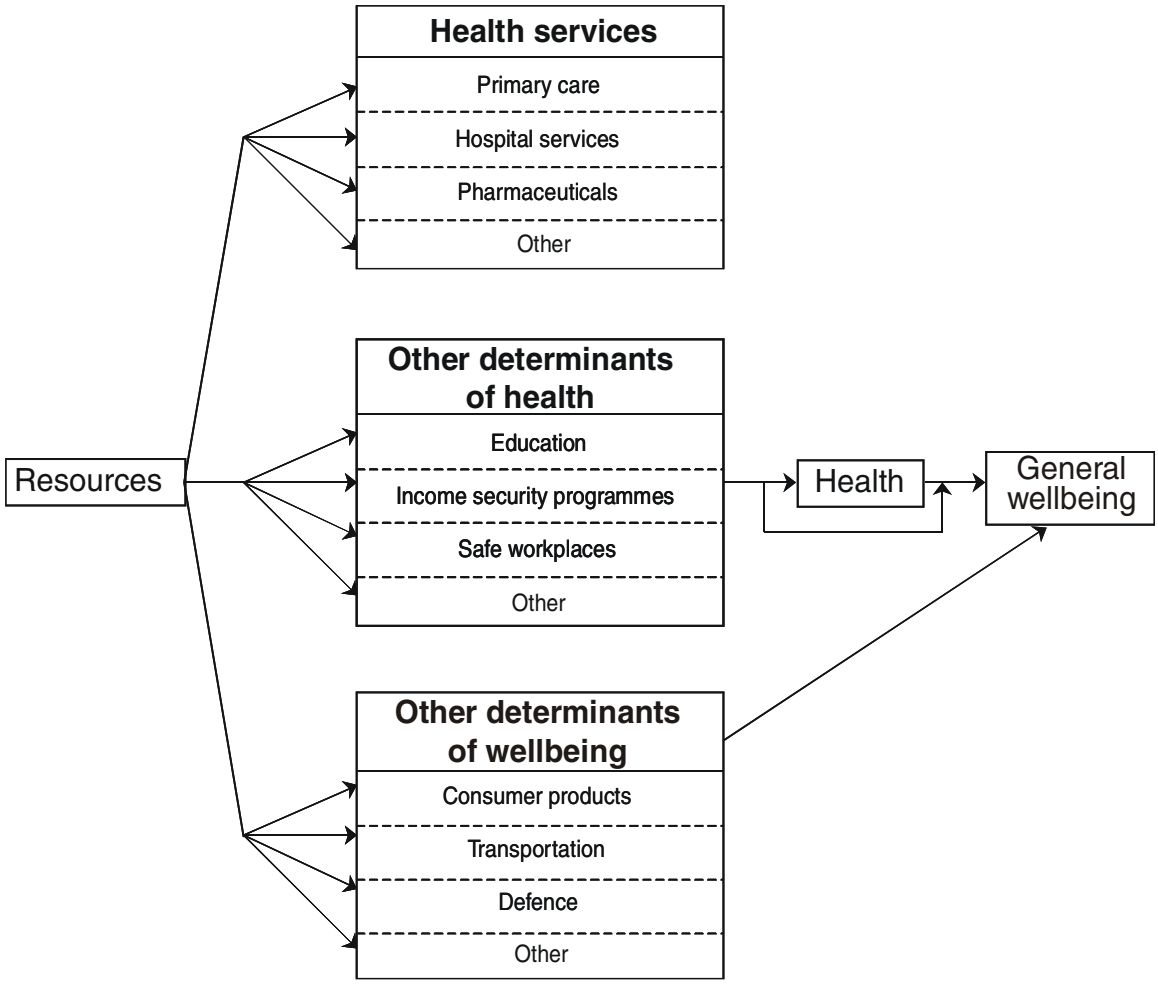
each category there are a multitude of competing uses, each important in its own right and each with its associated policies, advocates, critics and beneficiaries.

Exercise 1

1. How closely related are the ministry of health and the ministry of finance in your country? Which of the diagrams in Fig. 2 do you think best illustrates their relationship?
2. Explain your choice. Describe why you think they are or are not closely related in their daily function and policy-making.

In recent years, as a result of the efforts of those responsible for health promotion initiatives locally, nationally and internationally, and of a rapidly growing body of research evidence, the importance of a very broad range of determinants of health is increasingly being recognized. The determinants include both characteristics of individuals, such as their genetic endowments, personal health practices and coping skills, and characteristics of the settings in which these individuals live, work and play, such as the safety of physical and natural environments, stress in daily life at work and home, resources such as income, education and social support available to cope with daily life, availability of health services, and the degree of hope, control, respect, dignity and equity provided by

Fig. 2. The overall resource allocation problem



their societies. The characteristics of individuals and their settings are often not separable; they interact in critical ways – for example, it is now well known that the use of tobacco is socially conditioned. The determinants of health operate throughout the life cycle, again in complex interactions (for example, low birth weight is one of the best single predictors of future health), and early childhood development experiences can set the stage for both positive and negative health trajectories. Specific examples of the broad range of determinants and their significance for the harmonization and integration of health and economic policies can be found in *Health21: an introduction to the health for all policy framework for the WHO European Region (1)* and *Health21: the health for all policy framework for the WHO European Region (2)*.

Some of the most frequent differences of perspective between ministries of finance and of health concerning investments for health, policy focus and the role and organization of health care systems are described below, with reference to Fig. 1 and 2 in Module 2.2.1.

Investments for health

The breadth, complexity and interactive nature of the determinants of health mean that many investments for health do not fit neatly into only one sector. Because of this, it is frequently the case that neither ministries of health nor ministries of finance can or do take the broad perspective required by Fig. 2.

For example, tax or transfer policies to reduce the financial burden on low-income parents with small children may not be seen as a health investment by either ministry. The health ministry, preoccupied with issues of health service delivery and finance, may view the policy as well outside its scope, even though it may recognize income as a determinant of health. The finance ministry, although it deals with tax policy, will probably not characterize it as a health issue.

This highlights the need for interministerial mechanisms to address policies and investments for health which might otherwise fall neglected between sectors. One possible mechanism is interministerial committees composed of elected politicians or their senior deputies, charged with the responsibility of examining intersectoral influences on health and opportunities for intersectoral collaboration. Given the multiple demands on such officials, the creation of these mechanisms will depend on a recognition that the problems are substantial.

In fact, in the narrowest view of both ministries, it may seem that only arrows A and B in Fig. 1 in Module 2.2.1 matter for health policy. For most of this century, the primary health policy concern of governments in industrialized countries has been the development of health insurance and delivery systems to make available access to primary, secondary and tertiary medical and hospital care. Although this narrow view of what constitutes health policy has often been challenged by public health officials, most of the resources that societies commit to improving health are in fact still channelled through health services.

Policy focus

The two ministries differ significantly in this regard, which is to be expected given their mandates. The ministry of finance is concerned with fiscal indicators, and especially fiscal crises such as deficits and national debt. The ministry of health is concerned with indicators of the population's longevity and quality of life and with health crises such as the spread of infectious disease or inadequate medical facilities. The ministry of finance typically pursues expenditure control as one policy goal. The ministry of health is often seen as undermining the achievement of that goal through its objective of securing more resources to address what seem to finance officials to be ever-growing needs and demands from health care providers. And just as the ministry of finance does not routinely consider the effect of its macroeconomic policies on the health of individuals and groups, so the ministry of health often gives the impression that its use of resources is the most important possible use and that the ministry of finance should therefore accede to its constant requests for more.

In terms of Fig. 1 in Module 2.2.1, the ministry of health may be characterized as concerned primarily with arrow A (from health care to health) and to a lesser extent with arrow D (the effects of the economy on health), while the ministry of finance, if it is concerned at all, may focus on arrow F (the strain that health care spending places on national income).

Almost always the ministry of finance is more successful than the ministry of health in requiring other government ministries to adopt its ethos. Because fiscal crises are the highest priority (other than immediate threats to national security) of all governments, all ministries are typically required to consider in detail the revenue and expenditure consequences of their policy and programme decisions. By contrast, despite growing evidence that the determinants of health lie primarily in factors outside the control of health ministries, these ministries have usually been unable to persuade their governments to require that all ministries screen their policy and programme decisions for their potential impact on the health of individuals and populations.

Health care systems

Finance ministries often view health care as not being different from other products and services and therefore apply standard forms of economic analysis to the health care industry and the market for health services. These analyses frequently lead to recommendations to use market mechanisms such as prices (user charges), competition and consumer choice to structure health care delivery and allocate health services.

In contrast, health ministries are typically more aware of the special characteristics of health care which have led the governments of most industrialized countries, for the most part, to remove essential health services from private market allocation. This relates particularly to competitive, unguided, for-profit markets. In all countries there is use of market-like mechanisms within publicly financed systems to pursue public objectives, and there is further experimentation with this internationally.

Unlike most goods and services, health care is not consumed for its own sake but for the expected positive contribution it will make to an individual's health. It is the health that is of value to the individual, not the health care. Indeed, in the absence of illness or potential illness, individuals not only do not wish to purchase health care but actively seek to avoid it. Expenditure on health care, both individual and collective, is therefore in a category which might be termed "regrettables". Health care is not "demanded" in the economist's usual meaning of the concept of demand, like the demand for televisions or cars. It is consumed because it is needed, where need is defined by some external standard, both medical and social, to be the capacity for the individual's health to benefit from the consumption of the health service. Health care providers play a critical role in the setting of the external standard for need, through their expert judgements in diagnosis and provision and prescription of services. These providers occupy a special role as economic actors, unlike normal economic suppliers and firms, because the services that they demand, legitimize and prescribe on behalf of patients are often their own.

Most modern societies make the ethical judgement that need should be the basis on which essential health care is distributed. Whether or not totally unregulated markets could perform this function, they are largely rejected because they use ability to pay and willingness to pay rather than need as their allocation criteria, which frequently excludes individuals in need from receiving important services.

A second fundamental characteristic of health care is that the need for it is uncertain. Although the need for some health care such as preventive services may be foreseen, for the most part need is unpredictable because the incidence of illness or injury for an individual is itself unpredictable. It is much more predictable for groups and populations. Therefore some forms of insurance can be effective and efficient economic mechanisms for seeing that individuals in need receive services. Although private insurance is one policy option for governments, in most societies health care insurance is wholly or partially in the public sector, due to the extensive and well known market failure associated with private insurance for health services. One of the most serious types of market failure of private health care insurance is if low-income and/or unhealthy individuals (often the ones who most need care) cannot afford or are denied insurance coverage.

A third characteristic of health care which reinforces the case for a significant national role in the financing of health services is that there are more of what economists call external effects associated with the consumption of health care and the health of individuals than is the case for many other

consumer products. An individual may be concerned about others' health for selfish reasons, as in the case of infectious diseases, because another person's ill health or failure to consume health care pose risks to him or her. But this type of externality is only part of the story. The almost universal observation is that people genuinely care about others' health and ability to afford health care independent of selfish motives, in a way that they do not care about others' consumption of televisions or cars. The identification of need therefore establishes a collective ethical obligation that something should be done, which in turn leads to a significant role for the state in monitoring, regulating and financing health care systems, and sometimes providing services directly.

A fourth and final distinctive characteristic of health care is that, unlike many other products, consumers are generally poorly informed about their need for specific health services and unable to evaluate in advance what the services will do for them. For this they require and consult health care providers, who act as their agents in deciding what they need to consume. Health care providers, although they are the suppliers and not the consumers, in fact often possess a much greater degree of knowledge about the consumer's needs, the services available, and the effectiveness of the services in meeting the consumer's needs than do the consumers themselves. Indeed, to call the buyers of health services consumers in any conventional economic sense of that word is questionable. Although advances in information technology and the increased availability of consumer information (e.g. self-help guides, and "report cards" on hospitals) may improve the amount and flow of useful information to prospective patients, they will not alter significantly the fundamental asymmetry in information between providers and patients in relation to the content of a particular episode of care, which is highly specific to the individual.

This asymmetric possession of knowledge by the providers of care, and the influence it gives them over the utilization of health services, have far-reaching implications for the organization of health care systems and the use of market mechanisms. For example, the licensing of providers and a reliance on professional self-regulation to protect consumer-patients against misleading claims and poor quality or harmful services are necessary features of health care systems. The case for market mechanisms, such as user charges, to allocate services or control expenditure is considerably weakened, since health service utilization is not primarily consumer-driven. And the strong economic and political position accorded to health care providers, when coupled with the observation that it is they who define need, means that there will always be pressures for expansion of health care systems. The health care industry has much less in the way of internal equilibrating mechanisms than most other industries.

Exercise 2

1. (a) *For participants from the ministry of finance or other economic sectors.* What do you see as the biggest single problem that the health sector poses for your national economy? If you were minister of health, how would you propose to solve it? (Participants from the health sector to comment and respond after all answers have been given.)

   (b) *For participants from the ministry of health or health sector.* What do you see as the biggest single problem that the economic sectors and the general functioning of the national economy pose for the health of the population? How would you propose to solve it if you were minister of finance?

2. Read the script of the brief role-play (Annex 1) entitled "Panel of ministers: economic policies and health care reform", written by Keith Barnard and Professor Béatrice Majnoni d'Intignano for the WHO Ljubljana Conference on Health Care Reform in 1996. Alternatively, two participants could be assigned in advance to familiarize themselves with it and read the script to the group. If so, a participant from the ministry of finance should read the part of the minister of health, and a participant from the ministry of health should read the part of the minister of finance.
   (a) In the play, Barbara Luke, the minister of health, is concerned about the percentage of national income spent on health. Discuss the factors that you think should be considered when this is being decided. Do these factors differ from those you would consider when deciding the percentage to be spent on education, telecommunications on agricultural subsidies?
   (b) In the play, Robin Matthew, the minister of finance, is concerned that important health problems are not being tackled rigorously. Discuss improvements which could be made in health programmes in your own country which might appeal to the minister of finance because they would help the national economy.

Annex 1. Panel of ministers: economic policies and health care reform[5]

Introduction by moderator

Ladies and gentlemen, ministers of health, I am delighted to welcome you to Ljubljana for an extraordinary session to exchange experience on health care reform. Before we get down to business, just imagine, that we are moving to EUROPIA, a country psychologically if not physically near the heart of the Region. We are privileged to observe Robin Matthew, the rising star of the government, as the clever minister of finance, who is waiting in a restaurant for a private meeting with a colleague ... Here she comes, the seasoned minister of health, Barbara Luke. Just listen to what they are saying.

Scene: In the restaurant: a dialogue on health policy between colleagues

Robin: As you know, we might become a candidate country to join the European Union. Therefore, we will look carefully at things like the European monetary system and other criteria by which our case will be judged. Frankly speaking, it will be a big headache for any finance minister.
Barbara: How so? I thought it was supposed to be a big opportunity.
Robin: Well, we need to slim down public expenditure, cut taxes and remove some of the costs which are now falling on employers. I am just giving you a chance to look at the issues from my perspective. I think that you will have to rethink ideas in your sector.
Barbara: But surely we cannot cut health expenditure any further. The percentage going to health is already way below our neighbours', and our doctors and nurses continue to be relatively poor.
Robin: I am sorry I must be blunt. How could I explain to other ministers why I should treat you differently? Why are you so special, this is what they will say. These are tough times for all of us, even if there was no economic decline.

[5] This role-play was prepared by Keith Barnard of Gothenburg, Sweden and Professor Béatrice Majnoni d'Intignano, University of Paris, France.

Barbara: Well, I don't see myself behaving differently from any other health minister. When I meet my fellow health ministers from other countries, they all ...
Robin: Exactly! When I look at your colleagues in the other countries, they are also having a hard time making the health industry more efficient and competitive.
Barbara: I am sorry, Robin, you are quite wrong there. You are ignoring all the serious reform initiatives that have taken place in countries across Europe. In our different ways we are trying to find the balance – the public/private mix, as some of us call it. Everyone of us, we are trying to bring expenditure under control. Precisely because health is not an industry, we have to think about the quality of care people get and how it meets their needs.
Robin: Look, in education, they tell me how many schools and teachers they need, and why. They tell me how many university places, and we all agree that we are investing in education and training. In social security, they tell me how many elderly people there are, how many disabled, how many long-term employed, and I work out what we can afford. But you ...
Barbara: Wait a minute!
Robin: You tell the public that we are getting healthier, and yet every year you tell me that you need more money. Is your budget supposed to be open-ended upwards? You lead people to think that their care is free, but someone must be paying the bill.
Barbara: No, no, I do not mean that everything needs to be free. There is a lot of self-care in families and among friends. People buy drugs over the counter. There is a tremendous interest now in things like nutrition and promoting health. None of this comes into your calculations. The fact is that whenever we maintain or restore someone's health, we have helped the individual as well as the economy. We have enabled a disabled person to go on living an independent life, we have a schoolchild who can study uninterrupted and we have made workers become more productive.
Robin: That I do not doubt. My job is to get public expenditure under control. Consumer goods improve the standard of living, remove household chores, maximize people's leisure possibilities. They give them the chance to get on with the kind of lives they want to live. The health sector only drains resources away from the nation. Where is the profit?
Barbara: Of course we do not have profit in the health care sector, nor are we trying to turn our health care into a trading company. We have health gain, but it is also clear that family doctors and community nurses reduce and prevent the need for expensive services.
Robin: If it's that straightforward why are you always asking for more money and expecting the health insurance people to hike up their premiums? Or is it because some important health problems are not tackled vigorously, for example accidents, suicides and heart attacks, especially among young men?
Barbara: On the contrary. We have made a good start with making people more aware of how to use appropriate services appropriately and how to look after themselves. The quality of services is constantly being improved.
Robin: I have not tried to cut your budget for its own sake. Anyhow, I cannot get this country's economy on the right track unless all ministers are seen to exercise restraint. For example, there are several countries which use fewer beds and doctors. And let me remind you that we have closed quite a number of old-fashioned industrial plants in other sectors.
Barbara: I don't think that you have grasped my message. Good social policies, including health, will make people believe that this is the country they want to live in. People will then truly make our country a place worth living in. Good social policy supports economic policy. I need your help to provide our people with a set of decent essential services. Do that for us, and we can assure you, you will eventually see the economy grow, as we all want to see it grow, and that will lift the pressure off

both of us when we come to talk about budgets in the future. You see, really you should ask me what I would do with a 5% increase in my budget. I have plenty of practical ideas.
Robin: I have to rush now. It was nice talking with you. We can discuss this again when the economy has recovered.

The scene fades ...

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2.3.2 Reallocation of resources for health – a conceptual framework

Greg Stoddart[6]

Key messages

- The optimum use of scarce resources to improve health involves continuing consideration of the possibilities for allocating and reallocating resources within the health care sector. This can involve both existing resources and additional resources that become available. However, intersectoral collaboration for health improvement will frequently require reallocation of resources from one sector to another.
- Reallocation of resources can be categorized in five main types: reallocations among health care activities; reallocation among non-health care activities within the health system; reallocations between health care and non-health care activities within the health system; reallocations between the health system and other systems; and reallocations among other systems.
- Another important dimension of the conceptual framework for resource reallocation is the type of resources being reallocated. Although financial flows (budgets) are usually the focus of attention, it is important to remember that the resources themselves are the "real" things that go into health-influencing activities, i.e. the time of individuals, their skills and know-how, equipment and supplies, and the space provided by buildings and the land which they occupy.
- Decisions to reallocate resources for health improvement can be made at different decision-making levels, and in both the public and private sectors.

Tutors' notes

Although this module can be used to help achieve an *appreciation* of the complexity of intersectoral reallocation of resources, its primary purpose is to assist in the *analysis* of such reallocations. Analyses may include measurement of changes in actual resource flows. However, they may also include assessments of the potential resource flows that are implied by policy changes under consideration. The cube in Annex 1, Fig. 5 (relating to an application of a conceptual framework in the Canadian province of Prince Edward Island) may therefore be used in a discussion of the opposition that is likely to be encountered in the implementation of policies involving reallocation of resources.

The framework can be used by several groups, identified on the vertical axis of Fig. 5, including elected politicians, bureaucrats in health and other ministries, managers in regional authorities (at either the level of the overall authority or at the level of specific programmes) and service providers.

An interesting exercise suggested during the development of this module was to use it to prompt comparison of the effects of spending money in different areas, including outside health care. In Fig. 2 (under Discussion), this means asking what could be done with a specified amount of money if it was reallocated along any of the five arrows A–E. In terms of economic concepts, this would be a vivid illustration of measuring the opportunity cost of resource use in real terms. For a simple example of this, see Labonte *(1)*, who asks what else could have been done with a specific amount of new funding which was given to hospitals in the Canadian province of Ontario.

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[6] This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca).

A different exercise, more planning-oriented, would be to select some policy examples from *HEALTH21: an introduction to the health for all policy framework for the WHO European Region (2)* and *HEALTH21: the health for all policy framework for the WHO European Region (3)* and ask what actions would have to be taken within the cube in Fig. 5 to implement these policies in the specific jurisdictions of the students.

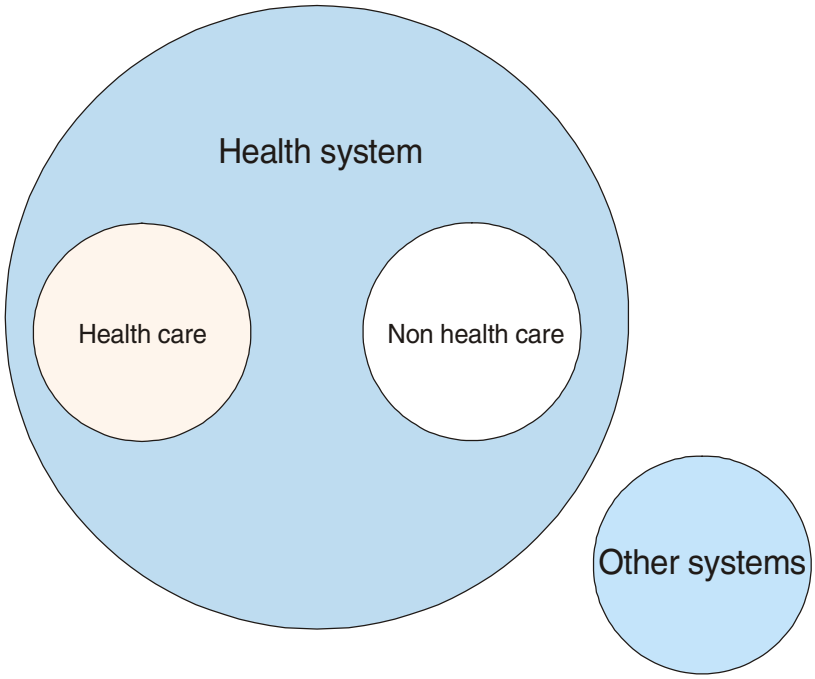
Introduction

Intersectoral collaboration for health improvement has been one of the main themes of recent health promotion initiatives internationally. It has figured prominently in the WHO health for all strategy, in WHO activities such as the Healthy Cities project, and in the 1986 Ottawa Charter for Health Promotion. It is also an integral component of HEALTH21 *(3)*.

Intersectoral collaboration encompasses numerous activities – partnership, advocacy, regulation, demonstration and negotiation among them – and has led to several general policy strategies, such as the creation of supportive environments (physical, social, economic, cultural and spiritual) for health, strengthening community action, the development of personal coping skills and health competencies, building healthy public policy, reorienting health services, and fostering public participation.

Many of these involve, indeed require, significant reallocation of resources either implicitly or explicitly. Yet it is difficult to find a conceptual framework within which to plan, monitor or evaluate such reallocations. This module develops one possible conceptual framework for the reallocation of resources for health improvement. The framework is illustrated with a brief case study concerning the Canadian province of Prince Edward Island, where a team considering a range of possible health reforms used the framework to evaluate the extent of resource reallocation which would be involved and the barriers to achieving this.

Fig. 1. Conceptual framework: components



Discussion

Allocations and reallocations take place whenever plans are established, budgets are formulated or action is implemented.

The conceptual framework makes use of an important distinction between the *objectives* and *consequences* of resource-consuming activities (policies, programmes or other actions). Many activities explicitly have the improvement of health as their primary objective. Health care is the leading example, but other "non-health care" activities, such as nutrition programmes and counselling services not provided through the health care sector or by health professionals, also have health improvement as a primary objective, or at least as one of several important objectives. Occupational or road safety programmes, in both the public and private sectors, are other examples of activities outside the traditional health care system which are nonetheless directed toward health.

The combination of largely separate sets of health care and non-health care activities is shown in Fig. 1 to comprise the health system, defined as activities undertaken with health improvement as a primary, or one main, objective.

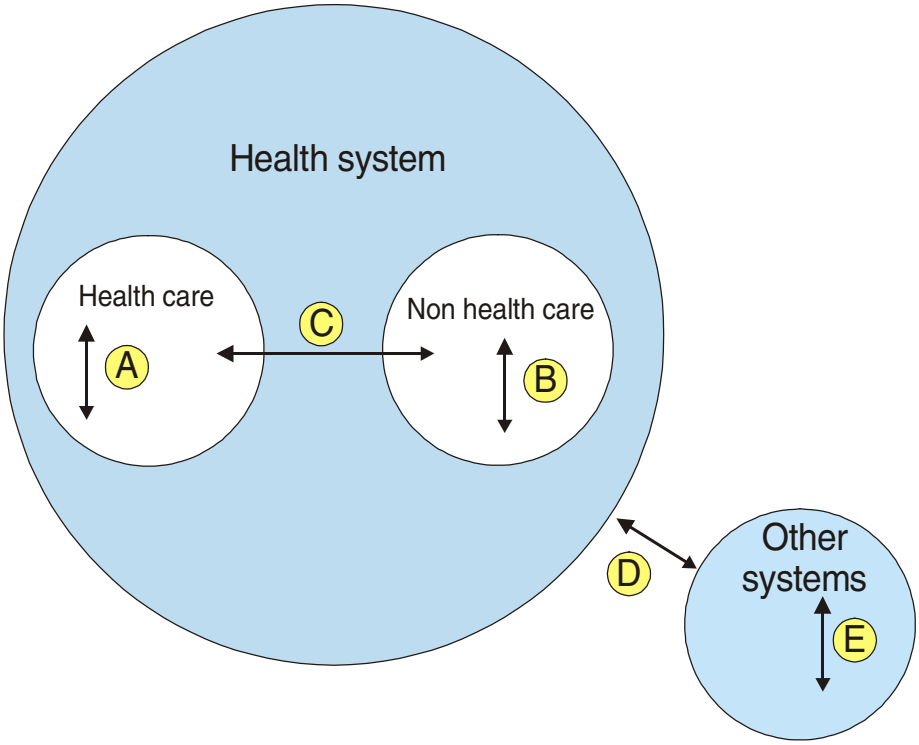
Of course, the health system is only one system whose activities have health *consequences*. The energy, agricultural or tourism policies of both public agencies and private firms, for example, may directly affect health. So too may activities as diverse as the tax policies of governments, the working conditions provided by private employers, the availability of special educational programmes for preschool children or adolescents in socioeconomically disadvantaged groups, and the effectiveness of law enforcement systems in assuring personal security. Therefore a large number of other systems, often not seen as directed primarily toward health objectives, produce significant health consequences. These other systems are grouped together in Fig. 1, but individual sectors could be displayed depending on the analysis being conducted.[4]

The activities of both the health system and other systems consume resources. Of course, close attention is given to the allocation and possible reallocation of resources for continuing activities within a given sector, which relates to the discussions in the module on efficiency. In reality, constant adjustments are being made and changes do not have to be large to be useful. However, the focus here is on attempts to *change* activities, which will require resource reallocations. Five principal types of reallocation, i.e. resource flows, can be identified in the framework:

A. reallocations between health care activities (for example, from hospital to community-based services);
B. reallocations between non-health care activities within the health system (for example, from counselling for adolescents to housing adaptation for older people);
C. reallocations between health care and non-health care activities within the health system (for example, from medical clinics to shelters for homeless persons);
D. reallocations between the health system and other systems (for example, to hospitals or non-health care programmes for adolescents or older people from education or transportation);
E. reallocations between other systems (for example, from tourism or agriculture to education or transportation).

These principal analytical types of reallocations are shown by arrows in Fig. 2 corresponding to the letters A–E above. Resources may flow in either direction along these arrows. In practice, the placement of a specific activity within the circles of Fig. 1 and 2 may sometimes be difficult, as

Fig. 2. Conceptual framework: flows of resources



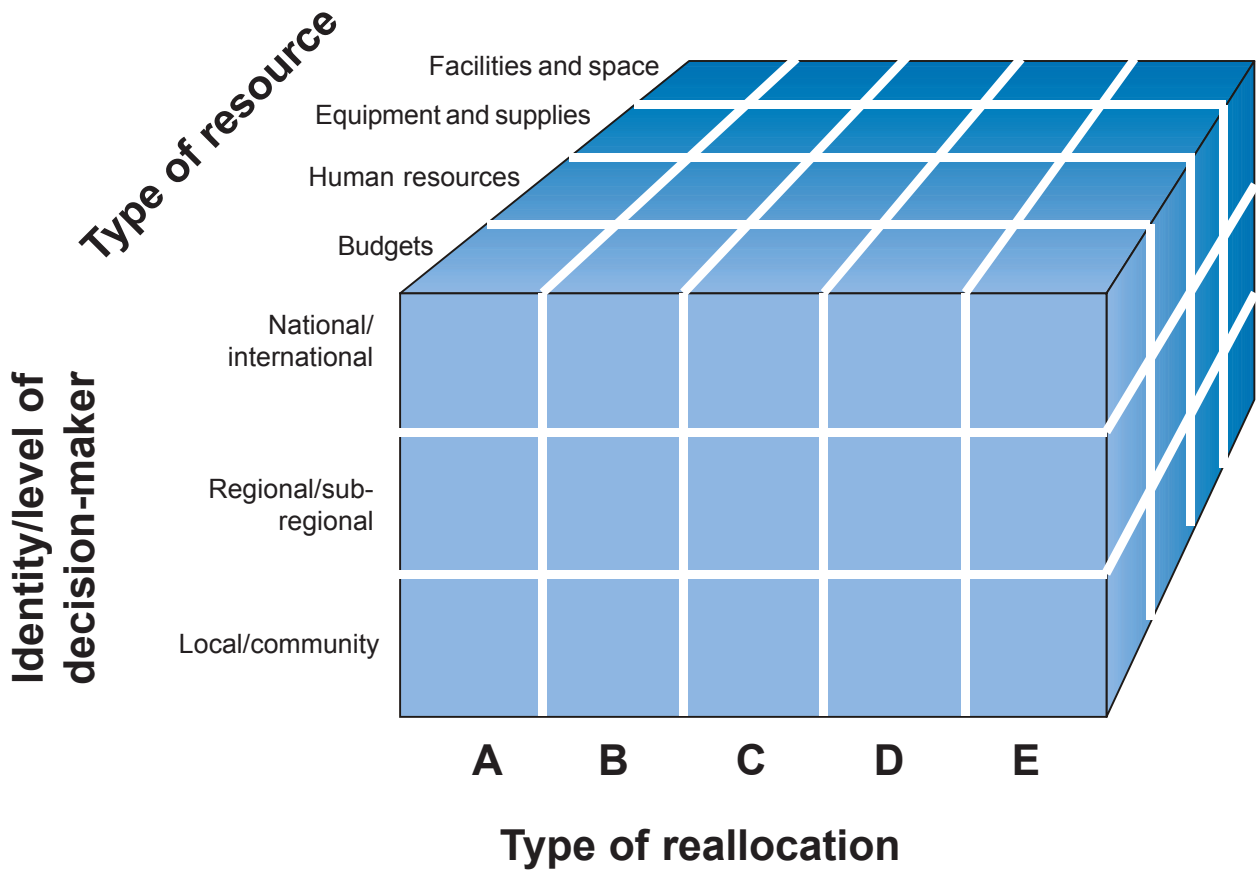
boundaries can be blurred. Nevertheless, the analytical distinction between objectives and consequences on which the framework is based is a useful place to begin.

The framework can be enhanced by considering two additional dimensions beyond the type of resource reallocation. The first is the type of resource being reallocated; the second is the identity of the decision-makers responsible for the changes in activities affecting resource allocation.

Although money (most often represented by budgets of both public and private enterprises) is not a resource in itself, financial flows are often a useful and reasonably accurate marker of changes in priorities and resource allocation. To economists, money and budgets represent and convey *command* over resources, but the resources themselves are the "real" things that go into health-promoting or health-affecting activities – i.e. the time of individuals, their skills and know-how, equipment and supplies, and the space provided by buildings and the land which these occupy. If these real resources are used for one purpose, they are not available for another purpose, from which comes the economist's concept of "opportunity cost". By asking questions such as "What are the opportunity costs of the current allocation of resources?" or "Are there health gains to be made by using resources differently?", opportunities for intersectoral reallocation can often be identified. Note that it is not always necessary to change financial flows and budgets to accomplish a reallocation of resources. Significant changes in the allocation of individuals' time, or the uses of equipment, supplies and facilities can sometimes occur without appearing as official budget changes. This may be an advantage in implementing reallocations in some circumstances.

Regarding the identity of decision-makers, it is important to realize that decisions to reallocate resources for health improvement can be made at different levels of influence and in both the public and private sectors. Elected politicians or senior officials of government ministries are often associated with high profile, national policy decisions. But regional or community authorities often play significant

Fig. 3. Conceptual framework: three dimensions



A Among health care activities
B Among non-health care activities within the health system
C Between health care and non-health care activities within the health system
D Between the health system and other systems
E Among other systems

roles as well, and at lower levels programme managers or even individual service providers can make reallocations through decisions on how their time is spent, or upon which activities and groups they choose to focus their efforts. Again, in the private sector, although many decisions are made at the (perhaps multinational) senior executive level, there is often scope at much lower levels of management or programming for decisions to be taken which affect the health of both workers and individuals outside the firm.

The three dimensions – type of reallocation, type of resource, and identity/level of decision-maker – are combined in Fig. 3 to extend the conceptual framework of Fig. 2. The result is a cube within which intersectoral reallocation of resources for health can be conceptualized and discussed. Actual or potential reallocations can be positioned according to their key characteristics.

The framework has several possible applications. It might provide a useful planning tool, or be an important starting point for developing intersectoral strategies that rely on resource reallocation for effective implementation. It may also be useful as a monitoring or auditing mechanism, or for evaluation

of progress toward reallocation objectives. Specific subcomponents or "slices" of the cube may be more useful than others for some purposes. For example, the focus at higher levels of decision-making may be on budgets and financial flows, while at middle or lower levels the focus may be on human resources or facilities. The framework can be used prospectively as well as retrospectively. Each specific application will require its own adaptation and development of the framework for the local context.

Note also that there may be a need to prepare the ground for reallocation decisions, if they are to be broadly accepted and implemented on an effective and sustainable basis, especially if they are likely to affect significantly key stakeholders, including the general public. Changes, especially if they are outside the health sector (or not wholly within it), generally cannot be commanded by health authorities. Other stakeholders have to be convinced that they are in their interest, or at least acceptable, bargaining and negotiations tend to be involved, and win-win situations are more likely to be implemented. Such changes may be easier to achieve in a growing economy, where resources are available to ease the concerns of others, than in a declining economy with fierce competition to retain existing levels of resources. These matters relate to discussions elsewhere in the learning materials, including in Module 4.2.2 on the political management of public health.

Exercise 1

Considering the conceptual framework presented in Fig. 2 for intersectoral reallocation of resources, assume that a given bundle of resources, say US $5million per annum (represented by so many doctors, so many nurses, so much in the way of facilities, equipment and other inputs) is available in the health care sector.

- Could the resources be used in other ways within the health care sector to produce more health gain (or other desirable outcomes)?
- Would your response be altered if the time period being considered was longer or shorter?
- Would the resources produce more health gain if used elsewhere (e.g. in the non-health care component of the health system or in other systems)?

Would you apply the conceptual framework in the same way if the decisions were being considered prospectively or evaluated retrospectively? If not, what would the differences be and why would they occur?

Would your approach be affected by whether the resource allocation and reallocation decisions were being taken:

- in a declining rather than a growing economy?
- by decision-makers at different levels?
- in the private sector rather than the public sector?
- with or without prior preparations among the stakeholders and the general public?

An application of the framework

Annex 1 to this module provides an application of the conceptual framework in the Canadian province of Prince Edward Island. The provincial government sought to evaluate progress towards intersectoral reallocation of resources for health improvement using the framework, having devolved decision-making for many health care and social services from the provincial level to regional health authorities. The health care services and programmes included hospitals, home care, mental health, public health,

dental public health, community health centres, laboratory services, ambulance services, rehabilitation services and long-term care. (Pharmacy and direct payments to physicians were not decentralized.). The non-health care services and programmes included housing, child and family services, addiction services, job creation programmes, community development, youth centres, services for older people, income security programmes, and adolescent group homes. Among regional authorities, those in Prince Edward Island have budgetary and management responsibility for the broadest scope of health and social services in Canada. Since an important policy objective of the reforms was to encourage a focus on preventing illness and promoting health by addressing the social and economic determinants of health, the regional authorities were given integrated "block" budgets for all of the above services combined. How to allocate the budgets (and the command they provide over real resources) among the array of services and programmes was largely left to the discretion of the authorities.

Exercise 2

Using the material on Prince Edward Island presented in Annex 1 (or another case with which you are familiar from your own experience or in your own country) consider the following.

- What was the overall pattern of reallocation; and what was the process through which it took place?
- Was the process controlled by the health ministry (or another ministry), or did it involve negotiation, bargaining and compromise?
- Have some of the reallocations been offsetting ones?
- How frequent are the reallocations between the health system and other systems (and between the health care and non-health care components of the health system)? Do such reallocations tend to become more prevalent over longer periods of time?

Annex 1. Making resource shifts supportive of the broad determinants of health: the Prince Edward Island experience (summary)[7]

This report presents the results from a case study of cross-sectoral resource allocation (CSRA) in the human services system in Prince Edward Island (PEI). The research builds on previous research that examined the role of block funding as an instrument for implementing health reform, based on a population health approach. It therefore extends and elaborates the pictures we have of CSRA in PEI from 1993 to 1999.

Fig. 4 and 5 reproduce Fig. 2 and 3 in the context of the Prince Edward Island reform.[8] The specific programme, service and system entries within the circles of Fig. 4 represent those of relevance there, with the titles that apply in this particular set of government departments and agencies.

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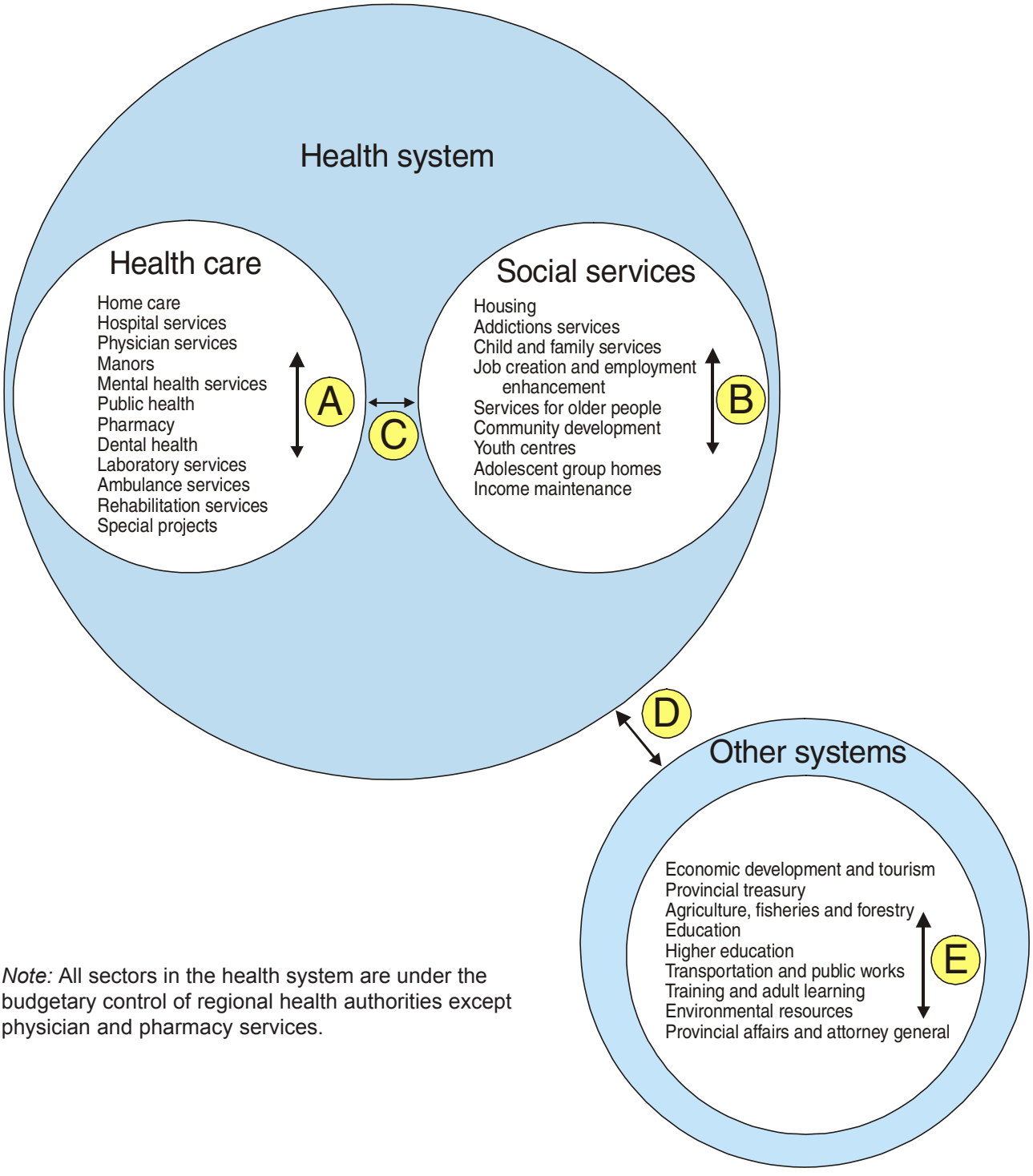
[7] Annex 1 to Module 2.3.2 was prepared by John Eyles, Greg Stoddart, John Lavis and Colin McCullan (McMaster University), and Tina Pranger and Laurie Molyneaux-Smith (PEI Department of Health and Social Services). The principal investigator was John Eyles (McMaster Institute of Environment and Health, e-mail: eyles@mcmaster.ca).

[8] In this case, only four of the five types of ("cross-sectoral"– the term used locally) reallocation are examined. Reallocations within other systems (arrow E from Fig. 2) are outside the scope of reform. The decision-making focus is also restricted to the public sector, as is evident from the vertical axis of Fig. 5 (Annex 1).

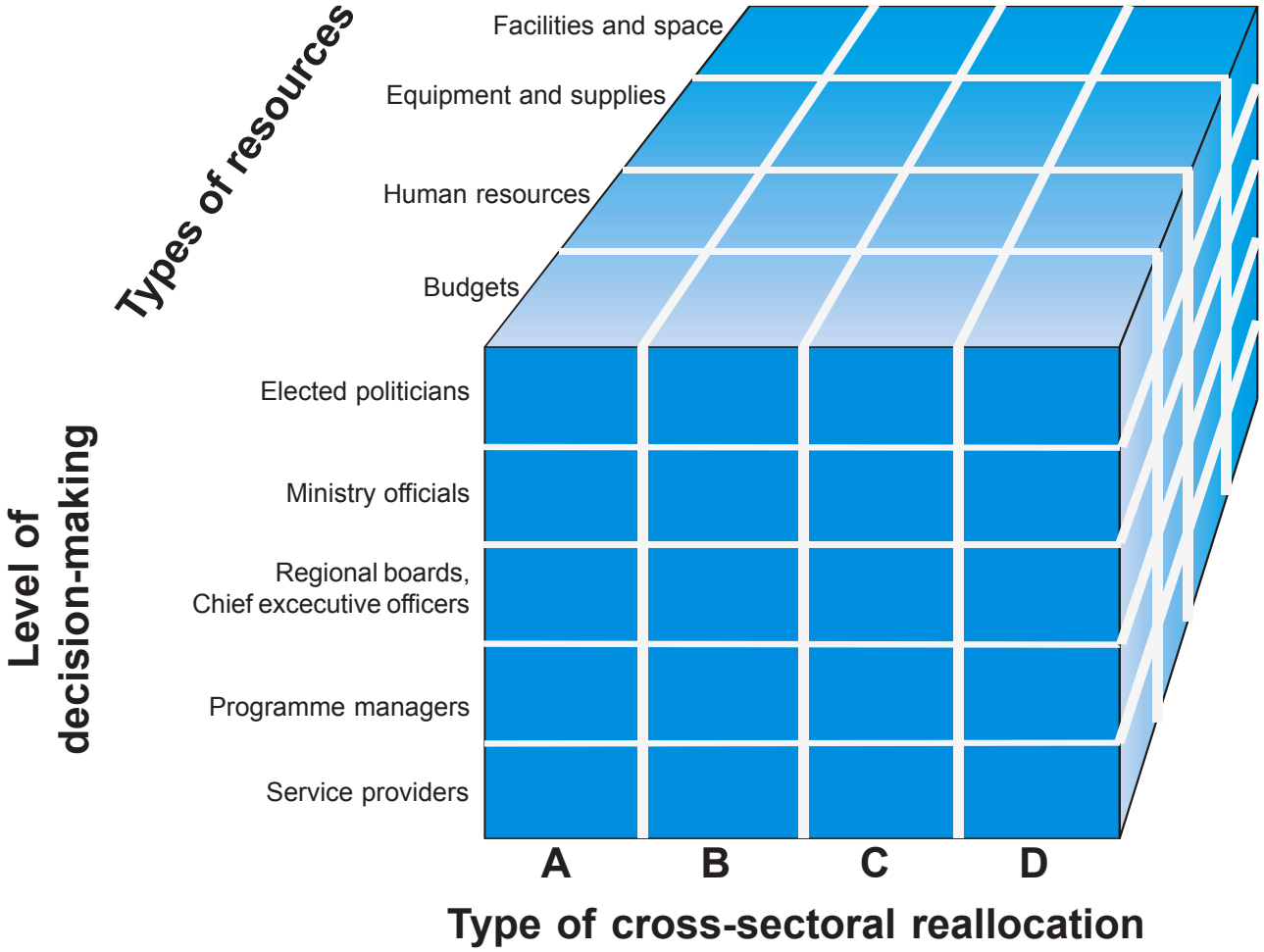
Fig. 4. An application of the conceptual framework to the Canadian Province of Prince Edward Island



Note: All sectors in the health system are under the budgetary control of regional health authorities except physician and pharmacy services.

The health reform of the early 1990s in PEI emphasized the broad determinants of health, a client focus in service delivery, the pooling of human services, the integration and coordination of services and the establishment of regional governance. PEI created five health regions to provide hospital care, social services, income security, public housing and a range of other services, but excluded physician and pharmaceutical resources and education. Each health region was provided with block funding to enable resources to be moved to address the broad determinants of health. These changes largely survived a change of government in 1996.

Fig. 5. The intersectoral cube applied in Prince Edward Island



This research set out to discover if CSRAs had been made in line with the broad determinants of health and if the mechanisms put in place to assist this process, particularly block funding and regional governance, had been successfully applied. To these ends, 58 interviews with key informants holding different positions in all five health regions and the Department of Health and Social Services and in various sectors were carried out during the winter of 1998–1999. The interviews were taped and transcribed for analysis and interpretation. In spring 1999, a focus group reported back on the preliminary findings. This provided a useful data collection tool as well as an opportunity to confirm researchers' interpretations. A dissemination meeting held in winter 2000 served similar purposes.

The key informants identified 74 CSRAs, two thirds of which had involved staff, space, equipment and information. Twenty-five had involved financial transfers, mainly within sectors. Some of the financial transfers reallocated money from community programmes to hospital care. In fact, most respondents believed that the acute sector had gained most in recent years in PEI both through CSRAs and increases provided through the provincial budget. While most CSRAs occurred within the broadly defined human services system, some involved partnerships and resource-sharing with other sectors, particularly education.

Of the instruments put in place to assist moves towards the broad determinants of health, regional governance was seen primarily as a facilitator. It helped ensure intraregional integration and coordination and could provide local, accountable services to the regional community. It had, however, appeared to lessen interregional cooperation and made such programmes more difficult to fund and put into

operation. Many respondents felt that regional governance required the presence of a strong standard-setting central authority to ensure equity of provision between regions. Block funding was viewed less positively. Some saw it as facilitating CSRAs through providing one budget for a range of services whereas others saw some of its features – no carry-over, programme surpluses going to pay down programme deficits in the same health regions, and line-by-line accounting and accountability – as detrimental to population health resource shifts.

Three times as many barriers as facilitators were mentioned by the key informants. Among the facilitating mechanisms was the development or emergence of an organizational culture supportive of population health. Important features of this culture included committed leadership, big picture thinking, and motivated and enthusiastic staff who were willing to work together to integrate services for clients. In fact, greater integration was seen as one of the most positive outcomes of the changes in the human services system. The barriers were seen to be structural in nature, involving the political nature of health care, public perceptions and preferences, union agreements, opposition from physicians and level of funding. In fact, the nature and context of funding were seen as vital by most informants and they frame many of the implications identified in this report. Budgetary practice and culture shape what can be achieved: if there is no budget line, there is no activity. For those wishing to advocate, nurture and implement CSRAs in line with the broad determinants of health, recognition of the limits of what is possible (and how the CSRAs may be increased in scope) is an important policy implication.

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2.4 Individuals, groups and health capital

2.4.1 Economic and social determinants of health

Béatrice Majnoni d'Intignano[8]

Key messages

- Industrially-induced epidemics play a key role in health status and health capital in modern societies, either developed or not.
- These industrially-induced epidemics are the consequences of the marketing activities and strategies of certain industries in terms of the morbidity, mortality and disability of the targeted groups.
- There is an apparent health divide in the population between the two groups of educated and non-educated people.
- Valuation of their own health and attitudes towards professional health services are very different in these two groups, with consequences for their health behaviour, including their use of health care.

Tutors' notes

Students could discuss the key messages with the following two questions and the four exercises set out at the end of the module.

First, explore the concept of industrially induced epidemics in your country or environment. Which industries are involved? Are they national, foreign or international businesses? Which are more dangerous for young people/for men/for women? Are women less sensitive to the efforts of these businesses to promote risky products or services? Are the messages which are being promoted different according to sex? How can the companies' behaviour be regulated? Think of tobacco abuse. Should tobacco be banned? Should the price of tobacco be increased? What is the price elasticity of the demand for tobacco according to age and socioeconomic status in your country?[9] Are there ways in which "disinvestments" in health are systematically related to industrial epidemics?

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[8] This module was prepared by Professor Béatrice Majnoni d'Intignano, University of Paris XII, France (e-mail: bmajnoni@wanadoo.fr).

[9] Price elasticity is a measurement of the degree to which the demand for a product will respond to changes in price. If a product is price-inelastic then the demand does not change so much with the price (e.g. bread). The demand for a product that is price-elastic changes substantially even with small changes in price (e.g. a particular brand of washing powder).

Secondly, explore the differences in behaviour towards health in your society between those with poorer health status and those with better health status. Are these differences linked to salaries, to information, to education or to something else? Should those making less rational use of information and the available health services be seen as victims or as culpable of wilful self-neglect?

The module is appropriate to several different groups:

- the general public;
- health care professionals (doctors, nurses, etc.);
- civil servants in health or social care ministries and in local government;
- representatives of nongovernmental organizations and other grass roots, voluntary and community groups;
- elected politicians.

Introduction

On what does the health of a nation, a group or an individual depend? What makes the difference? Where are changes occurring? The main factors are changing, as are the reactions of modern populations to those factors. The first part of this module analyses the concept of health capital and its main socioeconomic determinants. Health determinants include biological as well as economic, social and behavioural factors, and the concept of industrially-induced epidemics. The first part of the module includes the distinction between individual and collective aspects of health capital and contains an application of this approach to the United States.

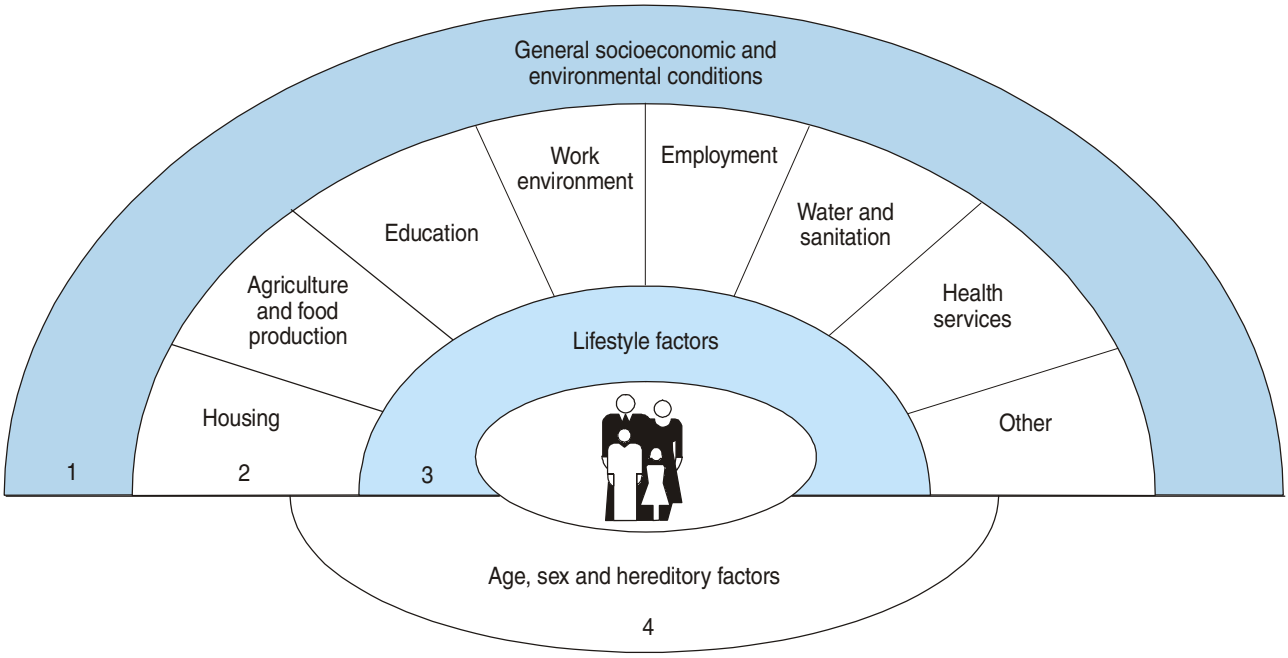
The second part of the module explains why modern societies are more and more divided into two groups regarding human capital, and wonders whether inequalities are likely to increase or decrease in the future. It is important to be aware that social stability in a society is affected by the general level of health which, in turn, is due to many different factors, including education and income. Finally some advice is proffered on policy to regulate or curb industries which are responsible for induced epidemics.

The socioeconomic determinants of health capital

The concept of health capital is derived from Becker's concept of human capital, introducing qualitative aspects into the economic concept of labour *(1)*. Human capital depends both on professional skills and on health status. The idea was developed by Grossman in the 1970s *(2,3)*, and presented both as an individual and as a collective investment, because health brings output benefits and utility benefits to human beings and their societies perhaps to a greater extent than any other goods or services currently consumed. Investment in the human being and overall society is the input to health capital and the output is consumption.

HEALTH21 *(4)* states the various determinants of health and how they interact (Fig. 1). Differentials in income and in access to education and employment are closely linked to differences in health and the quality of life between countries and between socioeconomic groups. Socioeconomic circumstances alone do not determine health. A person's state of health depends on the interplay between health determinants, life events and individual choices. Being poor means that people are at a disadvantage when it comes to making choices and coping with stressful events.

Fig. 1. Main determinants of health



Health is highly sensitive to socioeconomic circumstances, even in the most affluent societies, and therefore to socioeconomic policy and action. The main determining factors include income, education and employment. Multisectoral action is required to create sustainable health and development, by encouraging all sectors to identify and achieve mutual gains in terms of health and economic development. Such action should make it easier for people to make healthy choices, and empower individuals, local communities, and private and voluntary organizations to facilitate health gains in different settings, including homes, workplaces, schools and cities.

HEALTH21 proposes certain strategies:

- policies to ensure more equitable distribution of income and wealth (such as progressive tax systems), social security benefits for specific age groups or low-income families – all important elements;
- a guarantee of free health care and education, as well as subsidies for housing;
- nurturing of parental interest in and enthusiasm for education;
- allocation of economic resources to educational programmes according to clients' needs and the requirement of social equity;
- setting higher educational standards and ensuring smaller class sizes;
- promotion of training and employment, especially of those who have experienced less favourable conditions in early life;
- flexible arrangements for sharing work;
- alternative forms of social and community work, to avoid long-term structural unemployment;

- adjustment of labour market policies to diminish the risk of discrimination on the basis of gender, age or ethnicity.

Individual aspects

To focus particular attention on the quality of the health outcome produced by health programmes it is valuable to do the evaluation by a cost–utility analysis. This measurement counts utility in terms of healthy years or quality-adjusted life-years (QALYs). Any human being is born with an individual stock of health capital and at any year of life, health status can be measured by a quality of life weight- or index-rated from 0 (death) to 1 (perfect health). The advantage of the QALY as a measure of health outcome is that it can simultaneously capture gains from reduced morbidity (quality gains) and reduced mortality (quantity gains), and combine these into a single measure.

Health can be measured either on the operational level, by demographic indicators such as life expectancy, or by negative indicators such as infant mortality, disability rates, specific standardized mortality rates (from cancer, heart diseases, accidents, etc.) and avoidable death rates (from childbirth or from asthma, etc. which could be avoided with proper prevention or health care intervention). These indicators can be objectively measured. Other indicators are more subjective, such as self-perception by the individual of his or her own health, stress or anxiety. When gender is taken into account, differing pictures can emerge from the various indicators. For example, if health is measured through physical and objective morbidity or mortality rates, women appear to enjoy much better health than men. They live longer (6 to 8 years in France, a bit less in other countries), and they suffer less from cardiovascular diseases and cancer (except specific feminine cancers). If, on the other hand, social and physical self-perceived indicators are taken into account, such as stress and depression, contrary results are often observed. Women say that they suffer more than men. Many studies recording self-perception of health reveal apparently poorer health among women than men.

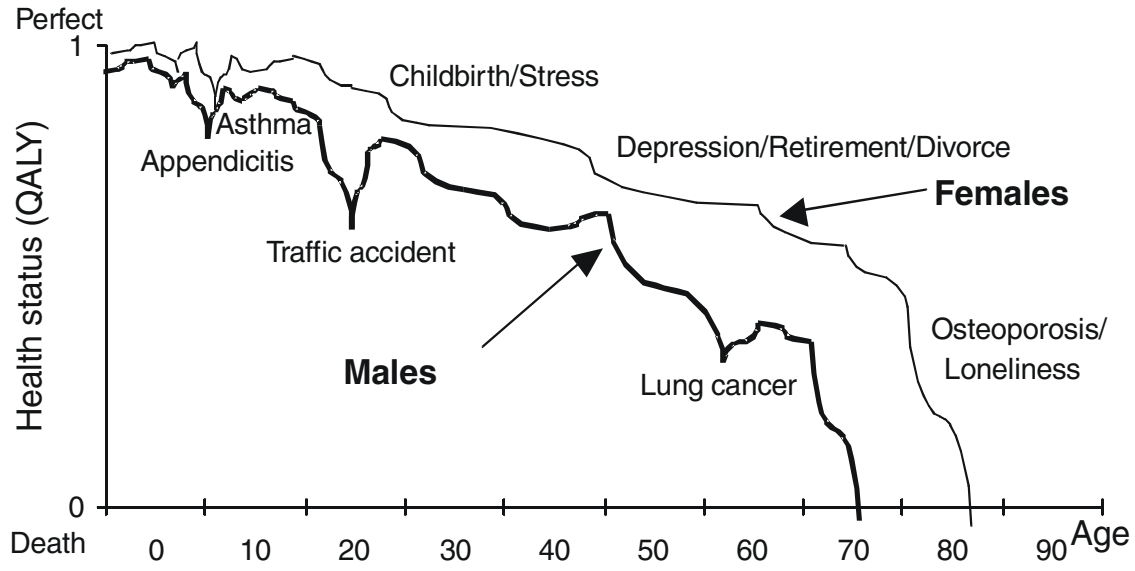
Life contains a series of critical transitions, which are marked by particular life events *(4,6)*. Adopting a life course approach to developing policies for health recognizes the complex interactions between such life events, biological risks and health determinants. Health can decline (or improve) at any point during a person's life through chance, circumstances and choice. A life course approach tends to ensure better health outcomes for the entire population in the medium and longer terms. At each transition point throughout life, supportive action at both the macro and micro levels can enhance health and wellbeing. For example, since parental poverty and ignorance can start a chain of social risk that damages health over the entire life course, investing in the socioeconomic wellbeing of parents and families is crucial to the promotion of health and development.

Fig. 2 shows how, at any age, individual health capital is influenced by several factors.

General socioeconomic and environmental conditions

Since the nineteenth century, increasing living standards have had a determining influence on health status and the increase in life expectancy, especially on the main illnesses that used to kill the young, such as tuberculosis *(7)*. Nowadays, the influence of wealth on health can still be seen by comparing life expectancy in western and eastern Europe. In the Russian Federation, as an example, life expectancy has decreased since 1990 from 70 to 65 years for men, partly due to increasing poverty. According to the United Nations report on human development in 1997 *(8)*, poverty rates increased from 4% to 40%

Fig. 2. The individual's health capital



Source: Majnoni d'Intignano, *(6).*

of the Russian population. Another example concerns the differences in diet between Nordic and Mediterranean populations, which have a major influence on cardiovascular diseases.

Housing, education, health services, etc.

The effectiveness of the health care services and the overall health care system, specifically curative medicine, exerts an important influence on individual health capital. Other important factors include public health policies and collective illness prevention, and the priority given to information, disease prevention and research. Individual health capital can be affected, either positively or negatively, by services in sectors other than health, e.g. in education, housing, income support and public order.

Lifestyle factors and gender

Industrially-induced epidemics, including those arising from tobacco, speed, noise, alcohol, drugs and arms, and excess weight, explain much of the excess mortality of men as compared to women and among poorly educated people. They also (partly) explain the decrease in life expectancy for men in the newly independent states caused by accidents, violence and suicide. Such epidemics are the consequences of the marketing activities of certain industries in terms of the morbidity and mortality of the target groups. These industries take advantage of risk-taking people. Again, gender makes a major difference regarding life expectancy and health status because of attitudes towards risks (Table 1). The gender difference appears to be reduced in highly educated populations such as teachers.

Table 1. Probability of dying at the age of 35–60 years, France (%)

	Men	Women
Unskilled workers	28.0	7.5
Industrial workers	21.0	7.5
Employees	18.0	6.0
Teachers	7.5	5.0

Source: Institut National de la Santé et de la Recherche Médicale *(9)*.

Taking risks is still in modern societies often regarded as typically masculine behaviour. The promotion of products such as cars and motorcycles, tobacco and arms encourages such behaviour. This phenomenon is universal, observable in the United States, in Europe and in developing countries. Differences towards risk, arms abuse and drug consumption are apparent among ethnic minorities and the well-to-do population in the United States (and appear in death rates by cause). The promotional efforts of the tobacco industry are especially important in the countries of central and eastern Europe.

The lung cancer epidemic began in the 1950s among men and reached a climax around 1965 in the United Kingdom and around 1990 in the United States. It began later among women and is still increasing, whereas it is stabilizing or decreasing among men in most countries.

There are two periods in life when men suffer from an excess mortality rate compared to women. In France, at the age of 20 years, men have a mortality rate that is 3.5 times higher than women. This is due to accidents, drugs, violence and taking risks, which have an immediate effect on their lives. The second period is around 60 years old, when the mortality rate of men is 2.5 times higher than that of women, due to factors such as tobacco-dependent cancers and alcoholic liver cirrhosis. These are illnesses that kill about thirty years after the risky behaviour was adopted.

Age, sex and heredity factors

Some people suffer from genetic illness and some have specific risk factors, so that their probability of suffering from, say, diabetes or colon cancer is higher than for people who do not suffer from these disadvantages. Health also declines with age, but differently for men and women.

Fig. 2 illustrates the changing pattern of health capital for individuals, by gender, over the life cycle, when the health capital of the individual depends on five factors:

1. genetic endowments
2. life risks
3. the environment and the industrial epidemics to which the individual is exposed
4. the behaviour of the individual and the social group to which he or she belongs, and
5. the health care system, including prevention and health promotion.

The man and the woman start life with a higher or lower genetic endowment (1), which can be favourably affected by preventive health measures (5) and health education (including dental care and diet). Young children of both sexes are affected by appendicitis (2), are treated by the health care system (5), and suffer from diseases resulting from pollution (3). The boy suffers from an accident (3), which results in significant disabilities for all his life. The young woman has three children (1), which disadvantages her in her professional career and results in depression, causing a deterioration in her

health (1) and (4). The man is a smoker, which causes lung cancer (3) and after 65 years of age a further sharp fall in his health status (5). He dies of the disease at 75 years. The woman lives for another nine years but suffers from osteoporosis in her later years and depression brought on by her isolation. Her health capital declines very sharply after 80 years of age. During his or her life, either the man or the woman causes a traffic accident (3), which does not appear on their own body but results in someone else becoming handicapped for life. The influence of particular health care services and the overall health care system is only responsible for about 20–30% of the individual's health status *(7)*. The rest is determined by all the other factors which have just been examined.

Grossman *(2,3)* has presented improving individual health capital as an investment. People invest in better health so as to improve their working capacity and their future income. Other authors present it as a pure consumption of wellbeing, comparable to consumption of any other goods and services. Different lifestyles and attitudes towards health influence greatly the health status outcomes for individuals and social groups, as illustrated in Table 1; this shows the different probabilities of dying between 35 and 60 years in France according to socioeconomic status and gender, under the same health care system. The worse-off suffer mainly from more digestive, cardiovascular and cancer injuries and fewer preventive activities, and only partly from more work accidents.

Collective aspects

Many societies take into account their health capital and treat is as a collective investment. Bismarck tried to avoid social revolution when he introduced a new type of professional health insurance during the 1880s. Lloyd George thought of strengthening the work force of British industry and the capacity of the Empire's army when he did the same in the years after 1910.

Nowadays, in developing countries, according to the World Bank, improvements or deterioration in health (particularly women's health) is a major determinant of human capital, specifically that of children. A striking example is the damage from AIDS in Africa *(6)*.

In old industrialized countries, as in Europe, with high unemployment and little progress in the health capital of the young, health capital is mainly improving among the retired. It may then be considered more as a cost and as a pure consumption of wellbeing rather than as an investment in the productivity of the nation.

The value of young people both to their families and to society, in terms of the investment made in their education and health and their future wealth-creating power, explains why some countries are trying to prevent or to stop industrially-induced epidemics, for example, in Scandinavia. These are spreading fast in the countries of central and eastern Europe, where tobacco, speed, violence, drugs and noise are destroying part of the human capital.

Where are the gains for American health capital?

Cutler & Richardson *(10)* have evaluated the change in health capital of the American population between 1970 and 1990. They add the life expectancy of the population, weighted by a QALY index, taking into account the prevalence of the most important causes of illness and a QALY weight for each disease.

As an example, they take into account decreasing illnesses such as vision problems, and increasing illnesses such as cardiovascular diseases, cancer, diabetes and orthopaedics. They also take into account

the improvement of health status in the case of vision, and cardiovascular diseases or orthopaedic disabilities, and the stability of the quality of life in the case of cancer or diabetes. Table 2 illustrates some of these data.

Table 2. Disease incidence and quality of life in the United States

	Prevalence		QALY	
	1970	1990	1970	1990
Vision	48	30	0.84	0.93
Cancer	11	19	0.70	0.70
Cardiovascular diseases	65	99	0.57	0.71
Diabetes	46	54	0.65	0.66
Orthopaedic conditions	102	135	0.70	0.88

Source: Cutler & Richardson (1998) *(10)*.

The results are interesting. The authors show that not only did the health capital of the American population increase during the period, mainly for elderly people (+65 years), but it increased more than the costs of the health care system. Between 1970 and 1980 it was increasing for the black population faster than for the rest of the population but has been decreasing relatively since. Finally, the health capital of women was much higher than for men.

Different attitudes towards health

Two groups can be distinguished in the populations of countries with liberal and capitalist economies, according to level of education. There is a strong social class gradient in educational qualifications. Children who have completed pre-university education or higher technical training or above have much better chances in terms of their health, as well as in occupation and income. Furthermore, education is a very strong predictor of making healthy choices. Higher and other forms of education foster innovation, which in turn sustains economic development. This section draws on research from the Institut National de la Statistique et des Etudes Economiques (INSEE) and the Institut National de la Santé et de la Recherche Médicale (INSERM) summarized in Majnoni *(6)*.

People in the first group (the integrated group) accept the democratic and individualist values of modern societies. They are on the whole educated people, of the younger generations, families with two working parents, or women. They have a positive attitude towards health capital and a voluntary and strategic behaviour pattern in their lives. They try to improve their health capital, or at least to protect it, through avoiding risks (women driving slowly, for example) or practising prevention (teeth brushing, cancer detection, sport). Their demand for health is shaped by their life-cycle, first of all to reproduction, i.e. birth control, safe delivery, child screening, therapeutic abortion and genetic medicine. Then there are demands linked to adult wellbeing, such as stress control and improvements in their working capacity. Finally, there are demands linked to ageing and dying, such as prevention of dependency and suffering, final care at home, and sometimes a conscious choice between a longer life or a better life.

Information and their own decisions influence the demands of this group on the health care system. More and more there is a demand for ambulatory care, or day care in hospitals, partly because of their more and more qualified familial environment. These people will benefit in the future from radical changes in medical technologies which will be increasingly oriented towards prevention, genetic

medicine and changes in individual behaviour (e.g. nutrition, sport, stress management, risk avoidance). They are willing to pay for more information and prevention and for better health care services. A sort of health consumerism is arising, sometimes even medical tourism (to Switzerland or to the French seaside for thalasso-therapy, for example). These people increasingly get their information from the media and the internet. Their consumption of pharmaceuticals is increasing.

The second group consists of poorly educated people, young males, single mothers and their children or broken families (probably about 10–20% of the population). They often have a fatalist attitude regarding health and relatively little perception of the importance of health capital. Sometimes they even have a destructive attitude towards life and their own life expectancy, as when they behave as risk lovers: driving too fast, abusing drugs, alcohol and tobacco, and using arms, for example. More and more families in this group consist of unemployed people who are supported by the welfare state, so they do not perceive any link between their health status and their future income. They are the main sufferers from industrially-induced epidemics, particularly young men aged around 20 years, who die from homicide among gangs, and men around 60 years, who die from lung cancer or liver cirrhosis. A dramatic example is the difference in life expectancy between black and white males in the United States (6 years). The demand for health care facilities from this group is for emergency services, hospital treatment or treatment for catastrophes such as war.

The differences in health service consumption between these groups is well documented *(6)*. The first group asks for more prevention, dental care, specialized medicine and outpatient hospital care; and highly specialized hospital care in the case of severe disease. The second group asks for more general practitioner care, hospital care for any disease or emergency care in case of accident.

Undesired pregnancies are more frequent among poorly educated young women than among middle-class and well educated girls. It often leads to dependence on the welfare state and to the poverty trap, i.e. future poor health status for the woman as well as for her child.

The divergence between the two groups seems to be universal. It is specifically noticed between men and women in the United States and France, but also in the rest of Europe. Either in liberal and regulated capitalist societies such as the United States or those of western Europe, or in transition economies such as the countries of central and eastern Europe, society is increasingly divided into such two groups mainly defined as (i) an educated, qualified and working population, or (ii) an uneducated, poorly qualified and unemployed population. The differences between the two groups are increasing with technical progress, competition and the internationalization of production and trade. Consequently, inequalities are likely to increase. There is a risk of segregation in the response of the health care system to the demands of these groups. One solution to the problem of the failure of poorer people to invest in their own health or that of their families is to give them a realistic and positive future. People who do not see a future for themselves will not invest in it (and the other way around). To reach these people the strategy should be to give them suitable information about the health system and their rights to use it. Everybody should have the possibility, and be provided with the capacity, to gain access to the health care system and to use what it can offer, and to look forward to good health.

This is consistent with target 2 of Health21 *(4)* which is concerned with equity in health. It states that "By the year 2020, the health gap between socioeconomic groups within countries should be reduced by at least one fourth in all member states, by substantially improving the level of health of disadvantaged groups."

Exercise 1

Which factors have changed between the nineteenth century and the end of the twentieth? In your opinion, which factors will dominate the twenty-first century?

Exercise 2

How would you build a QALY index? Would you ask physicians to provide the data? Patients? Do you think the result would be the same? What factors would you take into account: lifestyle, working capacity, family life, suffering, the risk of dying, or others? How would you weight and aggregate them?

Exercise 3

In your country, do you consider improving the health status of young people and of the working-age population as a productive investment that could improve the global productivity of the economy, or as an individual concern? Give examples. Is your answer linked to unemployment?

Exercise 4

Suppose your country is poor or the health services are constrained by cash limits. This means that the amount of money available for costly surgery is strongly limited and there are waiting lists. Should surgeons consider tobacco and alcohol abusers as culpable or victims? Who should be first on the list for treatment? Are the poorer alcoholics or smokers victims of their social condition or responsible for self-neglect? Should they be first on the list, or last? Should the physicians ask them to promise to stop smoking or drinking in excess after the operation? How would you solve this moral conflict yourself if you had to decide and control the physicians' choice?

What kind of resources or action could solve the dualism of modern populations? Better information? Price policies which increase the price of tobacco and alcohol? Policies which ban smoking or drinking among the young population?

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2.4.2 Individual behaviour and public policy

Björn Lindgren[9]

Key messages

- Although health is determined by many factors beyond the control of the individual – heredity, environmental factors and chance – a person can still influence his or her state of health to a considerable degree.
- Thus, individual behaviour is one of the determinants of the incidence and prevalence of disease and the costs of ill health.
- Economic analysis can be used to understand individual health behaviour and differences in health among people.
- Many agents, besides the individual, have incentives for investing in the health status of an individual – family, neighbours, friends, schoolmates, employers, local organizations, the health care sector and society at large – but their extent, ways, possibilities and impact are different.
- Public policy measures can improve health either (i) directly through improvements in the environment, or (ii) indirectly through changes in the regulation and incentive structures that influence individual health behaviour.
- Population health depends both on the health of individuals and its distribution.

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- The extent to which a society relies on individual or collective approaches to the "production" of health and the emphasis it puts on individual health or the distribution of health depend on historical circumstances and values, economic and social development, and the distribution of income, wealth and other life chances.

Tutors' notes

A wide range of groups within the health system would benefit from understanding more about individual behaviour and health, the impact on individual health of family and society at large, and policy options for increasing population health – an objective which includes improving both individual health and its distribution among the population generally.

This module may be of particular interest to those involved in designing direct regulations and financial incentives to encourage healthy lifestyles and promote healthy environments, including:

- health (and health care) policy-makers
- civil servants and other governmental technical staff
- public health officers
- health service managers
- health care practitioners
- consumers.

The module contains boxes illustrating the issues presented in the text, several questions for discussion in a country-specific context and an exercise designed to illuminate possible contradictions and the conflicts of interest between different agents in society when it comes to solving a particular health problem.

Introduction

The consequences of good health for the national economy have been recognized by economists for a long time. The American economist Irving Fisher was one such: in 1906 he wrote:

> *The true "wealth of nations" is the health of its individuals. A nation consisting of weak, sickly, and short-lived individuals is poor compared with a nation whose inhabitants are of the opposite type. (1)*

The objective of cost-of-illness studies has been to quantify these economic consequences, or rather the consequences for the national economy of ill health. Economists may still be occupied with such issues, but the main interest of modern health economics is with the individual's health as such, with its determining factors, with the distribution of health among individuals, and to what extent health can be affected by public policy measures. This is the topic to be analysed in this module.

For a long time good health was considered to be a gift of God and ill health to be God's punishment or just bad luck. Modern medicine has taught us, however, that good health may often be restored if the appropriate measures are taken. Modern genetic research proves more and more the importance of hereditary factors. Epidemiologists have identified risk factors in the environment which may damage the health of the individual. Public health scientists emphasize the importance of the individual lifestyle. So, nowadays health and its determining factors are regarded as a rather complex phenomenon. Chance, bad luck or uncertainty is still there though.

Box 1. The opportunity cost of illness to society

There is an opportunity cost to society due to the existence of diseases and injuries: the *opportunity cost of illness*. Table 1 shows some estimates for Sweden. Conceptually, the opportunity cost of illness can be considered as consisting of two separate parts:

- *direct costs*, which reflect the value of the resources shifted from other sectors of the economy into the health care sector due to the presence of illness, thus representing the sacrifice of other goods and services required in order to obtain health care;
- in addition, if there were no diseases or injuries, more could be produced of every good or service; the *indirect costs* of ill health reflect the value of those goods and services that could have been produced if people had not fallen ill, and thus they represent the loss of potential productivity, an opportunity gone forever.

There are, of course, welfare losses, besides the loss of desirable goods and services. Such negative effects as pain, suffering, insecurity and grief associated with illness are sometimes called *intangible costs*. Since there is no realistic possibility of estimating the size of the total intangible costs, there has been no attempt so far to do so.

Table 1. Cost of illness in Sweden, 1991. The six most costly disease categories. Lost future earnings discounted at 5%.

	Swedish kroner (billion)	Percentage of total
Diseases of the musculoskeletal system	60.9	23
Mental disorders	41.0	15
Diseases of the circulatory system	32.5	12
Diseases of the respiratory system	22.1	8
Accidents, poisonings, and violence	21.3	8
Neoplasms	16.0	6
All diseases	269.8	100

Source: Lindgren *(2)*.

Health economists are very interested in the role of the individual as a key decision-maker. There are several good reasons for adopting this approach when it comes to health. Even though other family members, friends, neighbours, and fellow citizens may care for an individual, at the same time both feeling some responsibility for that person's health and enjoying his or her good health, it is undoubtedly the individual himself or herself who primarily benefits from his or her own good health. It is also the individual who has the primary responsibility for his or her own health, who is the ultimate "producer" of his or her own health. Certainly – as emphasized above – much of the recovery and healing from an illness can be attributed to the physician and to the use of various health care resources, but without the cooperation of the individual mentally and physically, the healing process will slow down or even fail. The notion of "producer of health" does not, however, mean that the individual (with or without the help of a doctor) determines his or her state of health – heredity, environment and chance are three factors which may interfere – but rather that the individual can and does influence it quite substantially.

This module consists of four parts:

1. the individual as producer of health
2. individual, health and family
3. individual and health in a wider social context
4. individual health, public policy and population health.

The individual as producer of health

As Irving Fisher emphasized, health is a form of capital. Health and education are the two types of human capital in which the individual can invest. Wealth is a third type of capital, but one which can be physically distinguished from its owner. As a consumption good, good health is desired because it makes people feel better. As an investment good, good health is also desired because it increases the number of healthy days available to work. As such, good health increases the possibilities to earn income. A fourth type of capital has been introduced recently as a new analytical concept: social capital, in which the individual can invest (social interactions, social network, etc) or society (policies and institutions which improve social cohesion). Social capital can be demanded both for its own sake and for its positive effects on health (see Box 1). At an aggregate level, investments in all four types of capital are preconditions for economic growth, which in turn is a prerequisite for improvements in the health and welfare of the population.

Individual health is produced by choosing a particular lifestyle, making better or worse health states more or less probable, and by using medical advice, pharmaceuticals, hospital treatment, etc. in order to restore good health. How well this transformation of health inputs into health outcomes goes depends on (i) the present state of *health technology* and (ii) the individual's knowledge of how to use the technologies available. However, even if the individual had the best knowledge in the world about health technologies, he or she would not necessarily choose the one which maximizes his or her own health. Why?

One reason is that there are various constraints which the individual faces, including time, money, prices and government regulation. No man or woman will have more or less than 24 hours a day as long as they live; thus, in a way, *time* is one of the more equally distributed assets there is. But time could be used for so many interesting and pleasant activities other than those related to health. *Money*, i.e. income and assets, certainly tends to be more unequally distributed than time, but even a millionaire in money terms will notice that there is an upper limit to what it is possible to do with his or her money. *Prices* introduce a barrier, almost no matter how low they are, and *regulation* imposes constraints. Individuals are often not allowed to buy pharmaceuticals in a pharmacy, for instance, unless they have got a doctor's prescription. There may also be restrictions on where pharmaceuticals are supposed to be sold. The finance and delivery of health care is heavily regulated in more or less all countries.

So the individual has to choose what to do and how to spend his or her money during his or her lifetime. This individual decision-making process can formally be thought of as an optimization problem, in which the individual's objective is to maximize his or her *preferences* while taking all the previously mentioned constraints into account. The solution to this optimization problem determines a lifetime plan of how time and money will be used and distributed among various activities and periods of time. The economist takes for granted that the individual knows best about his or her own preferences – that is a cornerstone of economic theory. Economists also claim that preferences are stable.

But individual preferences differ. We have all heard about the advantages of not smoking, of getting regular exercise, and of avoiding all kinds of risky activities. Some people take more notice of this advice than others, not because of ignorance or inability to pay but (i) because of differences in their willingness to trade off health risks for the various pleasures and conveniences of daily life, and (ii) because of differences in their willingness to make sacrifices in order to reduce the probability that they might later regret not having acted in a certain way. This means that individuals can choose quite differently despite the fact that they may meet exactly the same constraints, and that maximizing individual preferences is not at all the same as maximizing individual health.

However, even if individual preferences really are stable, individual behaviour can be affected in various ways by changing the constraints that individuals face. For example, the price of health services can be more or less subsidized; risky consumption can be more heavily taxed; or the borderline between prescription and over-the-counter drugs can be changed. If one of these constraints is changed, then the old plan may no longer be optimal for the individual. If so, his or her whole planned lifetime pattern of activities will change as a result. Moreover, since the only constraint which is the same for everyone in every all country is the number of hours in the day, whereas incomes, prices and regulations differ, individuals will have quite different optimization problems – and solutions – depending on the country in which they live.

Age and investments in health

In biological terms, ageing occurs as a consequence of cells slowing down their replication rate. The function of the bodily system deteriorates. The physiological changes also have negative effects on the function of the brain. To the economist, ageing can be interpreted as depreciation of the individual's health capital. The rate at which an individual's health stock depreciates generally varies over his or her life-cycle. It may decline during some (early) periods of life, but eventually, as the individual ages, the depreciation rate increases. Thus, the health capital of older people is likely to deteriorate faster than the health capital of younger people, at least after some years. This depreciation in health capital can be totally or partly offset by gross investments in health. The higher the depreciation rate, however, the larger the costs of health investments. This means that the optimal health capital is greater for an individual younger person than an older one. Thus, an individual will generally increase his or her gross investment in health as he or she ages, while at the same time his or her health capital declines. As the health capital declines, eventually the costs will be prohibitively high for a health investment to prevent his or her death. In this sense the individual chooses not only his or her health status while alive, but also the expected time of death.

Income and investments in health

Income (or wealth) is highly interrelated with health. Good health improves productive capacity, and wealth makes it possible to invest in health. So, there is a strong correlation between the two, but the direction of causation seems to be two-way. At the national level, wealthier countries (in terms of GDP per capita, for instance) are usually also healthier (e.g. in terms of life expectancy). At the individual level, poverty is the largest single determinant of ill health. Living in poverty is correlated with higher rates of substance use, depression, suicide and violence. An increase in the wage rate increases the benefits from health (in terms of increased consumption possibilities of all kinds) and implies, *ceteris paribus*, a higher optimal level of health stock and larger health investments.

Education and investments in health

People with more education are significantly healthier than those with less. This observation can be explained both from the supply side and from the demand side. On the one hand, education is one factor making people more efficient in "producing" their own health. The more educated people generally know more about health, health risks, healthy lifestyles and the potential effects of medicines. This lowers the cost of investment in health and the optimal level of health capital will be higher, other things being equal, for educated people. Educated people may also enjoy eating nutritious food or doing physical exercise; they may enjoy a glass of wine instead of half a bottle of vodka a day; they may enjoy feeling and looking good. This raises the benefits of investment in health, so that the optimal level of health capital will also be higher for educated people from this point of view. Empirically, the demand effect would, of course, be difficult to distinguish from the supply effect.

Uncertainty, risk aversion and investments in health

Uncertainty does abound in health. An individual may face three types of uncertainty in health. First, there is uncertainty as to the current size of their health capital. Second, there is uncertainty about the rate of depreciation of their health capital. Third, there is uncertainty about the effects of the various inputs in the health production function on the health capital. In an uncertain world, risk-averse individuals make larger investments in health and have greater expected health stocks than they would in a perfectly certain world. The first type of uncertainty induces a demand for information. To some degree uncertainty may be reduced by check-ups by a doctor, but no diagnostic tests are perfect and the doctor may sometimes be just as uncertain as the individual about the latter's health status. Uncertainty, especially of the second type, also induces a demand for health insurance. Since there is uncertainty about the effects on health capital of various measures intended to improve health (the third type of uncertainty), the individual should diversify his or her health investment activities. For example, physical activity may not be the only way an individual needs to try to maximize his or her health; it could be better to reduce those activities and at the same time stop smoking, reduce drinking and reduce the intake of fats.

However, people do have different attitudes to uncertainty. Some like to take risks, some do not and others are neutral. Most people seem to prefer not to take risks, but the degree of risk-aversion varies both between people and over the lifetime of a person. The stronger an individual's aversion to risk, the less will he or she take part in activities which may damage his or her health. It should be noticed that it is the individual's own subjective risk or uncertainty which matters. Perceptions about risks may, of course, be correct, even if they differ from objective risks which are calculated for a larger, heterogeneous group. More information about objective risks may change behaviour. Thus, an individual perceiving that he or she has underestimated his or her own risk will reduce the level of risky activity. Conversely, an individual perceiving that he or she has overestimated the risk will tend to increase the level of risky activity.

Time preferences and investments in health

Most people have a positive rate of time preference, i.e. a preference for receiving benefits today rather than in the future and for incurring costs in the future rather than today. There are a number of reasons why this is so. The individual may have a very short-term view of life, living for today rather than caring about an uncertain future. Such a person may also think it unnecessary to care too much,

Box 2. Education and health

People with more education are significantly healthier than those with less. Why? Does increased education cause better health, or are health and education correlated for other reasons? The answer to this question has obvious policy implications.

On the one hand, education may increase the individual's efficiency in producing good health. Educated people have got the know-how needed to stay healthy, and they know better how to use various market inputs and their own time in order to produce good health. If this is true, it should also be expected that a father's or a mother's education would make them more efficient producers of good health in their children as well.

On the other hand, the correlation found between education and health may be related to a common factor, such as the individual's time preferences. Since the benefits of education lie in the future, individuals with low discount rates will be more likely to invest in education. Also health investments have distant payoffs, such as extended life years towards the end of the individual's life. So, individuals with low discount rates will invest more both in education and in health. It might also be the case that education changes people's time preferences with similar results.

Most empirical studies have used formal education (schooling) when investigating the relationship between education and health. There are studies supporting the hypothesis that schooling directly improves health status, but there is also conflicting evidence. Because of its important policy implications, this will certainly continue to be an area of extensive applied health economics research.

However, schooling in general may not *per se* raise the efficiency of health production, since it is often concentrated on issues other than personal health. A policy that emphasizes investment in education specifically devoted to health information – to health production technologies – may thus be relevant, regardless of the causal links between schooling in general and health.

Sources: Berger & Leigh *(3)*, Fuchs *(4)* and Grossman *(5)*.

because he or she will probably be wealthier by the time the future comes anyhow (as the long-term trend in economic growth indicates). Money will be worth more today than in the future for the individual. That most people actually have a positive rate of time preference is obvious, since it is possible to obtain a positive rate of interest on relatively risk-free investments. People also have different time preferences, however; some care more for the future than others – they have lower rates of time preference. This affects health investment decisions. The lower the rate of time preference, the less would it cost to invest in health and the larger would the individual's health capital be. Thus, differing time preferences may be a reason for differences in two persons' levels of health. If two people are equal in all characteristics but time preferences, the individual with the lower rate will have better (expected) health status. He or she will engage in health-promoting and preventive activities, avoid hazardous jobs and workplaces, look for safe housing areas, and consume little alcohol, tobacco, drugs and other goods and services which may damage his or her health in the future.

Questions for discussion

1. "Individual behaviour is one of the determinants of the incidence and prevalence of disease and the costs of ill health." Explain.
2. What are the main factors contributing to the health capital of an individual, and to what extent are these factors subject to control by the individual?
3. How do these factors vary among individuals and over time?
4. In what ways does an individual's health capital depreciate?

5. Even though older people make greater use of health care services, their stock of health capital decreases. Why?
6. "The individual chooses not only his or her health status while alive, but also the expected time of death." Discuss.
7. What is the effect of risk and uncertainty on individual investment in health, and to what extent are risk factors interrelated and cumulative?
8. What is the relationship between education and health, and to what extent may decisions to invest in education and health be interrelated and cumulative?
9. Which factors determine observed differences in health among individuals?
10. Will information about the health risks of smoking increase or decrease inequities in health?

The individual, health and family

Most people live in families. The health status of an individual during his or her lifetime is largely influenced by this fact. Family members typically care for other relatives' health: this may include devoting time and income to that person in order to make investments in his or her health. Thus, the time and money budget constraints are extended for people who live in families in comparison with those who live alone. Since uncertainty prevails in this area, the family may also be seen as a form of health insurance. Conflicts between parents, among children and between parent(s) and child(ren), on the other hand, as well as parent(s) favouring one child may in varying degrees be harmful, or at least not beneficial, to health.

The early years of life

The child typically grows up in a family, which may take various forms, of which two parents and siblings or just one parent are only examples. Within the family, factors and decisions determining the child's present and future health status are not influenced directly by the child. Family-related factors are vital for a healthy start in life for individuals. For instance, the better a mother's state of education, health and nutrition, and the higher her income or wealth, the greater is the chance of a successful pregnancy. Birth weight, which is an important indicator for the development of physical and psychological health during childhood and later in life, is related to family income, but also to the smoking behaviour of parents.

Childhood and adolescence are also mostly spent in families. Later, individuals start to live on their own, at least for some time, until they form new families. These are periods of intellectual and physical development in a person's life during which lifelong social and health skills are acquired. Young people make their own decisions about behaviour which directly or indirectly affects their health, but these decisions are influenced to a large extent by their families. Their psychological health is also closely linked to whether they have a caring and supportive family. Families with better education and higher incomes are often also better informed about both positive and harmful health behaviour and facts which influence present and future health behaviour. Family habits and attitudes are key to forming healthy (or, for that matter, unhealthy) lifestyles regarding, for instance, eating, physical activity, smoking, drinking and the taking of drugs by young people. Also, the material and cultural resources of a family have a major influence on a child's educational attainment. Children who attain higher levels of education have much better chances in health, as well as in occupation and income.

Adult life

The health status of an individual at the start of adult life is partly determined by health investment decisions taken or induced by his or her parents. Family background is also likely to have influenced his or her preferences for healthy or unhealthy life choices or for particular activities. The allocation of time and money for health investments within a family (with or without children) also affects adult people. Marriage means pooling resources and knowledge as well as specialization according to comparative advantages. This increases the consumption possibilities in comparison to living separately and improves the incentives for investing in health. Health will thus be better among married than unmarried persons. The distribution of health may not be equal, however, for a number of reasons.

The single most important reason for specialization is the presence of children. Typically, specialization means that the wife specializes in household activities and, hence, invests in household-related human capital, while the husband invests in market-related human capital. This increases the husband's wage-rate and, as a result, the family's interest in investing in his health. The wife's position in marriage and the incentives for investing in her health could be strengthened by increasing her external options. Overall, the incentives for investing in the health of the other spouse may not be strong enough to be efficient, since human capital cannot be part of what is divided in case of divorce or constitute grounds for alimony.

Divorce is detrimental to both children's and adults' health. However, the way in which divorced parents are treated by legislation will affect the distribution of health capital not only for divorced parents and their children but also within marriage. Thus, if regulation does not promote investment in the health of children living in separated families, this might lead to a situation in which the health of children that have not experienced divorce may also be reduced. Since divorce rates have risen in most countries during recent decades, it has become increasingly important – also for the sake of health – to analyse the institutions that regulate divorce.

Ageing

In later years, when children have left home, the family will again consist of just two people. In many cases this means growing old together, but with increasing divorce rates many old people will spend the rest of their lives alone. Eventually, even married elderly people will lose their life companion. Children and friends can partly compensate for the loss of support, but divorce and widowhood are important health risks. Other major threats to the health of older people are dementia, depression and suicide, cancer, cardiovascular diseases, osteoporosis, incontinence and injuries.

On the other hand, many older people remain active and fully independent until very close to the end of their lives. There are many opportunities for elderly people to stay active and interested in life. Education levels are gradually rising and there are new opportunities for older people to continue education. In Sweden and in several other countries, older people have established political pressure groups in order to voice their demands in relation to the development of social and health policies and services. Not enough is being done, however, to meet the changing needs and expectations of older people and to prepare for an increasingly ageing Europe.

Human capital for health, in terms of its consumption elements, is highly relevant for older people (in terms of social cohesion from the viewpoint of the overall society and in terms of personal consumption from the viewpoint of the individual). Human capital for health, in terms of its investment

elements, may appear to be less relevant, once older people have left paid employment. However, it may still retain some relevance, for example, in relation to voluntary or other contributions, and also since a social determination to deny much care to older people may provide incentives for them to act differently (perhaps less productively) earlier in their lives, for example, when they are still in employment or raising children.

Older people are a resource for their families and for society at large. They can make important contributions to the quality of life, health and wellbeing of the family. Their experience and accumulated wisdom are essential assets in child-rearing and for other adults in the family. The efficient use of this capital would benefit society as a whole long after regular employment has ceased.

Questions for discussion

1. What are the relationships between the health status of an individual and his or her family circumstances?
2. To what extent do they differ systematically by gender and age?
3. To what extent are the factors determining health within a family interrelated and cumulative?
4. To what extent are they under the control of the individual?

The individual and health in a wider social context

The individual is also part of a wider social context. He or she usually has relatives and friends and may meet and know many other people while taking part in various, more or less daily, activities. He or she may go to school, be a university student, be in paid employment, or be unemployed. The social networks and the relations to school and workplace are factors that directly or indirectly influence an individual's health status during his or her lifetime. So do the physical and social environments in which the person lives.

Social network

There is ample empirical evidence that belonging to a social network is beneficial to health. The existence of a network can be seen as an extension of the individual's resources and knowledge and may, hence, ease the tensions in critical periods of an individual's lifetime, such as leaving the parental home, job insecurity, onset of chronic illness, or loss of spouse and close friends. The social network can also exercise some regulation and control over individual health-related behaviour such as eating, drinking, smoking and exercise habits. (This kind of influence on individual behaviour towards what is the socially acceptable norm within the network does not necessarily have to be positive, of course. In some cases, it might be detrimental to health.)

To a large extent the health benefits of a network may come as an extra bonus for an individual who loves good company, enjoys taking part in sports or cultural activities, or is an active member of a religious organization. So investments in a social network may most often be made for other purposes than health. The investment is never without a cost, however. It takes time and sometimes money to engage in activities which involve meeting people, and it takes time and sometimes also money and

Box 3. Social capital and health

Social interaction – in various forms and degrees – is common for all economic agents. Social interaction is beneficial for at least two reasons. First, it contributes directly to the utility of those who participate in it.[4] Second, social interaction may improve the allocation of resources by improving information-sharing, coordination of activities and collective decision-making. Social capital consists of all the networks, norms, structures and institutions that facilitate social interaction in society.

There is ample empirical evidence that belonging to a social network is beneficial to health. The existence of a network can be seen as an extension of the individual's resources and knowledge and may, hence, ease the tensions in critical periods of an individual's life-time, such as leaving parental home, job insecurity, onset of chronic illness, or loss of spouse and close friends. The social network can also exercise some regulation and control over individual health-related behaviour.

Socially cohesive societies are those with well functioning institutions and developed civic communities. A lack of social cohesion shown, for instance, by indicators such as income inequality and unemployment, can have significant negative health consequences. It has been known for a long time that unemployment and health are negatively correlated. Moreover, in recent studies it has been suggested that not only absolute income levels, but also the relative distribution of income within a society, are important determinants of health. That inequality in itself is a health hazard has become known as the Wilkinson (1996) hypothesis *(6)*. So far, however, studies have shown conflicting empirical evidence of the Wilkinson hypothesis. Thus, this issue still has to be resolved by further research in the future.

Sources: Deaton *(7),* Grootaert *(8)*, Kahn et al *(9)*, Lavis & Stoddart *(10).*

emotions to keep this kind of capital intact. In order to get help from your network when you need it, you have to be prepared yourself to act towards the members of your network as you hope they will act towards you.

Differences in perceived benefits and costs may explain why people differ in the investments they make in social networks. For instance, a married woman is typically younger and faces a lower mortality risk than her husband. Thus, she has a higher expectation than her husband of being widowed, and she can also expect to remain a widow for longer. Her husband would typically have a shorter remaining life expectancy in the case of widowhood but also face greater prospects of remarriage. Thus, a woman has strong incentives to prepare herself for a single life as a widow and to allocate time and money to activities which, *inter alia*, involve investments in her social network. For a man, those incentives are much weaker, so he would typically invest less in keeping his social network capital intact and more in other goods and services that he prefers. He would, hence, typically benefit more than his wife from being married. On the other hand, he will also be less prepared for a single life as a widower. The impact on mortality of widowhood has been found to be significantly higher among widowers than among widows.

Workplace

Most adults of working age spend roughly one third of their day at work, and the workplace has an enormous impact on their health status. On the one hand, an unsafe and unhealthy working environment may, *inter alia*, involve exposure to accidents, noise and chemical hazards, ergonomic problems and stress. Furthermore, the psychosocial work environment may be related to other health conditions, such as heart disease and mental illness, which do not fall directly into the sphere of the workplace. On

the other hand, adults can be reached with health promotion activities, such as smoking control and exercise, at the workplace. It is also a site for building social networks.

Most employers have incentives for investing in the health of their employees (to varying degrees) reflecting the fact that financial losses will accrue to the employer when an employee gets ill. These losses will arise because it is impossible to foresee exactly when someone will fall ill, which implies that an employee can only be replaced at a cost. The cost of replacement, including the cost of training, is high in industries which employ highly qualified and specialized employees. It also varies with the business cycle: the lower the unemployment rate, the harder it will be to find replacement workers.

So, worksite health promotion may reduce health-related costs to the employer due to health insurance benefits, worker's compensation, disability, absenteeism and lower productivity. The extent to which an employer will have financial incentives for investing in the employees' health depends on the regulatory environment, which differs from one country to another. In Sweden, for instance, the law obliges employers to pay income compensation to employees during the first 14 days of their absenteeism, after which social insurance takes over the responsibility. There are proposals for extending the period during which the employer pays the compensation, thereby increasing the incentives for employers to invest in employees' health. No investments are without cost, of course, and the higher the risk that an employee will leave for another employer, the lower will the returns be on the health investment for the present employer.

Physical environment

The health of an individual depends on the availability and quality of food, water, air and shelter. Agricultural products are a prerequisite for health and wellbeing, but the development of bovine spongiform encephalopathy (BSE), for instance, has shown that food safety is also important for health. Microbial contamination of drinking-water causes outbreaks of acute gastrointestinal disease. Water may also be seriously contaminated by waste. In rural areas, the widespread use of pesticides and nitrates in agriculture has contaminated the groundwater. Water shortages are a major problem in some countries. Air pollution causes damage to lung function, respiratory illness and death from respiratory diseases. Allergies relating to air pollutants are also an important health problem. Homelessness and poor housing (lack of sanitation, damp, moulds, constructional deficiencies and unhealthy building materials) cause major health problems.

Cheap and extensive transport facilities mean opportunities for people to meet other people and experience other cultures, and for goods to be exported to satisfy the demands of people in other countries. They also mean fast transport to hospital in case of health emergencies. At the same time, transport may be a health problem. Carbon dioxide emissions are already a health problem, as are noise and congestion. Moreover, road traffic accidents cause a heavy burden of personal injuries.

To a large extent, the environmental effects on health are unavoidable for the individual, or at least only avoidable at a cost which is often rather high. Certainly, a person can move to another geographical area – although that would involve having to give up an established social network – but only if the individual and his or her family can afford it and can find jobs, housing, etc. Also, the negative externalities of the road traffic environment for an individual can be reduced by decreasing the number of journeys. On the whole, however, improving the physical environment requires collective action.

Health care

Health care is, of course, a key determinant of an individual's health, especially when he or she has been struck by disease and needs curative care rather than illness prevention or health promotion services. The efficient use of existing medical technology is essential for an optimal contribution to the individual's health capital. The importance of a well functioning relationship between the health care workforce and users (including patients, unpaid carers and volunteers) for health improvements should, however, be observed in the context of this module. The health care workforce is the major input into the health care system, exceeding all other inputs combined in terms of expenditure. The education, training and experience of health care providers are critical factors underlying the processes by which health care is provided and for the actual outcomes which are achieved. The human capital of health care providers is a prerequisite for the health capital of individuals in society.

Multisectoral responsibility for health

The health of an individual is a product of heredity, his or her physical and social environments and capacity to make healthy choices, and chance. It is clear that actions pursued solely by the health care sector are not the only factors that affect health. Healthy lifestyles can only be promoted and healthy environments created if a large number of sectors are mobilized – not all of them mentioned above. An effective approach to health development requires all sectors to recognize the benefits of promoting health and to be accountable for the impact on health of their actions.

Box 4. The contribution to health from the health care and other sectors

If the overall objective is to maximize the health of the nation as some trade-off combination of the health status of all the inhabitants and the distribution of health among them, what is the relative contribution from each sector to this objective? This is an under-researched area. Furthermore, conditions differ among countries, so there is no definite answer for each and every country. However, even though their study is dated, the early contribution by Auster et al *(11)* may help to illustrate some important issues. These authors used states of the United States as their unit of observation when estimating the contribution to age- and sex-standardized mortality rates of a number of factors, including education, cigarette consumption and medical services. The estimated elasticities address several policy issues.

First, the elasticity of medical services expenditure was approximately -0.1 and was statistically insignificant. This suggests that a 1% in expenditure on medical services would reduce mortality by 0.1%. Since the coefficient is not statistically significant, the possibility cannot be ruled out that the contribution from increased spending on medical services is zero. Second, the elasticity of education is somewhat larger, -0.2, and statistically significant. Taking the costs of increasing education levels into account, a marginal transfer of resources from medical services to education would be expected to improve population health in terms of lower mortality rates. Third, cigarette consumption per capita is associated with higher mortality rates. It should be noted that this lifestyle variable easily attains significant levels, while medical services do not.

This should be taken as an illustrative example, not literally as a recommendation for policy-making in a specific country. The observations on which this study was based are now 40 years old and many conditions have changed since then, including the development of high-tech medical care. For more recent studies see Wolfe *(12)* and Cremieux *(13)*.

Source: Auster et al *(11)*.

Questions for discussion

1. When is the social network beneficial to an individual's health? When is it detrimental?
2. Why may people differ in the investments they make in social networks?
3. What is meant by social capital? In what ways can it be beneficial to an individual's health?
4. What factors determine an employer's returns on investments in employees' health?
5. What are the roles of the individual, other family members, the employer, the health care system and society in general in determining an individual's health? What is the relative influence of different decision-makers when it comes to investments in individual health in your country?
6. Why can it be argued that improvements in the physical environment require more collective actions than improvements in most other areas affecting health?

Individual health, public policy and population health

Objectives of a policy for population health

The health of a nation (population health) depends on the health of its inhabitants. It has two aspects, which are reflected in the objectives of the WHO strategy for health for all: (i) to improve health for all individuals, and (ii) to decrease inequities in health between individuals (and countries). This strategy may take different forms, stressing one rather than the other objective, in different countries depending on cultural values and economic conditions. At one extreme would be making equity in health the sole objective, so that a worsening of other people's health would be accepted as long as the policy promoted equity. Such a policy would create enormous disincentives for everybody to invest in their own health, not just people with advantages. At the other extreme would be a situation where inequities were disregarded and all health gains valued equally no matter who received them. Most European countries have (generally more implicitly than explicitly) chosen some trade-off between the two policy objectives. No government seems to say that closing the health gaps should be achieved by promoting a worsening in health for their healthiest inhabitants.

A measure of individual health

In order to implement and evaluate the above policy objectives, a meaningful measure of individual health (and changes in individual health) must be available, and it must be possible to collect it at a relatively low cost. It must also be possible to aggregate this measure of individual health (and changes in health), giving varying weights to individuals who are more or less advantaged in terms of health. Measures of population health which are aggregates from the beginning, such as the mortality rate or life expectancy which are readily available at present in all countries, may be used (at least for some purposes) where the distribution of health is not of interest. For the individual, the mortality rate for the whole nation makes little sense, since his or her long-run probability of death equals one. Mortality rates relating to a smaller group are only slightly better, since almost everyone differs from the statistical average. The exception is infant mortality, since many characteristics of the individual have not yet been formed resulting in some degree of homogeneity. However, even in the case of infants, mortality rates reflect a rather extreme situation, providing very little information about health in terms of life expectancy and quality of life. Yet mortality rates are often used in empirical studies because they are easily available in official statistics and can be compared across regions and countries. Life expectancy is a better measure, particularly at time of birth. Quality-adjusted life expectancy (as well as gains and losses in quality-adjusted life years) would be a still better measure, suitable for all age groups.

This is an important point for policy-makers, who have to make up their minds about the relative importance of the two objectives in their particular situations. Since policies in most cases will affect the two objectives differently, the policies which should be undertaken depend on the relative emphasis placed on the two objectives. The outcome will be influenced by the circumstances of the individual country, including its history, its level of economic and social development, its distribution of income, wealth and other resources relevant for health outcomes, and its values.

In a world of scarce resources, no policies are without costs. It seems reasonable that those policies will be chosen which will maximize the national health objectives within some given budget, properly defined and subject to various other constraints.

Population health and policies for economic growth

Affluent societies are often healthier in terms of life expectancy. For example, richer countries can afford to improve the environment. Thus, economic growth is important for the health of nations and, in the long run, policies which improve conditions for economic growth are vital for all other types of health policy to be successful. Economic growth means that there are more goods and services to distribute among the population. Incomes can be raised for the least advantaged, employment can be kept at a high level, tensions in health care finance can be eased, housing conditions can be improved, education can be expanded and so on. Without economic growth, there will be fewer opportunities for improving health. On the other hand, economic growth, or conditions which stimulate growth, may also create health problems. Moreover, people's health is in itself a contributing factor to productivity and economic growth. Thus, the most successful policies would be those which deal with economic growth, human development and health in an integrated way. However, economic growth is a prerequisite for extending opportunities in many other areas than those which directly refer to health. Since the interrelationships between economic growth, the environment, health care and health were explored in the first chapter of these learning materials, the focus here is on the potential of more direct policies for population health.

Policies for population health

Different countries put different emphases on individual versus collective responsibilities for promoting the health of the population. At one extreme is the totally individual-centred society, in which only individual wellbeing counts and the distribution of health does not matter. At the other extreme, the totally collective society has definitive paternalistic views about individual health and the distribution of health among individuals. These are extremes. The historical circumstances and values of a society, its level of economic and social development and the distribution of income, wealth and other life chances are significant elements of the balance it chooses between individual-centred and collective approaches.

Where collective approaches are supported, there is a range of policies that will affect the health of individuals and/or the distribution of health among them which governments can adopt.

- Taxing goods and services (or reducing subsidies that support practices) that are harmful to health, e.g. tobacco products and alcohol. Even though these substances are addictive, people – even heavy consumers – react to price changes. The price elasticity of liquor seems to be the largest among alcoholic beverages (around (-)1), while the price elasticities of wine and beer are significantly lower, but definitely not 0. Since differences in price levels may distort competition and create cross-border shopping, such policies often stimulate coordination among countries.

- Subsidizing certain goods and services which promote health, or providing them free, to disadvantaged individuals, especially where the disadvantage, if not addressed promptly, can become permanent or cumulative.
- Regulation of private activities, in order to restrict some aspects and encourage others, e.g. in order to create a safer road traffic environment.
- Direct public provision of goods and services, including information on healthy lifestyles and health risks.

Overall, as has been identified by WHO, governments are in a unique position to address population health issues. They are charged with protecting the public good and have the legitimacy to act on behalf of the overall community. They possess legislative and regulatory powers and a comprehensive reach across the country and across the various sectors of the economy. They have some clear roles to play in promoting health across the entire society, including the following.

- They work to create links within the public sector between tiers of public administration and different government departments. The potential government contribution to health gains can be fully realized only if all tiers of government are willing and able to coordinate their activities. There is also a need for intersectoral action, involving a wide range of functional agencies, not just ministries of health.
- They act to unlock resources that will reduce inequity in health. Not only inequalities in income and wealth, but also differentials in security, authority, and power can affect the distribution of health in society.
- They collect and disseminate health information and use it to plan for the future. Routine monitoring allows for a tangible measure of the baseline position before an intervention and for the mapping of potential improvements in population health. This can be a powerful tool for persuading agents from different sectors to commit themselves to particular programmes. It also allows planners and policy-makers to analyse the existing context and to identify likely trends and paths of action.
- They work with other sectors, including the voluntary and community sectors, to develop cooperative partnerships.
- They run campaigns and programmes that promote health and seek the voluntary support and compliance of organizations and individuals for these initiatives.
- They legislate and regulate. WHO has argued that such measures should not be the main routes for implementing population health and the health for all approaches. Certainly, governments may want to see a greater sensitivity to health issues on the part of private companies. Advocacy, persuasion, popular pressure and the use of financial incentives are likely to be more effective ways of winning support. Where companies are not inclined to participate in voluntary schemes, despite such efforts, it may be necessary for governments to consider legislation and regulation to enforce compliance with environmental protection policies, occupational health and safety standards, provision of health information to facilitate consumer choice, etc.
- They act responsibly as a major employer and as a significant economic player.

The optimal mix of population health policies

As emphasized above, the appropriate balance differs among countries depending on differences in their historical circumstances and values, their economic and social development, and the distribution of income, wealth and other life chances. However, all policy options have different outcomes, achieved at different costs. Thus, there is also a role for economic evaluation of available options in order to find the most cost-effective way of using scarce resources for the objective of maximizing population

health. The module by Michael Drummond (5.3.1) provides the essentials of how to make economic evaluations of health programmes. Thus, economic analysis can help in setting priorities with regard to risk reduction and health promotion. It can provide information to assist choices concerning the optimal mix of population health policies among all the options open to society.

Questions for discussion

1. Is there a trade-off between different approaches to aggregate, on a population basis, levels of individual health? If there is, what is the trade-off in your country? If not, what are the policy implications?
2. How could individual health be measured for routine purposes?
3. Consider the following opinion: "Lifestyle factors are major and statistically significant determinants of individual health, but changing lifestyles may not be the least costly way to improve population health status." Try to explain under which circumstances this opinion could be true. Is it likely to be true in the real world? Taking the evidence on lifestyle factors into account, how should government health policies be designed?
4. What public policies contribute to the improvement of the health of individuals and the health of the overall population? To what extent are these objectives complementary and to what extent are they competitive?
5. How could economic evaluation of health programmes be helpful when setting priorities among all the health policy options that are open to society?

Exercise

The balance between individual and collective action (role-play)

The balance between individual and collective action to achieve health gain is an important aspect of this module. Collectives refer to a wide range of social groups and organizations. The extent and focus of their interest in preserving or restoring health vary widely, as do the possibilities open to them and the impact of these. The balance between individual and collective participation varies among settings and societies, with differences in values playing an essential role. Compared to other goods and services, health care, for instance, tends to show an emphasis on collective action, but this is more obvious in relation to its financing than delivery. Individual approaches have both advantages and disadvantages, for example, greater freedom of choice and flexibility in organization, but may leave some individuals and groups in vulnerable positions. Collective approaches also have advantages and disadvantages, such as the possibilities for wider accessibility and greater equity, but can become unwieldy: the administration of large systems can become bureaucratic, user preferences may be ignored, and social problems may become medicalized. Historical traditions, social expectations, the level of economic development and the distribution of resources also affect how these differences work out in particular countries and circumstances.

Discuss (preferably through role-playing among participants from various groups) a particular case – a city with poor health status indicators, for instance – and prepare suggestions to improve the situation. Participants should be encouraged to bring out the possible contradictions and conflicts of interest of the actors, the values inherent in their views, and the historical and ideological factors which may be involved.

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