

## CHAPTER ONE

# *Why do Health Systems Matter?*

*Health systems consist of all the people and actions whose primary purpose is to improve health. They may be integrated and centrally directed, but often they are not. After centuries as small-scale, largely private or charitable, mostly ineffectual entities, they have grown explosively in this century as knowledge has been gained and applied. They have contributed enormously to better health, but their contribution could be greater still, especially for the poor. Failure to achieve that potential is due more to systemic failings than to technical limitations. It is therefore urgent to assess current performance and to judge how health systems can reach their potential.*

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# 1

## WHY DO HEALTH SYSTEMS MATTER?

### THE CHANGING LANDSCAPE

On 13 October 1999, in a maternity clinic in Sarajevo, Helac Fatima gave birth to a son. This was a special occasion, because United Nations demographers had calculated the global population would reach six billion on that day. The little Sarajevo boy was designated as the sixth billionth person on the planet.

Today there are four times as many people in the world as there were 100 years ago – there are now about 4000 babies born every minute of every day – and among the countless, bewildering changes that have occurred since then, some of the most profound have occurred in human health. For example, few if any of Helac Fatima’s ancestors around 1899 were likely to have seen a hospital, far less been born in one.

The same was true for the great majority of the 1.5 billion people then alive. Throughout the world, childbirth invariably occurred at home, rarely with a physician present. Most people relied on traditional remedies and treatments, some of them thousands of years old. Most babies were born into large families and faced an infancy and childhood threatened by a host of potentially fatal diseases – measles, smallpox, malaria and poliomyelitis among them. Infant and child mortality rates were very high, as were maternal mortality rates. Life expectancy for adults was short – even half a century ago it was a mere 48 years at birth.

Last year the son of Helac Fatima entered the world with a life expectancy at birth of 73 years – the current Bosnian average. The global average is 66 years. He was born in a big city hospital staffed by well-trained midwives, nurses, doctors and technicians – who were supported by modern equipment, drugs and medicines. The hospital is part of a sophisticated health service. It is connected in turn to a wide network of people and actions that in one way or another are concerned with maintaining and improving his health for the rest of his life – as for the rest of the population. Together, all these interested parties, whether they provide services, finance them or set policies to administer them, make up a health system.

Health systems have played a part in the dramatic rise in life expectancy that occurred during the 20th century. They have contributed enormously to better health and influenced the lives and well-being of billions of men, women and children around the world. Their role has become increasingly important.

Enormous gaps remain, however, between the potential of health systems and their actual performance, and there is far too much variation in outcomes among countries which seem to have the same resources and possibilities. Why should this be so? Health systems would seem no different from other social systems in facing demands and incentives to

perform as well as possible, and it might be expected that – with some degree of regulation by the state – their performance could be largely left to markets, just as with the provision of most other goods and services.

But health is fundamentally different from other things that people want, and the difference is rooted in biology. As eloquently expressed by Jonathan Miller, “Of all the objects in the world, the human body has a peculiar status: it is not only possessed by the person who has it, it also possesses and constitutes him. Our body is quite different from all the other things we claim as our own. We can lose money, books and even houses and still remain recognisably ourselves, but it is hard to give any intelligible sense to the idea of a disembodied person. Although we speak of our bodies as premises that we live in, it is a special form of tenancy: our body is where we can always be contacted” (1). The person who seeks health care is of course a consumer – as with all other products and services – and may also be a co-producer of his or her health, in following good habits of diet, hygiene and exercise, and complying with medication or other recommendations of providers. But he or she is also the physical object to which all such care is directed.

Health, then, is a characteristic of an inalienable asset, and in this respect it somewhat resembles other forms of human capital, such as education, professional knowledge or athletic skills. But it still differs from them in crucial respects. It is subject to large and unpredictable risks, which are mostly independent of one another. And it cannot be accumulated as knowledge and skills can. These features are enough to make health radically unlike all other assets which people insure against loss or damage, and are the reason why health insurance is more complex than any other kind of insurance. If a car worth US\$ 10 000 would cost \$15 000 to repair after an accident, an insurer would only pay \$10 000. The impossibility of replacing the body, and the consequent absence of a market value for it, precludes any such ceiling on health costs.

Since the poor are condemned to live in their bodies just as the rich are, they need protection against health risks fully as much. In contrast, where other assets such as housing are concerned, the need for such protection either does not arise, or arises only in proportion to income. This basic biological difference between health and other assets even exaggerates forms of market failure, such as moral hazard and imperfect and asymmetric information, that occur for other goods and services. Directly or indirectly, it explains much of the reason why markets work less well for health than for other things, why there is need for a more active and also more complicated role for the state, and in general why good performance cannot be taken for granted.

The physical integrity and dignity of the individual are recognized in international law, yet there have been shameful instances of the perversion of medical knowledge and skills, such as involuntary or uninformed participation in experiments, forced sterilization, or violent expropriation of organs. Health systems therefore have an additional responsibility to ensure that people are treated with respect, in accordance with human rights.

This report sets out to analyse the role of health systems and suggest how to make them more efficient and, most importantly, more accessible and responsive to the hundreds of millions of people presently excluded from benefiting fully from them. The denial of access to basic health care is fundamentally linked to poverty – the greatest blight on humanity’s landscape. For all their achievements and good intentions, health systems have failed globally to narrow the health divide between rich and poor in the last 100 years. In fact, the gap is actually widening. Some such worsening often accompanies economic progress, as the already better-off are the first to benefit from it. But the means exist to accelerate the sharing by the poor in these benefits, and often at relatively low cost (see Box 1.1). Finding

a successful new direction for health systems is therefore a powerful weapon in the fight against poverty to which WHO is dedicated. Not least for the children of the new century, countries need systems that protect all their citizens against both the health risks and the financial risks of illness.

## WHAT IS A HEALTH SYSTEM?

In today's complex world, it can be difficult to say exactly what a health system is, what it consists of, and where it begins and ends. This report defines a health system to include *all the activities whose primary purpose is to promote, restore or maintain health.*

Formal health services, including the professional delivery of personal medical attention, are clearly within these boundaries. So are actions by traditional healers, and all use of medication, whether prescribed by a provider or not. So is home care of the sick, which is how somewhere between 70% and 90% of all sickness is managed (2). Such traditional public health activities as health promotion and disease prevention, and other health-enhancing interventions like road and environmental safety improvement, are also part of the system. Beyond the boundaries of this definition are those activities whose primary purpose is something other than health – education, for example – even if these activities have a secondary, health-enhancing benefit. Hence, the general education system is outside the boundaries, but specifically health-related education is included. So are actions intended chiefly to improve health indirectly by influencing how non-health systems function – for example, actions to increase girls' school enrolment or change the curriculum to make students better future caregivers and consumers of health care.

### Box 1.1 Poverty, ill-health and cost-effectiveness

The series of global estimates of the burden of disease do not distinguish between rich and poor, but an approximate breakdown can be derived by ranking countries by per capita income, aggregating from the lowest and highest incomes to form groups each constituting 20% of the world's population, and studying the distribution of deaths in each group, by age,<sup>1</sup> cause and sex.<sup>2</sup> These estimates show that in 1990, 70% of all deaths and fully 92% of deaths from communicable diseases in the poorest quintile were "excess" compared to the mortality that would have occurred at the death rates of the richest quintile. The figures for total losses of disability-adjusted life

years (DALYs) were similar, with a larger contribution from noncommunicable diseases. The large difference between the effects of communicable and noncommunicable diseases reflects the concentration of deaths and DALYs lost to communicable diseases among the global poor: about 60% of all ill-health for the poor versus 8–11 % among the richest quintile. This is strongly associated with differences in the age distribution of deaths: just over half of all deaths among the poor occur before 15 years of age, compared to only 4% among the rich. The difference between the poor and the rich is large even in a typical high-mortality African country, and much greater in a typical lower-mortality Latin American

country, where deaths at early ages have almost been eliminated among the wealthy.

There are relatively cost-effective interventions available against the diseases that account for most of these rich–poor differences, and particularly to combat deaths and health losses among young children.<sup>3</sup> Interventions costing an estimated \$100 or less per DALY saved could deal with 8 or 9 of the 10 leading causes of ill-health under the age of 5 years, and 6 to 8 of the 10 main causes between the ages of 5 and 14 years. All of these are either communicable diseases or forms of malnutrition. Death and disability from these causes is projected to decline rapidly by 2020, roughly equalizing the health damage from

communicable and noncommunicable diseases among the poor. If the projected rate of decline of communicable disease damage could be doubled, the global rich would gain only 0.4 years of life expectancy, but the global poor would gain an additional 4.1 years, narrowing the difference between the two groups from 18.4 to 13.7 years. Doubling the pace of reduction of noncommunicable disease damage, in contrast, would preferentially benefit the well-off as well as costing considerably more. The association between poverty and cost-effectiveness is only partial, and probably transitory, but in today's epidemiological and economic conditions it is quite strong.

<sup>1</sup> Gwatkin DR. *The current state of knowledge about how well government health services reach the poor: implications for sector-wide approaches.* Washington, DC, The World Bank, 5 February 1998 (discussion draft).

<sup>2</sup> Gwatkin DR, Guillot M. *The burden of disease among the world's poor: current situation, future trends, and implications for policy.* Washington, DC, Human Development Network of The World Bank, 2000.

<sup>3</sup> *World development report 1993 – Investing in health.* New York, Oxford University Press for The World Bank, 1993: Tables B.6 and B.7.

This way of defining a system does not imply any particular degree of integration, nor that anyone is in overall charge of the activities that compose it. In this sense, every country has a health system, however fragmented it may be among different organizations or however unsystematically it may seem to operate. Integration and oversight do not determine the system, but they may greatly influence how well it performs.

Unfortunately, nearly all the information available about health systems refers only to the provision of, and investment in, health services: that is, the health *care* system, including preventive, curative and palliative interventions, whether directed to individuals or to populations. In most countries, these services account for the great bulk of employment, expenditure and activity that would be included in a broader notion of the health system, so it might seem that little is lost in concentrating on a narrower definition that fits the existing data. Those data have required great efforts to collect – and this report further offers several kinds of information and analysis, such as estimates of life expectancy adjusted for time lived with disability, assessments of how well health systems treat patients, national health accounts, and estimates of household contribution to financing.

Nonetheless, efforts are needed to quantify and assess those activities implied by the wider definition, so as to begin to gauge their relative cost and effectiveness in contributing to the goals of the system. To take one example, in the United States between 1966 and 1979 the introduction of a variety of safety features in automobile design (laminated windshields, collapsible steering columns, interior padding, lap and shoulder belts, side marker lights, head restraints, leak resistant fuel systems, stronger bumpers, increased side door strength and better brakes) helped reduce the vehicle accident fatality rate per mile travelled by 40%. Only three of these innovations added more than \$10 to the price of a car, and in total they accounted for only 2% of the average price increase during 1975–1979 (3). From 1975 to 1998, seat belts saved an estimated 112 000 lives in the United States, and total traffic fatalities continued to fall. The potential health gains were even greater: in 1998 alone, 9000 people died because they did not use their belts (4).

The potential savings in other countries are very large. Road traffic accidents are increasing rapidly in poor countries and are projected to move from the ninth to third place in the worldwide ranking of burden of ill-health by the year 2020. Even in many middle income countries, the fatality rates per head or per vehicle mile are much higher than in the United States (5). Sub-Saharan Africa has the world's highest rate of fatalities per vehicle. The cost of improving vehicles may be high, relative to expenditure on health care, in low and middle income countries, so the effect of including such activities in the definition of the health system may be greater. Unsafe roads also contribute greatly to the vehicular toll in poorer countries, and the cost of improving roads could be much larger than the cost of making cars safer. But behavioural changes such as using seat belts once installed, and respecting speed limits, are nearly costless and could save many lives; they are very likely to be more cost-effective than treatment of crash victims.

Where information corresponding to a broader definition of health systems is not available, this report necessarily uses the available data that match the notion of the health care system. Even by this more limited definition, health systems today represent one of the largest sectors in the world economy. Global spending on health care was about \$2985 billion (thousand million) in 1997, or almost 8% of world gross domestic product (GDP), and the International Labour Organisation estimates that there were about 35 million health workers worldwide a decade ago, while employment in health services now is likely to be substantially higher. These figures reflect how what was for thousands of years a basic, private relationship – in which one person with an illness was looked after by family mem-

bers or religious caregivers, or sometimes paid a professional healer to treat him or her – has expanded over the past two centuries into the complex network of activities that now comprise a health system.

More than simple growth, the creation of modern health systems has involved increasing differentiation and specialization of skills and activities. It has also involved an immense shift in the economic burden of ill-health. Until recently, most of that burden took the form of lost productivity, as people died young or became and remained too sick to work at full strength. The cost of health care accounted for only a small part of the economic loss, because such care was relatively cheap and largely ineffective. Productivity losses are still substantial, especially in the poorest countries, but success in prolonging life and reducing disability has meant that more and more of the burden is borne by health systems. This includes the cost of drugs – for controlling diabetes, hypertension, and heart disease, for example – that allow people to stay active and productive. Part of the growth in resources used by health systems is a transfer from other ways of paying for the economic damage due to illness and early death.

The resources devoted to health systems are very unequally distributed, and not at all in proportion to the distribution of health problems. Low and middle income countries account for only 18% of world income and 11% of global health spending (\$250 billion or 4% of GDP in those countries). Yet 84% of the world's population live in these countries, and they bear 93% of the world's disease burden. These countries face many difficult challenges in meeting the health needs of their populations, mobilizing sufficient financing in an equitable and affordable manner, and securing value for scarce resources.

Today in most developed countries – and many middle income countries – governments have become central to social policy and health care. Their involvement is justified on the grounds of both equity and efficiency. However, in low income countries – where total public revenues for all uses are scarce (often less than 20% of GDP) and institutional capacity in the public sector is weak – the financing and delivery of health services is largely in the hands of the private sector. In many of these countries, large segments of the poor still have no access to basic and effective care.

## WHAT DO HEALTH SYSTEMS DO?

For rich and poor alike, health needs today are very different from those of 100 or even 50 years ago. There are growing expectations of access to health care in some form, and growing demands for measures to protect the sick, and their families, against the financial costs of ill-health. The circle in which health systems are required to function has been pushed yet wider by raised awareness of the impact on health of developments such as industrialization, road transport, environmental damage and the globalization of trade. People also now turn to health systems for help with a much wider variety of problems than before – not just for the relief of pain and treatment of physical limitations and emotional disorders but for advice on diet, child-rearing and sexual behaviour that they used to seek from other sources.

People typically come into direct contact with a health system as patients, attended by providers, only once or twice a year. More often their contact is as consumers of non-prescription medications and as recipients of health-related information and advice. They meet the system as contributors to paying for it, knowingly every time they buy care out of pocket or pay insurance premiums or social security contributions, and unknowingly whenever they pay taxes that are used in part to finance health. It matters very much how the

system treats people's health needs and how it raises revenues from them, including how much protection it offers them from financial risk. But it also matters how it responds to their expectations. In particular, people have a right to expect that the health system will treat them with individual dignity. So far as possible, their needs should be promptly attended to, without long delays in waiting for diagnosis and treatment – not only for better health outcomes but also to respect the value of people's time and to reduce their anxiety. Patients also often expect confidentiality, and to be involved in choices about their own health, including where and from whom they receive care. They should not always be expected passively to receive services determined by the provider alone.

In summary, health systems have a responsibility not just to improve people's health but to protect them against the financial cost of illness – and to treat them with dignity. As is discussed in more detail in Chapter 2, health systems thus have three fundamental objectives. These are:

- improving the health of the population they serve;
- responding to people's expectations;
- providing financial protection against the costs of ill-health.

Because these objectives are not always met, public dissatisfaction with the way health services are run or financed is widespread, with accounts of errors, delays, rudeness, hostility and indifference on the part of health workers, and denial of care or exposure to calamitous financial risks by insurers and governments, on a grand scale.

Because better health is the most important objective of a health system, and because health status is worse in poor populations, one might assume that for a low income country, improving health is all that matters. Concern for the non-health outcomes of the system, for fairly sharing the burden of paying for health so that no one is exposed to great financial risk, and attending to people's wishes and expectations about how they are to be treated, would then be considered luxuries, gaining in importance only as income rises and health improves. But this view is mistaken, for several reasons. Poor people, as indicated earlier, need financial protection as much as or more than the well-off, since even small absolute risks may have catastrophic consequences for them. And the poor are just as entitled to respectful treatment as the rich, even if less can be done for them materially. Moreover, pursuing the objectives of responsiveness and financial protection does not necessarily take substantial resources away from activities to improve health. Much improvement in how a health system performs with respect to these responsibilities may often be had at little or no cost. So all three objectives matter in every country, independently of how rich or poor it is or how its health system is organized. Better ways of achieving these objectives, treated in later chapters, are similarly relevant for all countries and health systems, although the specific implications for policy will vary according to income level and the cultural and organizational features of the system.

## WHY HEALTH SYSTEMS MATTER

The contribution that health systems make to improving health has been examined much more closely than how well they satisfy the other two objectives mentioned above, for which there is little comparable information and analysis. This report therefore develops measures corresponding to all three objectives, for assessing how systems perform. Even the contribution that health systems make to improved health is difficult to judge, because different kinds of evidence seem to give conflicting answers. At the level of interventions

against particular diseases or conditions, there is now substantial and growing evidence that large improvements in health can be achieved at reasonable cost, for individuals and for large populations (6). Such data are the basis for estimates that in poor countries, roughly one-third of the disease burden in 1990 might be averted at a total cost per person of only \$12 (7).

Even without progress in fundamental science, changes in the way currently available interventions are organized and delivered can reverse the spread of an epidemic and dramatically reduce the cost of saving a life. For example, in the Brazilian Amazon, greater emphasis on early malaria case detection and treatment, together with more focused efforts on mosquito control, turned around an epidemic and cut the cost of saving a life by case prevention from nearly \$13 000 to only about \$2000 (8).

At the level of overall progress in health, as reported in *The world health report 1999*, the generation and utilization of knowledge – that is, scientific and technical progress – explained almost half of the reduction in mortality between 1960 and 1990 in a sample of 115 low and middle income countries, while income growth explained less than 20% and increases in the educational level of adult females less than 40%. Such estimates summarize progress in developing and applying interventions of many kinds against a large number of diseases. Prominent among these are antimalaria and immunization programmes, and the increasing use of antibiotics for the treatment of respiratory and other infectious diseases. Since it is the health system that develops and applies those interventions, two kinds of evidence, one detailed and the other aggregated, indicate clearly that health systems not only can but do make a large difference to health.

Taking a narrower focus on diseases for which there are effective treatments, numerous studies beginning in the 1970s (9, 10) have consistently found that preventable deaths, that is “deaths due to causes amenable to medical care” have fallen at a faster rate than other deaths. Similarly, a comparison of death rate differences between western Europe and formerly communist countries of eastern Europe attributed 24% of the difference in male life expectancy and 39% of that in female life expectancy to the availability of modern medical care. Such care is not guaranteed simply by the existence of medical facilities (11).

At the same time, other evidence seems to show that health systems make little or no difference. This emerges from some other comparisons across countries rather than through time. Often these show that while per capita income is strongly related to some measure of health status – as are other factors such as female education, income inequality or cultural characteristics – there is little independent connection with inputs such as doctors or hospital beds (12), with total health expenditure (13), with expenditure only on conditions amenable to medical care (14), or with public spending on health (15). It is not surprising to find that these relations are weak in rich countries, since many causes of death and disability are already controlled and there are many different ways to spend health system resources, with quite varying effects on health status. But health system expenditure often seems to make little difference even in poor countries with high infant and child mortality, which it should be a priority to reduce.

Furthermore, health systems make costly, even fatal mistakes far too frequently. In the United States alone, medical errors in hospitals cause at least 44 000 needless deaths a year, with another 7000 occurring as a result of mistakes in prescribing or using medication, making these errors more deadly than such killers as motor vehicle accidents, breast cancer and AIDS (16). The economic cost of these mistakes is at least \$17 billion, of which health care costs are more than half. And even when no one makes errors, patients often acquire



new infections in hospital, and the massive use of antibiotics promotes pathogen resistance to them, so that some part of ill-health is caused by the very efforts to treat it.

These conflicting kinds of evidence can be reconciled in two ways: first, by noting that while health systems account for much health progress through time, that progress is far from uniform among countries at any one time, even among countries with similar levels of income and health expenditure; and second, by recognizing that the errors of the system diminish but do not offset the good it accomplishes. Nonetheless, “there is an enormous gap between the apparent potential of public spending to improve health status and the actual performance” (15), and the same is doubtless true of resource use in general. One measure of that gap is that many deaths of children under 5 years of age could be averted for \$10 or less, as estimated from cost-effectiveness studies of particularly valuable interventions, but the average actual expenditure in poor countries per death prevented, as estimated from the overall relation between spending and mortality, is \$50 000 or more. The overall relation between child mortality and income implies that in a poor country of two million population, total income would have to rise by roughly \$1 million in order to avert a single death. This is several orders of magnitude higher than the average health expenditure needed to save a life. Per capita, these numbers imply health expenditure of only \$0.025 versus an income increase of \$0.50. Income differences may explain more of health variation among countries than do differences in health expenditure. But raising income is not on that account a cheaper or easier way to improve health.

Concerning the more distant past, historians debate whether declines in mortality rates in some European and Latin American countries in the 19th and 20th centuries owe more to such factors as an improving diet and other socioeconomic progress than to personal medical care. But health systems, defined broadly, include all of the non-personal, population-based or public health interventions such as the promotion of healthy lifestyles, insecticide spraying against vector-borne diseases, anti-tobacco campaigns and the protection of food and water. So even if personal services accounted for very little health gain until recently, the health system as defined in this report began to make a large difference more

### Box 1.2 Health knowledge, not income, explains historical change in urban–rural health differences

In the first half of the 19th century, life expectancy was much shorter in London and Paris, respectively, than in the rural areas of England and Wales or of France; a similar difference prevailed between the urban and rural areas of Sweden in the first decades of the 20th century. Large cities were unhealthy because unclean personal habits did more to spread disease when people were crowded together and because garbage and even excrement were accumulated, drawing flies and rodents and contaminating the air and water.<sup>1</sup> Pollution was wors-

ened by burning soft coal and by discharges from factories.

Crowding and poverty produce many of the same problems in the large cities of poor countries today, which typically have more polluted air and water than urban areas in richer countries. Vehicular exhaust, unknown a century ago, is already a major health threat in such areas as Delhi and Mexico City. Rapid growth has made it hard to expand such services as piped water, sewerage facilities and garbage collection fast enough to keep pace. In slum areas, even if safe water is available, many households have no access to sani-

tary waste disposal, and much garbage is simply dumped or burned in the open. Nonetheless the health consequences are not so severe as in European cities 150 years ago. On one hand, increased knowledge of how diseases are caused and transmitted has led to valiant efforts to reduce contamination, control disease vectors and educate the population to take better care of their health. On the other hand, even very poor urban dwellers now have better access to effective personal health care than much of the rural population, adding to the inducements to migrate to the city. Slum

residents in Lima, for example, are as likely to immunize their children and to take them for medical care when sick as residents of better-off neighbourhoods, and much more likely to do so than people living in Peru's mountainous interior.<sup>2</sup> Both the public health and the personal care interventions have contributed to reversing the urban–rural differences in health status; better health among urban populations is due more to the application of improved knowledge than to higher incomes in cities.

<sup>1</sup> Easterlin RA. *How beneficent is the market? A look at the modern history of mortality*. Los Angeles, University of Southern California, 1998 (unpublished paper).

<sup>2</sup> Musgrove P. Measurement of equity in health. *World Health Statistics Quarterly*, 1986, 39(4).

than a century ago, chiefly through improvements in urban sanitation and personal hygiene. These changes – removing excrement and garbage, protecting water supplies, and washing one’s hands – happened because of more understanding of how diseases are *spread*, even before there was any useful knowledge of how they are *caused*. Some improved individual hygienic practices are centuries old, while collective measures are generally more recent. Growth in income alone would not have improved health under the conditions of the time, and may even have worsened it because of urban filth and crowding; similar conditions often prevail in the cities of poor countries today, but the threat to health is better controlled (see Box 1.2).

So health systems *are* valuable and important, but they could accomplish much more with the available understanding of how to improve health. The failings which limit performance do not result primarily from lack of knowledge but from not fully applying what is already known: that is, from systemic rather than technical failures. This is true even of most medical errors, because “the problem is not bad people; the problem is that the system needs to be made safer” (16). How to measure current performance and how to achieve the potential improvements in it are the subject of this report. Research to expand knowledge is crucial in the long run, as progress over the last two centuries shows; in the short run, much could be accomplished by wider and better application of existing knowledge. This can improve health more quickly than continued and more equally distributed socio-economic progress, important as that is. The next sections discuss how modern health systems arose, and how they have been repeatedly subjected to reforms intended to make them work better in one way or another.

## HOW MODERN HEALTH SYSTEMS EVOLVED

Health systems of some sort have existed for as long as people have tried deliberately to protect their health and treat diseases. Throughout the world, traditional practices based on herbal cures, often integrated with spiritual counselling, and providing both preventive and curative care, have existed for thousands of years, and often coexist today with modern medicine. Many of them are still the treatment of choice for some health conditions, or are resorted to because modern alternatives are not understood or trusted, or fail, or are too expensive. Traditional Chinese medicine can be traced back more than 3000 years, and still plays a huge role in the Chinese health system, as do its equally ancient equivalents in the Indian sub-continent and similar systems of belief and practice among indigenous African and American peoples. But until the modern growth of knowledge about disease, there were few cures for ailments and little effective prevention of disease.

With rare exceptions, even in industrialized countries, organized health systems in the modern sense, intended to benefit the population at large, barely existed a century ago. Although hospitals have a much longer history than complete systems in many countries, few people living 100 years ago would ever visit one – and that remains true for many millions of the poor today. Until well into the 19th century they were for the most part run by charitable organizations, and often were little more than refuges for the orphaned, the crippled, the destitute or the insane. And there was nothing like the modern practice of referrals from one level of the system to another, and little protection from financial risk apart from that offered by charity or by small-scale pooling of contributions among workers in the same occupation.

Towards the close of the 19th century, the industrial revolution was transforming the lives of people worldwide. At the same time societies began to recognize the huge toll of

death, illness and disability occurring among workforces, whether from infectious diseases which killed many thousands during the construction of the Panama Canal or from industrial accidents and exposures. Once it was realized that mosquitoes transmitted malaria and yellow fever, control of the insects' breeding-sites became part of prevention efforts that also translated into benefits for surrounding communities. In addition to the human costs, the toll of illness and death meant great losses in productivity. In response, company owners began providing medical services to treat their workers. As the importance of clean water and sanitation became better understood, they also improved workers' basic living conditions. Wars were another influence – the American Civil War showed that soldiers on both sides were more likely to be killed by disease than by the enemy. The same message came home from the Crimean and Boer wars.

About the same time, workers' health was becoming a political issue in some European countries, but for quite different reasons. Bismarck, Chancellor of Germany, reasoned that government take-over of labour unions' sickness funds would remove a source of their support at a moment when socialist workers' movements were gaining strength, and also increase workers' economic security (17). Thus, in 1883, Germany enacted a law requiring employer contributions to health coverage for low-wage workers in certain occupations, adding other classes of workers in subsequent years. This was the first example of a state-mandated social insurance model. The popularity of this law among workers led to the adoption of similar legislation in Belgium in 1894 and Norway in 1909. Until Britain followed suit in 1911, medical care for British wage-earners tended to be paid for by their subscriptions to trade unions or friendly societies, which in turn paid the providers. But only the worker, and not his family, had such coverage.

In the late 1800s, Russia had begun setting up a huge network of provincial medical stations and hospitals where treatment was free and supported by tax funds. After the Bolshevik revolution in 1917, it was decreed that free medical care should be provided for the entire population, and the resulting system was largely maintained for almost eight decades. This was the earliest example of a completely centralized and state-controlled model.

The influence of the German model began to spread outside Europe after the First World War. In 1922, Japan added health benefits to the other benefits for which workers were eligible, building on its tradition of managerial paternalism. In 1924, Chile brought all covered workers under the umbrella of a Ministry of Labour scheme. By 1935, a total of 90% of Denmark's population was covered by work-related health insurance. Social insurance was introduced in the Netherlands during the country's occupation in the Second World War.

Not least among its effects, the Second World War damaged or virtually destroyed health infrastructures in many countries and delayed their health system plans. Paradoxically, it also paved the way for the introduction of some others. Wartime Britain's national emergency service to deal with casualties was helpful in the construction of what became, in 1948, the National Health Service, perhaps the most widely influential model of a health system. The Beveridge Report of 1942 (18) had identified health care as one of the three basic prerequisites for a viable social security system. The government's White Paper of 1944 stated the policy that "Everybody, irrespective of means, age, sex or occupation shall have equal opportunity to benefit from the best and most up-to-date medical and allied services available", adding that those services should be comprehensive and free of charge and should promote good health, as well as treating sickness and disease. New Zealand had already become, in 1938, the first country to introduce a national health service. Almost simultaneously, Costa Rica laid the foundation for universal health insurance in 1941. In

Mexico, the Institute of Social Security and the Ministry of Health were both founded in 1943. A scheme for a national health service broadly similar to the British model was proposed in South Africa in 1944, comprising free health care and a network of community centres and general practitioners as part of a referral system, but was not implemented (19).

In the immediate post-war period, Japan and the Soviet Union also extended their limited national systems to cover most or all of the population, as did Norway and Sweden, Hungary and other communist states in Europe, and Chile. As former colonies gained independence, they also tried to adopt modern, comprehensive systems with heavy state participation. India developed ambitious five-year development plans for a health system, based on the Bhore Report of 1946 (20). The factors which made this period of system-building and expansion possible included realization of the power of the modern state, post-war movements towards reconciliation, stability and reconstruction, and collective solidarity stemming from the war effort. Newly acquired citizenship and the belief in a relatively effective and benevolent state which could promote development of all kinds led to a social and political environment in which “classical universalism”, the concept of free access to all kinds of health care for all, could take root.

Today’s health systems are modelled to varying degrees on one or more of a few basic designs that emerged and have been refined since the late 19th century. One of these aims to cover all or most citizens through mandated employer and employee payments to insurance or sickness funds, while providing care through both public and private providers. The earliest such social insurance systems usually evolved from small, initially voluntary, associations; later versions have sometimes been created *ex nihilo* by public action. Another, slightly more recent, model centralizes planning and financing, relying primarily on tax revenues and on public provision. Resources are traditionally distributed by budgets, sometimes on the basis of fixed ratios between populations and health workers or facilities. In a third model, state involvement is more limited but still substantial, sometimes providing coverage only for certain population groups and giving way for the rest of the populace to largely private finance, provision and ownership of facilities. Relatively pure examples, in which one or another model accounts for the bulk of resources or provision, are found mostly in rich countries; health systems in middle income countries, notably in Latin America, tend to be a mixture of two or even all three types (21). Much debate has centred on whether one way of organizing a health system is better than another, but what matters about a system’s overall structure is how well it facilitates the performance of its key functions.

## THREE GENERATIONS OF HEALTH SYSTEM REFORM

During the 20th century, there have been three overlapping generations of health system reforms. They have been prompted not only by perceived failures in health but also by a quest for greater efficiency, fairness and responsiveness to the expectations of the people that systems serve. The first generation saw the founding of national health care systems, and the extension to middle income nations of social insurance systems, mostly in the 1940s and 1950s in richer countries and somewhat later in poorer countries. By the late 1960s, many of the systems founded a decade or two earlier were under great stress. Costs were rising, especially as the volume and intensity of hospital-based care increased in developed and developing countries alike. Among systems that were nominally universal in coverage, health services still were used more heavily by the better-off, and efforts to reach the poor were often incomplete. Too many people continued to depend on their own resources to pay for health, and could often get only ineffective or poor quality care.

These problems were apparent, and increasingly acute, in poorer countries. Colonial powers in Africa and Asia, and governments in Latin America, had established health services that for the most part excluded indigenous populations. For example, where a European model of health care was implemented in the countries of Africa under British administration, it was primarily intended for colonial administrators and expatriates, with separate or second class provision made – if at all – for Africans. Charitable missions and public health programmes were relied on to provide some care for the majority, much as in parts of Europe. In these former colonies and low income countries, the health system had therefore never been able to deliver even the most basic services to people in rural areas. Health facilities and clinics had been built, but primarily in urban areas. In most developing countries, major urban hospitals received around two-thirds of all government health budgets, despite serving just 10% to 20% of the population. Studies of what hospitals actually did revealed that half or more of all inpatient spending went towards treating conditions that could often have been managed by ambulatory care, such as diarrhoea, malaria, tuberculosis and acute respiratory infections (22).

There was, therefore, a need for radical change that would make systems more cost-efficient, equitable, and accessible. A second generation of reforms thus saw the promotion of primary health care as a route to achieving affordable universal coverage. This approach reflected experience with disease control projects in the 1940s in countries such as South Africa, the Islamic Republic of Iran, and former Yugoslavia. It also built on the successes and experiments of China, Cuba, Guatemala, Indonesia, Niger, the United Republic of Tanzania, and Maharashtra State in India (23). Some of these countries, and others such as Costa Rica and Sri Lanka, achieved very good health outcomes at relatively little cost, adding 15 to 20 years to life expectancy at birth in a span of just two decades. In each case, there was a very strong commitment to assuring a minimum level for all of health services, food and education, along with an adequate supply of safe water and basic sanitation. These were the key elements, along with an emphasis on public health measures relative to clinical care, prevention relative to cure, essential drugs, and education of the public by community health workers. By adopting primary health care as the strategy for achieving the goal of “Health for All” at the Joint WHO/UNICEF International Conference on Primary Health Care held at Alma-Ata, USSR (now Almaty, Kazakhstan) in 1978, WHO reinvigorated efforts to bring basic health care to people everywhere.

The term “primary” quickly acquired a variety of connotations, some of them technical (referring to the first contact with the health system, or the first level of care, or simple treatments that could be delivered by relatively untrained providers, or interventions acting on primary causes of disease) and some political (depending on multisectoral action or community involvement). The multiplicity of meanings and their often contradictory implications for policy help explain why there is no one model of primary care, and why it has been difficult to follow the successful examples of the countries or states that provided the first evidence that a substantial improvement in health could be achieved at affordable cost. There was a substantial effort in many countries to train and use community health workers who could deliver basic, cost-effective services in simple rural facilities to populations that previously had little or no access to modern care. In India, for example, such workers were trained and placed in over 100 000 health posts, intended to serve nearly two-thirds of the population.

Despite these efforts, many such programmes were eventually considered at least partial failures. Funding was inadequate; the workers had little time to spend on prevention and community outreach; their training and equipment were insufficient for the problems

they confronted; and quality of care was often so poor as to be characterized as “primitive” rather than “primary”, particularly when primary care was limited to the poor and to only the simplest services. Referral systems, which are unique to health services and necessary to their proper performance, have proved particularly difficult to operate adequately (24). Lower level services were often poorly utilized, and patients who could do so commonly bypassed the lower levels of the system to go directly to hospitals. Partly in consequence, countries continued to invest in tertiary, urban-based centres.

In developed countries, primary care has been better integrated into the whole system, perhaps because it has been more associated with general and family medical practice, and with lower-level providers such as nurse practitioners and physician assistants. Greater reliance on such practitioners forms the core of many developed countries’ current reform agendas. Managed care, for example, revolves to a large extent around the strengthening of primary care and the avoidance of unnecessary treatment, especially hospitalization.

The approach emphasized in the primary health care movement can be criticized for giving too little attention to people’s *demand* for health care, which is greatly influenced by perceived quality and responsiveness, and instead concentrating almost exclusively on their presumed *needs*. Systems fail when these two concepts do not match, because then the supply of services offered cannot possibly align with both. The inadequate attention to demand is reflected in the complete omission of private finance and provision of care from the Alma-Ata Declaration, except insofar as community participation is construed to include small-scale private financing.

Poverty is one reason why needs may not be expressed in demand, and that can be resolved by offering care at low enough cost, not only in money but also in time and non-medical expenses. But there are many other reasons for mismatches between what people need and what they want, and simply providing medical facilities and offering services may do nothing to resolve them. In general, both the first-generation and second-generation reforms have been quite supply-oriented. Concern with demand is more characteristic of changes in the third generation currently under way in many countries, which include such reforms as trying to make “money follow the patient” and shifting away from simply giving providers budgets, which in turn are often determined by supposed needs.

If the organizational basis and the quality of primary health care often failed to live up to their potential, much of the technical footing remains sound and has undergone continuous refinement. This development can be sketched as a gradual convergence towards what WHO calls the “new universalism”– high quality delivery of essential care, defined mostly by the criterion of cost-effectiveness, for everyone, rather than all possible care for the whole population or only the simplest and most basic care for the poor (see Figure 1.1).

**Figure 1.1 Coverage of population and of interventions under different notions of primary health care**

	Population covered	
Interventions included	Only the poor	Everyone
"Basic" or simple	"Primitive" health care	Original concept
"Essential" and cost-effective	"Selective" primary health care	New universalism
Everything medically useful	(Never seriously contemplated)	Classical universalism

Adapted from Frenk J. *Building on the legacy: primary health care and the new policy directions at WHO*. Address to the American Public Health Association, Chicago, IL, 8 November 1999.

The notions that health and nutrition interventions can make a substantial difference to the health of large populations (25) and of obtaining “good health at low cost” (26) by selectively concentrating efforts against diseases that account for large, avoidable burdens of ill-health, are the basis for packages of interventions, variously called “basic” or “essential” or “priority”, that have been developed in several countries from epidemiological information and estimates of cost-effectiveness of interventions (27, 28). And the common failures in diagnosis and treatment due to inadequate training and excessive separation among disease control efforts have led to the development of clusters of interventions and more thorough training to support their delivery, most notably in the integrated management of childhood illness (29).

This evolution also implies an emphasis on public or publicly guaranteed and regulated finance, but not necessarily on public delivery of services. And it implies explicit choice of priorities among interventions, respecting the ethical principle that it may be necessary and efficient to ration services but that it is inadmissible to exclude whole groups of the population. However, it is easier to define a set of interventions that would preferentially benefit the poor if fully applied to the population, than it is to assure either that most of the poor actually do benefit, or that most of the beneficiaries are poor. Government health care services, although usually intended to reach the poor, often are used more by the rich. In 11 countries for which the distribution of benefits has been calculated from the distribution of public expenditure and utilization rates, the poorest quintile of the population never accounts for even its equal share (20%), and in seven of those countries the richest quintile takes 29% to 33% of the total benefit. This pro-rich bias is due largely to disproportionate use of hospital services by the well-off, who (with one exception) always account for at least 26% of the overall benefit. The distribution of primary care is almost always more beneficial to the poor than hospital care is, justifying the emphasis on the former as the way to reach the worst-off. Even so, the poor sometimes obtain less of the benefit of primary care than the rich (30). The poor often obtain much of their personal ambulatory care – which accounts for the bulk of their use of the health system and their out-of-pocket expenditure, and offers the greatest opportunity for further health gains – from private providers (31), and those services may be either more or less pro-poor than the care offered by the public sector.

The ideas of responding more to demand, trying harder to assure access for the poor, and emphasizing financing, including subsidies, rather than just provision within the public sector, are embodied in many of the current third-generation reforms. These efforts are more difficult to characterize than earlier reforms, because they arise for a greater variety of reasons and include more experimentation in approach. In part, they reflect the profound political and economic changes that have been taking place in the world. By the late 1980s, the transformation from communist to market-oriented economies was under way in China, central Europe, and the former Soviet Union. Heavy-handed state intervention in the economy was becoming discredited everywhere, leading to widespread divestiture of state enterprises, promotion of more competition both internally and externally, reduction in government regulation and control, and in general, much more reliance on market mechanisms. Ideologically, this meant greater emphasis on individual choice and responsibility. Politically, it meant limiting promises and expectations about what governments should do, particularly via general revenues, to conform better to their actual financial and organizational capacities.

Health systems have not been immune from these large-scale changes. One consequence has been a greatly increased interest in explicit insurance mechanisms, including

privately financed insurance. Reforms including such changes have occurred in several Asian countries, universal health insurance being introduced to different degrees in the Republic of Korea, Malaysia, Singapore and China (Province of Taiwan). Reforms to consolidate, extend or merge insurance coverage for greater risk-sharing have also occurred in Argentina, Chile, Colombia and Mexico, and a mixture of insurance and out-of-pocket health care has replaced much of the public system throughout the former communist countries. In developed countries which already had essentially universal coverage, usually less drastic changes have taken place in how health care is financed. But there have been substantial changes in who determines how resources are used, and in the arrangements by which funds are pooled and paid to providers. General practitioners and primary care physicians, as ‘gatekeepers’ to the health system, have sometimes been made accountable “not only for their patients’ health but also for the wider resource implications of any treatments prescribed. In some countries this role has been formalised through establishing ‘budget holding’ for general practitioners and primary care physicians, for example, through general practice ‘fund holding’ in the UK, Health Maintenance Organizations in the USA, and Independent Practice Associations in New Zealand” (32). And in the United States, there has been a great shift of power from providers to insurers, who now largely control the access of doctors and patients to one another.

## FOCUSING ON PERFORMANCE

This report does not analyse the variety of current reform efforts and proposals in detail, nor offer a model of how to construct or reconstruct a health system. The world is currently experimenting with many variants, and there is no clearly best way to proceed. But there do seem to be some clear conclusions about the organizations, rules and incentives that best help a health system to use its resources to achieve its goals; these are the subject of Chapter 3. How much can be accomplished with currently available resources – people, buildings, equipment and knowledge – depends greatly on the past investment and training that created those resources. And mistakes in investment have long-lasting consequences. The questions of how best to create resources, and what mistakes to avoid, are the subject of Chapter 4. There are comparable conclusions about what is desirable in the financing of the system; these are treated in Chapter 5. Finally, the health system as a whole needs comprehensive oversight, to stay directed to its goals and to ensure that the tasks of financing, investing and delivering services are adequately carried out. Suggestions concerning this more general function are developed in Chapter 6. These subjects are emphasized partly because so much reform today aims to change such aspects, rather than simply expanding supply or determining which interventions to offer. And all changes, to be justified, need to improve the performance of the system.

How then can the potential of health systems be fulfilled? How can they perform better, so that besides protecting health, they respond to people’s expectations, and protect them financially against the costs of ill-health? Chapter 2 sets out a framework for assessing health system performance and understanding the factors that contribute to it in the four key areas treated in subsequent chapters: providing services, developing the resources – human, material and conceptual – required for the system to work, mobilizing and channelling financing, and ensuring that the individuals and organizations that compose the system act as good stewards of the resources and trust given to their care.



## REFERENCES

1. **Miller J.** *The body in question*. New York, Random House, 1978: 14.
2. **Kleinman A.** Concepts and a model for the comparison of medical systems as cultural systems. *Social Science and Medicine*, 1978, **12**: 85–93.
3. **Claybrook J.** Remarks at the Seventh Annual North Carolina Highway Safety Conference, 1980. On Bureau of Transportation Statistics, Transportation Research Board web site at <http://www4.nas.edu/trb/crp.nsf/>
4. **US Department of Transportation.** *Traffic safety facts 1998*. Washington, DC, National Highway Traffic Safety Administration, 1998.
5. **OECD.** *International road traffic and accident database*. Paris, Organisation for Economic Co-operation and Development, 1999.
6. **Jamison DT et al.** *Disease control priorities in developing countries*. New York, Oxford University Press for The World Bank, 1993.
7. *World development report 1993 – Investing in health*. New York, Oxford University Press for The World Bank, 1993: Table 5.3.
8. **Akhavan D et al.** Cost-effective malaria control in Brazil. Cost-effectiveness of a malaria control program in the Amazon Basin of Brazil, 1988–1996. *Social Science and Medicine*, 1999, **49**(10): 1385–99: Table 5.
9. **Rutstein DD et al.** Measuring the quality of medical care – a clinical method. *New England Journal of Medicine*, 1976, **294**(11): 582–588.
10. **Charlton JR, Velez R.** Some international comparisons of mortality amenable to medical intervention. *British Medical Journal*, 1986, **292**: 295–301.
11. **Velkova A, Wolleswinkel-van den Bosch JH, Mackenbach JP.** The East–West life expectancy gap: differences in mortality from conditions amenable to medical intervention. *International Journal of Epidemiology*, 1997, **26**(1): 75–84.
12. **Cochrane AL, St Leger AS, Moore F.** Health service ‘input’ and mortality ‘output’ in developed countries. *Journal of Epidemiology and Community Health*, 1978, **32**(3): 200–205.
13. **Musgrove P.** *Public and private roles in health: theory and financing patterns*. Washington, DC, The World Bank, 1996 (World Bank Discussion Paper No. 339).
14. **Mackenbach JP.** Health care expenditure and mortality from amenable conditions in the European Community. *Health Policy*, 1991, **19**: 245–255.
15. **Filmer D, Pritchett L.** The impact of public spending on health: does money matter? *Social Science and Medicine*, 1999, **49**(10): 1309–1323.
16. **Kohn L, Corrigan J, Donaldson M, eds.** *To err is human: building a safer health system*. Washington, DC, Institute of Medicine, National Academy of Sciences, 1999.
17. **Taylor ASP.** *Bismarck – the man and the statesman*. London, Penguin, 1995: 204.
18. *Social insurance and allied services. Report by Sir William Beveridge*. London, HMSO, 1942.
19. **Savage M, Shisana O.** Health service provision in a future South Africa. In: Spence J, ed. *Change in South Africa*. London, The Royal Institute of International Affairs, 1994.
20. **Government of India.** *Health Survey and Development Committee Report. Vol. 1–4*. New Delhi, Ministry of Health, 1946.
21. **Londoño JL, Frenk J.** Structured pluralism: towards an innovative model for health system reform in Latin America. *Health Policy*, 1997, **41**(1) :1–36.
22. **Barnum H, Kutzin J.** *Public hospitals in developing countries: resource use, cost, financing*. Baltimore, MD, The Johns Hopkins University Press, 1993.
23. **Newell KN.** *Health by the people*. Geneva, World Health Organization, 1975.
24. **Sanders D et al.** Zimbabwe’s hospital referral system: does it work? *Health Policy and Planning*, 1998, **13**: 359–370.
25. **Gwatkin DR, Wilcox JR, Wray JD.** The policy implications of field experiments in primary health nutrition care. *Social Science and Medicine*, 1980, **14**(2): 121–128.
26. **Halstead SB, Walsh JA, Warren KS, eds.** *Good health at low cost*. New York, Rockefeller Foundation, 1985.

27. **Bobadilla JL et al.** Design, content and financing of an essential national package of health services. *Bulletin of the World Health Organization*, 1994, **72**(4): 653–662.
28. **Bobadilla JL.** *Searching for essential health services in low- and middle-income countries*. Washington, DC, Inter-American Development Bank, 1998.
29. **Tulloch J.** Integrated approach to child health in developing countries. *The Lancet*, 1999, **354**(Suppl. II): 16–20.
30. **Gwatkin DR.** *The current state of knowledge about how well government health services reach the poor: implications for sector-wide approaches*. Washington, DC, The World Bank, 5 February 1998 (discussion draft).
31. **Berman P.** The organization of ambulatory care provision: a critical determinant of health system performance in developing countries. *Bulletin of the World Health Organization*, 2000, **78**(6) (in press).
32. **Wilton P, Smith RD.** Primary care reform: a three country comparison of ‘budget holding’. *Health Policy*, 1998, **44**(2): 149–166.