TRENDS AND CHALLENGES IN WORLD HEALTH

WORLD HEALTH ORGANIZATION
GENEVA

TRENDS AND CHALLENGES
IN WORLD HEALTH

REPORT BY THE SECRETARIAT

1.   Health outcomes vary widely across the world. Even among countries at similar levels of income, variation persists. Some of this variation arises from health system performance, as differences in the design, content and management of health systems translate into outcome differences. Understanding this variation is essential for decision-makers at all levels if system performance and hence population health are to be improved.

2.   Improving population health is not, however, merely a matter of providing more and more health services. The health system can be defined as comprising all the organizations, institutions and resources that are devoted to health actions. A health action is defined as any effort, whether in the personal health care service sector, in the non-personal health service system or through intersectoral action, whose primary intent is to improve population health.

Goals of health systems

3.   This notion of the health system broadens the traditional focus on personal health care services. **Figure 1** situates the health system among various social systems and the goals that societies seek to achieve. Each system has a defining goal related to its core activity – for the education system, educating the people for the health system, improving health.

Fig. 1. **Social goals and systems**

Social goals	Social systems					
	Education	Health	Economic	Political	Cultural	Other
Education						
Health						
Consumption						
Democratic participation						
Knowledge						
Other						
Responsiveness						
Fair financing						

WHO 99463

4.   In addition to these defining goals, each system shares two common goals, here shown on the two bottom rows. The first is responsiveness to the legitimate expectations of the population. Citizens have expectations for their interaction with each system that transcend the simple defining goal – for example, to be treated with dignity and respect.

5.   The second is fairness in financing. For health, this is somewhat different to the simple value-for-money fairness of the

marketplace, for it also extends to the desire to avoid impoverishment due to illness of oneself or a family member. For health, fairness requires some degree of risk pooling.

6.   Achieving these health system goals also has effects on other systems and vice versa, as shown in each column. For example, health system outcomes of improved health may improve educational attainment, foster economic growth and political participation, and vice versa. The importance of these intersectoral goals has been emphasized by the Director-General in many of her speeches on the importance of improving health as an engine for economic growth.

7.   For health systems to improve health, performance monitoring must focus on health status, responsiveness and fairness in financing. **Figure 2** illustrates the framework for these three goals. First, achieving health status goals means improving average population health. Furthermore, because poor health status disproportionately affects certain segments or groups of society, reducing health inequalities is also important.

Fig. 2. **Health system goals**
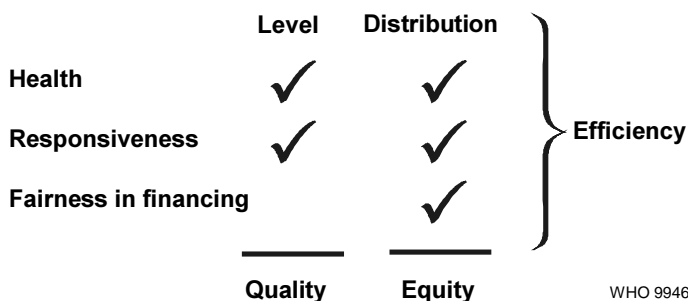
8.   Second, for responsiveness, as for health, the goal is twofold – raising the average level of responsiveness of the health system, and reducing inequalities in responsiveness. Finally, for

fairness in financing and financial risk protection, the key concern is distributional, across households.

9.   To complete this conceptual framework, the goals are translated into quality, equity, and efficiency. These concepts, often touted as central to monitoring health system performance, can now be meaningfully measured – the levels of population health and system responsiveness capturing quality, the distribution of all three comprising equity, and the output of these five elements as a function of resources invested in the health system describing efficiency.

10.   This conceptual framework, provides a basis for the measurement of system performance – the investigation of the success of health systems in meeting these goals. As a first step, the following paragraphs examine current and future trends in health status, and then health system performance in achieving the three goals. Finally, the document addresses key determinants of variation in health system performance.

Health status

11.   Mortality data are useful as a first step in describing the world's current health status. **Figure 3** plots global mortality for males, with the probability of death between birth and age five years (5q0) on the x axis and the probability of death between age 15 and 60 years (45q15) on the y axis. The figure shows 45q15 for males because variation across countries in the pattern of male mortality is much greater than that for female mortality, which is much more closely related to child mortality levels. The resulting figure then groups countries into five categories.

Fig. 3. **Child and adult male mortality by country, indicating mortality groups (mortality regions)**

Probability of dying between
age 15 and 60 years for males (45q15)

Probability of dying between birth and age 5 years (5q0)
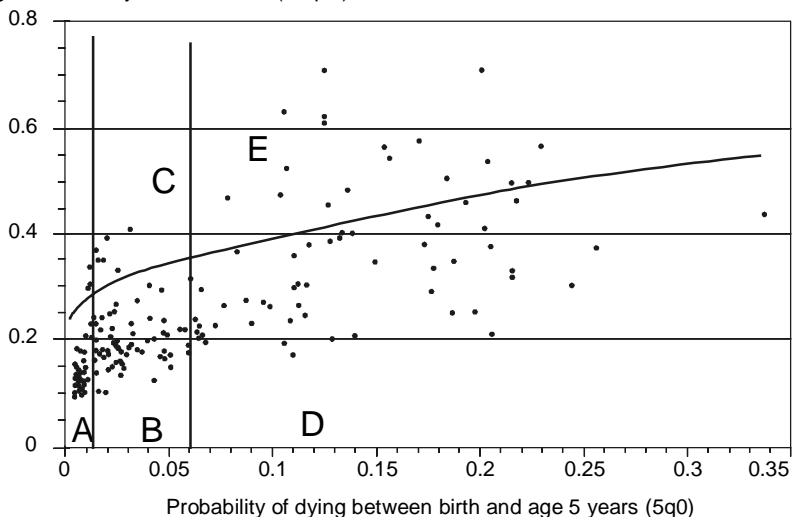
WHO 99456

12.   The map in **Figure 4** categorizes the countries of the world into five corresponding mortality regions. Group A countries have low levels of child and both adult male and female mortality and include Canada, the United States of America, most of the countries of Western and Central Europe, Australia, New Zealand and Japan. Group B countries have intermediate levels of both child and adult mortality and are found mainly in Latin America, the Eastern Mediterranean Region, parts of South-East Asia and China.

13.   Group C countries have the same level of child mortality as Group B but much higher levels of adult male mortality. All are located in Eastern Europe and Central Asia. Group D countries, in Asia and sub-Saharan Africa, have high levels of both child and adult mortality. Group E countries, all located in sub-Saharan Africa, have extremely high levels of adult male mortality, and in most, extremely high levels of female mortality, attributable in large part to AIDS.

Fig 4. **Mortality regions**

A
B
C
D
E
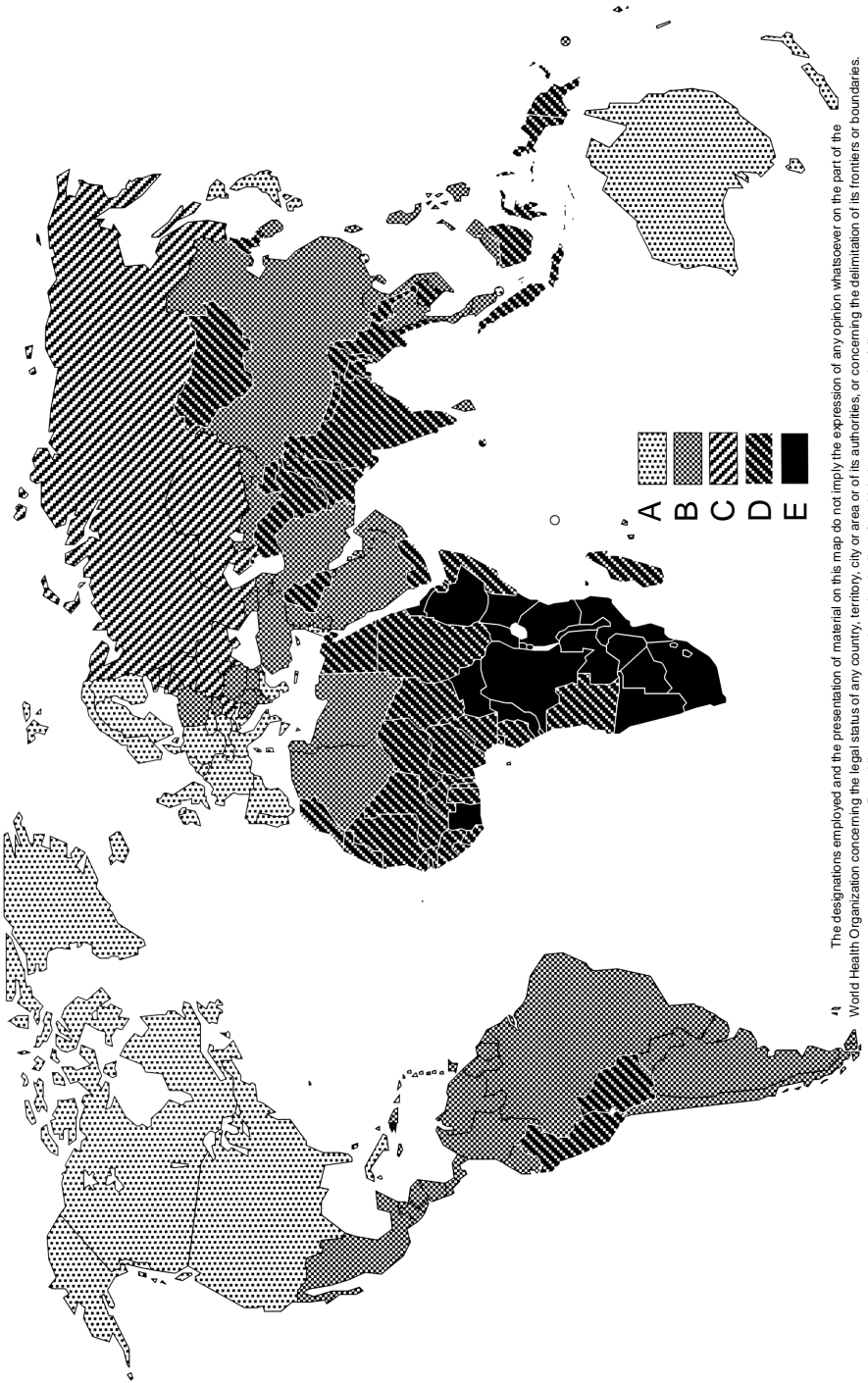
The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the
World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.
Dotted lines represent approximate border lines for which there may not yet be full agreement.

14.   Complementing this snapshot of the present situation, trends in mortality are also important to understanding world health. Mortality has declined across the globe, for both children and adults, yet heterogeneity in the rates of decline appears to be increasing, with reversals of the decline in some of the poorest parts of the world. For example, **Figure 5** shows stagnation in child mortality declines, as measured by 5q0, in Côte d'Ivoire and South Africa.

15.   The figure also shows trends in child mortality for the two most populous countries in the world, China and India. Although the latest available information for China is not very recent, it does suggest that child mortality declines have slowed since the mid to late 1980s. In India child mortality continues to decline, but rather slowly.

16.   This heterogeneity in child mortality trends mirrors that seen in adult mortality trends. **Figure 6** shows examples from four countries. Data from the Russian Federation demonstrate recent reversal of rising mortality trends; in the United States, where adult male mortality had stagnated for more than a decade, substantial improvement over the last two years has been attributed to the effectiveness of triple drug therapy in reducing AIDS mortality. The figure also shows data from the United Kingdom of Great Britain and Northern Ireland where percentage declines in mortality over the last two decades have been rather dramatic and not seen uniformly among European countries, including several high-income countries. Finally, the figure also shows the unusual pattern in Sri Lanka, where adult female mortality began to improve substantially in the 1970s and 1980s but adult male mortality did not, leading to substantially widening gender differentials in mortality.
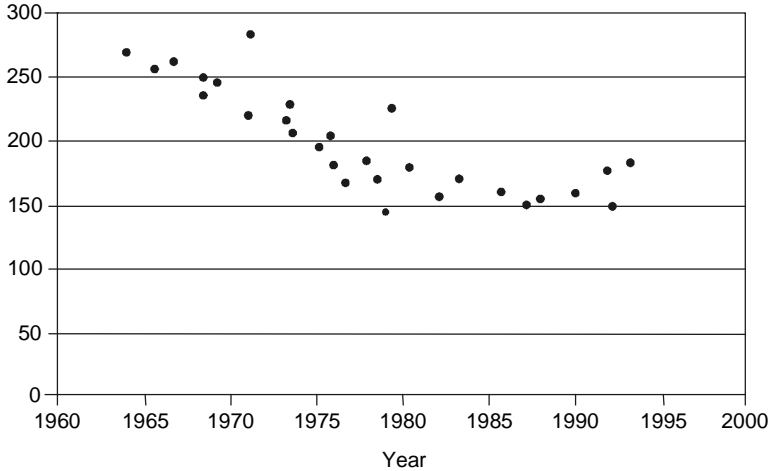
Fig. 5. **Trends in under-five mortality 1960-1996***
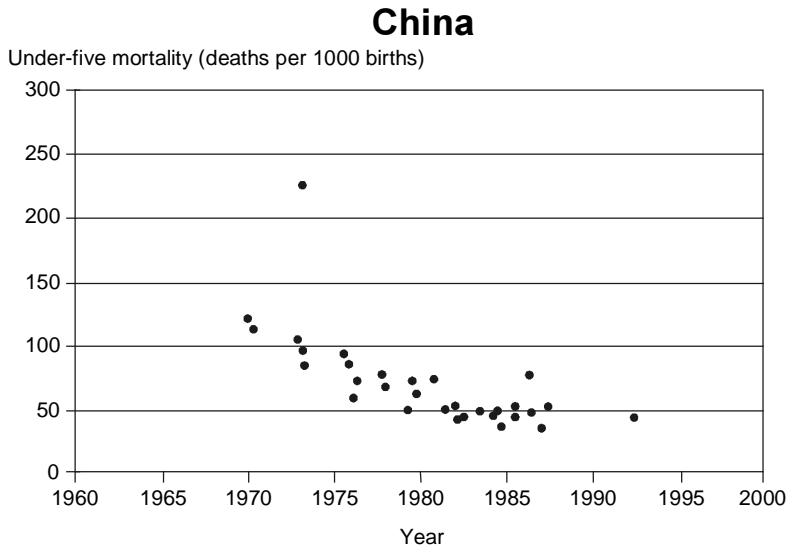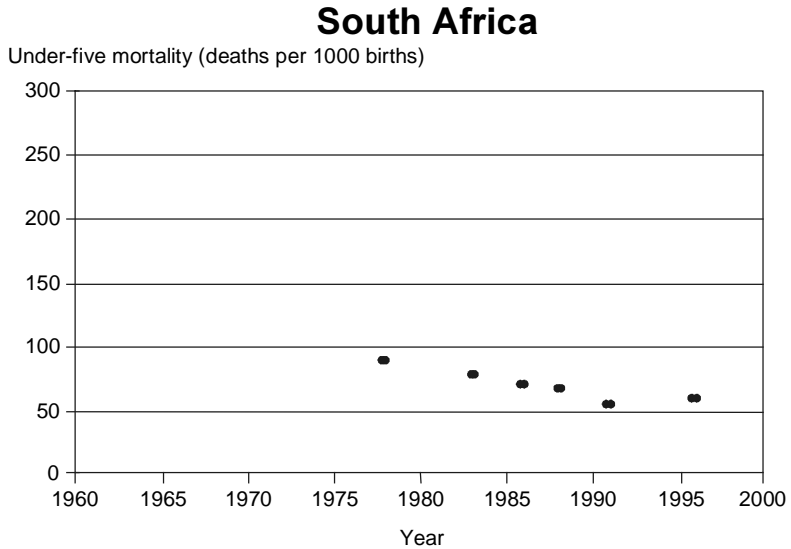
South Africa

Under-five mortality (deaths per 1000 births)

China

Under-five mortality (deaths per 1000 births)

* Separate dots at particular points in time represent data drawn from different sources.

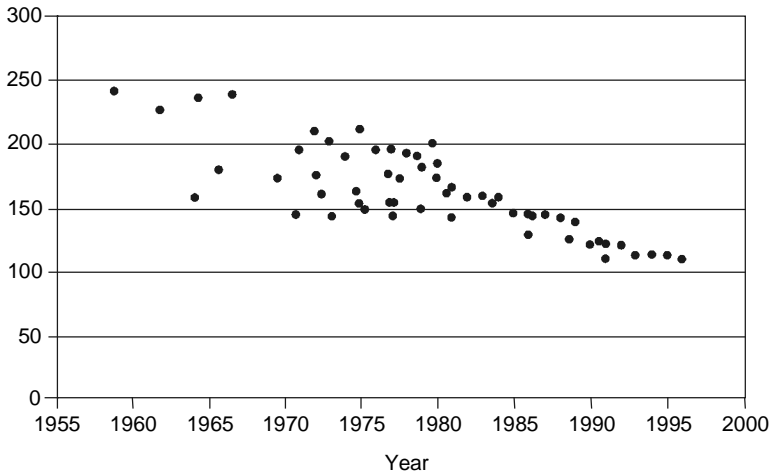Fig. 5. **Trends in under-five mortality 1960-1996*** (continued)

Côte d'Ivoire

Under-five mortality (deaths per 1000 births)

India

Under-five mortality (deaths per 1000 births)

* Separate dots at particular points in time represent data drawn from different sources.

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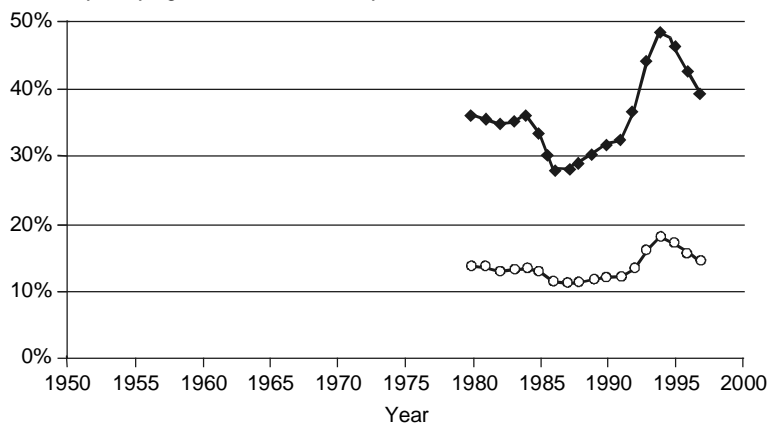Fig. 6. **Probability of dying between age 15 and 60 years, by sex, in selected countries**

Russian Federation
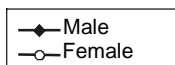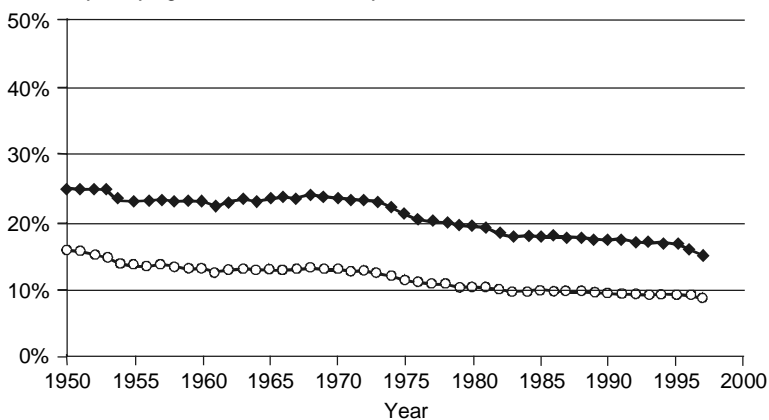
Probability of dying between 15 and 60 years

United States of America

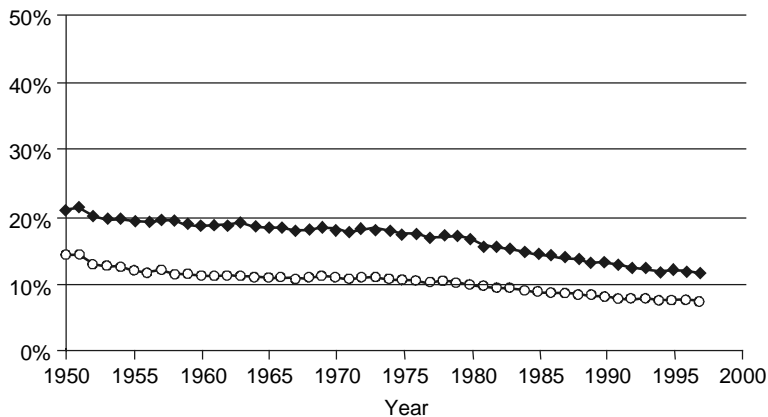Probability of dying between 15 and 60 years

Male
Female

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Fig. 6. **Probability of dying between age 15 and 60 years, by sex,
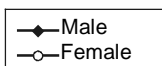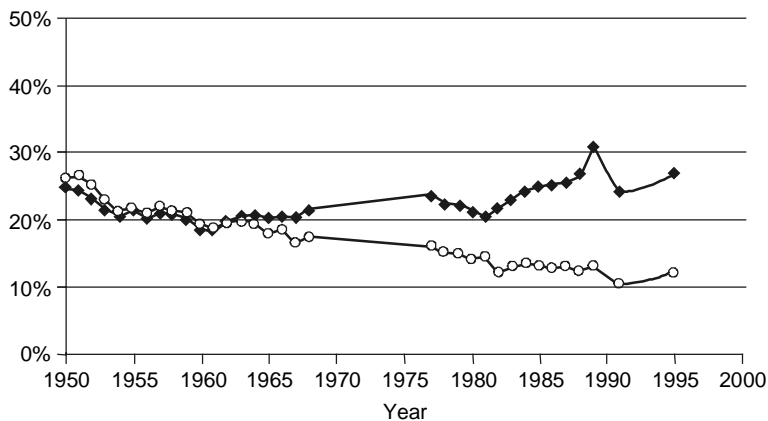in selected countries** (continued)

United Kingdom

Probability of dying between 15 and 60 years

Sri Lanka

Probability of dying between 15 and 60 years

WHO 99457/b

17.   To be sure, mortality alone is insufficient as a measure of health; the complete health experience of the population must be captured, through what WHO calls summary measures of population health. Two summary measures of population health are used extensively in WHO's annual World Health Report. The first is health expectancy, measured through disability-adjusted life expectancy. This measure subsumes not only premature mortality but also time spent in health states that are less than full health. Comparing disability-adjusted life expectancy with life expectancy provides a measure of the fraction of the life span spent in health states that are less than full health and the severity of those health losses.

18.   Similarly, health gaps – measures comparing the level of health achieved in a population with some normative goal for that population – provide insights into major causes, in disease and risk factor terms, of burden of disease. **Figure 7** shows health gaps for each WHO region, characterized in terms of disability-adjusted life years (DALYs) and broken down by three large groups of causes: communicable, maternal and perinatal causes; noncommunicable diseases; and injuries.

19.   In the Americas, Europe and the Western Pacific, the burden of disease from noncommunicable causes dwarfs that of communicable causes. In the Eastern Mediterranean and South-East Asia regions, communicable diseases become progressively more important, and in Africa they are the major contributor to the burden of disease. The fraction attributable to injuries, shown at the top of each column, varies substantially across regions. **Table 1**, based on WHO's estimates for the 1999 World Health Report, shows the 10 leading causes of health gaps, again measured in terms of disability-adjusted life years. The top three are major killers of children in the poor parts of the world. Number 4 is HIV/AIDS, reflecting the last decade's dramatic increase in the burden of disease due to HIV. Number 5 is unipolar major depression,

Fig. 7. **Distribution of DALYs by cause and WHO region, 1998**
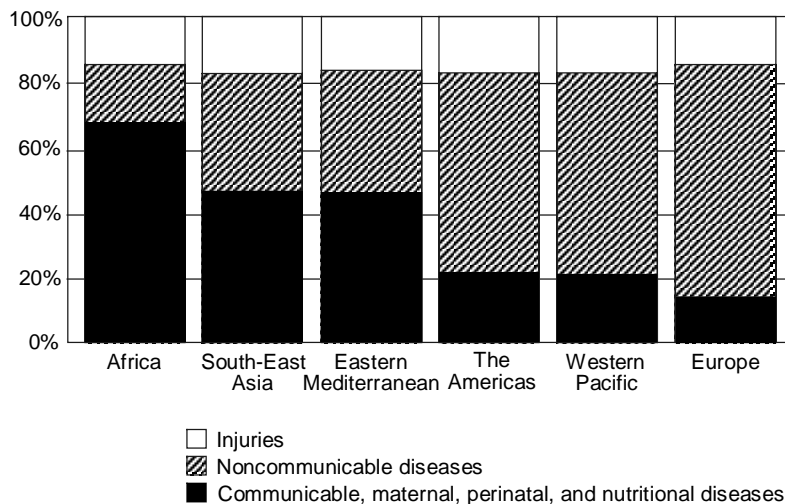
Table 1. **Ten leading causes of DALYs, 1998**

| Rank	Cause	% of global DALYs
1	Lower respiratory infections	6.0
2	Perinatal conditions	5.8
3	Diarrhoeal diseases	5.3
4	HIV/AIDS	5.1
5	Unipolar major depression	4.2
6	Ischaemic heart disease	3.8
7	Cerebrovascular disease	3.0
8	Malaria	2.8
9	Road traffic accidents	2.8
10	Tuberculosis	2.0

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highlighting how this measure, reflecting both fatal and non-fatal health events, leads to a different assessment of health problems to one focused solely on mortality. Number 6 is ischaemic heart disease, followed by stroke at Number 7. Malaria is the eighth leading contributor to the global burden of disease, followed by road traffic accidents and tuberculosis.

20.   **Figure 8** ranks the contribution of 11 major risk factors to the global burden of disease. The most significant risk factors are malnutrition in children and poor water and sanitation practices, which correspond to a substantial burden of disease, particularly in less developed countries. Five risk factors – unsafe sexual practices, alcohol use, indoor air pollution, tobacco use and occupational exposures – each account for between 3% and 4% of the global burden of disease. The major effect of alcohol abuse is disability rather than mortality. Indoor air pollution is a major contributor to childhood deaths from respiratory infections in poor parts of the world. Tobacco use continues to increase, meaning that its global impact on disease will increase. Occupational exposures, hypertension, physical inactivity, illicit drug use and outdoor air pollution, while smaller, are of particular importance in various parts of the world.

Fig. 8. **Burden of disease due to selected risk factors, 1995**

% of global DALYs

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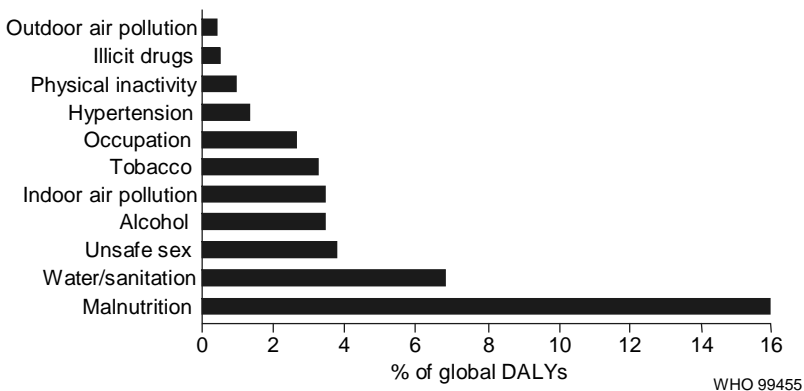
21.   After a brief look at trends in health indicators and some of the current sources of burden of disease in both terms of diseases and risk factors, it is important to look ahead. Many policy decisions, such as investments in human capital, physical infrastructure, and research and development, must anticipate future health challenges. Reflecting the crucial importance of forward-looking policy, WHO has invested substantially in strengthening capacity to work with Member States in order to develop future health scenarios.

22.   **Table 2** illustrates one future health scenario for the year 2020, developed through modelling and grounded in the evidence base for levels and trends in key determinants of health, using disability-adjusted life years to measure the projected health gap. The leading causes of the global burden of disease are expected to change from a pattern dominated by the communicable disease killers of poor children to a pattern dominated by noncommunicable diseases and injuries. Projected leading causes will include ischaemic heart disease, depression and road traffic accidents, followed by stroke, obstructive pulmonary disease and then lower respiratory infections, tuberculosis, possibly war, diarrhoeal diseases and HIV/AIDS.

23.   Five key determinants – or at least risks – of projected health change, are important enough to deserve special note. First is tobacco – a major risk factor at the end of the twentieth century and likely to continue to be so well into the twenty-first century. Second is HIV/AIDS, which will continue to cause increasing child and adult mortality in critical regions over the next decade. Third and fourth – the world's population is ageing and the average age of the population is increasing in all regions of the world. This shift in age will profoundly alter the mix of health problems to be addressed and is a result of two determinants: changing levels of fertility and changing levels of mortality.

Table 2. **Ten leading causes of DALYs, 2020**

Rank	Cause	% of global DALYs
1	Ischaemic heart disease	5.9
2	Unipolar major depression	5.7
3	Road traffic accidents	5.1
4	Cerebrovascular disease	4.4
5	Chronic obstructive pulmonary disease	4.1
6	Lower respiratory infections	3.1
7	Tuberculosis	3.1
8	War	3.0
9	Diarrhoeal diseases	2.7
10	HIV/AIDS	2.6

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24.   Fertility is particularly noteworthy because United Nations projections indicate that below-replacement fertility may become the norm for a growing number of countries. Changing mortality manifests itself in life expectancy gains which will see the number of persons aged 65 years or older grow dramatically. The fifth factor is the expectation of future, potentially accelerated declines in childhood mortality as the scientific advances of molecular biology translate into effective treatments for communicable diseases.

Health inequalities

25.   As important as they are, average levels of health alone are insufficient to measure health system performance. Critically important also is the distribution of health within countries, i.e., the extent of health inequalities.

26.   Measuring health inequality can be approached in two ways. On the one hand, the population of any country can be grouped according to determinants such as income, education level and ethnicity; key health indicators, such as infant mortality rate, life

expectancy and prevalence of important conditions can then be calculated for each group and compared.

27.   On the other hand, variation can be examined directly by considering a continuous scale for a health indicator – for example, child mortality may range 40-fold from 200 per 1000 for persons of lowest socioeconomic status to 5 per 1000 for those of highest socioeconomic status. Both approaches are rooted in the notion that health differences are interesting only if correlated with some other component of well-being such as income, education or social class. WHO believes that differences in health are intrinsically important, and not just if they correlate with other socioeconomic factors, simply because health is an intrinsic component of well-being. To reflect this concern for health for its own sake, WHO has fostered the development of measures of the full extent of health inequality within a population.

28.   While both approaches outlined earlier capture something of health inequality, further insight can be gained from small area contrasts. These are based on calculating health indicators for small populations, created by dividing a country into relatively homogeneous populations of, for example, 10 000 people. **Figure 9**, based on small area contrasts for Mexico, the United States and Japan, demonstrates the surprising extent of health inequality and variation in health inequality across countries.

Fig. 9. **Population distribution by average male life expectancy at birth**

% Population

Life expectancy at birth (years)

- - Mexico 1993   —— USA 1990   — Japan 1990
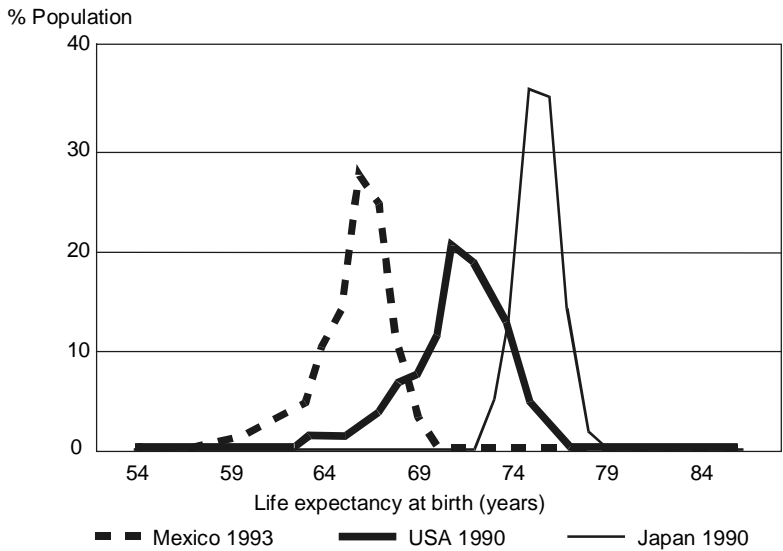
WHO 99458

29.   The graph shows the frequency distribution of male life expectancy, calculated for small areas, for each of the three countries. Among the three countries, average life expectancy is highest in Japan and lowest in Mexico, but ranking by inequality, captured in the width of the distribution, tells a different tale. Japanese health inequality is small, as seen in the relatively tall and narrow distribution indicating that most areas have similar male life expectancy. By contrast, the United States distribution is lower and broader, indicating greater variation in life expectancy by small area. From this perspective, Mexico is intermediate, having a lower average life expectancy than the United States but less inequality.

30.   WHO has also developed methods to measure inequality in child mortality risks, and identified some populations with low levels of child mortality but substantial inequality and others with high

levels of child mortality and intermediate to high levels of inequality. Both of these analytical approaches highlight the importance of considering not only the health of populations but also the distribution of health within populations.

Responsiveness

31.   With regard to the three goals outlined at the outset – improved health, responsiveness, and fairness in financing – these analyses relate predominantly to the first, improved health. Operationalizing the idea of responsiveness has meant breaking new ground, both conceptually and methodologically.

32.   Conceptually, responsiveness draws on two clusters of components. The first, comprising respect for individual dignity, for personal autonomy regarding treatment and for confidentiality, describes expressions of basic human rights. Responsiveness also comprises a cluster of components related to satisfaction with services, including such items as promptness of attention, access to social support networks, basic amenities in health care facilities, and availability of choices of health care provider. All seven components mentioned are important but, until recently, development of instruments to measure responsiveness that would be applicable across cultures and health care systems has been slow.

33.   Recognizing this need, WHO is working with partners to develop such instruments. Pilot surveys have been undertaken in a number of countries. To gather additional information, key informant surveys have been used to gather comparable information on health system performance in these seven areas. To ensure that measurements of responsiveness across countries are both reliable and valid and to avoid the situation that the poor are often more satisfied with lower quality services than the rich, the ultimate measurement strategy is likely to combine population-based surveys
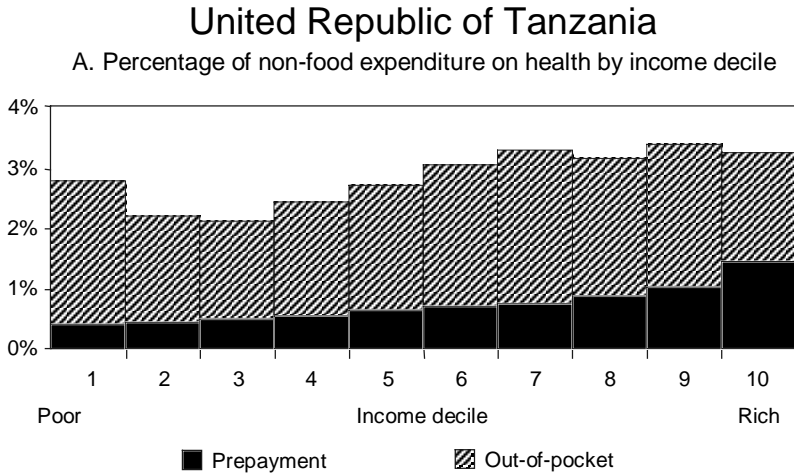
with observational study of health services delivery in health care facilities.

Fairness in financing

34.   The third goal for health systems is that of fairness in financing and protection against financial risk, based on the notion that every household should pay a fair share. What constitutes a fair share depends on a particular population's normative expectations as to how health systems are financed. Nevertheless, in all countries, fairness in financing embraces two critical aspects: (a) risk pooling among healthy and sick, and (b) risk sharing across wealth and income levels. Risk pooling denotes the premise that the contributions of those who are healthy pay for the care for those who are sick, so that individuals who become sick are not struck by a double burden of sickness and the financial costs of health care. Over the life span, each individual is likely to benefit from the financial security of risk pooling when she or he becomes sick. Risk sharing, while similar, refers to the premise that fairness does not mean equal contributions from all regardless of income or wealth but that contributions are greater from those who have more. In practical terms, embedding these notions of fairness in financing is a step towards preventing the financial impoverishment of households when one of their members becomes sick.

35.   This is demonstrated in **Figure 10**, which illustrates the extent of health expenditures by households for two very different countries, the United Republic of Tanzania and Bulgaria. The left-hand scale in the upper graphs shows the percentage of household non-food expenditures on health, grouped by increasing income decile, with the poorest on the left and the richest on the right. The pie charts present the same information, but classifying households by the proportion of their non-food expenditure devoted to health expenditures.

Fig. 10a. **Household non-food expenditure on health**

United Republic of Tanzania

A. Percentage of non-food expenditure on health by income decile

■ Prepayment   ▨ Out-of-pocket

B. Households by percentage of non-food expenditure on health

Legend:
- 0-0.5%
- 0.5-10%
- 10-25%
- 25-100%
- >100%

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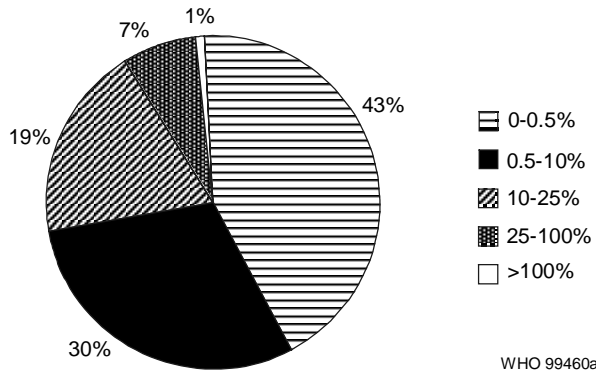
Fig. 10b. **Household non-food expenditure on health**
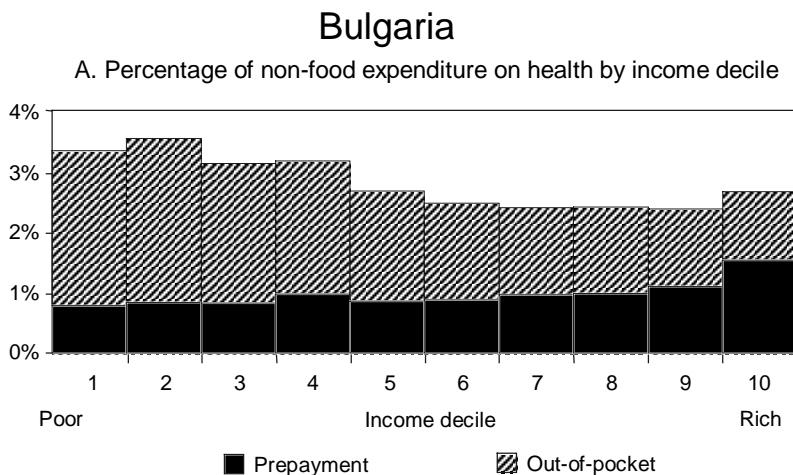
Bulgaria

A. Percentage of non-food expenditure on health by income decile

■ Prepayment   ▨ Out-of-pocket

B. Households by percentage of non-food expenditure on health

- 0-0.5%
- 0.5-10%
- 10-25%
- 25-100%
- >100%

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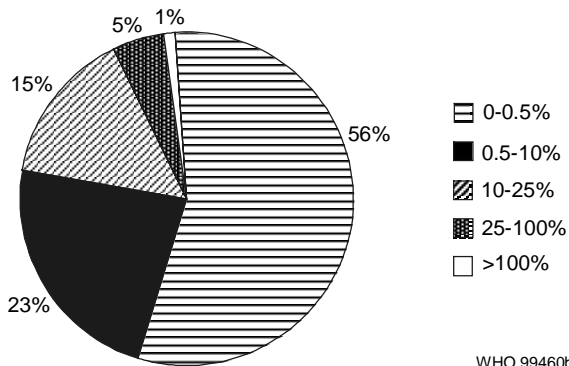
36.   In both countries, a substantial fraction of households are spending more than 25% of their available income on health, and a small number actually spend more than 100%. Systems where households are forced to become impoverished to purchase health care are clearly failing to meet the goal of fairness in financing.

37.   Health system reform can dramatically alter the distribution of household non-food expenditures devoted to health. For example, prior to a 1993 reform of German insurance contributions, each insurance fund adjusted its rate of contribution to the health risks of its population, resulting in a situation where contributions ranged from 4% to 5% of income for some households to as high as 17% for others. Reforms to equalize risks across insurance funds enhanced fairness, making contributions as a percentage of household income less variable.
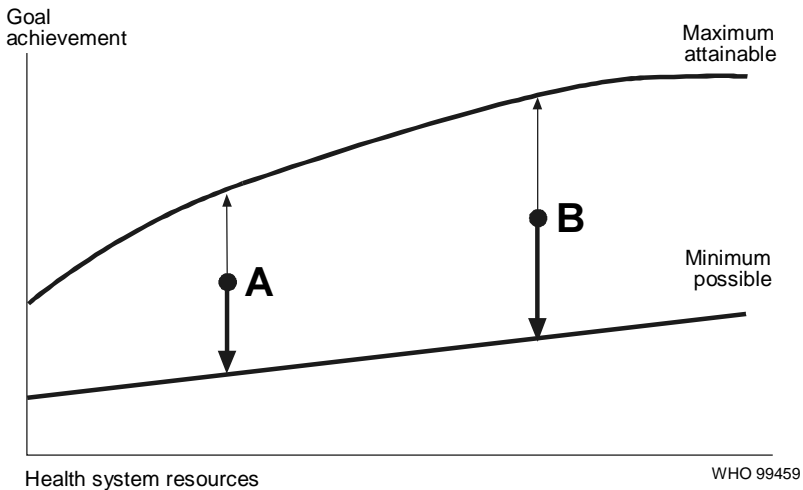
Performance

38.   In the preceding paragraphs, this review has covered the conceptual framework for each of the three goals of health systems – improving health, responsiveness, and fairness in financing – and highlighted measurement issues arising from measuring both the entity itself and its distribution. Progress towards achieving these goals is a critical component of health system performance, but the notion of performance now proposed is not simply about the level of goal achievement, but the level of goal attainment in comparison to the resources available for health.

39.   **Figure 11** illustrates this concept of performance with two countries, A and B. The vertical axis shows the level of achievement with respect to the goal of improving health. The horizontal axis shows health system resources. The lower line, or "minimum possible", is the level of health that would be achieved with the worst health system. The higher line, or "maximum attainable", is

the level of health that would be achieved with the best health system. Within the bounds established by the maximum and minimum, population A, despite a lower level of health than population B, benefits from system performance equivalent to population B.

Fig. 11. **Performance: achievement of goals in relation to resources**

40.   In other words, performance is measured relative to what is achievable given the resources devoted to health. In practical terms, to relate performance to resources requires asking the question, what resources are available for health? While all governments are familiar with budgets for health ministries, and often with budgets for health that may be located in other ministries, a more extensive effort, known as national health accounts, is necessary to measure available resources. National health accounts seek to identify all sources for health system expenditures, whether out-of-pocket, private voluntary insurance, social insurance, government taxation or donor agencies.

41.   Building on the extensive experience of OECD, WHO has been encouraging countries to use national accounts. This is no small task, for health systems are a major industry, accounting for approximately one-tenth of the global economic product. Of course, these resources are very unequally distributed, the vast majority being spent in high-income countries, and a very small fraction being spent in low- and middle-income countries where the majority of the global burden of disease now occurs.

42.   Looked at another way, as a share of national economies, health spending ranges from 2% or even less in some countries to nearly 15% in the richest nation. While great variation exists, as countries get richer the share of national income going to health tends to increase.

43.   Why is all of this important to WHO? Simply because by looking across health systems and comparing both the level of goal attainment and the amount of resources invested, it is possible to obtain a composite assessment of how systems are performing. As an example, consider disability-adjusted life expectancy compared to the level of health resources. Between-country variation in this critical measure of population health for any given level of health resources reflects variation in how well systems perform in improving health.

44.   WHO is investing substantially in providing the tools countries need to assess health system performance and in developing benchmarks to enable health systems to compare their performance to others in similar situations. Yet this is but a first step, because variation in performance merely highlights the importance of identifying the determinants, attributes or characteristics that explain why some systems perform better than others.

Determinants of performance

45.　Why does the performance of health systems vary? Countries with relatively similar levels of resources show great variation in goal attainment. In other words, some countries spending the same amount as others achieve greater levels of health, responsiveness, and fairness in financing. Determinants of performance can be analysed at several levels, but the following section focuses on health system structure and how institutions are organized to execute health system functions. **Figure 12** identifies four key functions in any health system: stewardship, financing, service provision and resource generation.

Fig. 12. **Functions of health systems**
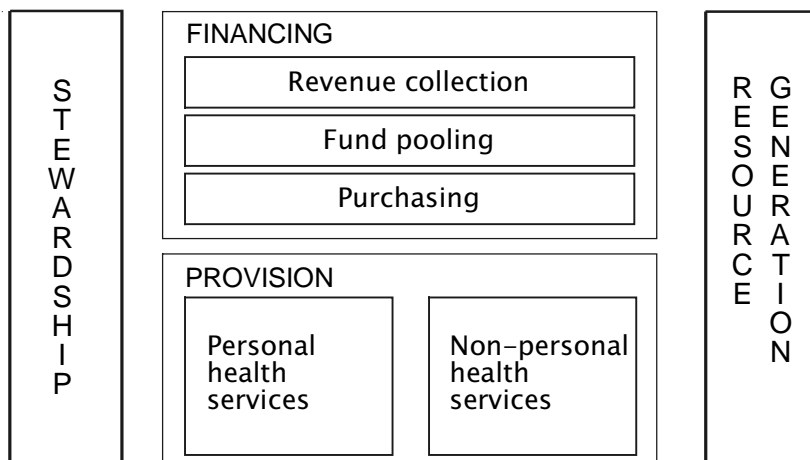
WHO 99465

46.　All health systems face the same central policy question of how to combine institutions to carry out these functions. Answering that question has been at the heart of the health reform debate. What is the role of the State in each of these functions? What is the optimal public-private mix for each function? How is responsibility for each function distributed among levels of government? A

society's answers to these policy questions constitute the central determinant of its health system performance, so that understanding the key functions is crucial.

47.   To begin on the left-hand side of Figure 12, stewardship is commonly used to refer to regulation. However, the concept of stewardship proposed here broadens the conventional notion of regulation – setting rules – to encompass two additional components: ensuring a level playing field, for example, by providing consumers with adequate information to guide their decisions in the health system; and providing strategic direction to the health system as a whole.

48.   The second function is financing – collecting revenues, pooling them and allocating them to specific provider activities. Revenue collection refers to mobilizing money from households, firms, governments and donor agencies and is conducted through various mechanisms, including out-of-pocket payments, voluntary insurance, compulsory social insurance, general taxes, donations from nongovernmental organizations and transfers from international agencies. Once funds have been mobilized, the second part of the financing function is accumulating those revenues in a fund, to pool risk. Some forms of financing involve no pooling, as with out-of-pocket payment for each episode of care at the time services are rendered.

49.   By contrast, insurance systems entail integration of resources from individual contributors or sources both to pool and to share risks across the population. Achieving greater financing fairness implies solidarity in financing, which in turn is only achievable through risk pooling – i.e., those who are healthy at any given time contribute to paying for the care of those who are sick. Evidence from many health systems highlights the point that prepayment through insurance systems leads to greater financing fairness.

50.   Once revenues have been collected and pooled, they are allocated to institutional or individual providers for service provision, described as purchasing in Figure 12. "Purchasing" is used broadly here to include both intervention-specific purchases and global budgeting arrangements. The primary policy lesson from available evidence on purchasing is that health systems perform better to the extent that they are engaged in active purchasing of interventions of proven cost-effectiveness and social acceptability. By contrast, unstructured purchasing or budgeting reflecting historical trends does not take account of actual cost-effectiveness and social acceptability of interventions and leads to poorer performance.

51.   The third function of the health system is the provision of services. This refers to the combination of various inputs – human resources, drugs, and facilities – in a production process whose output is health services. In most health systems, there is a distinction between, on the one hand, personal services applying to individuals, whether the services are preventive, diagnostic, therapeutic or rehabilitative, and, on the other, non-personal services applying to collectives – for example, mass education – or to non-human elements of the environment, as in sanitation. This distinction is important because the relevant policy questions differ for each. For example, personal health services are typically provided through a much broader public/private mix than non-personal health services, which tend to be a governmental responsibility.

52.   Finally, the fourth function of the health system is resource generation. Health systems are not limited to the set of institutions that regulate, finance or provide services but also include a diverse set of organizations providing inputs into producing health services, particularly human resources, physical resources such as facilities and equipment, and knowledge. This set of organizations includes universities and other educational institutions, research centres,

construction firms, and a vast array of organizations producing specific technologies such as pharmaceutical products, devices and equipment.

53.   From descriptions of the four functions and how they combine within a given health system, its organizational architecture can be characterized. Some systems have substantial vertical integration such that organizations, whether governmental or in the private sector, execute more than one of these functions. For example, health systems may be vertically integrated through the ministry of health, which may be responsible for stewardship, financing, provision and at least some aspects of resource generation. An alternative architecture is seen in the highly fragmented systems of several Latin American countries where social security institutes, the ministry of health and the private sector coexist. Monitoring the four functions and how they are combined thus both permits comparisons among systems at a particular point in time and yields insights into the way systems evolve over time.

54.   **Figure 13** shows the example of Chile, portraying the organizational structure of the Chilean health system in five time periods. The first reflects the situation relatively early in the twentieth century, whereas the second refers to the initial reforms that introduced social insurance in Chile; the third to the unification of public institutions into a national health service; the fourth to the fragmentation of fund pooling and substantial privatization of the purchasing function; and the fifth to recent attempts to increase the degree of solidarity in health system financing. These diagrams show the way in which the configuration of the stewardship, financing and provision functions has changed over time. Figure 13 depicts the relative importance of public and private sectors for each function over the five time periods. The shape of this functional combination, as mentioned earlier, constitutes the central determinant of health system performance.

Fig.13. **Evolution of the health system in Chile**

1923

Revenue collection — D | GT | OOP

Pooling — NGO | NP

Purchasing — IP

Provision — PP

1924-1952

Revenue collection — GT | OOP

Pooling — SI | M O H | NP

Purchasing — IP

Provision — PP

1953-1979

Revenue collection — GT | OOP

Pooling — SI | NHS | NP

Purchasing — IP

Provision — PP

D	Donors
FONASA	Public health insurance fund
GT	General taxation
IP	Individual purchasing
ISAPRE	Private health insurance/purchasing firms
MOH	Ministry of health or equivalent
NGO	Nongovernmental organization
NHS	National health service
NP	No pooling
OG	Other governmental (not central)
OOP	Out-of-pocket
PP	Private providers
SI	Social insurance

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Fig.13. **Evolution of the health system in Chile** (continued)

1980-1990

1991-1997

D	Donors
FONASA	Public health insurance fund
GT	General taxation
IP	Individual purchasing
ISAPRE	Private health insurance/purchasing firms
MOH	Ministry of health or equivalent
NGO	Nongovernmental organization
NHS	National health service
NP	No pooling
OG	Other governmental (not central)
OOP	Out-of-pocket
PP	Private providers
SI	Social insurance

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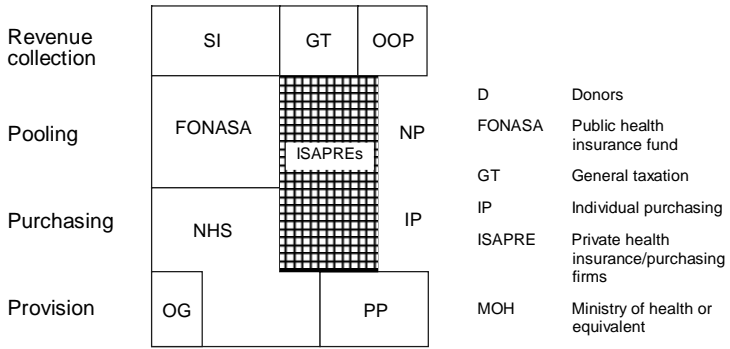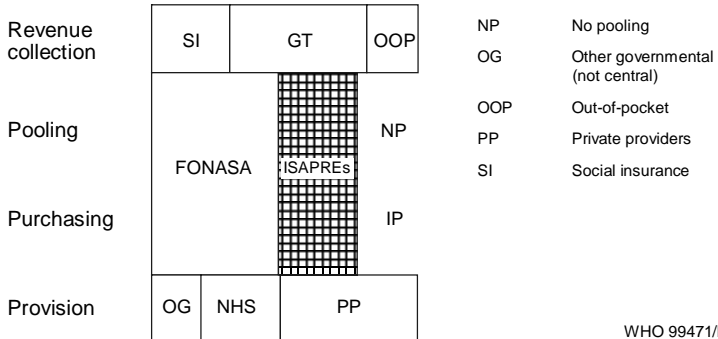
55.   In addition to comparing the evolution of a particular health system through time, it is possible to compare the functional configuration of several systems at a given moment. **Figure 14** illustrates such a comparative approach with the examples of Bangladesh, Egypt and the United Kingdom.

Key challenges

56.   By articulating and investigating the four functions and how they combine, one can not only understand determinants of system performance but also contemplate key policy challenges arising for each function as health systems continue their processes of reform. For stewardship, which lies at the heart of debates about the future role of the State, the main challenge is to strengthen the capacity of ministries of health to provide strategic leadership for the health system. Many reform initiatives seek to alter the role of the State so that it ceases to be a mere provider of services – very often a weak, poor-quality, high-cost provider – and develops capacity to regulate the entire health system and provide it with strategic direction.

57.   Within the financing function, the key challenge in revenue collection is to expand prepayment, via a central role for public financing or publicly mandated financing. In the case of fund pooling, creating as wide a pool as possible is critical to spreading financial risk for health care, and thus reducing individual risk and the spectre of impoverishment from health expenditures. For purchasing, the key challenge is to develop and implement mechanisms to allocate resources to optimal combinations of interventions. Much work remains to be done to strengthen the evidence base that undergirds the choice of optimal interventions.

Fig.14. **Organizational structure of health systems in three countries**

Bangladesh (1996/97)

Revenue collection	GT	D	OOP	Other
Pooling	MOH	OG	NP	
Purchasing			IP	
Provision	MOH	PP		

Egypt (1994/95)

Revenue collection	GT	D	SI	OOP
Pooling	MOH	OG	SI	NP
Purchasing				IP
Provision	MOH	MOE	OG SI	PP

United Kingdom (1994/95)

Revenue collection	GT	SI	OOP	PI
Pooling	MOH		NP	
Purchasing	HA		GP IP	
Provision	NHS	PP		

D	Donors
GP	General practitioners (gatekeepers)
GT	General taxation
HA	Health authorities
IP	Individual purchasing
MOE	Ministry of environment
MOH	Ministry of health or equivalent
NHS	National health service
NP	No pooling
OG	Other governmental (not central)
OOP	Out-of-pocket
PI	Private insurance
PP	Private providers
SI	Social insurance

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58.   As noted earlier, the distinction between personal and non-personal service provision is important because the policy questions and challenges differ. For non-personal health services, key challenges include further decentralization where that enhances suitability of services and accountability for resources, and improving managerial capacity to deliver the services. A related issue is the need for efforts to ensure that these services are increasingly prominent in evolving health systems, particularly as the State reassesses its role in the provision of personal care services. Key challenges for personal services arise from the need to balance the extent to which competition is desirable in such a way that efficiency gains do not increase inequality or slow further declines in burden of disease. Precisely because of the growth of private service provision, the importance of stewardship as a core public responsibility grows in parallel.

59.   Finally, for resource generation, a central policy question is how to ensure the best possible match between input supply and the requirements of the health system, particularly in the case of human resources for health, to ensure that maldistributions of health professionals and workers do not compound existing inequalities in health.

Conclusion

60.   This report began with three goals for health systems – improving health, responsiveness, and fairness in financing. These are each amenable to measurement and monitoring and together provide the basis for a composite assessment of health system performance. Having established a measure of performance, the document turned to investigating variation in performance, using the framework of four key functions – stewardship, financing, service provision, and resource generation – to describe health system architecture. Further refinement of the instruments for

measuring performance and analysing its determinants is critical to its improvement. To that end, WHO is continuing its investment in developing instruments that will help decision-makers to improve performance and, by so doing, ensure that the actions of health systems translate into better health for the populations they serve.

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