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HEALTH-CARE SYSTEMS: LESSONS FROM THE REFORM EXPERIENCE

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ABSTRACT/RESUME

This study reviews health-system reforms in OECD countries over the past several decades and their impact on the following policy goals: ensuring *access* to services; improving the *quality* of care and its outcomes; allocating an "appropriate" level of resources to health care (*macroeconomic efficiency*); and ensuring *microeconomic efficiency* in service provision. While nearly all OECD countries have achieved universal insurance coverage, initiatives to address persistent disparities in access are now being undertaken in a number of countries. In light of new evidence of serious problems with health-care quality, many countries have recently introduced reforms, but it is too soon to generalise as to the relative effects of alternative approaches. Instruments aimed at cost control have succeeded in slowing the growth of (particularly public) health-care spending over the 1980s and 1990s but health-care spending continues to rise as a share of GDP in most countries. A few countries have been concerned that spending restrictions have gone too far and hurt health-system performance. There is some evidence that supply of health services has become more efficient, particularly in the hospital sector, but scope for further gains exists. Measures such as better payment methods have improved the microeconomic incentives facing providers. However, introducing improved incentives through a more competitive environment among providers and insurers has proved difficult.

JEL classification: I10, I11.
Keywords: Health care reforms; health-care systems.

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Cette étude présente les réformes des systèmes de santé des pays de l'OCDE qui se sont opérées au cours des dernières décennies et leur impact sur les objectifs de politique économique suivants: assurer l'accès aux services de santé; améliorer la qualité des soins; allouer un niveau « approprié » de ressources à la santé (efficience macroéconomique) ; et s'assurer que les services soient dispensés de façon à optimiser l'efficience microéconomique. Alors que presque tous les pays de l'OCDE ont mis en place une couverture universelle, les initiatives se multiplient pour résoudre les problèmes de disparités résiduelles d'accès aux soins. Un grand nombre de pays ont introduit des réformes pour tenter de corriger de sérieux problèmes de qualité mais il est encore trop tôt évaluer leurs effets. Les mesures visant à contrôler les coûts ont réussi à réduire la croissance des dépenses de santé au cours des années 80 et 90, mais les dépenses de santé exprimées en pourcentage du GDP continuent à croître dans la plupart des pays. Quelques pays se sont inquiétés de ce que les restrictions de dépenses aient été trop loin et eu des effets négatifs sur les performances des systèmes de santé. Bien que l'offre des services de santé soit devenue plus efficiente, notamment dans le secteur hospitalier, le champ des gains possibles reste large. Un certain nombre de mesures, telles que l'amélioration des méthodes de paiement, ont accru les incitations microéconomiques des fournisseurs. Améliorer ces incitations par le biais d'un environnement plus compétitif entre fournisseurs et assureurs s'avère difficile.

Classification JEL : I10, I11.
Mots-clés : Reformes systèmes de santé ; systèmes de santé.

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Introduction

1. This paper presents a broad overview of OECD member countries' experience in reforming their health-care systems over the past several decades. The continued need for policy reform reflects the very particular nature of health care as an economic activity, together with fundamental equity objectives. More specifically, financing of health care is based on insurance (including tax-funded models), and insurance markets suffer from a number of deficiencies, which may be particularly pronounced in the case of health:

- The ability of insurance to pool financial risk and promote access to services is weakened in voluntary insurance markets because those with greater health risks are more likely to take out insurance and to insure at higher levels, as compared with those in good health. This "adverse selection" can limit access to affordable insurance for higher-risk individuals, lower coverage and potentially lead to under-consumption of care from a social perspective.

- The point of insurance is that the insured person does not bear the full cost of treatment received. The associated "moral hazard" implies a propensity to consume beyond the social optimum.

- Providers of health care are typically better informed than insurers about the true need and scope for medical treatment, and about the quality of services furnished. This "information asymmetry" (which applies to patients as well as insurers) may well influence medical choices, with health-care practitioners often being in a position to induce demand for care.

2. For these reasons, all OECD countries rely heavily both on public provision of insurance and on public regulation of various aspects of health-care and private health-insurance markets. In practice, the public sector has come to take a dominant role in the financing and, in some cases, the provision of health-care services. However, because health-care spending over the 1960s and 1970s grew at rates that most governments considered inconsistent with sustainable public finances, policy makers became concerned

[1] This report was produced for Working Party 1 of the Economic Policy Committee and the Ad Hoc Group on the OECD Health Project. The authors wish to thank the authorities in OECD member countries for providing input on the health-system reform experience and comments on earlier drafts. Thanks go also to Irene Sinha for secretarial assistance, Gabrielle Hodgson for statistical support, and Jean-Yves Gnabo for research assistance. Guidance and direction to this work was provided by Willi Leibfritz, Jorgen Elmeskov and Michael Feiner of the Economics Department and Peter Scherer, Martine Durand and John Martin of the Directorate for Employment, Labour and Social Affairs. Useful comments were provided by Rauf Gonenc, David Grubb, Peter Hoeller, Manfred Huber, Jeremy Hurst, Rick Imai, Peter Jarrett, Jens Lundsgaard, Flavio Padrini, Luigi Siciliani, Clive Smee and Nicole Tapay.

with finding ways to bring this expenditure under control. In many instances, governments initially aimed at constraining health-care spending through various kinds of macroeconomic restrictions. Since these often created problems in the provision of health care, more recently the focus turned to encourage more efficient provision of care. Nonetheless, while spending growth has slowed considerably over the past two decades, health spending continues to grow at rates exceeding overall economic growth in many OECD countries.

3. Devoting more of GDP to health care as society gets richer is not necessarily inappropriate. Indeed, an emerging dilemma facing governments after this period of restraint is judging the "appropriate" level of spending. On the one hand, social welfare may well be improved by increased government spending, particularly if demand for health-care services tends to rise more rapidly than income, and if the cost of technological change is more than compensated by improvements in the quality of care. On the other, the market failures associated with health care suggest a risk of excess spending, with equivalent health outcomes possibly attainable at lower cost. In particular, governments continue to be concerned that providers may have captured some of the increase in health spending as *quasi*-rents and that forms of inefficient – and sometimes ineffective - provision have lingered, even when less expensive and better alternatives were possible. At the same time, price signals can be used only to a limited extent to curb excessive or too costly care because patient demand appears to be relatively inelastic and there is concern that they would prevent access to care for some persons and thereby conflict with objectives concerning equity and health outcomes.

4. Governments are increasingly aware that inappropriate incentives built into the existing arrangements for organising and paying for health-care services have contributed importantly to current problems. In the light of this, a number of reforms to address these issues have been introduced. The scope for improvement is far from exhausted, but choices about further reform are hampered by the insufficiency of information about the impact of the (numerous) reforms that have been enacted - either domestically or abroad. This, in turn, reflects the fact that those charged with governing the day-to-day operation of health-care systems only rarely have the information necessary to correctly identify problems and to monitor adequately the outcomes of changes once they have been introduced.

5. This report aims to give policy makers a better understanding of the state of reforms across OECD countries and to inform them of policy orientations that may potentially have greater payoffs. Nonetheless, the broad conclusions are to be treated with some caution: while all countries have encountered the same basic challenges, they have manifested themselves differently because of differences in institutional and historical context, and the reforms undertaken have not necessarily reflected the same factors and problems. This review is intended to serve as a supplement to the more detailed studies under way in the OECD Health Project and as an input to a comprehensive report prepared for discussion at Ministerial level.

6. The report draws on the diversity of the reform experience across countries on the basis of information available to the Secretariat.[2] While the Secretariat has attempted to cast the net as wide as possible, information was not available for all countries and all aspects of reform. Thus, some important reform experiences may have been missed.

[2] This paper has drawn on the special chapters on health in EDRC country surveys (listed in bibliography), mainly written during the 1990s, and other OECD reports on health and health policy. The Secretariat has, where possible, updated this material and widened the country coverage on the basis of available literature and replies to a questionnaire sent to member countries by the Secretariat. The the Health Care Systems in Transition series of publications by the European Observatory on Health Care Systems served as another source of information on reforms in some OECD countries.

7. The remainder of this report is structured as follows. The report begins with a brief overview of the structural characteristics of OECD health systems. It then describes and assesses a range of instruments aimed at achieving key health-system goals. Under the heading of improving access to care and health outcomes, the first substantive section examines, successively, measures to improve access to health care and reforms aimed at improving the quality and effectiveness of health-care services and achieving high levels of patient satisfaction. As regards the cost of health care, the second substantive section first considers macroeconomic measures to control public health-care spending and, then, efforts to achieve greater cost efficiency in the provision of care. Trade-offs between various instruments are highlighted in the various sections. The policy conclusions are summarised in the final section.

Overview of the structural characteristics of OECD health systems

8. OECD member countries use a wide variety of institutional arrangements to provide health insurance coverage and to finance and deliver health care. Each approach has strengths and weaknesses that reflect, to a large degree, the patterns of incentives associated with its institutional and regulatory arrangements.

Health-care insurance and financing

9. Because insurers serve as payers for health services, the extent of public versus private coverage is indicative of the degree of government control over health spending. Whether the system features a single, universal insurer or multiple insurers has implications for the scope for introducing competition-based reform approaches and the extent of consumer choice available. All OECD countries have some form of publicly financed or administered health insurance programmes (Table 1). Private health insurance is the dominant form of basic coverage in the United States and Switzerland, and covers a sizeable minority of the population in Germany and the Netherlands. In countries such as Hungary, Japan, Korea, Mexico, and most Nordic countries, private health insurance policies are not commonly used. In other countries, private health insurance is used to fill gaps in the benefits package (a supplemental policy) or absorb out-of-pocket payments (complementary insurance).[3] Private insurance duplicates coverage provided by universal public programmes in Australia, Ireland, Italy, Spain, and the United Kingdom, where such coverage is purchased mainly to increase choice of providers and timeliness of care.[4]

[Table 1. Coverage of public health insurance schemes over total population, 1960-2000]

10. The way in which health systems are financed affects equity (Table 2). Systems based on individual premia (as in standard private insurance arrangements) and/or with a high degree of cost-sharing distribute a larger share of the cost to higher-risk groups and those who use services. And since income is linked to health status (as are premia in some systems), financing can fall disproportionately on low-income households, potentially hindering access where costs serve as financial barriers. Financing schemes that are closely related to ability to pay – *i.e.*, mainly relying on taxes or social insurance contributions – and that use a low degree of cost-sharing are generally considered to be more equitable in their financial impact and to foster greater equity of access to care. Because demand for services is not tempered by

3 Countries in which complementary or supplementary private health insurance policies are common include Belgium, Canada, Denmark, France, Germany, the Netherlands, New Zealand, and the United States (in the case of Medicare programme beneficiaries).

4 In countries where private health insurance is available, governments often impose rules on what sort of coverage is permissible. For example, Australia prohibits private insurance policies from covering the ambulatory care co-payments required in the public programme. Canada prohibits private health insurers from covering benefits included in the national plan.

additional (direct, financial) costs incurred by prospective patients, this form of financing may be particularly subject to moral hazard.[3]

[Table 2. Public and private financing sources as shares of total health expenditure, 2000]

Relationship between insurance/financing and delivery systems

11. The degree to which health-care financing and delivery systems are publicly controlled or administered has important policy implications, particularly for cost control and efficiency. Although there is considerable variation within systems, OECD countries can be classified as generally consistent with one of the three approaches described below.[5] It is important to recognise that elements of more than one of these approaches exist in most countries (even if one form is dominant) and that the dominant model has tended to shift under the force of reforms.[6]

12. The *public-integrated model* combines on-budget financing of health-care provision with hospital providers that are part of the government sector.[7] These systems, which merge the insurance and provision functions, are organised and operated like any government department. Staff is generally paid on salary (although, in some cases, doctors can have private patients as well) and they are most often public-sector employees. Ambulatory doctors and other health-care professionals can be either public employees or private contractors to the health-care authority, with a range of remuneration packages. Ensuring complete population coverage is particularly easy under such systems, and as they are under the control of the budget, the growth of overall costs has been contained more easily. However, they have weak incentives to increase output, improve efficiency, or maintain quality and responsiveness to patient needs. This may be less the case in the ambulatory sector, where payment systems are more often linked to provider output.

13. In the *public-contract* model, public payers contract with private health-care providers. The payers can be either a state agency or social security funds.[8] Single-payer arrangements have a stronger position *vis à vis* providers (as in the public integrated model) and tend to have lower administrative costs than do multiple payer systems. In many public-contract systems, the private hospitals and clinics are run on a non-profit basis. Independent private contractors generally supply ambulatory care. In the past, payment of providers has been often on an *ex post* basis for services provided (see Boxes 5 and 6), although contract arrangements have been evolving. These systems are generally considered to be more responsive to patient needs than public-integrated arrangements, but less successful in containing health-care costs, requiring additional regulation and control by the public authorities.

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5 In practice, no OECD member country has a health system based on private financing combined with public delivery of health care.

6 For example, in the United States, the hospital system for veterans belongs to a public integrated model, and Medicare and Medicaid are a form of the public contract model, with the remainder a private insurance/provider model. Other countries are equally complex. France has a social insurance system that finances most of health care, but the public hospital system is part of the government sector and as such is closer to a public integrated model. This sits alongside public-contract arrangements with private clinics and hospitals (some of which are for-profit).

7 Broadly speaking, public-integrated systems exist in the Nordic countries, Australia (public hospitals), Italy, Greece and Portugal and, before reforms of the early 1990s, the United Kingdom. New Zealand introduced a purchaser-provider split in the 1990s similar to developments in the United Kingdom, but it has since moved closer to an integrated model following reforms in 2000.

8 Canada, most of the remaining Continental European countries, Japan, and, now, the United Kingdom and, to some extent, New Zealand, belong to the public-contract category.

14. A *private insurance/provider model* uses private insurance combined with private (often for-profit) providers. Insurance can be mandatory (Switzerland) or voluntary (the United States), and in the case of the latter, affordable insurance may not be available to some individuals. Payment methods have traditionally been activity based, and the systems have featured a high degree of choice and responsiveness to patient needs, but cost control has been weak. In response, managed care plans, which provide incentives for volume and price control, expanded rapidly in the United States during the 1990s. Under these arrangements, insurers selectively contract with competing providers and restrict patient choice of providers and services.

Improving access to care and health outcomes

15. Fostering access to health-care services has been a fundamental objective of health policy-making in OECD countries. This was approached first by making insurance coverage of essential care universal and later by taking steps to eliminate financial barriers, ensure adequate supply and address disparities related to social characteristics. Only quite recently have countries turned their attention to other dimensions of health system performance – ensuring that the system works to improve health and functional ability, and that it provides an adequate level of patient and population satisfaction. In the sub-sections that follow, the reform experience and progress in meeting these performance goals are described.

Assuring universal and comprehensive health insurance coverage

16. Health insurance coverage promotes access to care, particularly in those countries that separate the functions of financing and delivering health-care services. It also furnishes protection against the high costs associated with treating many acute illnesses and chronic health conditions.[9] With the exception of Mexico, Turkey, and the United States, all OECD countries had achieved universal (or near-universal) coverage of their populations by 1990.[10] Coverage levels vary from comprehensive, providing full financial protection to patients for all necessary health-care services, to those that exclude some services or require patient cost-sharing.[11]

The relationship between health insurance coverage and health care

17. Lack of health insurance is the greatest risk factor for inadequate access to services. Evidence from the United States shows that uninsured persons face barriers to access, despite the provision of significant quantities of care furnished on a subsidised or charity basis. Uninsured adults are less likely

9 Risk of incurring catastrophic expense is low, given that only a small share of the population in any given country accounts for the bulk of health spending in any particular year.

10 The share of the population lacking health insurance stands at close to 50 percent in Mexico (although reforms from 2003 are expected to expand public health insurance coverage), 17 per cent in Turkey, and 14 per cent in the United States. In all other OECD countries, at least 98.4 per cent of the population is insured. Six OECD countries – the Czech Republic, Iceland, New Zealand, Norway, Sweden, and the United Kingdom – achieved universal (or near-universal) health coverage of their populations prior to 1960. Most of the remaining OECD countries attained universal coverage between 1960 and 1980, three of which – Greece, Korea and Spain – expanded eligibility to achieve full coverage of their populations during the 1980s.

11 Patient cost-sharing arrangements include co-payments (a fixed amount per service), co-insurance (a fixed percentage of the total charge or payment), and deductibles (a level of patient spending to be met in a given time period before insurance payments will be made). These requirements may be tempered by establishing a cap on total out-of-pocket spending during a set period.

than their insured counterparts to obtain health care for serious conditions.[12] Those who lack insurance coverage are also at greater risk of not receiving preventive care and routine care for chronic conditions, which means they need more intensive care at later stages of illness.[13] The uninsured obtain worse health outcomes and are at significant financial risk.[14] These consequences make the insured status of a population an important determinant of efficiency of spending in the health sector.

Reforms to extend health insurance coverage to uninsured populations

18. Because universal or near-universal health insurance coverage exists in most OECD countries, coverage extension has been the focus of recent reforms in only a few countries. Rather, maintaining full coverage has served as a potential constraint on some reform options (such as shifting to voluntary coverage schemes).

19. The approach most commonly used to attain universal coverage has been to make coverage compulsory, either by establishing a default or all-inclusive public programme, or by mandating purchasing of private coverage. Australia, for example, shifted from a voluntary to a mandatory scheme with the introduction of Medicare, its universal health insurance programme, in 1984.[15] Similarly, Switzerland mandated compulsory purchase of a private health insurance policy in 1994, and in so doing moved from near-universal to universal coverage. Since establishing its social health insurance programme, Spain has implemented a series of coverage expansions and, as of 2000, coverage reached 99.8 per cent of the population. France filled the final gaps in social insurance coverage in 2000, with institution of its *couverture médicale universelle*. In the Netherlands, insurance has been made compulsory for 65 per cent of the population, including all vulnerable groups (those who qualify for social security benefits and those with incomes below a fairly high ceiling). Perhaps because the government also makes subsidised insurance available for those who are refused a private health insurance policy and for those with voluntary private health insurance whose incomes drop below a set level, the country's rate of uninsured stands at only 1.6 per cent.

20. Some countries have adopted a targeted, incremental approach to increasing the availability of coverage to uninsured populations. For example, Mexico's approach to increasing coverage has been to create new social insurance programmes for each new group of employees required to affiliate. However, because an important part of the population is not employed through the formal economy, universal access through social insurance could not be attained, requiring reliance on other public programs and services. The resulting fragmented financing system has been criticised as inefficient and resulting in inequitable care (Barraza-Llorens *et al*., 2002) and has inspired more recent reforms to extend public insurance coverage. The United States has undertaken numerous reforms designed to increase both public and private

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12 For example, Baker *et al.*, (2000) found, after adjusting for differences in age, sex, health status, and income, that uninsured persons in the United States were half as likely as those with insurance to receive care for a condition deemed by a physician to be highly serious and requiring attention.

13 Anayanian *et al*. (2000) found that adults who lacked insurance for a year or more were significantly less likely than those with coverage to obtain cancer screening, cardiovascular risk reduction and diabetes care.

14 One recent study found that chronically ill persons without insurance had higher average levels of out-of-pocket spending on health care, despite being five times less likely to see a physician (Hwang *et al.* 2001). Medical expenses represent the second leading cause of personal bankruptcy in the United States, following loss of employment (Warren, Westbrook and Sullivan, 2000).

15 Universal coverage under a programme known as Medibank existed previously between 1974 and 1976.

health coverage.[16] But in spite of these initiatives and a booming economy throughout most of the 1990s, the rate of uninsured increased.[17]

Financial barriers associated with the level of coverage or cost-sharing

21. Cost-sharing requirements and lack of coverage for certain services – such as dental care, prescription drugs, mental or behavioural health care, rehabilitative or post-acute care, and infertility treatments vary widely across OECD countries (Table 3). Therefore, there is wide variance both within and across countries in the average share of total health expenditures represented by out-of-pocket payments (Table 4). Korea, Mexico, and Turkey all have systems in which more than a third of the cost is borne directly by patients. The practice of patients making supplementary, unofficial, out-of-pocket payments to supplement provider fees is common in a small number of OECD countries, mainly among the new Eastern European members.[18] Overbilling – charging fees above those fixed under social insurance contracts – is more widespread.

[Table 3. Cost-sharing policies in basic public health insurance in the early 2000s]

[Table 4. Out-of-pocket spending as a share of total expenditure on health, 1980-2000]

22. The burden on households of out-of-pocket health spending also varies considerably across OECD countries, ranging in 2000 from a low of 1.1 per cent of total household consumption to a high of 4.3 per cent, among those countries reporting data (Table 5). In addition to the average, the distribution of spending across the population can vary considerably, depending on whether such spending is affected by income, service use, type of coverage, or other factors.[19]

[Table 5. Out-of-pocket payments as a share of total household consumption, 1970-2000]

23. Cost-sharing requirements and lack of coverage for certain types of care stand to pose financial barriers to service use, in cases where they are high relative to patient income. Out-of-pocket costs may have an impact on patients' use of certain services, such as primary care visits and prescription drug use,

16 Coverage of poor and near-poor children was expanded through the creation of the State Children's Health Insurance Program in 1997. Reforms have also been undertaken by individual states, which regulate private health insurance markets, and their success has varied, sometimes resulting in substitution of one problem (*e.g.* limited availability) for another (*e.g.* limited affordability). At the federal level, the Health Insurance Portability and Accountability Act of 1996 created standards to improve the portability of coverage and otherwise increase the ability of privately insured persons to maintain coverage in the event of job loss.

17 In 1990, 14.9 per cent of *non-elderly* Americans lacked insurance (Fronstin, 2002). The rate increased steadily throughout the 1990s, reaching a high of 17.0 per cent in 1998. Following a decline to 15.8 per cent in 1999, the rate of uninsured grew again in 2000 and 2001, when it stood at 16.5 per cent.

18 Such payments are not accounted for in the reported OECD data on health financing.

19 Between 10 and 14 per cent of Mexican households spent more than a third of total income on health care in 1998 (Barraza-Llorens *et al.*, 2002). Across the US population, there is wide variation in out-of-pocket spending, depending on the source of coverage, type of insurance, and amount of service use. For example, out-of-pocket spending among elderly and disabled Medicare beneficiaries averaged 19 per cent of income in 1997. Out-of-pocket spending for Medicare beneficiaries with incomes below the poverty level varied from 35 per cent of total income among the 40 per cent who had assistance from Medicaid to about half of income, on average, among the 60 per cent who did not (Gross *et al.* 1999).

where a certain degree of patient discretion determines use.[20] However, they have little impact on non-elective hospitalisation and other high-cost services for which patients have very low price sensitivity (see Annex).

24. Several studies have assessed whether access to health services is equitable across populations irrespective of income. Van Doorslaer *et al.*, (2000) assessed the service use patterns across income groups in ten European countries and the United States. After standardising for differences in health-care needs (as proxied by age, sex, and health status), they found little or no evidence of significant inequities in the volume of health services used. However, different patterns of use (*e.g.*, more use of specialist care by the higher-income population in half of the countries studied) were evident.[21] On the other hand, a population survey encompassing five OECD countries did find evidence of income-based inequalities in perceived access to care (Blendon *et al.*, 2002).[22] A minority of citizens reported problems with access to services, but persons with below-average incomes were more likely to report problems than were their counterparts with above-average incomes according to one or more of the access measures used.[23] Other country-specific studies have documented cross-income differences in access that may be growing subsequent to decisions to increase user payments.[24]

Reforms to expand the level of coverage for the insured

25. Some countries in which insurance coverage has gaps in benefits or requires patient cost-sharing have instituted reforms to increase the level of coverage for insured populations, either for the insured population generally or for vulnerable populations on a targeted basis.[25] Such reforms reflect an underlying objective to establish a common floor level of coverage, judged to promote access to care considered medically necessary.[26] The approaches differ on the question of how equity and public cost containment are weighted. When countries set relatively low coverage floors, relying to a greater extent on private health insurance or out-of-pocket spending, covered populations have more incentives to be cost-conscious in their use of services above the established floor. To the extent that they directly bear more of the cost associated with use of services, services of relatively low marginal value may be foregone due to cost. However, any efficiency gains may come at the expense of equity, in that those least able to bear the cost

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20 One recent study of working-age adults in the United States showed that doubling co-payments from $5 to $10 reduced the annual average drug cost from $725 to $563 (Joyce *et al.*, 2002).

21 This study serves as the basis for an enhanced and expanded study of equity of service use being undertaken as part of the OECD Health Project.

22 The countries included in the study were Australia, Canada, New Zealand, the United Kingdom, and the United States.

23 For example, in four of the five countries studied, low-income persons were significantly more likely to report difficulty obtaining specialist care.

24 For example, recent studies of health-care use and perceived access to care in Sweden have documented income-related differences that were not found in earlier studies. Such differences may reflect changes in Sweden's health-care system in the 1990s, including the increase of user fees (Burstrom, 2002). Between 1970 and 1995, patient charges for consulting a general practitioner in Stockholm county increased more than three times faster than the consumer price index (Elofsson *et al.*, 1998).

25 Some countries (or the same countries during different periods) have taken the opposite tack. The subsequent section on cost-containment reforms describes reforms designed to increase reliance on out-of-pocket payments and private health insurance as a means of controlling public-sector spending.

26 How medical necessity is determined varies across countries. In addition to considerations of medical necessity, some countries also take account of whether services are routine or predictable in occurrence and low in cost. Thus, coverage for dental care varies widely.

may forego some services of relatively high marginal value. When the basic coverage provided to the entire population is relatively generous, more of the population will be able to avail itself of more services.

26. Austria and Mexico are among the countries that have enriched the basic package of services and degree of cost protection in an effort to increase access and reduce financial barriers to care.[27] Some countries have focused on specific groups within the insured population thought to be vulnerable to access problems, such as low-income or unemployed persons. France, which began in 2000 to cover a greater portion of costs for low-income persons, provides an example, as does Japan, which in 2002 set a maximum co-payment amount for those aged 70 and older in an effort to increase access. In 1997, New Zealand introduced heavy subsidies for primary health services and pharmaceuticals for young children, encouraging physicians to make such care free of charge to patients.

Ensuring adequate and equitable access to needed health services

27. Many countries have found that universal and comprehensive insurance coverage is not always sufficient to ensure equitable access to services (see Box 1).[28] In some OECD countries, shortages or maldistribution of providers or services, or constraints presented by language or cultural differences, limit access to medically necessary care for some portion of the population. Numerous studies have documented large differences in service use patterns across geographic areas (both within and across countries) as well as across various populations within a country. Some such differences appear to represent inequitable use of services according to the standard embraced by most OECD countries: that need for care should be the primary or sole determinant of service use.

Reforms to increase access to health services: the initiatives and their effects

28. Having recognised problems with adequacy and equity of access to services, many countries have undertaken reform initiatives designed to lessen these problems.[29] In response to perceived shortages or maldistribution of providers and services, OECD countries have utilised regulatory planning measures, financial incentives and other mechanisms to increase or redirect supply. In some cases, recognising that a lack of available services is a problem for certain populations, some countries have taken steps to enlarge the scope of free public health-care services available to uninsured or disadvantaged populations.

29. As part of recent reform initiatives, Mexico has focused on improving access to key primary care and public health services for populations living in rural and poor areas, for indigenous populations, and for those working outside the formal economy. Specific steps include expanding the country's network of health centres in rural areas. In 1992, Australia implemented a rural incentive programme to ameliorate access to health care in rural and remote areas of the country. Australia also expanded its primary health services to aborigines in response to evidence of worse health outcomes for this population and has implemented a workforce programme designed to address cultural issues and other concerns. New Zealand has increased primary and community health services that are both owned by and operated for the native Maori population. Spain has opened more than 60 new public hospitals in recent years in an effort to

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27 Austrian reforms implemented in 1992 expanded benefits for psychotherapy, medical rehabilitation and home health care by qualified nurses. Long-term care benefits were extended in 1993. Japan and Germany also extended long-term care benefits in the 1990s.

28 In this regard, adequacy represents the degree to which needed services are available and attainable by the population requiring care and equity denotes the degree to which those with equivalent need are able to obtain essentially equal care.

29 The issue of disparities in health outcomes and health status is of great and growing importance in a number of OECD countries. This is discussed in the next section, which reviews reforms geared toward improving health outcomes, quality of care and patient satisfaction.

ensure geographic proximity to needed care.[30] In the United States, recent initiatives have stepped up federal funding to health clinics and other providers that predominantly serve uninsured and poor patients.

Box 1. Factors affecting access to services for insured populations

In addition to health insurance coverage or financial barriers to access, three factors underlie access problems in many OECD countries:

Practitioner shortages/maldistribution: Despite some degree of planning of health-care supply or administration of services delivery, many OECD countries have experienced problems with the quantity and distribution of practicing physicians and other practitioners. In some countries, shortages of certain types of health-care practitioners create problems in meeting demands for services. For example, a recent shortage of nurses in the United States has meant that positions in many hospitals go unfilled and has prompted a current debate regarding the appropriate policy response. In a number of countries, including Australia, Canada, Finland, Mexico, New Zealand and the United States, certain geographic areas are considered to have an insufficient number of providers to ensure timely local access. The problem is often noted in countries that have significant expanses of rural areas with low population density that do not support efficient provision of health-care services. In addition, low-income, inner-city areas perceived as not desirable practice locations also have practitioner shortages in many countries.

Timely availability of services: Even when the number or distribution of practitioners is not an issue, demand for services can exceed the capacity of the system to supply them on a timely basis. Delays in treatment, particularly for non-urgent, elective procedures, are common in a significant number of OECD countries. Waiting lists for elective surgical procedures are an issue driving reform initiatives or policy debates in Australia, Canada, Denmark, Greece, Ireland, Italy, the Netherlands, New Zealand, Norway, Spain, Sweden and the United Kingdom (see Siciliani and Hurst, 2003 and Siciliani, 2003). However, in other OECD countries, including France, Germany, and the United States, waiting lists for elective surgery are uncommon.

Socio-cultural barriers: Some OECD countries with significant populations of racial or ethnic minorities, or with recent immigrant groups, have identified problems in ensuring access to care for these populations. Such problems may reflect differences in language, geographic isolation, cultural norms, economic status, or a combination of these factors. For instance, in response to numerous studies showing differences in treatment and outcomes that could not be explained on the basis of coverage or need for care, the United States has established a goal of eliminating disparities in health experienced by certain racial and ethnic minorities by 2010. The goal is to be addressed through initiatives geared toward improving both coverage and access to services. Australia and New Zealand have likewise identified problems in meeting the health-care needs of their indigenous populations.

30. Other approaches have focused on reducing pressure on existing providers by creating new sources of care. Like a number of other countries, Spain has taken steps to establish more ambulatory care alternatives to inpatient care to reduce pressure on its hospital system. In an effort to shorten waiting times, the United Kingdom has experimented with a programme to allow patients to obtain, in other countries, certain services for which demand exceeds national supply capacity. Several Canadian provincial payers have established temporary contracts with US providers for specific services for which waiting times exist in Canada (Katz *et al.*, 2002). Many countries have taken steps to increase the availability of home care for patients who formerly would have received long-term care in hospitals or other institutions.

31. Particularly in countries where the delivery system is largely private, financial incentives have been used to affect supply. For example, the Medicare programme of the United States exempts many rural hospitals from its prospective payment system, instead reimbursing them retrospectively on the basis of incurred costs so as to account for the lesser ability of small, low-volume institutions to match the

30 As a result of these efforts, virtually all of the population lives less than one hour from a public general hospital offering a minimum package of basic services, including 24-hour emergency services.

efficiencies of larger urban hospitals. And at both the federal and state levels, numerous public programmes have been established to promote the availability of practitioners in underserved areas.[31]

32. The evidence suggests that the effects of such initiatives to address provider shortages or maldistribution have varied, with greater investments generally achieving correspondingly greater effects. On the face of it, this suggests that, in countries with significant areas of relative under-service or entrenched social problems, considerable investments may be necessary to ensure that all of the population has ready access to services.

Increasing the effectiveness of health systems

33. Increasing the effectiveness of health-care systems in accomplishing their intended functions is a growing priority for policy makers in many countries. The notion of effectiveness encompasses a broad and growing number of dimensions, reflecting increasing expectations in many countries that health systems must do more than just improve population health and reduce disability.[32] Notably, many countries include in their assessment of system effectiveness the extent to which systems result in an acceptable level of consumer and patient satisfaction. Ensuring safe and appropriate health care of high technical quality is seen as a critical means of accomplishing both health and satisfaction goals. Increased pressure for reform has been heightened by better measurement of health system performance – including health outcomes, quality of care, patient satisfaction and system responsiveness – and the opportunities for improvement that this new evidence has revealed (Hurst, 2002).

Opportunities to further improve population health status and clinical outcomes

34. Population health status and patient outcomes are widely tracked in OECD countries as metrics for evaluating health system effectiveness. Population health-status measures, such as life expectancy and infant mortality, tend to be indirect measures of health system effectiveness in that they are highly influenced by social and environmental risk factors. According to measures such as life expectancy and infant mortality, population health status has been improving steadily over time in OECD countries. For example, life expectancy at birth increased by an average of eight years for men and nine years for women between 1960 and 1999 across all OECD countries (Table 6). Infant mortality has declined dramatically, from an OECD average of 36.3 deaths per 1 000 live births in 1960 to 6.4 in 1999 (Table 7). Such improvements are due to rising standards of living as well as advances in access to care and the capability of medicine. Despite across the board improvement, however, significant differences in health status across countries persist.

[Table 6. Life expectancy at birth, 1960-1999]

[Table 7. Infant mortality, 1960-1999]

35. Clinical outcomes, such as cancer survival rates and rates of disability among those with chronic conditions, serve to reflect more directly the effectiveness of care received. These outcomes are a relatively newer focus of attention for OECD member countries. Studies making international comparisons of outcomes for conditions such as ischaemic heart disease have uncovered significant differences in case

31 Such programmes include medical school loan assistance or forgiveness, and supplementary payment schemes, such as Medicare's bonus payments for care furnished in designated shortage areas.

32 The concepts of effectiveness and efficiency are not mutually exclusive. In this study, "effectiveness" reforms are ones designed to improve health system performance in ways that may be cost-increasing, cost-neutral, or cost-decreasing, while "efficiency" reforms aim to improve the value obtained for a given amount of health spending.

mortality (Moise and Jacobzone, 2002). Studies of post-surgical mortality and cancer survival also documented differences across countries (Roos *et al*., 1990; Roos *et al*., 1992; General Accounting Office, 1994). Significantly, the best outcomes were not always found to be linked with greatest resource use or volume of services, suggesting that there may be opportunities in some countries to simultaneously reduce costs while maintaining or even improving system performance.

Initiating focused public health programmes

36. A number of countries have set goals and undertaken focused initiatives to improve population health. The public-health initiatives are usually multi-dimensional efforts that rely on several channels (*e.g.* education and awareness campaigns, administrative changes to affect health-care practice) to accomplish focused goals. In Australia, the United Kingdom, the United States and many other OECD countries, specific targets for health outcomes and intermediate health targets have been set. Information systems have been built to measure success in meeting targets. Many such efforts have appeared successful in reducing health risk factors such as tobacco and alcohol use, for example. Australia's multi-faceted approach to reducing HIV infection rates is believed to have been instrumental in slowing the spread of the disease. However, even as established goals are approached or met (the record is mixed across countries and specific objectives), new public health issues emerge to present challenges.[33]

Establishing new health-care delivery arrangements

37. One reform direction used by some countries as part of efforts to improve the effectiveness of health-care delivery is to establish new health-care delivery arrangements designed to improve co-ordination and reduce fragmentation of the delivery process. Such arrangements may work to better integrate primary care with specialist services, as is the case in countries that have established gatekeeper arrangements. As discussed in the following section, France, Germany, the Netherlands, Switzerland, and the United States are among those countries that have experimented with the use of managed-care arrangements that incorporate elements of co-ordination, management and rationalisation of patient services. These reforms tend to have been motivated as much from concerns about cost as from a desire to improve health-care delivery. Evidence from the United States suggests that managed-care plans tend to outperform uncoordinated indemnity insurance arrangements in terms of ensuring preventive and primary care, but may not do as well in serving the needs of the chronically ill (Miller and Luft 2002).

New concerns about quality of care and patient safety

38. Quality of care issues – namely inappropriate use of health-care services or poor technical quality in service provision – have only lately become a concern of health policy makers. Up until recent years, practitioner competency and judgements about appropriate provision of services were left largely to professional self-regulation. As in the case of health outcomes, prominent research studies have been responsible for newly asserted interests and actions by governments in their role as health-system regulators and third-party payers. In this case, the relevant studies were ones that revealed, both across and within countries, wide variation in health-care practice patterns and in the extent to which those patterns were judged consistent with the current state of medical knowledge.[34]

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33 At present, many countries are experiencing a rapid growth in the share of the population that is overweight and obese. Because obesity has been linked to increases in health problems and associated costs, this trend represents an area of concern that is a likely subject for future public health initiatives (Strum, 2002).

34 Examples of such studies include one that found wide variation in the management of respiratory illness among infants across nine OECD countries (Behrendt, 1998) and another that documented low rates of

39. Patient safety and medical errors have similarly come into the spotlight because of new information suggesting problems of this type are much more common than previously believed.[35] Studies based on information derived from root-cause analysis of specific incidents suggest that poor design of health-care delivery processes, rather than technical incompetence among individual professionals, underlies the majority of problems (Kohn *et al*., 2000).

Public reporting of information on health-care quality

40. A key dimension of the trend towards increased accountability for quality has been initiatives to publish and widely disseminate information on the performance of providers, health insurance plans, or other areas considered relevant (see Box 2). Such initiatives reflect the expectation that publication of this type of information will either increase the ability of consumers and their agents to demand effective care or will inspire further professional activities geared toward improvement.

Box 2. Improving the information basis for better health system outcomes

Because approaches for improving clinical outcomes are highly dependent on context, few reform initiatives geared directly at addressing specific clinical outcomes have been initiated at the health system level. Instead, countries have focused on investment in clinical performance measures and the information systems needed to use them as part of ongoing measurement and improvement cycles (Hurst, 2002).

Most countries have recently created or improved information systems used to assess one or more dimensions of health system performance. In Mexico, the main health-care provider in the part of the system financed by social insurance has adopted a system based on diagnosis-related groups (DRGs) for recording hospital service activity as a means of informing efforts to reduce practice variation. The Czech Republic is also pilot-testing the use of a DRG-based system as a device for hospital management and making comparable measurements of quality and output across hospitals. The 1999 clinical governance initiative in the United Kingdom requires all NHS organisations to produce an annual report that provides information on performance for public use. Also in the United Kingdom, the National Patient Safety Agency was created in 2001 to manage a new mandatory national reporting system for adverse events and near misses in health-care delivery. The United States has also invested in information systems focusing on health-care quality and other performance measures. Notably, a standard set of quality and performance information is required to be submitted by all health plans participating in public programmes.[1] Reporting is also required by many employers that contract with health insurance plans on behalf of their employees. Public programmes in the United States have begun to implement systems of quality measurement and reporting focused on health-care providers, including nursing homes and home health care.[2]

1. Health Plan Employer Data and Information Set (HEDIS).
2. In the mid-1980s, a US government initiative to publish hospital-specific mortality data for Medicare patients was discontinued because of concerns about the validity of comparisons. New York State may have resulted in increased market share for surgeons with better outcomes (Mukamel and Mushlin, 1998).

41. Initial efforts to develop and report information on health-care quality have faced numerous challenges, both technical and otherwise, and results have yet to meet expectations in terms of influencing decision making (Marshall *et al*., 2000). In particular, health-care consumers have not proved as ready an audience for comparative information on performance as was hoped by advocates of market-based reforms to health systems, as assessed by interest, propensity and ability to use such information. Assuring that information is viewed as relevant and usable from a patient or consumer standpoint will be important if use of information is to grow. And concerns of health-care providers about the technical quality of information

compliance with guidelines for controlling patient asthma in seven western European countries (Vermeire *et al.,* 2002).

35 For example, a report by the Institute of Medicine (Kohn *et al.,* 2000) noted that medical errors are responsible for more annual deaths than motor vehicle accidents in the United States. Studies have found comparable error rates in Australia, Denmark and the United Kingdom.

and validity of comparisons must be met if they are to become active users of comparative information on quality. Questions about how best to preserve confidentiality of medical information have proved to be challenging to address from both technical and political perspectives.

Setting targets and standards for improvement

42. The policy responses of OECD member countries to recent findings of deficiencies in health-care quality and health outcomes have been, in general, moves to demand greater accountability for health-care quality from health-care providers. Accountability mechanisms include setting quality standards that providers must meet to obtain or retain a business license or to participate in public programmes. Although public authorities still rely on professional input for the definition of quality standards, they have come to take a leadership role in measuring performance against those standards and taking actions based on results.

43. Both policy makers and the medical profession have embraced the idea of "evidence-based medicine," a strategy for translating findings from clinical research into practice and policy decisions. Member-country reform initiatives designed to operationalise these ideas include efforts to develop practice guidelines that are used by payers and regulators for monitoring service provision as well as to inform decisions about health benefits, coverage and other factors affecting the supply of services. Spain, for example, has instituted protocol guides for hospital practice geared toward reducing variation and improving quality of care. France has also published official standard practice protocols, known as *réferences médicales opposables*.

44. Examples of recent initiatives to establish minimum conditions for health-care providers include Hungary's regulations, instigated in 1998, which are believed to have triggered new quality management efforts in the health system. The United Kingdom's National Service Frameworks were established in 1998 to set national standards for services or types of health care, as well as performance milestones and a timetable for improvement against which to measure progress.[36] France and several other countries have established a mandatory accreditation programme for hospitals that assesses providers against established standards. Reforms introduced in Belgium in 1990 introduced performance criteria for hospitals, such as target length of stay.

45. Information on the effects of public efforts to establish evidence-based standards for health care is limited, largely because systems for monitoring the processes and outcomes of health care are still in their infancy. However, it is clear that this reform approach faces a number of challenges to success. First, it requires a great deal of support from the health-care profession, which may resent a perceived intrusion on professional decision-making and perhaps also higher administrative costs. An example of such tension is the US experience in developing and publishing clinical practice guidelines through federal government support and organisation, which led to a provider backlash and cessation of public development of guidelines. A second challenge concerns the difficulty in maintaining standards that reflect the current state of the art in the rapidly evolving field of health care. Maintaining up-to-date standards is important to promote both best practices and provider buy-in; indeed, insisting on standards that no longer reflect best practice would be counter-productive on multiple levels.

46. In design of reforms geared toward increasing the practice of evidence-based medicine, governments must carefully weigh the use of incentive-based approaches (such as voluntary accreditation

[36] The first wave of standards addressed cancer, paediatric intensive care, mental health, coronary heart disease, diabetes and care for older people. Although the initiative is relatively recent, performance has been monitored on a quarterly basis and improvement has been documented in a number of areas, including screening services.

systems) versus enforcement-based approaches (such as licensing requirements). At present, there is little evidence available by which to determine which approaches have been more successful in influencing health-care practice, and countries have used a mixture of both.

Providing technical assistance for improving quality and performance

47. Accompanying greater demands for accountability has been increased recognition of the need to facilitate quality improvement. Because of increasingly rapid evolution in the state of medical knowledge and technological change, medical professionals find it increasingly difficult to stay up to date with the latest developments and may require ongoing training or assistance in doing so. Hospitals and other institutional health-care providers may also benefit from technical guidance regarding latest methods and procedures to ensure quality and safety. Both individual practitioners and institutional providers can benefit from collective efforts to pool certain types of data so as to allow for greater precision in estimating trends and making comparisons.

48. A wide range of reforms have been implemented as part of technical assistance efforts. In the Netherlands, for example, professional associations have taken on the role of transmitting and checking professional quality among doctors, and there is a high degree of “ownership." Such an approach is more difficult in an environment like that in France, where there are a number of professional unions; and, in this case, public organisations have been set up to evaluate medical skills and to undertake “reaccreditation” of doctors. In the light of the vast differences across hospitals in rates of patient deaths and infections acquired by patients, France has put in place new accreditation standards and assessment procedures. In 1999, the United Kingdom established a Commission for Health Improvement that reviews the clinical governance arrangements of all NHS organisations on a rolling basis and carries out investigations into serious failures. In the United States, so-called quality improvement organisations serve as government contractors, responsible for undertaking measurement and assisting hospitals in designing and implementing improvement strategies. New Zealand has established web-based “toolkits” designed to bring together resources and information to support efforts to address population health goals by providers, district health boards and others.

49. Reform initiatives that focus on technical assistance to health-care providers reflect a policy decision regarding the value of a co-operative approach to quality improvement. This serves as a contrast with the competitive approach that is also used, in some cases, side-by-side, in the United States and other countries that foster private markets for health care or health insurance. It is not as yet clear which approach works best and under what circumstances. Those who point to the value of the co-operative approach note that sharing quality improvement techniques and data pooling may be the most efficient ways to foster improvement. At the same time, in a competitive approach, multiple avenues to quality improvement may be tested and used, resulting in perhaps quicker advancements in technique.

Aligning economic incentives with effectiveness objectives

50. In another approach, some OECD countries have introduced financial or other types of economic incentives for meeting quality standards or achieving effectiveness improvements. Australia, for example, has had a system in place since 1994 to reward physicians for meeting various quality and other effectiveness goals. Incentives were originally designed to reward physicians who spent more time with patients and are now linked to performance on a range of quality measures.[37] Similarly, the UK health system now rewards high-performing health-care providers with more funding and greater autonomy from central control.

[37] Australia has also created a set of national goals, targets and strategies for health-care quality improvement that may ultimately be linked to bonus payments.

51. Economic incentives can be a powerful tool to influence performance. However, they may also lead to efforts by health-care providers to "game the system" by focusing on the dimensions of performance subject to financial incentive at the expense of performance in areas not affected by the incentive. In addition, because it remains difficult to disentangle environmental effects on performance that are outside the direct control of health-care providers, some approaches may risk penalising providers who treat higher-risk patients and thus potentially compromise access to treatment. Because of these factors, care needs to be taken in the design and implementation of such incentives.

More attention paid to patient satisfaction and system responsiveness

52. Governments have also become more conscious of the value of assuring that patients are satisfied with their care and with the system in which they obtain it. As a result, they increasingly rely on surveys to measure satisfaction with practitioners, hospitals and other institutional providers, health insurance plans and the health system more broadly. An OECD survey on policy priorities conducted in 1997 found that approximately one-half of member countries reported problems with patient/health-care consumer satisfaction (Kalisch, Aman and Buchele, 1998).[38] Results from the 1999 Eurobarometer survey show a European Union country average of 12.7 per cent who are "very dissatisfied" with their health-care systems, with a range of 2.2 to 34.1 per cent across the 15 countries surveyed (Table 8). A 2001 survey of five countries – Australia, Canada, New Zealand, the United Kingdom, and the United States – found that the vast majority of those surveyed agreed with the statement that "fundamental changes" to their health system were required or the system needed to be "rebuilt completely" (Blendon *et al*. 2002). Only between 18 and 25 percent of the people in each country agreed that their health system needed only “minor changes”.

[Table 8. Satisfaction with health systems, 1999]

53. In addition to assessing the level of patient or consumer satisfaction, some such surveys also collect information about patient perceptions regarding aspects such as humaneness of treatment, quality of communication, perceived barriers to obtaining services, and other subjective components of care. Combined with objective data that are simultaneously collected, data from such surveys serve in initiatives to redesign system components to improve quality and are increasingly also used in consumer information campaigns designed to promote more knowledgeable decision-making among patients and consumers.

Establishing or strengthening patient protections and rights to treatment

54. One approach increasingly used to improve patient satisfaction with their health care is to enumerate specific rights or protections for patients within the health system, an approach that has also been used to ensure access to a defined set of services. Patients' rights geared toward improved effectiveness often include ones to ensure choice of provider or rights to appeal health-care decisions made by other actors in the health system. For example, in 1997, a revised Guarantee for Medical Treatment took effect in Sweden that regulated accessibility to primary and specialist care.[39] Austria established a patient charter in 1999 that put forward a set of patient rights agreed between the federal government and the provinces. In the United States, numerous states have established legally binding "bills of rights" for

38 Surveys consistently find differences in satisfaction between users of health care and the population at large. Often, users express higher satisfaction, particularly with their own physician and most recent experience obtaining care.

39 The guarantee assured that patients could receive care from a nurse practitioner upon the day of presentation at a health centre. An appointment to see a physician must be offered within eight days. Specialist referrals must result in an appointment offer within three months (one month if diagnosis is uncertain). Care must be arranged in another county if these timetables cannot be honoured.

patients that are, in part, focused on establishing rights to see certain specialists or to obtain appointments within set periods of time.

55. Although there are limited data available by which to judge the effectiveness of this reform approach, its strengths and weaknesses have become evident. A strength is that it provides incentives for those parties responsible for guaranteeing the patients rights to take needed action. Depending on the specific rights involved, a variety of underlying approaches might be taken by the responsible parties to address the perceived problems. However, a weakness of this approach lies in the potential for any designated set of rights to become outdated because of changes in medical practice standards or underlying needs, and there may be additional implementation costs.

Increasing patient choice

56. Countries have undertaken reforms designed to increase patient choice of provider or insurer in an effort to increase consumer and patient satisfaction. Countries such as the Czech Republic, Hungary, Poland and Sweden that previously assigned patients to physicians or that featured community clinics in which patients previously saw the first doctor available now allow patients to select a primary care physician. Belgium, Germany, the Netherlands and Switzerland all allow some degree of competition among insurers, partly to promote consumer satisfaction. In Germany, consumer satisfaction, together with premium costs, is one of the key factors motivating switching among funds.

Controlling spending and improving cost efficiency

57. The level of health-care spending (both public and total) varies widely across countries reflecting market and social choices regarding, *inter alia* supply of services, remuneration of health-care providers, the degree of diffusion of health-care technology and the institutional arrangements for the finance of health care. While there is, therefore, no "optimal" level of resources devoted to health care (or to the public and private split in financing), expenditure as a share of GDP provides a broad indication of the resource costs of this sector and of the burden on public finances. Governments are, therefore, concerned when this share increases even though there is no prima facie reason why health-care spending should not increase relative to GDP. Indeed, a number of longer-term factors, including technological change, are likely to push spending upwards relative to GDP.[40] In addition, some governments have found that the existing level of resources was inadequate in the light of public demand for care and have increased public financing for health-care services. This section first examines the recent development of health-care spending, and policies that, until recently, have largely focused on limiting the growth of health-care spending.

58. With concern over increased pressures for health-care spending, public policy has also aimed at easing this constraint by achieving higher output at lower cost. A range of policies has been introduced to this end, most often focusing on institutional arrangements and the incentives facing providers. These efforts are discussed in a second sub-section.

Policies affecting the level of aggregate health-care spending

59. This sub-section first describes patterns of spending over the last three decades and some of the underlying factors influencing these developments. It then discusses policies aimed at controlling the rapid growth in spending in the earlier part of this period and their impact on expenditure developments in the 1980s and 1990s.

Developments in health-care spending

60. Attempts to control aggregate health-care spending over the last two decades reflected the rapid and sustained rise in expenditure during the 1960s and 1970s (Table 9).[41] Taken as a share of trend GDP,

40 The value of health care is, generally, measured by inputs and fails to take into account the value of improved quality of care arising from advances in medicine. At the same time, upward pressures on health care can arise from the introduction of new technology, ageing populations and maintaining wages and salaries in the health-care sector in line with the rest of the economy. Governments may also judge that current levels of volume inputs need to be increased or that relative wages need to be adjusted.

41 Health-care spending has been taken as a share of trend GDP rather than actual GDP. Trend GDP reduces the impact of differences in cyclical position across countries and over time relative to where spending is normalised by GDP. Trend GDP was drawn from the OECD Analytical Database. Estimates are based on production functions for most countries with the remainder estimated by smoothing GDP.

the increase in spending was smaller in the 1980s, partly as a result of these policies. Public spending - which represents about three-quarters of total health-care spending on average over the OECD area - increased more slowly than for total spending during the 1980s and, particularly, during the 1990s, reflecting a progressive shift of costs onto the private sector (Tables 10 and 11).[42] Nonetheless, an average one percentage point increase in total spending as a share of GDP over the 1990s suggests that upward pressures remain sizeable in a number of countries. While data are weak, there appears to be no systematic shifts in spending away from the higher cost inpatient care towards lower cost ambulatory care as measured by the contribution of individual components of health-care spending to the total change. (Table 12).[43]

[Table 9. Total expenditure on health care as a percent of trend GDP, 1970-2000]

[Table 10. Public share of total expenditure on health care, 1970-2000]

[Table 11. Public expenditure on health as a percent of trend GDP, 1970-2000]

[Table 12. Contribution of ambulatory, hospital and pharmaceutical components to changes in total health-care costs, 1980-2000]

61. While there is general agreement about which supply and demand factors have driven aggregate health-care spending, there is little consensus about the specific contributions of each to the increase in outlays on health care (see Annex). Studies using statistical tests of the impact of budgetary caps or other policies to limit spending provide little evidence of a strong impact on health-care expenditure. Nonetheless, the greater variability in the growth of public health-care spending across countries in the 1980s may partly reflect growing differences in the type, size and timing of policies aimed at controlling expenditure.

62. Two factors affecting the development of health-care spending are likely to affect future expenditure trends strongly:

- Technology has been and is expected to remain an important driver of health-care spending. While it is difficult to identify precisely, this factor may have explained as much as half of total spending growth over recent decades (Newhouse, 1992a; OECD, 1995; Jones 2002).

- Population ageing is expected to increase significantly the demand for health-care over the next half century (See OECD, 2003c).

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42 Reductions in the share of public spending in total health-care spending took place in 13 countries in the 1980s and in 19 countries during the 1990s, as more of the cost of care was shifted to the private sector. This development was very important (above five percentage points) in eight of the OECD countries (Finland, Greece, Hungary, Italy, Poland, Spain, Sweden and Switzerland). Some of this increased share was covered by private insurance.

43 Such changes between sectors can reflect changes in the volume of care provided and changes in wages or in the price of services provided. These estimates, therefore, do not provide a good measure of real resource shifts. More rapid increases in ambulatory and pharmaceutical spending, where they occur, may be partly caused by the restructuring of care away from high-cost inpatient care to a lower-cost outpatient environment, leading to overall cost savings. Eastern European countries have faced very sharp increases in drug expenditure as imports of newer drugs have increased with prices set on international markets. A good portion of this increase has been paid privately, and this may partly explain the large shift to private financing in these countries.

In this context, budgetary controls are likely to remain an important policy tool for containing expenditure. The following paragraphs review the nature of past policies.

Macroeconomic cost-containment initiatives

63. Efforts by governments to slow the growth of spending over the past two to three decades have relied on three sets of policies: regulation of prices and volumes of health care and inputs into health care; caps on health-care spending, either overall or by sector; and shifts of the costs onto the private sector through increased cost-sharing.[44]

Controlling wages, prices and health-care production resources

64. In the health-care sector most countries have regulated prices, volumes or both. Wage controls have been particularly prevalent in systems with public-integrated systems in both the hospital and in the ambulatory sector if health-care personnel are paid on a salary basis (Denmark (hospitals), Finland, Ireland (hospitals), Spain, Sweden, the United Kingdom (hospitals)), although this has often occurred in the context of broader public-sector pay restraint and is, thus, not specific to the health-care sector. Price controls have been used in all three sub-sectors of health care, as governments generally can set prices administratively or have oversight on prices agreed between health-care purchasers and providers. A number of countries have set fees directly after negotiations with health-care providers broke down (*e.g.* Australia, Belgium, France, Japan, Luxembourg and Canada). Cost control in Japan has relied heavily on government price fixing of both primary and secondary care. In others, prices have been automatically adjusted as a function of the volume of care so as not to exceed a fixed budget ceiling (*e.g.* Germany (ambulatory care), Austria (hospital care), Hungary (outpatient care) and recent Belgian reforms[45]). A few jurisdictions use kinked price schedules to reduce the marginal return to doctors for additional supply beyond defined ceilings (Canada (Quebec), Hungary).

65. Administrative price setting has probably been most widespread for pharmaceutical drugs, as all countries except Germany, Switzerland and the United States have price-control arrangements at various levels of the distribution chain and these have tended to remain relatively unchanged over time. [46,47] However, the vigour with which existing price-setting policies have been applied has varied over time, becoming more important, during periods of budgetary pressure when supplementary price freezes, cuts or refunds from suppliers have been introduced.[48]

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44 Many countries have tended to introduce reforms in that order (Mossialos and Le Grand, 1999).

45 The German "point" system, which was modified in 1997, combined an overall budget for ambulatory care with a system of points for services provided. The value of the point was set so as to ensure that the budget ceiling was not surpassed. Austria uses a similar system for its hospital system following the introduction of a DRG-type payment system. Belgium has recently strengthened its capacity to control costs by varying prices when actual spending deviates from the budget target.

46 For example, Jacobzone (2000) reports that pharmaceutical price freezes have been introduced, mainly during the 1990s, in all of the countries covered by his report (Austria, Belgium ,Canada (two provinces), the Czech Republic, Denmark, France, Germany Greece, Italy, Korea, Luxembourg, the Netherlands, Spain, Switzerland and the United Kingdom).

47 Canada, Italy and the Netherlands have moved to setting drug prices on the basis of prices in other countries. The Czech Republic, Korea, Spain and Turkey have increasingly taken into account the costs of research and development (Jacobzone, 2000)

48 In addition, managed-care organisations in the United States have often obtained discounts from both manufacturers and wholesalers by driving a harder bargain in the pharmaceutical drug market.

66. The impact of price controls on overall expenditure can be eroded by supplier responses, for example by increasing volumes to compensate for limiting price (or wage) increases (*e.g.* ambulatory care in Australia, France and Japan and the hospital sector in Sweden),[49] providing higher cost services (*e.g.* more on-site diagnostic tests) (France, Germany and the United States), up-rating of patients into higher cost classifications (*e.g.* Medicare in the United States) or shifting services into areas where there are no price controls.[50] Although constraints on medical student numbers are particularly important, wage and price controls can also have negative longer-term supply effects. A number of countries are now facing shortages of medical personnel, and the market position of health-care workers and unions is becoming stronger in wage and price negotiations. Inadequate attention to relative prices may also be affecting the supply of certain specialities such as anaesthetists, gynaecologists and psychiatrists.[51] Nurses are in short supply in many countries. Thus, countries may achieve short-term gains in terms of lower public health-care spending, but may confront difficulties in maintaining an adequate level of services at a later date.

67. Limits in most countries on entry to medical schools, are an important additional factor affecting the growth of the number of medical professionals. The number of doctors per capita has slowed as a result but remains positive in virtually all countries (Table 13).[52] [53] Elsewhere, there have been reductions in support staff (Canada, Sweden). Considerable diversity still exists across countries in the number of doctors and health-care workers per capita, suggesting that there is additional scope for limiting costs through further adjustment in medical personnel in some countries. But in making further adjustments to supply, governments need to be careful not to push these too far. For example, both Canada and the United Kingdom have recently increased health-care budgets but, like Denmark, are having difficulty in increasing the supply of health care because of the limited number of available doctors and nurses.[54] In others, there is already upward pressure on wages.[55] Thus, the increased budgetary resources risk leading to higher wages of health-care professionals rather than increases in services provided. Looking to the future, a number of countries are now becoming concerned about the impact on the supply of services of the expected exit of a

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49 These concerns prompted Germany and Austria to put in place automatic adjustment mechanisms described above. In Australia, there have been attempts to control the supply of ambulatory doctors limiting the places to get training needed to practice as general practitioners.

50 For example in Greece, where social insurance reimbursement rates for doctor visits are set at low levels, doctors shift patients to private practice. Over-supply of health-care services in Eastern Europe - one of the legacies of the communist era - has been reflected in continued low wages and salaries in this sector, leading to demands for under-the-counter gratuity money. In the United Kingdom and Ireland, hospital consultants increase their incomes by encouraging patients to move into private care. While this may in fact reduce pressure on public health-care outlays, it increases overall health-care spending.

51 In some countries the problem of legal liability – and the associated increases in malpractice insurance premia – in certain areas is said to be becoming increasingly important in the supply of certain specialists.

52 The number of practicing doctors in the ambulatory sector is also controlled by professional associations (Germany, Austria) or through limits on the number of doctors able to bill public insurers (Denmark and the Netherlands).

53 Such constraints have not always been successful. The number of doctors and dentists in Italy rose by 25 per cent from 1987 to 1994 even though there was officially a freeze on hiring (Fattore, 1997), and the number of doctors per capita remains amongst the highest in the OECD area.

54 These difficulties are also related to wage restraint in both countries and some upward adjustment of wages is therefore likely. Ireland and Sweden have had similar experiences in the late 1970s and early 1990s. There strong pressure on budgets led to a fall in expenditure but were followed by a subsequent rebound. Some of these difficulties in supply are leading to migration of medical staff.

55 As documented by an increasing number of strikes of doctors in countries such as Finland, France, Korea and in some Canadian provinces. Wage increases have been agreed recently in Canada (Quebec and British Columbia, while Ontario has increased overall health-care funding).

significant share of health-care professionals as the post-war baby-boom generations move into retirement. Supply appears likely to fall just as age-related needs increase. Better human resource planning policies, focusing on maintaining adequate supplies of qualified health-care professionals over the longer run, may well be needed.

[Table 13. Medical personnel in OECD countries, 1970-2000]

68. As regards hospital supply, the 1960s and 1970s saw rapid growth in supply in both the ambulatory and inpatient sectors even though, in the case of the latter, new health-care technology progressively reduced both the need for in-hospital care and for the required length of hospital stays.[56] While there was some policy lag to the effects of technology, government policies have – especially over the past two decades – encouraged a reduction in the number of beds per capita and concentrated acute care in larger hospital units so as to achieve economies of scale and scope (Table 14).[57] This policy has limited the risk of public expenditure overruns, as there are fewer beds to fill.[58] At the same time, governments have imposed tighter constraints on capital spending on new hospitals, often making them conditional on further restructuring of existing supply. Nonetheless, a high level of acute-care beds per capita in a few countries in 2000 suggests that there may still be some scope for further adjustment (such as Austria, the Czech Republic, Germany, Hungary and the Slovak Republic)

[Table 14. Acute-care beds in OECD countries, 1970-2000]

Budgetary caps

69. Budgetary caps or controls have been a widely used instrument for controlling expenditure (Table 15). Initially directed at the hospital sector (the most costly element of the system), they have been often complemented by global and supplementary spending caps on ambulatory care and pharmaceuticals, reflecting the difficulty in controlling overall spending by focussing on only one care component. In general, policies to control and reshape supply and to cap spending in the hospital sector appear to have been more successful than for ambulatory care or pharmaceutical drugs, although institutional differences lead to considerable variation across countries.[59] Spending control through budgetary caps also appears to have been most successful in countries such as Denmark, Ireland, New Zealand and the United Kingdom where integrated models of health-care financing and supply are (or were) the rule and in mainly single-

56 Political economy factors underlay some of the increases in hospital supply. In many countries, there were strong political pressures for increases in hospitals in municipalities and cities to ensure local access. These hospitals were also important employers. In addition, there were strong financial incentives where the investment in increased capacity was often paid for at other levels of government or institutions.

57 To some degree, the lag in policy reflected incentives in payment methods. Payment on the basis of bed days – which was common - provided a strong incentive for hospitals to keep patients as long as possible and masked the effects of technological change. This is reflected in the strong correlation between number of beds and average length of hospital stays (see OECD, 1995a, figure 4).

58 Roemer's "law" argues that "an available bed is a filled bed" (see Oxley and MacFarlan 1995), although the linkages between the number of beds and bed use are complex (Taroni, 2001). In addition, countries are also making progress towards a better balance between long-term nursing care beds and acute-care beds and increased services aimed at encouraging the elderly to remain in their own homes as long as possible. This is reducing pressure on acute-care beds (Casey *et al.,* 2003).

59 For example, spending under capitation-based payment systems in the ambulatory care sector is easier to control than under fee-for-service payment arrangements.

payer countries, such as Canada, where health-care budgets are generally explicitly set through the budget process.[60]

[Table 15. Overall and sectoral arrangements for setting expenditure]

70. A few countries with social-insurance systems have established indicative budgets or targets (Belgium, France, Luxembourg and the Netherlands), but these limits have rarely been respected, partly because of their indicative nature and, sometimes, because there was no means to claw back over-spending in subsequent years (France).[61] Others have imposed spending limits indirectly: the Czech government set budget caps on individual providers in 1994 (after a sharp increase in spending in 1992-93), but operated the policy via the main insurer; Germany limited expenditure to the increase in receipts from contributions at fixed contribution rates over the period 1992-93 to 1997; and in countries where supply is organised at lower levels of government, the central authorities limited the amount of inter-government transfers (Canada, Finland) or set limits on tax increases at lower levels of government (Denmark and Sweden).

71. New budget controls have also involved a move from retrospective payments – *i.e.* paying the provider on the basis of costs – to prospective or forward-looking budgets. At the simplest level this has meant that providers have been given a hard-budget constraint while being expected to continue to adjust supply to meet the increasing demand for care. However, top-down spending constraints in the form of budget caps can have undesirable incentive effects. They do not encourage (and may actively discourage) providers to increase output or to enhance productivity.[62] For example, where the budget is allocated independent of output, there is no financial cost if output falls or compensation for higher costs where output is increased. Where budgets have been set on the basis of historical cost, this may favour inefficient providers and penalise efficient ones and hinder the geographical distribution of scarce resources on the basis of need. Furthermore, where any savings are clawed back by payers (Denmark, Greece and France continue to budget in this way), fixed budget ceilings encourage suppliers to spend up to the ceiling. And since budget caps and controls on inputs are often associated with cuts to staff and increasing work loads, staff morale and dedication may suffer while restrictions on wage rates and on hiring can interfere with personnel polices and the capacity to attract labour. In any case, most governments have found themselves obliged to finance the cost over-runs when faced with bankruptcy of hospitals (Italy, Greece, New Zealand and Portugal). As a consequence, governments have been moving increasingly to combine budget setting with measures that take more account of levels of efficiency and output across hospitals and differences in need across geographical areas.

Shifting the costs to the private sector

72. Although the degree of cost-sharing varies across countries, the increase in cost-sharing for medical care has been a common feature over the 1980s and, particularly, the 1990s.[63] Greater cost-sharing

60 Nonetheless, such outcomes are not a foregone conclusion and may depend on the period under review. Budget caps have been, generally, less well met or not met at all in Greece, Italy, Portugal and Spain even though they have similar institutional arrangements. Alternatively, countries with integrated models have also deliberately increased resources to the health-care sector over certain periods – for example, Canada, New Zealand and the United Kingdom in the most recent period – or have experienced rebounds in spending after periods of tight budget restraint (Ireland).

61 Belgium has recently reinforced its capacity to change prices to adjust to deviations from budget targets.

62 The outcome may depend on the amount of excess supply in the system. For example, spending limits have traditionally been kept tight in the UK National Health Service. With pressure to improve efficiency, and reduce waiting lists, considerable productivity gains were achieved over much of the period under review.

63 More important increases in cost-sharing were introduced in Austria (1988, 1996, 1997), Belgium (1992-95), Finland (1990-95, 2002), France (1970s and 1980s), Germany (successive measures in the 1990s),

has mainly affected pharmaceuticals, while patient payments for inpatient and doctors visits have been less widespread (Sweden, Italy, France).[64] The number of drugs not reimbursed has increased, mainly for "comfort" drugs or those without proven therapeutic value. The degree of cost-sharing has been increased for many others. In a number of cases, flat-rate payments per prescription have been introduced. Reference price systems have also been introduced in a number of countries. These arrangements increase cost-sharing for individuals using branded or higher cost products while assuring access to drugs of a generic nature.[65]

73. These measures have reduced the share of public spending in total spending, but the impact of these policies on overall household demand and consumption of care is probably limited (see Annex). Available empirical evidence suggests that the elasticity of demand for health care is generally small - in the range of -0.2 to -0.3 - with a weaker response at the level of hospital care.[66,67] Increases in co-payments substantial enough to have significant effects on demand are likely to have undesirable effects on access and may have additional social costs.[68] Indeed, because of this, many countries have attenuated and effects on access, by exempting vulnerable groups (the poor, the chronically sick and the elderly) who consume the bulk of health-care services, by setting ceilings on annual spending on health care by individuals or households (*e.g.* Sweden), and by allowing complementary insurance to cover the increase in cost-sharing (*e.g.* France).[69] Alternatively, where there are multiple exemptions and ceilings, administrative costs increase and the net budget savings may be less.

Italy (1995), The Netherlands (1997 but reversed in 1999), Portugal and Sweden (during the 1990s). In some cases, these were combined with policies to shift patients from hospitals into nursing-home environments where the cost-sharing is higher (Australia, Belgium and the United Kingdom).

64 This is, presumably, not independent of the higher price elasticity for pharmaceutical drugs than for ambulatory and, particularly, for hospital care.

65 Branded drugs appear able to maintain their price advantage over generics even after patents are expired, reflecting marketing efforts by the drug firms and strong loyalty of doctors to the brand name (see Scherer, 2000 for a review). This has led a number of countries to take pro-active policies to encourage the introduction of generics. Reference price systems reimburse patients on the basis of the lowest price generic substitute or the lowest priced drug in a given therapeutic class (Canada (British Columbia (n/a)), Denmark (1993), Germany (1989), Hungary (1989) Italy the Netherlands (1996), New Zealand (the late 1980s) and Sweden (1993)).

66 At the level of secondary care, health-care professionals are likely to have a strong influence on the level and kind of care and the impact of higher cost-sharing on demand is, therefore, weakened.

67 The impact of the elasticity is calculated as the elasticity times the per cent change in cost-sharing. Thus, where the level of cost-sharing is near zero the impact of a change in cost-sharing can be large. For example, the Health Insurance Experiment in the United States estimated that an increase in co-payments from around zero to 25 per cent reduced spending by around one-fifth, despite an elasticity in the range indicated in the text (Manning, *et al.*, 1987).

68 As noted, the largest impact of cost-sharing on demand for care will fall on ambulatory care and pharmaceutical drugs. Because "necessary" contacts with the health-care system appear to be as equally affected by cost-sharing as "unnecessary" consultations, the chances of early diagnosis are reduced, possibly requiring more costly treatment at a later date. Similar problems can also arise where patients do not take prescribed drugs.

69 Such measures increase the administrative costs of cost-sharing schemes, and may reduce the net fiscal savings.

Improving cost-efficiency at the micro level

74. Making health-care systems more efficient helps offset the budgetary impact of increased demand for health care.[70] This sub-section first examines reforms introduced to improve productivity and output of the ambulatory and hospital sector.[71] It then discusses efficiency issues associated with health insurance markets. Policies concerning technological change and, in this context, pharmaceutical drugs, are described subsequently.

75. Although the efficiency of health-care systems is hard to measure, a number of indicators suggest that there are large differences across countries (and even within countries) in what is produced and in the way that it is produced and on the resulting impacts on health outcomes (OECD, 1995b). As Tables 9 and 10 suggest, the level of capital and human resources employed in the sector shows a wide variation across countries. In addition, there are as many different combinations of spending on ambulatory and inpatient care as there are countries (Table 12)[72] and there are also very different levels of specialist care.[73] For any given pathology, wide differences also exist in the treatment and in the intensity of care (practice patterns), both within and between countries.[74]

Reforms to provider markets: ambulatory care

76. With the primary-care doctor or nurse usually being the first contact with the health-care system, the role and organisation of ambulatory care is of key importance in the overall efficiency and effectiveness of health-care systems. In addition, shifting care to an ambulatory environment helps control overall costs since ambulatory care is generally less expensive than hospital care. There is considerable cross-country diversity in the way ambulatory care is organised and paid for (see Box 3).

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70 Efficiency, for the purposes of this paper, is defined as achieving the maximum output in terms of health-care services with a given level of resources and cost or to achieve output targets with minimum costs. This can comprise finding the best balance between different kinds of care, the inputs going into that care and their cost and the technical efficiency with which they are used.

71 For additional information on developments in the European hospital sector, see McKee and Healy, 2002.

72 The real resources consumed in each sector may differ from the numbers in Table 8 because of differences across countries in relative prices for the ambulatory and inpatient care.

73 This has been very much the case in Eastern Europe where the share of specialists in the total number of doctors is very high. In Poland, specialists are moving to become "family" doctors (Girouard and Imai, 1999).

74 This is replicated in national studies. For example, Skinner *et al.* (2001) demonstrate the wide differences between states in the level of Medicare spending in the United States. The authors estimate that if spending were reduced to levels in the lowest spending states, overall Medicare spending might fall by just under 30 per cent.

Box 3. Paying primary-care doctors

General practitioners (GPs) are employed on salaries in Greece, Finland, Iceland, Mexico (public health providers), Norway (mixed salary and fees), Portugal, Spain (with some capitation), Sweden (some capitation), and Turkey - countries with integrated health systems. Salaries are generally negotiated centrally (*e.g.* between physicians' associations and the government), with individual-based adjustments sometimes included to allow for experience, location, and other reward and/or incentive considerations. Salary arrangements allow funders to control primary care costs directly; however, they may lead to under-provision of services (to ease workloads), excessive referrals to secondary providers and lack of attention to the preferences of patients.

Capitation payment systems provide GPs with a fixed payment for each patient on their "list", usually with adjustments for factors such as age and gender. These systems are used in Italy (with some fees), the United Kingdom (with some fees and allowances for specific services), Austria (with fees for specific services), Denmark (one third of income with remainder fee for service), Ireland (since 1989), the Netherlands (fee-for-service for privately insured patients and public employees) and Sweden (from 1994). Capitation payments have become more frequent in "managed care" environments in the United States.[1] Capitation systems allow funders to control the overall level of primary health expenditures, and the allocation of funding among GPs is determined by patient registrations. However, under this approach, of GPs may register too many patients and under-serve them, select the better risks and refer on patients who could have been treated by the GP directly. Freedom of consumer choice over doctors, coupled with the principle of "money following the patient" may moderate some of these risks. Aside from selection, these problems are likely to be less marked than under salary-type arrangements.

Fee-for-service arrangements are used to pay GPs in the remaining OECD countries and are even more widely used for specialists working in ambulatory care. Fee levels are either negotiated centrally (as in Japan, Germany, Canada and in France (Sector 1)[2]) or set by the individual practitioners. Some countries (*e.g.* Australia, France (Sector 2) and New Zealand) allow "extra billing" by GPs on top of standard patient reimbursement rates.

The fee-for-service approach gives physicians full discretion over the level and mix of services, referrals, and other treatment options. However, doctors face incentives to expand the volumes and prices of services they provide. The risk of supply-induced demand is particularly strong with this type of payment system, for example by increasing services provided "in-house" even if there would be advantages - *e.g.* through economies of scale - in making more use of secondary suppliers.

As suggested in the description of capitation contracts, there has been growing interest in payment systems that blend different element of these three payment approaches.[3]

1. Managed care can be defined as the body of clinical, financial and organizational activities designed to ensure the provision of appropriate health-care services in a cost-efficient manner (Academy Health, 2003). Managed care techniques are most often practiced by organizations and professionals that assume risk for a defined population (e.g., health maintenance organisations).
2. Doctors practicing in ambulatory care belong to either Sector 1 – where they charge a fee agreed with the Social Security (conventionné) - or Sector 2 – where they can set their fees freely. An easing in the rules of access to Sector 2 led to a rapid increase such that in many cities it is difficult to find a specialist in Sector 1. More recently access to Sector 1 has been severely tightened.
3. Newhouse (1992b) argues that mixed systems outperform pure capitation and fee-for-service systems, by reducing the welfare losses that may arise, under administered price arrangements where prices are set at the "wrong" level - *i.e.* away from the level where the marginal costs and benefits of services are equal.

77. Despite the potential importance of this sector for overall system efficiency, changes in this area have been relatively modest. This may partly perhaps reflect resistance to systemic change by practitioners but also the difficulty in designing payment systems that limit incentives to oversupply care while preventing low levels of patient satisfaction through, for example, waiting lists.[75] A significant shift in

75 Ideally, primary-care doctors (general practitioners) would act as informed agents of the patients and coordinate care by specialists or hospitals, for example via gatekeeping arrangements. However, doctors may have too many patients on their lists to care for them effectively and capitation payments provide little incentive for them to do so. This very often leads to waiting lists and low patient satisfaction. In contrast, fee-for-service arrangements provide little incentive to refer or to coordinate hospital or specialist care and encourage over supply.

orientation may be occurring in the United Kingdom where recent reforms are intended to increase the role of the general practitioner in deciding how resources are allocated in the hospital sector and in New Zealand where practitioners will have greater say in deciding how resources are allocated in diagnostics and pharmaceuticals.[76] The gate-keeping role of GPs has been encouraged in a few countries (France, Norway and the United States).[77] Finally, in the Eastern European countries, the ambulatory sector has been shifted from the public sector to private practitioners in the course of the 1990s and, in some cases, they are now paid on a capitation basis. In the early 1990s, Sweden allowed private doctors to be reimbursed on a fee-for-service basis by the public insurer, a policy that has now been largely reversed.[78] Only a few countries have changed payment arrangements, generally away from fee-for service systems to wage and salary and capitation approaches.[79]

Reforms to provider markets: the hospital sector

Enhancing the role of health-care purchasers

78. A first area of reform concerns the separation of purchasers and providers within public integrated systems and, more generally, the strengthening of purchasers' agency role within the health-care system. Purchasers/funders of health care are responsible to the budgetary authorities for cost control and to patients for the quality and accessibility of care. A significant number of countries with integrated systems have now moved in this direction (Australia, United Kingdom, New Zealand, Sweden, Italy, Portugal and, more recently, Greece).[80] More active purchasing has also occurred in countries with public contract models (Germany, Belgium). The role of purchasers has been enhanced in the United States as well within the context of managed care arrangements and selective contracting by insurers (see Box 6). The form of the purchaser has also varied. While most countries have focused on the hospital sector, both the United Kingdom and New Zealand have experimented with using primary care doctors as purchasers

76 In the United Kingdom, the General Practice Fundholding system established under the 1992 reform has evolved further under the 1997 reforms. In the new system all GPs will belong to a Primary Care Trust. These trusts will be the new "purchasers" of secondary care, replacing the District Health Authorities. In New Zealand, a more important role for the Independent Practice Associations is being considered.

77 For France, patients who accept their doctor as "médecin référant" (referring doctor) do not need to pay the doctor with subsequent reimbursement by the insurers. This option, however, is voluntary and has been relatively little used, mainly because the financial incentives for doctors are weak: they receive a small lump sum payment per patient but have extra administrative and prescribing obligations. In the United States, this shift has occurred within the context of managed care plans.

78 Prior to this change, public finance of ambulatory care was limited to services provided by the state sector.

79 Some forms of managed care in the United States have introduced capitation and wage and salary contracts. The Czech Republic moved from salaries to fee-for-service and then to capitation. Spain is progressively moving from a capitation system towards a salary payment. Ireland shifted from a fee for service to a capitation system leading to an estimated decline in doctor visits of 20 per cent (Hughes, 1999). In the United Kingdom, GPs can also be paid now in the form of a block grant, equivalent to a wage. Denmark has moved to a mixed system of capitation for around one third of GP income and two thirds from fee-for-service arrangements.

80 This has sometimes been combined with better geographical distribution of budgets using weighing systems based on the number of individuals covered by the purchaser and their health characteristics. These funds are then distributed to the various funders using a number of indicators ranging from historical patterns (France), to population or risk factors such as age or health characteristics of the population (Canada, Italy, Sweden). France intends to move towards capitation/risk-based arrangements for distributing public finances in the hospital sector across regions. This was initially to be fully introduced early in the next decade but this is now to take place over a much longer period (Imai *et. al.*, 1999).

and in the United Kingdom (General Practitioner Fundholders) such policies were reinforced in 1997.[81] And the extent of the experiments has also varied in countries where health care is decentralised (Sweden, Italy and Spain).[82]

79. Little information on the impact of this approach on cost and performance is available. However, the ability of the purchasers to affect provider behaviour appears to depend importantly on whether the purchasers have adequate information. While less the case in the United States, they have often lacked the skills and resources needed to overcome the information asymmetry in favour of providers. This, in turn, has limited their capacity to enforce contracts and to overcome provider resistance to change (Smee, 2000; Light, 2000).[83] Results from the United Kingdom have suggested that the GP Fundholders have proved somewhat more agile in selective purchasing for elective care than have the District Health Authorities in the new environment. (Glennester and Le Grand, 1995).

80. Purchasers have sometimes also taken on the role of reorganisation and rationalisation of care institutions. In France, the Agences régionales d'hospitalisation (ARH) were established in 1996 to organise hospital care by region. While they do not actively purchase care, they can set contracts with providers and allocate budgets to the various hospitals under their jurisdiction. These groups are also actively engaged in the restructuring of hospital supply.

Improving hospital contracting and payment systems

81. A shift toward more active purchasing and contracting by insurers/payers of hospital care rather than simply funnelling financial resources to providers has accompanied the move towards a clearer distinction between purchasers and providers. Countries have generally made hospital contracts both more explicit and better attuned to achieving the goals of cost control, efficiency and quality of care. Greater attention is being paid to the incentives inherent in specific payment methods (the key types and their incentive features are described in Box 4 for hospital care). A range of contracting methods has been used, the form often reflecting the amount of information available to the purchaser. Where detailed information on the costs of individual hospital services is absent, contracts have largely been of a block type, sometimes combined with indications of required levels and quality of service. In general, purchasers and providers - particularly in public integrated models - have had only a limited idea of the true resource costs of various treatments. As a consequence, providers have difficulty in evaluating which is the most cost-effective treatment approach while purchasers have little means of assessing provider performance. While purchasers are becoming more active in collecting the information needed to inform resource allocation

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81 In the 1992 United Kingdom reforms, volunteering GPs (GP Fundholders) received a budget to purchase pharmaceutical drugs and elective care. After some experimentation this is now being extended in the form of Primary Care Trusts which regroup all GPs and which will form the main purchasing agencies. In New Zealand, Independent Practice Associations and Primary Care Organisations developed and these have been given a purchasing role for selected services such as laboratory tests.

82 Purchasing arrangements were set up in 11 counties in Sweden. In Italy, where ultimate financial responsibility for health-care budgets was decentralised to the Regions, the Local Health Units have been strengthened and make more independent and contract with local hospitals and ambulatory providers for care. However a full purchaser-provider split has only taken place in a few regions (Jommi *et al.*, 2001). A move towards health-care purchasing has recently been legislated in Greece and will be progressively introduced over the next six years.

83 This has been compounded by the requirement that purchasers contract with all providers and by the fact that contracting takes place in an environment of bilateral monopoly between insurers and providers, leaving less scope for influencing behaviour of individual hospitals. Furthermore, in most cases, the health purchasers were drawn from the same group of individuals that had formerly administered the system, making it more difficult to change roles.

decisions in the hospital sector, there is still considerable controversy over how it should be used.[84] The United States' experience with more active purchasing by private insurers (see below) demonstrates that important investment in data systems and in human capital are needed to set contracts effectively and to assess whether contract conditions are being met (Light, 1998, 2000).

Box 4. Hospital financing systems

With block or global grants/budgets, hospitals receive an annual fixed budget to cover all their services (usually apart from major capital spending). During the 1980s, this approach became the main payment method used in many "integrated" health systems, where the government is the main provider as well as funder of health services. It is found, for example, in Australia, Canada, Denmark, Finland (with some direct billing of municipalities), Ireland, Mexico, New Zealand, Norway and Sweden, and the United Kingdom (until recent reforms) and is also commonly used in the public hospital sectors of other systems (*e.g.* France and Spain (social security hospitals)). In Denmark and Sweden, block grants are provided at the level of clinical departments in hospitals. Block funding provides a direct means of containing hospital spending, provided enforcement mechanisms are adequate (as has not been the case in a number of southern European countries). However, as noted, this approach provides few incentives for hospitals to improve the efficiency of their operations. A more complex alternative defines prices and volumes of care (the United Kingdom, Germany), although such arrangements come closer to a Diagnosis Related Group (DRG) approach described below.

Bed-day payments provide hospitals with a flat-rate fee per occupied bed. This approach was found mainly in systems with public funding and a mixture of public and private providers and is probably now only used in Switzerland. Overall hospital spending is capped, in effect, by total hospital capacity; however, suppliers face incentives to lower patient turnover and prolong lengths of stay so that the more expensive early days (when treatment intensity is higher) are offset by lower-cost stays later on during recuperation. As with block grants, funding decisions do not incorporate information on relative costs across treatment methods. To minimise this incentive, Germany, for example, set caps on the number of bed days but only partially reimbursed the bed-day price when the bed days exceeded this limits.

Fee-for-service methods pay hospitals according to individual services provided. These are the principal means of paying for hospital services in Japan, some cantons in Switzerland, and formerly, the United States - *i.e.* systems with mainly private providers and multiple insurers. Under this system, macro-control is weaker than, for example, under block grants (requiring spending to be limited by other means), with suppliers facing incentives to raise the quantity, quality and prices of services provided.

Payments-per-case set fees prospectively according to diagnosed medical conditions and standardised treatment costs. The best-known system is the DRGs introduced into the US Medicare programme in 1983. Different pathologies are grouped into homogeneous cost groups and average costs of treatment are estimated. A patient is assigned to a group on entry to the hospital and the provider receives a lump sum for the treatment. Prices are set administratively for each category. This approach appears to have certain favourable characteristics: it allocates budgetary resources on the basis of output; it can give purchasers some control over treatment intensity (for example through price); it encourages hospitals to increase output where there is demand and capacity and to look for ways to reduce costs per sickness episode. However, this approach places the risk of cost over-runs on the provider. As this can lead to undesirable provider behaviour – such as cream skimming patients[1] – these systems need to be carefully designed and applied to the context of each country.[2] To avoid some of these problems, a number of countries have

84 For example, private clinics in France now furnish more than three-quarters of elective surgery in France. These patients most often have no important medical complications, such that the risk of cost over-runs is limited. In contrast, public hospitals – which are often better equipped for complex cases - tend to have a high proportion of very sick individuals. In the light of this "cream skimming", public hospitals are concerned that a single DRG for both public and private hospitals will put them at a disadvantage.

Box 4. Hospital financing systems cont'd

explored risk-sharing arrangements (van de Ven and Ellis, 2000).[3] In addition, care needs to be taken that increases in output do not lead to budget over-runs (Wennberg *et al*. (1984)).[4]

DRG-based systems have since spread to other parts of the US medical system and are being implemented or considered by other countries, including Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Korea, Mexico,[5], Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. In many of these countries, they have been used as an indicator of the volume of care, permitting a move to an allocation of budgets on the basis of output rather than historical costs (*e.g*. Austria).[6]

1. However, cream skimming can be a problem with other payment arrangements.
2. Prices need to be set carefully in line with the cost structure in each country and adjusted in line with changing practice patterns. More generally, providers need to be monitored to prevent "bumping" patients into higher-cost categories or refusing to treat high-risk individuals.
3. These can take on a variety of forms: payment of a part of total expenditure, payment for high-cost outliers (van de Ven and Ellis, 1999). For example, Belgium has chosen to combine a fixed payment or daily allowance for hotel charges on a prospective basis, while paying for the costs of treatment on a fee-for-service basis (FFS).
4. Concern over this issue led to an overall budget cap and a point system in Austria while in Sweden the introduction of a DRG system led to a rapid increase in output and the re-imposition of a budget cap in the mid 1990s. But such measures can introduce their own problems. In the Austrian case, this encouraged hospitals to raise output so as to maximise their share of the total budget. Such a result may be a positive outcome if there are productivity reserves and waiting lists but pose problems where they lead to unnecessary hospitalisation.
5. For the main health-care providers to social security (IMSS).
6. In Germany, Ireland, Luxembourg and the Netherlands, budgets are based on hospital activities or functions; in Belgium and Spain only part of the budget is on an activity basis - for example nursing and hotel components - while medical treatment is on a fee-for-service basis and paid retrospectively; in Italy and Sweden (certain counties) budgets are paid on the basis of activities, while in the United Kingdom and Finland purchasing packages of hospital and outpatient services are used which determine expected supply.

82. Within this context, greater attention has been given to capital costs. In many countries, hospital investment continues to be controlled and paid for at the central or regional level (Germany, Austria, Belgium, the Netherlands), and these expenses are normally considered outside operating budgets. Such arrangements may have encouraged hospital oversupply and greater capital intensity of care because capital costs are essentially free to the hospital. To counter such effects, a few countries have introduced capital charges into the contracting arrangements (New Zealand, United Kingdom).[85]

83. Prospective pricing systems appear to have encouraged greater cost efficiency in the hospital sector. Evidence from the United States indicates that there have been significant falls in average length of hospital stays compared with other payment methods, although this may also have been accompanied by lower intensity of care in certain cases (Chalkley and Malcolmson, 2000). In Sweden, a comparison of counties that used prospective payment systems with those that did not suggested cost differentials in the order of 10 per cent (Gerdtham *et al*., 1999a and 1999b) and similar results have been found for Australia. However, the use of these payment methods may conflict with overall expenditure controls, particularly where there is excess supply or productivity reserves. For example, the introduction of DRGs in Stockholm County led to a sharp rise in activity and spending and the re-imposition of central expenditure control through penalties for exceeding volume limits.

Improving managerial independence and cost accountability of hospitals

84. The shift towards more independent producers with greater management independence and responsibility to payers has been particularly marked for countries with integrated systems with tight

85 For example, in New Zealand the value of the capital was estimated and hospitals were required to pay a rate of return to the owners, in this case the state.

budget limits as a starting point. With greater managerial freedom, contracting-out selected activities has also increased, where these can be provided more cheaply externally.[86] For example, the Private Finance Initiative in the United Kingdom allows the private sector to build hospitals and to operate all non-medical services within them under contract. Gains in efficiency in the hospital sector, however, have been partly offset by the need for greater information both as a basis for effective management and to fulfil the oversight requirements of the funders and purchasers. Some countries have also moved to improve the flexibility of labour. For example, Portugal is shifting hospital staff onto private labour contracts and experience in test hospitals suggests that efficiency gains from greater labour flexibility can be achieved.

Increasing competition among providers

85. A limited number of countries (the United States, the United Kingdom, Sweden, the Czech Republic and New Zealand) have experimented with greater competition among hospitals as a means of inducing improvement in efficiency, quality, and responsiveness (see Boxes 5 and 6). The appearance of managed care in the United States for privately insured and Medicaid payments within a context of competing providers appears to have led to slower growth of private health-care spending without loss of quality.[87] This success has been achieved under a set of market and regulatory conditions that are probably unique to the United States (see Box 5). However, the recent reappearance of strong upward pressure on health-care insurance premiums and spending suggests that these approaches may now be reaching their limits in terms of expenditure control.[88] Efforts to introduce competition in other countries - starting from very different systems of financing, provision and supply from that in the United States - have not achieved the expected results and have run into considerable patient and provider opposition. However, as these experiments were discontinued after a relatively short period, more time may have been needed for positive results to appear.

Competition in provider markets outside the United States

86. Reforms to increase competition among health-care providers have focused on creating quasi-markets.[89] These experiments have occurred largely in countries with national health services (integrated models) or with single-payer arrangements. These changes were intended to put pressure on providers through limited forms of competition and harder budget constraints (New Zealand, Spain (mainly

86 To some degree, however, the lower costs may reflect public or para-public sector wage scales which provide higher wages for the low skilled than in the private sector.

87 However, a number of other instruments and factors in addition to competition have played a role. For example, managed care also constrained costs by limiting choice over the kind of care received. The Medicare prospective price system has also played a role by demonstrating that lower prices were possible.

88 Health-care costs are estimated to have increased by roughly three-quarters of a percentage point of GDP in 2001, although this partly reflects a slowdown in the growth of GDP (Levit *et al.*, 2003). One important factor underlying this development has been the shift of the population away from health maintenance organisations (HMOs) to less restrictive arrangements such as preferred provider organisations (PPOs) that provide greater patient choice. In addition, increased intensity of care and higher prices have also played a role.

89 In quasi-markets, third-party payers or public agents contract for health care rather than the patients themselves (Le Grand *et al.*, 1998).

Box 5. Provider-market competition and managed care in the United States

Under the impetus of rising costs of health care, the insurance system in the United States has progressively moved from an indemnity model with free consumer choice of provider and *ex post* reimbursement of medical expenses towards policies that restrict patient choice of provider to varying degrees. Insurers then selectively purchase care on the basis of price, aiming to do so without loss of quality. Patients are limited to those providers chosen by their insurers or they will face financial penalties. Within this context, managed care plans go one step further by potentially restricting the level of care through gate-keeping, case/utilisation reviews, pre-authorisations and monitoring of doctor practice patterns. Managed care has taken on a variety of forms with differing mixes of risk cover, cost-sharing and premiums (Glied, 2000). At one extreme, certain health maintenance organisations (HMOs) supply their own care, thus combining both the insurance and supply function. An alternative and currently more widespread form is through non-exclusive contractual relations with independent providers (Independent Practice Associations). Other forms allow greater individual choice over the provider—at a price of increased patient cost-sharing and higher premiums (Preferred Provider Organisations or Point of Service Plans. But whatever the form, all but five per cent of the privately insured population was in arrangements of this type by 2002 (Gabel *et. al.*, 2002).[90]

Increased provider market competition has benefited from the particular market conditions in the United States health-care industry. There is broadly unregulated local competition for health-care services in large urban areas and excess supply (Dranove and Sattherwaite, 2000). Purchasing organizations have sufficient size and market power to collect and analyse complex information on cost and service use, thereby helping to bridge the information asymmetry inherent in health-care markets. These factors have permitted insurers to obtain lower prices (Rice, 1985; Staten *et al.*, 1988; Melnick *et al*., 1992).

After allowing for differences in health status associated with cream skimming and self selection,[91] managed-care plans appear to have lower levels of hospital utilisation (both through lower admissions and length of stay) and total care costs tend to be 10-15 per cent lower than under indemnity plans (Miller and Luft, 1994, 1997 and 2002, Glied, 2000).[92] Cost reductions do not appear to have been accompanied by lower quality of care – although this is difficult to measure. Despite these achievements, care restrictions imposed by managed-care plans have led to considerable public dissatisfaction. As a consequence, state-government regulations that restrict the capacity of managed-care institutions to limit access to care have become widespread. In addition, and much more importantly, consumers have switched to larger, looser forms of managed care such as PPOs and Point of Service arrangements. This has weakened the capacity of managed care to sustain the efficiency gains so far achieved.

Catalonia), Sweden and the United Kingdom) (see Box 6). These reforms have generally involved health-care providers competing for the customers of health-care purchasers on the basis of price. However, competitive pressures and provider incentives were weak, purchasers lacked the skills and information to place enough pressure on providers for change and the conditions of tight supply meant that providers were in a strong market position. These policies also led to significant opposition from both patients and providers. As a result, policies have been reversed and, in the case of New Zealand, the most recent changes appear to have brought the system nearly full circle.

90 This expanded in the public sector where the states enrolled a large share of the Medicaid population in HMOs and to a much lesser degree in Medicare through the Medicare+Choice programme.

91 Because of self-selection and cream skimming, managed care plan participants are estimated to spend 20-30 per cent less on health care, irrespective of the health-care plan they are in (Glied, 2000).

92 But while there is a broad consensus that managed care has been instrumental in the slowdown in overall health-care cost growth particularly over the 1990s, not all studies using micro data show this effect (somewhat over half of the studies reported in Glied (2000) indicate either an increase in overall costs associated with managed care or no reduction). For an alternative view, see Sullivan (2000).

Box 6. Experiments with competing providers outside the United States

In the early 1990s, New Zealand and the United Kingdom set up broadly the same approach to purchasing health care from independent but largely government-owned providers. Hospitals were to establish prices for care and to compete for business. In practice, this was largely limited to elective care as emergency services needed to be locally supplied. In the United Kingdom, purchasing was divided between the District Health Authorities (the main purchasers) and General Practice Fundholders - *i.e.* GPs who volunteered to be the purchasers for most elective surgery for their patients. Groupings of GPs in New Zealand (Independent Practice Associations) took on some budget holding functions.

In Sweden, competition was largely limited to Stockholm County, where nine semi-autonomous district health authorities were established with purchasing responsibility for medical care and public health. These authorities were to establish contracts with providers specifying volume and quality. Payment was on a DRG basis and competition on the basis of price, with the share of total care under tender increasing progressively from 1993. These reforms were made against a background of free choice of provider by patients and an increase in private ambulatory care paid on a fee-for-service basis from 1994.

There was a very short-lived experiment in the Czech Republic, which set up a system of competing insurers and providers in 1992. The system was characterised by extensive oversupply in the health-care sector and a fee-for-services payment system. (OECD, 2003a).

While there were small improvements in some efficiency indicators in the United Kingdom, there was no sustained improvement in waiting lists or waiting times, and no measurable improvement in the clinical quality of care[1] or in health outcomes and, hence, in patient satisfaction (Smee, Mays *et al*. (2000)).[2] GP fundholders are thought to have had somewhat greater success in achieving cost savings through purchases of excess hospital supply where it appeared (Glennester and Le Grand, 1995). In New Zealand, there is no clear evidence of improved performance in the hospital sector. Competitive tendering may have led to small savings in non-medical hospital services (Cumming and Mays, 2002). These small successes in New Zealand and the United Kingdom need to be seen against a significant increase in administrative costs (Smee, 2000; Le Grand, 2002) and, in the United Kingdom, a perception of greater inequality in access to care.[3]

Reforms in the county of Stockholm appear to have led to a marked increase in the volume of hospital care, reflecting both payment on a DRG basis and free patient choice of provider. Some econometric evidence shows that hospitals in those counties most active in introducing contracting and internal markets proved to be somewhat more efficient than those that did not (Gerdtham *et al.*, 1999a and Gerdtham *et al*., 1999b).[4] However, the rise in volume and the increased spending led to lowering DRG prices and penalties for providers exceeding their contract volumes, thus highlighting the difficulty in simultaneously achieving both cost control and incentives for increased efficiency. This problem was also apparent in the Czech Republic: after the sharp increases in health-care spending, budget caps were imposed on hospitals and doctors were paid on a capitation rather than a fee-for-service basis.

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Box 6. Experiments with competing providers outside the United States, cont'd

In all countries that introduced them, the competitive experiments remained short-lived, lasting from 1992 to 1997 in the United Kingdom, and 1992 to 1996 in New Zealand and Sweden. This outcome has been attributed to a range of factors: a tradition of central budget and regulatory control; local provider monopolies, tight supply and waiting lists; weak provider incentives and the absence of hard-budget constraints; the absence of staff skilled in purchasing; and more generally, an underestimation of the complexity of health-care markets. As a result, competitive forces were weak, and policies were in place for too short a period to have a substantive impact. Some have argued that effective competition did not materialise. (Le Grand (1999); Smee (2000); Light (1998)).

1. Indeed, Propper *et al.* (2002) provide some evidence suggesting that quality may have declined in the United Kingdom. Death rates were higher in hospitals where the potential for competition was strongest.
2. There was a small increase in the growth of hospital productivity and a relative reduction in the pharmaceutical expenditures of GP fundholders. Providers also appear to have been more responsive to GP concerns over quality. Fundholders were able in a few cases to get better prices, but at a possible cost in the form of lower hospital revenues. There is also some evidence that fund holding led to a two-tier service. However, the fact that fundholders tended to change activity patterns - so as to maximise their fundholding budgets - just before entering the scheme makes before and after comparisons difficult (Mays *et al.*, 2000).
3. Waiting times appear to have been shorter for GP fundholders (Mays *et al.*, 2000).
4. These studies suggest that the efficiency differences might be of the order of 10 per cent. However, the accuracy of these estimates is limited by the ability to adequately control for exogenous factors. Some improvements in hospital performance occurred, but this appears to have been widespread and to have sometimes appeared before competitive markets began operating. This development may have reflected the impact of the earlier Patients Guarantee.

87. While attempts at active competition in health-care markets in Europe and New Zealand have been curtailed, some of the underlying elements of these reforms nonetheless remain. All countries appear to have maintained contracting arrangements, even if they have become longer-term in nature and place greater emphasis on co-operation than on head-to-head competition. This suggests that policy makers find them a useful tool to strengthen the position of purchasers, to encourage greater transparency and accountability and to search for more cost-effective solutions (Light, 2001). In some cases, incentives have been improved; for example, both purchasers and providers can now keep surpluses in the United Kingdom since the 1997 reform, while purchasers can still withdraw their custom as a last resort from local providers if they are dissatisfied with the services they are receiving.[93] Financing is increasingly based on output, with some offsets to allow for higher costs from very sick patients, rather than block contracts or capped budgets. A number of countries continue (or have increased) contracting out for non-medical hospital services (the United Kingdom). And greater attention is being paid to integrating health-care planning to include all levels of health care, such that more cost-effective combinations of community and health care are explored (Sweden and the United Kingdom).

88. Some form of budget control remains necessary for overall system efficiency because of moral hazard. Nonetheless, there may tradeoffs between overall cost control and the extent to which increased efficiency gains can be obtained - even though indicators (see above) suggest widespread scope for gains. Achieving increased efficiency may depend on how improved incentives translate themselves into increased provider efficiency. This is particularly true in the hospital sector where gains will depend on a range of factors including the quality of management, the scope for better operating arrangements and the incentives to staff to search for and accept new ways of working. While there little information in this area, long periods of budget (or wage) restraint may make it more difficult to create conditions conducive to change, particularly where improvements depend on investment in human and physical capital. Some

93 However, it is not clear how the Primary Care Trust (PCTs) will arbitrate between different GP interests and this may mean replacing weak monitoring capacity of DHA purchasers in the last scheme with even weaker arrangements in PCTs to face down the hospitals (Le Grand, 2002, OECD, 2000b).

increase in resources may therefore be needed to "oil the wheels" of change. Such increases should, however, be carefully designed to encourage the chances for efficiency gains.

89. Furthermore, certain payment arrangements may not always be compatible with cost control. As experience in Sweden and Norway demonstrates, attempts to improve productivity of hospitals through activity-related payment systems, can quickly lead to cost over-runs unless there is some way to adjust prices to compensate (such as in the Austrian hospital point system).[94]

Enhancing competition among insurers

90. Insurance market competition can improve efficiency in two ways. First, it encourages insurers to minimise administrative costs and improve services to the insured, even though they are still likely to have higher operating/marketing expenses when compared to countries with a single-insurer model. Where alternative insurance plans are proposed, there may be gains to consumer welfare through greater variety in health-care plans and, particularly, in the degree of insurance cover. Second, the pressure from selective contracting by insurers among competing health-care suppliers can encourage more efficient health-care provision. Recent experience in health insurance markets suggests that achieving this goal while maintaining full population coverage is more difficult than anticipated (van de Ven *et. al.*, 2002).

91. Concern over increased health-care costs prompted a few OECD countries with multiple insurers to open the health insurance market to greater competition (Belgium, the Czech Republic, the Netherlands and Germany). In Switzerland, which already had competitive private insurance markets, health-care insurance was made mandatory (see Box 7). However, tight regulatory control and the objective of ensuring full access of the population to health-care cover has limited the scope of reforms and imposed new trade-offs.

94 This may lead to a desirable increase in output particularly where there are waiting lists. However, where waiting lists are not at issue, this may simply encourage hospitals to provide additional services of a low marginal social value to ensure a larger share of points in the total.

Box 7. Insurance competition in selected European countries

These competitive insurance arrangements aim to combine competition with full or near-full insurance cover. Coverage is mandatory or has been achieved via public arrangements covering vulnerable groups (the Netherlands). Systems generally combine a defined package of insured care, free choice of insurer at regular intervals with open enrolment and community rating of all members of the same plan. Insurers are often non-profit (Belgium, Switzerland).[1] Contribution systems can be based on earnings (*e.g.* Germany), income, individual insurance premiums (*e.g.* Switzerland) or a mix of all three (*e.g.* the Netherlands).

A key element in all systems is an *ex-ante* risk-adjustment arrangement to take account of differences in risks of needing medical care by policy holders of the individual insurers. Insurers with participants that have high-risk profiles receive a cross-subsidy from funds with lower risks to allow for their higher expected health-care costs. However, because these risk-adjustment systems are only able to account for a small part of the true differences in risk,[2] all insurers have an incentive to attract healthier individuals - *i.e.,* to cream skim.[3] This, in turn, reduces incentives to place pressure on health-care providers to reduce costs as cream skimming provides an easier way of ensuring profitability (or financial viability in the case of non-profit insurers). In the light of this, government policies have attenuated the risks faced by individual insurers, for example through retrospective reimbursement of insurance fund deficits (*e.g.* Belgium and the Netherlands) or paying for high-cost patients.[4] However, this also has the disadvantage of reducing incentives facing insurers to search for less expensive and more cost-effective care from providers.

1. In both countries this is based on the notion that care decisions should not be based on motives of profit rather than on the strict application of medical need (OECD, 1999a and OECD, 2000a).
2. Up to now risk-adjustment systems fail to account for much more than ten per cent of the total variance in health-care spending, leaving ample scope for profitable cream skimming. Available indicators of risk are generally limited to age and sex but, depending on the country, can also include disability (Belgium and the Netherlands), region (Belgium, the Netherlands and Switzerland), unemployment (Belgium), mortality (Belgium) and hospitalisation (Ireland). However, some authors have suggested that there is scope for improvement in risk adjustment (see van de Ven and Ellis, 2000, Table 3; van Doorslaer and Schut, 2000; Beck and Zweifel, 1998).
3. Insurance plans attempt to increase the chance of earning surpluses by attracting low-risk individuals and deterring high-risk individuals. Methods include: refusing or setting a very high premium for complementary insurance; having a weak response to the preferences of high-risk consumers. In a managed care environment, it may give poor care to the chronically ill, making patients wait for agreement for care, and otherwise providing poor service. For example, some German funds, do not advertise among lower-income groups, which are considered to be higher risks (Brown and Arneburg, 1999).
4. In both Belgium and the Netherlands, the insurance funds are being made increasingly responsible for deficits - *i.e. ex post* risk sharing is being reduced.

92. Over the shorter run, these reforms appear to have led to an evening out of health-care premiums within countries as individuals move from higher-cost to lower-cost insurers, leading, at least initially, to greater equity in the premiums paid. The size of these contribution rate changes depends significantly on the initial differences in contribution rates between funds. Movements by the insured between funds and the degree of the narrowing in premiums have been larger in Germany (where differences in contribution rates have been large) than in the Netherlands (where they are relatively small) (Gress *et al*., 2002).[95] However, in Switzerland there appears to be considerable consumer loyalty to individual funds and, despite very large differences in premiums, the flows from high to low cost funds appear to be relatively limited so far (Colombo, 2001).

93. An additional positive feature is that competition may place pressure on administrative costs and force insurers to pay greater attention to consumer needs and satisfaction with their services (Belgium, Germany). In Belgium, savings in administration by insurers have permitted increased cover in other health-care areas for their members. (Gress *et al*., 2000; OECD, 1999a). In the Netherlands, amalgamation

95 Differences in the flat-rate component of health insurance paid by the individual in the Netherlands can differ by as much as 25 per cent. But this component forms only a very small share of the overall cost of health care, the majority of which is financed through the public sector.

of social funds has been extensive and even social funds and private insurers are merging, potentially leading to greater scope for gains in administration costs.[96]

94. Despite a few areas of modest change, there has been little attempt to harness the competitive pressures from insurance markets to influence provider behaviour in these countries.[97] Insurers continue to regulate prices, quality and entry and exit of providers. Most importantly, insurers are generally unable to choose providers selectively, thereby limiting the transmission of insurance market competition to provider markets and any potential effects on the cost of care. Contractual relations with providers continue to take place in the context of a bilateral monopoly: insurers as a group generally negotiate with providers as a group with government regulatory oversight, and prices and payments generally apply equally to all providers and insurers (Germany, Switzerland, Netherlands (hospitals)). In addition, the insurers confront the same problems of information asymmetry as elsewhere and need to develop the tools necessary to engage in managed care activities. Even with regulatory changes permitting the introduction of managed care on a more widespread basis, it may be difficult to sustain competition. Low-cost insurers will be able to attract more clients, leading to a progressive reduction in the number of insurers.[98] While these systems avoid the key problem of coverage, recent experience in the United States insurance market highlights some of these longer-term problems. Health insurance markets appear to be becoming more segmented. This pattern has been reflected in the low-risk profile of managed-care enrolees but also in the increasing cost of traditional indemnity-type insurance, which in turn, pushes more individuals towards managed-care plans with less choice. Risk sharing across the population is reduced, and certain segments of the insurance markets may "collapse".[99]

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96 Between 1985 and 1998, the number of sickness funds declined from 53 to 31 (Lieverdink and van der Made, 2001).

97 There have been a few developments, largely in the ambulatory sector. In the Netherlands, selective contracting with individual providers such as GPs or specialists is becoming more frequent. Some insurers are beginning to use managed-care tools, including case management for large claims, co-ordination of GPs' referrals to specialists, provision of data on resource use to physicians and development of preferred provider organisations (van Doerslaer and Schut, 2000). In Switzerland, some funds are operating pilot projects of an HMO nature at the ambulatory level with important effects on costs. Leading social health insurers now all have HMO divisions, but the number of plans in 1998 was around 10 with a market share of 3 per cent but increasing rapidly. In several smaller cities primary care networks have been created, acting as gatekeepers for participating insurers. Physicians seek to prevent unnecessary hospitalisation and receive a part of the savings (Zweifel, 1998).

98 For example, if one insurer is able to attract a low-risk clientele its premiums will also be low, permitting it to attract new fund members. Even if risk selection is not possible, the low-premium fund will still tend to increase its membership, although its premiums would progressively rise as higher risk individuals enter the scheme. The fund progressively absorbs a larger and larger share of the market and in the limiting case could become the only insurer. New entry into the market is likely to be limited, particularly where insurers are non-profit organisations.

99 Developments in the United States (Harvard University Health plans and the Federal Employees Health Benefits programme) illustrate what can happen. In the case of the Harvard scheme, a decision not to subsidise the most generous alternative plan in the health-care scheme led to a "death spiral". Higher-risk individuals tended to choose the generous scheme, pushing up costs and premiums and leading to exit by lower-risk individuals into less costly (and possibly less generous) schemes. There was a similar development for the federal employees' plan (Cutler and Reber, 1998).

Technological change and pharmaceutical drugs

Assessing technological change

95. Technological change covers a range of products, processes and organisational arrangements in health care.[100] As noted, this has had a major impact on health-care outcomes and in the quality of care. But it has also been a major driver (if not the major driver) of health-care spending over the post-war period (Newhouse, 1992a; OECD, 1995a; Abel-Smith, 1996; OECD, 2002e).

96. Technological change can affect health-care expenditure in complex ways. While the arrival of new drugs or procedures may increase costs in the short to medium run, they may reduce costs over the longer term where they help prevent more serious conditions from developing.[101] There can also be dynamic effects as a result of expanded indications of use.[102] In some circumstances, individuals may choose higher-cost treatments, a factor that may be encouraged by high levels of insurance coverage.[103] At the same time, the wide differences in the intensity of use of many technologies across countries, often without large differences in outcomes, suggests that there is considerable uncertainty as to the appropriate level of use in technology and there may be gains from a better understanding of costs and benefits in their use (OECD, 2002e; Cutler, 2002).

97. Technological change continues to be rapid and this is expected to continue, particularly in areas such as diagnostics, therapeutic and preventive technology and in medical procedures and devices (Gelijns *et al.*, 2002; Aaron, 2003). Longer-term control of health-care spending will importantly depend on governments taking a stronger role in evaluating the costs and benefits of new technology.

98. Pre-marketing controls to determine whether a new technology is safe and efficacious for a particular use is now widespread and has been strengthened, for example by the European Medicinal Products Evaluation Agency set up in 1995. In addition, many countries require hospitals to obtain a licence to provide expensive devices and procedures (*e.g.* imaging devices, open heart surgery units) and these appear to have been more seriously adhered to than the existing certificate-of-need system in the United States (Gelijns *et al.*, 2002). In addition, the introduction of budget caps has forced hospitals to be more selective in the investment in new technology. However, since health-care costs tend to be driven by "small ticket" items at the level of individual care units, this may not be an effective way of overseeing technological change. Budget caps also do not provide criteria for choice of technique and are unlikely, in themselves, to lead to the most effective or cost-effective choices as new developments present themselves.

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100 Pritchard (2002) defines this broadly as "drugs, devices, medical or surgical procedures used in medical care as well as the organisation and supportive systems within which such care is provided"

101 For example, drugs to reduce blood pressure reduce the risk of heart disease, strokes and peripheral vascular disease may increase costs initially but may subsequently delay the appearance of high-cost diseases at a later date.

102 For example, a recent study of an HMO in over a five year period (Legoretta, 1992) showed that despite a 25 per cent reduction in the average cost of care for gall-bladder operations as a result of key-hole surgery, there was an increase in overall costs because of an increase in the number of operations by 60 per cent, as it became possible to operate higher-risk patients.

103 Zweifel and Manning (2000) argue that insurance systems may result in "dynamic moral hazard" where patients choose more expensive technology if they have high insurance cover and freedom of choice. The effect may be even stronger under fee-for-service payment systems with retrospective reimbursement for costs. This issue may be less important in countries that limit the diffusion of and access to new technologies.

99. A key problem facing governments in this context is the lack of meaningful indicators to judge the relative costs and potential benefits of new – as opposed to existing – technologies and investment of governments in improved policy tools is probably low relative to the potential payoffs.[104] However, such approaches are quite information intensive, often requiring large randomised trials that may take time before definitive results are forthcoming.[105] Decisions, therefore, are often taken on much smaller groups of patients where the possibility of small sample errors is much larger and selection issues more important. Finally, estimates of the costs and the benefits of care are imprecise, particularly in the case of chronic conditions where the costs of care need to be viewed over a longer time frame.

100. A few countries are now moving to improve the information available for decision-makers. For example, the National Institute for Clinical Excellence (NICE) in the United Kingdom and the Agence nationale pour le développement de l'évaluation médicale (ANDEM) in France make recommendations to policy makers on the basis of available information and signal areas where further research is needed. In a few cases (*e.g.* the Netherlands and the United States), countries have begun using conditional insurance coverage – *i.e.* where the payment for treatment using the new technology is integrated into a research programme - thereby ensuring that spending contributes to increasing available information on costs and outcomes. Given that technology is diffused across the OECD, greater international co-operation in the area of testing and evaluation would be likely to result in large benefits from increased scale.

Policies for pharmaceutical drugs

101. Pharmaceutical drug markets have received special attention because they have been a dynamic component of health-care spending. This market is highly regulated in all countries (see Box 8). There are tight pre-marketing requirements to assess whether products are safe for use. In addition, most countries control prices at the wholesale and retail level and these methods – which often include references to prices in other countries – appear to have led to a narrowing in the prices in these products across countries (Jacobzone, 2000).

[104] One promising method is to compare the cost of treatment per life year saved or per quality-adjusted life year (QALY) for technologies affecting relatively focused therapeutic categories (Gleijn *et al.*, (2002).

[105] For example, a recent study has shown that a comparison of the long-term effects of many costly hypertensive drugs is not significantly greater than the effect of much cheaper diuretics.

Box 8. Regulating the pharmaceutical sector

Pharmaceuticals represent around 15 per cent of overall health expenditure. Heavy regulation of this market has been inevitable in light of the information asymmetry as regards safety and the moral hazard associated with high levels of insurance cover. A wide range of demand- and supply-side regulations has been introduced, the precise form differing widely across countries.

Demand-side policies

As noted above, there are widely different levels of cost-sharing across countries and pharmaceutical drugs are generally considered to be the most price sensitive element of health-care expenditure. All countries have public reimbursement systems except Canada, Mexico, Turkey and the United States.[1] Governments set the lists of drugs that will be reimbursed and these are changed with varying frequency and use different criteria.

Cost-sharing varies with the drug and but is often limited in high-risk groups, the poor and the chronically ill, and since these groups consume a large share of drugs, cost-sharing bites on relatively few people.[2] Cost-sharing is generally proportional to the price but Australia, Austria, Germany, Japan, New Zealand, the Netherlands and the United Kingdom use a fixed charge per prescription while Finland and Italy mix these two approaches. Cross-country differences in spending on drugs also reflect prescribing behavior of doctors and a number of countries have introduced various tools: auditing and benchmark prescribing behaviour (France and the United Kingdom), guidelines (most OECD countries) and budgets at both the individual (GP Fundholders in the United Kingdom) and regional level (Germany 1992-93 to 1997, Belgium, Greece (main insurance fund), Italy and Mexico).

Governments also encourage consumption of lower-cost generic drugs. Prescribing guidelines exist in most countries to encourage the shift to less expensive drugs but, as importantly, to encourage appropriate prescription of drugs and limit overuse. Reference price systems have been set up in which insurance reimbursement rates depend on the price of the cheapest comparable product have also encouraged a change in this direction along with an easing in regulations that permit pharmacists to substitute generic drugs where they exist. These mechanisms give the consumer more control, help ensure that individuals have access to drugs and increase competition.

Supply-side policies

Supply-side regulation relies heavily on price fixing and all countries, with the exception of the United States, Germany and to a lesser degree Switzerland, set producer prices. Pricing issues differ depending on whether the product is patented or not. Where this is the case, governments attempt to set prices that provide an appropriate return on investment in innovation, while limiting potential over-exploitation of monopoly positions founded on patent protection. For patented drugs, countries use a wide range of criteria in setting prices: the therapeutic value of the drug, reference to existing products; prices in other countries; and the contribution of the pharmaceutical sector to the economy. A few countries set prices to ensure pre-established rates of return on invested capital (the United Kingdom, and to a lesser degree, the Czech Republic (domestic producers), Korea, Spain and Turkey).[3] As noted, some countries have moved to require cost-effectiveness tests for new pharmaceutical drug listings. While most countries have maintained these bilateral monopoly arrangements after patents lapse, overall costs have also been affected by subsequent price freezes in most countries in the 1980s and 1990s, de-listing of reimbursable products (often over-the-counter drugs) and specific taxes on the pharmaceutical industry (Belgium and France).

Box 8. Regulating the pharmaceutical sector, contd.

Distribution systems for pharmaceuticals

There are wide differences across countries in the number of retail outlets as suggested by the large number of practicing pharmacists per capita across OECD countries (Table 16). Distribution systems are highly regulated with limitations on ownership, entry and prices and mark-ups at the retail level in most countries even though the scope for greater competition is possibly larger in this sector than in most other areas of health care. The institutional arrangements vary from Sweden - where Apoteket AB is a government-owned monopoly - to North America where there are virtually no entry restrictions and many pharmacies belong to retail chains selling a wide range of other products. In many countries, pharmacies continue to have a monopoly on the sale of over-the-counter drugs, limiting competition in this area and there are fixed mark-ups on list wholesale prices, even though pharmacies are often able to obtain discounts from manufacturers or wholesalers. Such mark-ups have also reduced the incentives of pharmacies to promote generic drugs as their margins are smaller.

1. A large share of pharmaceutical drugs in Mexico are provided directly to patients under Social Security and, in principle, for patients served by the public health system, although in the case of the latter, supply is often insufficient to fill demand. Although in Canada, provinces generally have schemes protecting the elderly and medication furnished in hospitals are free.
2. For example, France has 100 per cent cover for the chronically ill, cost-sharing is largely covered by complementary insurance and this has been extended with the Couverture médicale universelle in 2000. However, Germany, Japan, Spain and Switzerland have officially banned reinsurance by a second-tier insurer on the grounds that it diminishes the incentives of public schemes.
3. For example, under the Pharmaceutical Price Regulation Scheme in the United Kingdom, a specified rate of return of between 17 and 21 per cent is allowed with a 25 per cent tolerance when companies submit new products.

102. As noted above, the degree of cost-sharing for drugs has been more widespread than for other components of health care, although the impact of these measures on consumption and on public spending is often weakened because of exemptions of vulnerable groups. These changes have resulted from the exclusion of products from reimbursement – mainly over-the-counter and comfort drugs – and by changes in the rates of reimbursement on the remaining products. A number of countries have introduced reference price systems that set reimbursement on the basis of lower-priced generic products, a practice that also helps ensure access to drugs by vulnerable groups.

103. Widespread differences in the level of prescribing both within and across countries have led to a growing emphasis on practice guidelines and these have become widespread in a variety of countries. These aim to reduce risks of over- and under-medication and limit broader social effects - for example from the over-use of antibiotics.[106] However there is little evidence that they have had a major impact on practice patterns at the level of the individual doctors as doctors' habits and patient expectations remain strong.

104. On the supply side, the drug approval process has been significantly tightened both in the United States, Japan and in Europe, where the European Medicinal Products Evaluation Agency was set up in 1995. Within the broad context of technology policy just described, growing attention is being paid to assessing the cost-effectiveness of new treatments (Jacobzone, 2000). For example, pharmaco-economic assessments in support of listings under publicly-funded benefits began in Australia in 1993 and have now been introduced in one form or another in at least 11 OECD countries (Dickson *et al.*, 2003).[107]

106 High levels of antibiotic use have resulted in the appearance of bacteria that are now resistant to even the most powerful combinations of drugs.

107 These included Australia, Belgium, Canada, France, Italy, Japan, the Netherlands, Portugal, Sweden, Switzerland and the United Kingdom.

105. All countries except the United States and Germany control pharmaceutical prices either directly or indirectly (see Box 8).[108] There has been relatively modest change in the approach to fixing prices,[109] although the Czech Republic, Korea, and Spain have moved to introduce a rate-of-return approach used in the United Kingdom since the late 1950s.[110]

106. At the retail level, wide differences in the number of practising pharmacists (Table 16) suggests that rationalisation in this sector may also provide scope for savings.[111] Regulation of systems of distribution has remained largely unchanged with this sector heavily regulated both as regards to price (see above), market entry and the degree of competition at both the wholesale and retail level. Aside from Eastern Europe, where the number of wholesalers and retain outlets have increased with the shift in ownership of the distribution system from the state to the private sector, limits on market entry remain strong in virtually all countries. There has been difficulty in allowing competition even in over-the-counter drugs.[112]

107. The scope for gains from greater competition in these markets can be considerable. For example, Pharmaceutical Benefit Management companies, which act as purchasing agents of insurers in the largely unregulated (in terms of prices) United States pharmaceuticals market, have been successful in achieving gains in purchasing drugs from manufacturers - although their capacity to achieve these gains over the longer term has been questioned (Kaisernetwork, 2003). While some of these functions already exist in other OECD countries within existing government institutions and regulatory systems, there may be scope for cost savings, particularly in the area of generic drugs in many countries.

[Table 16. Practicing pharmacists in OECD countries 1970-2000]

Conclusions

108. The broad conclusions with respect to health-care policy reforms are summarised below, structured around the main policy objectives.

Insurance coverage and health outcomes

109. All but a few OECD countries have now achieved universal or near-universal insurance coverage of their population, a status with positive implications for both access to care and efficiency. Experience suggests that full coverage can be achieved using approaches based primarily on public programmes or on

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108 While Switzerland does not control the prices at the time of introduction it can influence the rate of increase over time.

109 France introduced joint negotiations on values/prices and introduced innovative value/price as a criterion in 1994. Italy moved to use average prices in Europe in 1995 and introduced an innovative product criterion; the Netherlands set maximum authorised prices in 1996; reference pricing systems were introduced in Norway and Sweden in the early 1990s, and Switzerland modified its method of adjusting prices of older products in 1995.

110 Such systems set prices so as to achieve a pre-determined rate of return on the costs that drug companies have spent on research and production of the pharmaceutical product.

111 However, cross-country differences may reflect prescribing patterns. In countries where doctors prescribe heavily, there may be more prescriptions and a higher demand for services at the retail level. Gains in this area may require changes to patient and medical behaviour.

112 Part of the problem in making reforms is the fact that most pharmacies have capitalised the rents of these monopoly conditions into the market value of the pharmacy. This means that regulatory changes that would erode these rents will reduce the resale value. This results in strong opposition from existing owners.

private insurance. However, systems in which coverage is voluntary have not attained full population coverage. Mandating insurance coverage purchase or providing compulsory cover appears necessary.

110. Experience has shown that coverage alone is not always sufficient to ensure health-care accessibility, as more and more countries struggle with financial or social barriers to access, or general or isolated shortages in the supply of health providers or services. Fully addressing these problems may require additional investments to enhance coverage (overall or for vulnerable populations) or service availability, including some investments that imply trade-offs with efficiency goals.

111. Cost-sharing reforms have reduced the growth of *public* health-care spending by shifting costs onto the private sector. Low price elasticities of demand also suggest that at modest levels of cost-sharing, the impact on *overall* consumption of care is likely to be small, particularly for hospital care, where choices are most often determined by doctors (see Annex). And because increased cost-sharing shifts the burden of financing health care from the healthy to the sick and from the wealthy to the poor, increases in cost-sharing that are large enough to have a substantial effect on demand seem likely to compromise the standard of equal access for equal need. Indeed, many countries have limited cost-sharing for at-risk groups for this reason. Nonetheless, increased cost-sharing for certain types of services may usefully temper demand for services where these are discretionary or discourage the use of products for which cheaper substitutes are available (*e.g.*, brand-name versus generic drugs). These effects will be stronger where existing levels of cost-sharing are low.

112. Although population health status and clinical outcomes of health care have improved dramatically over time, policy makers have become aware of problems with quality and safety of health care and are also concerned about low patient satisfaction. Despite strong interest among policy makers and much activity, reforms geared at making health systems more effective are relatively new. Progress in this area will require increased investment in information systems designed to track system performance and in methods to improve the organisation and delivery of health care and the practice of evidence-based medicine. Payment systems, too, must evolve to ensure that incentives are aligned as well as possible with desired outputs of the system. Payments increasingly reward improved productivity but may ultimately need to take into account the effectiveness of care in improving health and satisfying patients. At the same time, policy makers must recognise that behavioural and risk factors, such as tobacco use, violence, and obesity, and social policy factors such as income levels and distribution across the population, are the greatest factors in determining overall population health status. Improvements in health systems can address clinical outcomes of health care, which, while important, in many cases play only a secondary role as determinants of population health and disability.

Controlling spending and improving system efficiency

113. Confronted by large cross-country differences in the share of resources devoted to health care, policy makers continue to grapple with the question of appropriate spending levels. Relatively low spenders questioned whether expenditures were adequate to achieve system objectives. Relatively high and moderate spenders have questioned whether resource reallocation or structural changes in the system could allow objectives to be met at lower cost. But irrespective of the level of spending, most governments reacted to the rapid increases in health-care spending during the 1960s and 1970s. A range of policies was put in place that contributed to more moderate growth since the 1980s. Although the timing varied, restraints on both the volume and price of health-care services were followed by measures to cap health budgets and to shift the financing of health care onto the private sector. Rapid advances in medical treatment capability, demands for adequate access and quality of care, and growing supply constraints have led countries to make more targeted reforms. A few countries, often those that have been successful in containing spending, have judged that spending restraint may have gone too far and that increases in the level of resources accorded to the health-care sector are required.

114. The experience with reforms to limit the increase in spending suggests the following:

- Publicly-financed, single-payer systems (particularly public integrated systems) probably make containing overall spending easier. By contrast, multiple-payer systems (some social insurance and private insurance arrangements) have had more difficulty in attaining and sustaining slowdowns in expenditure growth.

- Efforts to control the volume of services have been successful, particularly in the hospital sector. Price and wage controls, while achieving restraint over short periods, may be unsustainable over the longer haul because of associated distortions to relative input and output prices.

- Budget caps in various forms have been successful in constraining expenditure, particularly in the hospital sector. However, budget allocation methods have introduced their own problems, particularly where they have limited the incentives to improve efficiency.

115. Increased efficiency in the provision of health-care services can help ease budgetary pressures (which will continue to increase because of medical progress and population ageing) and/or release resources to improve services elsewhere. Reforms have focused on modifying financing arrangements to better align the incentives of health-care providers and, in some cases, of patients, with efficient production and use of health services. Some key points emerging from the assessment of these reforms are:

- In countries with public-integrated systems, efficiency-related reforms have included: introducing separate purchaser and provider functions, better alignment of incentives with objectives through contracts, decentralised decision making, greater competition among providers and, more recently, benchmarking against best-performing hospitals. While the positive impact of such policies has most often been weakened by continued central control, tight spending limits and tighter supply constraints than elsewhere, these policies generally have been sustained, despite subsequent reforms in many countries.

- Experiments with competition among providers have been less successful and reforms have been reversed in those countries where they were introduced. Failures partly reflected tight supply conditions and monopoly positions of providers in local health-care markets and lack of sufficiently skilled purchasers. Positive results from competition probably require establishing market conditions conducive to competition, better purchasing capacity, and the information base needed to appropriately set and monitor contracts.

- Improved payment systems can enhance productivity if administered carefully. For example, output-related prospective payment systems can encourage providers to minimise costs without hurting patient care if associated prices are set correctly and there is appropriate control of quality and of strategic provider behaviour.

116. Experience with respect to increased competition among insurers, the most salient feature of reforms in multiple-payer systems, is mixed:

- Increased insurance market competition may have had some positive effects by narrowing premia across insurers, encouraging better service and instituting incentives for administrative cost reduction.

- In addition, price negotiation and selective contracting among providers by competing purchasers has been successful in slowing cost growth in the United States. Managed-care arrangements, under which patients accept some limitations on choice of providers and services, may be particularly adept at reducing costs.

- However, one important issue is how to foster competition among insurers without creating further segmentation of the insurance market and reduced "solidarity" as a result of inadequate risk-adjustment mechanisms that encourage insurers to avoid bad risks.

117. A final point concerns possible tradeoffs between budgetary control and system efficiency. For example, introducing payment, management, or other changes geared toward improve efficiency may require both human and capital investments, which may be problematic in cases where tight resource constraints have already been imposed. Increasing flexibility may also be difficult where there are staff shortages or there have been long periods of wage restraint. Alternatively, where there are unused productivity reserves, incentives to increase supply through output-based payment arrangements (*e.g.*, prospective payment systems) may put pressure on budgets, absent adequate price controls or adjustments that offset these volume effects. Thus, policies need to be carefully tailored to ensure that the advantages of policies introduced to achieve one objective are not offset by unexpected costs elsewhere.

Tables

Table 1. **Coverage of public health insurance schemes over total population, 1960-2000**

	Public health care coverage, per cent of total population[a]					
	1960[b]	1970[c]	1980	1990[d]	2000[e]	2001[f]
Australia	76.0	85.0	100.0	100.0	100.0	100.0
Austria	78.0	91.0	99.0	99.0	99.0	99.0
Belgium	58.0	97.8	99.0	97.3	99.0	99.0
Canada	100.0	100.0	100.0	100.0	100.0	100.0
Czech Republic	100.0	100.0	100.0	100.0	100.0	100.0
Denmark	95.0	100.0	100.0	100.0	100.0	100.0
Finland	55.0	100.0	100.0	100.0	100.0	100.0
France		95.6	99.1	99.4	99.9	99.9
Germany	85.2	89.2	92.3	88.8	90.9	90.9
Greece	44.0	55.0	88.0	100.0	100.0	100.0
Hungary			100.0	99.0	100.0	100.0
Iceland	100.0	100.0	100.0	100.0	100.0	100.0
Ireland	85.0	85.0	100.0	100.0	100.0	100.0
Italy	87.0	93.0	100.0	100.0	100.0	100.0
Japan	99.0	100.0	100.0	100.0	100.0	100.0
Korea			29.8	100.0	100.0	100.0
Luxembourg	90.0	99.6	99.8	98.8	99.0	99.4
Mexico					50.0	50.0
Netherlands	71.0	71.0	74.6	73.9	75.6	75.7
New Zealand	100.0	100.0	100.0	100.0	100.0	100.0
Norway	100.0	100.0	100.0	100.0	100.0	100.0
Poland						
Portugal	18.0	40.0	100.0	100.0	100.0	100.0
Slovak Republic						97.9
Spain	54.0	61.0	83.0	99.0	99.8	99.8
Sweden	100.0	100.0	100.0	100.0	100.0	100.0
Switzerland[g]	74.0	89.0	96.5	99.5	100.0	100.0
Turkey		26.9	38.4	55.1	66.0	66.0
United Kingdom	100.0	100.0	100.0	100.0	100.0	100.0
United States				24.5	24.7	25.3
OECD point average[h]	80.4	86.6	92.3	93.9	93.0	93.2
22 comparable countries[i]						
Average	80.4	88.9	96.9	98.0	98.3	98.4
Standard deviation	22.5	17.1	6.7	5.9	5.4	5.4

a) This series gives the share of the population which is eligible for health care goods and services that are included in total public health expenditure.
Coverage in the sense of this index is therefore independent of the scope of cost-sharing.
b) Data refer to 1961 for Australia, Canada, Czech Republic, Greece, Ireland and Japan.
c) Data refer to 1967 for Netherlands.
d) Data refer to 1993 for Luxembourg.
e) Data refer to 1997 for Italy, Spain and Turkey.
f) Data refer to 1997 for Italy, Spain and Turkey; 2000 for Ireland, Japan, Mexico, Portugal and Switzerland.
g) Switzerland has universal mandatory private health insurance.
h) Unweighted average. Includes all available countries at the relevant point in time.
i) Unweighted average. Excludes France, Hungary, Korea, Mexico, Poland, Slovak Republic, Turkey and United States.

Source: OECD HEALTH DATA 2003 3rd ed., Barraza-Llorens, M and colleagues (2002), "Addressing inequity in health and health care in Mexico", Health Affairs, May/June 2002, pp. 47-56 used for Mexico.

Table 2. **Public and private financing sources as shares of total health expenditure, 2000**[a)]

	Public financing sources			Private financing sources			
	Social security schemes	Other public spending	Total public	Private health insurance	Out-of-pocket spending	Other private spending	Total private
Australia	0.0	68.9	68.9	7.3	18.5	5.4	31.1
Austria	40.2	29.2	69.4	7.2	18.8	4.6	30.6
Belgium			72.1				27.9
Canada	1.4	69.5	70.9	11.4	15.8	1.9	29.1
Czech Republic	81.7	9.7	91.4	0.0	8.6	0.0	8.6
Denmark	0.0	82.5	82.5	1.6	15.9	0.0	17.5
Finland	15.4	59.7	75.1	2.6	20.4	1.9	24.9
France	73.3	2.5	75.8	12.7	10.4	1.0	24.2
Germany	68.7	6.3	75.0	12.6	10.5	1.8	25.0
Greece			56.1				43.9
Hungary	63.3	12.2	75.5	0.2	21.3	3.0	24.5
Iceland	24.7	59.0	83.7	0.0	16.3	0.0	16.3
Ireland	0.9	72.4	73.3	7.6	13.5	5.6	26.7
Italy	0.1	73.3	73.4	0.9	22.6	3.1	26.6
Japan	65.4	12.9	78.3	0.3	16.8	4.5	21.7
Korea	34.3	10.1	44.4	8.7	41.3	5.6	55.6
Luxembourg	72.7	15.1	87.8	1.6	7.7	1.2	10.5
Mexico	31.5	16.4	47.9	0.6	51.5	0.0	52.1
Netherlands	59.4	4.0	63.4	15.2	9.0	12.4	36.6
New Zealand	0.0	78.0	78.0	6.3	15.4	0.4	22.0
Norway	0.0	85.2	85.2	0.0	14.3	0.5	14.8
Poland			70.0				30.0
Portugal			68.5				31.5
Slovak Republic	84.4	5.0	89.4	0.0	10.6	0.0	10.6
Spain	6.9	64.8	71.7	3.9	23.5	0.9	28.3
Sweden			85.0				15.0
Switzerland	40.4	15.2	55.6	10.5	32.9	1.0	44.4
Turkey			71.9				28.1
United Kingdom	0.0	80.9	80.9				19.1
United States	15.0	29.2	44.2	35.1	15.2	5.6	55.8
OECD point average[b)]	32.5	40.1	72.2	6.4	18.7	2.6	27.8
22 comparable countries[c)]							
Average	32.5	40.1	72.6	6.4	18.7	2.6	27.7
Standard deviation	31.1	31.3	13.2	8.0	10.6	3.0	13.5

a) Data refer to 1998 for Turkey.
b) Unweighted average. Includes all available countries at the relevant point in time.
c) Unweighted average. Figures for Public financing sources exclude Belgium, Greece, Norway, Poland, Portugal, Sweden and Turkey. Figures for Private financing sources exclude Belgium, Greece, Netherlands, Figures for Private financing sources exclude Belgium, Greece, Netherlands, Poland, Portugal, Sweden, Switzerland, Turkey and United Kingdom.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 3. Cost-sharing policies in basic public health insurance schemes in the early 2000s (degree of cost-sharing in percent and in US$ or EUR

Country	General Practitioner	Specialist	Drugs	In-patient care	X-ray and pathology
Australia	For 25% of bills average of $5.	For 71% of bills average of $8.	Maximum $11 per prescription for general patients for drugs on the PBS Scheme.	None.	Included in specialists' bills.
Austria	20% of the population pays between 10% and 20% of doctor's fee.	Same as for GPs.	$4.50 per prescription.	For insured persons: $6 per day/maximum 28 days per year. For dependents: $10-$13.50 per day/maximum 28 days per year.	Same as for GPs.
Belgium	25% reduced to 10% for vulnerable groups.	Same as for GPs.	Flat rate plus 100/80/60/50% 0% for drugs on negative list.	$5-$6 per day, $2-$3 for vulnerable groups. Increased after 90 days.	
Canada	None.	None.	Discretion of Provinces.	None.	None.
Czech Republic (2000)	None.	None.	Generics covered. Non-generics reimbursed if no alternative.	None.	None.
Denmark	None except for under 3% of the population.		Flat rate plus: 50/70/100%	None.	None.
Finland	$17	$17	60% in excess of $8.	$22	None.
France	30%[3]	30%[3]	0% for some drugs; 35% for most drugs, 65% for "comfort" drugs or those w/out proven therapeutic value	EUR 11 per day plus 20% of total cost for first 30 days up to a ceiling of EUR 200	40%
Germany	None	None.	Charge of $3 per medicine prescribed (many exemptions).	$3 for the first 14 days (many exemptions).	
Greece	None	None.	0/10/25%	$15	--
Hungary (2002)	None.	Co-payment if no referral from medical doctor (except emergency);	50/70/90 or 100%; some drugs based on reference price system.	Co-payment for long term care in hospitals (depends on income level may be covered), co-payment for "hotel services" in hospitals	None.
Iceland[4]	$9	$17 plus 40% of the rest of the cost.	0, 12.5%, 25%	None.	$13
Ireland	None for Category I (35% of population); those in Category II pay for GP services[7]	As for GPs.	No charge for Category I; reimbursement for Category II of any cost over $21 per month.	No charge for Category I; Category II: $17 per day subject to a maximum of $166 in any 12 month period[9]	None for Category I.
Italy	None.	Maximum of $41	Free for Category I medication; 50% for Category II; $0 for both Categories I & II for exempted people; 100%. for Category III medication	None.	Up to a maximum of $41.
Japan[11]	Employees, 20% of all costs; dependents, 30%, self-employed and their dependents 30%.		Outpatients in EHI and NHI pay co-payments from zero yen for one drug prescribed to $0.85 for six or more drugs prescribed for internal use, and $0.40 (for one) to $1.20 (for three) drugs prescribed for external use.	Employees, 20% of all costs; dependents, 20%, self-employed and their dependents 30%.	Same as for GPs (outpatient) or inpatient care.

Table 3. Cost-sharing policies in basic public health insurance schemes in the early 2000s (cont'd)

Country	General Practitioner	Specialist	Drugs	In-patient care	X-ray and pathology
Korea	"outpatient fees" as follows: 30% if seen in clinic, 40% if hospital; 55% if general hospital	"outpatient fees" as follows: 30% if seen in clinic, 40% if hospital; 55% if general hospital		20% of inpatient care ("hospitalization fees")	
Luxembourg	5%	5%	0% or 20%	Flat rate between EUR 10 and EUR 15	
Mexico					
Netherlands					
New Zealand	Extra billing.	Out-patients $3-$17.	$2-$8 with stop loss.	None.	Out-patients $3-$17.
Norway	$11	$16	25% if on blue ticket, maximum $43 per prescription.	None.	X-ray $11
Poland (1999)	None.	None.	Basic drug list: flat fee=0.05% of min. wage; suppl. list=30-50% of cost of drug. Patients w/ chronic disease or war veterans fully or partially reimbursed.	None.	None.
Portugal		$91-$213	0/30/60/100%	$30	
Slovak Republic (2000)	None.	None.	Category I: fully covered. II: Same drugs as above, different manuf. partially reimbursed. III: out of pocket	None.	None.
Spain	None.	None.	0%, 40%. Pensioners and long-term ill largely exempt.[8]	None.	None.
Sweden[4]	$6-$19		First drug $15 then $1 each.	$8	--
Switzerland[6]	10%	10%	10%	10 SFR per day (about $7)	10%
Turkey	None.	None	10% retired; 20% active	None	None.
United Kingdom	None.	None.	$9 per prescription or free with a "season ticket" of $130. Many persons exempt.	None.	None.
United States (2004)[10]	20% in excess of the $100 deductible. Also a $66.60 monthly premium.		100%	$876 deductible first 60 hospital days; $219 co-payment per day for days 61-90; $438 per day beyond 90 days. $109.50 per skilled nursing facility stay day 21-100.	Same as doctors.

1. Approximate amounts in US dollars, converted at nominal exchange rates. Some changes arising from most recent reforms may not have been included for countries covered in OECD (1992*b*).
2. Information refers to the most recent data available, ranging from the late 1990s to the present.
3. 30% of the agreed fee schedule (doctor conventionné) and more if there is overbilling. Co-payment may be less if covered by complementary insurance which normally covers part of the co-payment including the overbilling. Complementary insurance covers over 80% of the population. Vulnerable groups and long-term ill may have zero co-payment.
4. Maximum for the year in the charging scheme.
5. Whole population covered for chronic care. 70% of the population is compulsorily insured and 30% by private for acute care. Privately insured patients can choose the deductible and co-payment policy they wish.
6. Yearly deductible of 230 SFR ($160) (1998). From 01/012004, yearly deductible of 300 SFR for adults, 0 SFR for children. From 1986 higher deductibles can be chosen up to 1500 SFR in exchange for a lower premium.
7. About 40% of the population has private health insurance that generally covers general practitioner fees above a relatively high threshold, consultant/specialist fees above a certain threshold and private and semi-private accommodation. Tax relief at the marginal rate is available on unreimbursed medical expenses above a certain threshold.
8. Patients with chronic illness pay 10% up to maximum of 400 ($2.75) pesetas per prescription.
9. Reflects an increase from the previous charge of $13 per day; in effect from 1 January 1998.
10. Applies to 13% of population (elderly and disabled) who are beneficiaries of public Medicare programme. Lower deductibles if in HMOs.
11. In Japan there is a dedicated mandatory public health system for those aged 65 and over and those aged between 65 and 69 with severe disability. From October 1997 to December 2000, cost sharing for them is ¥1,200 ($10.5) per day for inpatient care, and ¥530 ($4.7) per day for outpatient care (General practitioner, Specialist, X-ray and pathology). Cost-sharing for drugs (outpatient) is same as the other population.

SOURCE: Information supplied by OECD member countries or obtained from official publications.

Table 4. **Out-of-pocket spending as a share of total expenditure on health, 1980-2000**

	Percent of total expenditure on health				
	1980[a)]	1985[b)]	1990[c)]	1995[a)]	2000[e)]
Australia	16.1	14.3	16.6	16.5	18.8
Austria				14.9	18.8
Belgium					
Canada		14.7	14.4	15.8	15.8
Czech Republic			2.6	7.3	8.6
Denmark	11.4	13.6	16	16.3	15.9
Finland	18.4	18.3	15.5	20.5	20.4
France			11.4	10.8	10.4
Germany	10.3	11.2	11.1	10	10.5
Greece					
Hungary			10.9	16	21.3
Iceland	11.8	13	13.4	16.1	16.3
Ireland	13.8	14.4	16.5	15.5	13.5
Italy		15.7	15.3	24.4	22.6
Japan				15.5	16.6
Korea		59.9	53	51.1	41.3
Luxembourg	7.2	9.2	5.5	6.2	7.7
Mexico			58.3	56.2	50.9
Netherlands				8.8	9
New Zealand	10.4	10.8	14.5	16.2	15.4
Norway			14.6	15.2	14.3
Poland					
Portugal					
Slovak Republic				8.3	10.6
Spain			18.7	23.5	23.5
Sweden					
Switzerland		37.6	35.7	33	32.9
Turkey			31.4	29.7	
United Kingdom	8.6		10.6	10.9	
United States	24.2	22.8	20.1	15	15.2
OECD point average[e)]	13.2	19.7	19.3	18.9	18.7
20 comparable countries[g)]			19.2	20.3	19.8
Average					
Standard deviation			14.4	13.3	11.1

a) Data refer to 1983 for Ireland.
b) Data refer to 1988 for Canada and Italy.
c) Data refer to 1991 for Hungary and Spain; 1992 for Turkey.
d) Data refer to 1997 for Slovak Republic; 1998 for Netherlands.
e) Unweighted average. Includes all available countries at the relevant point in time.
f) Unweighted average. Includes Australia, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Korea, Luxembourg, Mexico, New Zealand, Norway, Spain, Switzerland and United States.
g) Includes Australia, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Korea, Luxembourg, Mexico, New Zealand, Norway, Norway, Spain, Switzerland and United States.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 5. **Out-of-pocket payments as a share of total household consumption, 1970-2000**

	Out-of-pocket payments			
	1970[a)]	1980[b)]	1990[c)]	2000
Australia	2.4	1.9	2.2	2.8
Austria				2.7
Belgium				
Canada			2.4	2.7
Czech Republic			0.3	1.2
Denmark	2.2	2.0	2.8	2.8
Finland	2.5	2.3	2.5	2.9
France			1.8	1.8
Germany	1.6	1.6	1.8	2.0
Greece				
Hungary			1.5	2.8
Iceland	2.6	1.3	1.8	2.6
Ireland		1.8	1.8	1.9
Italy		1.6	2.1	3.1
Japan				2.3
Korea			4.9	4.3
Luxembourg		0.7	0.7	1.1
Mexico			4.0	4.3
Netherlands				1.6
New Zealand		1.1	1.7	2.1
Norway			2.4	2.7
Poland				
Portugal				
Slovak Republic				1.1
Spain			2.4	3.0
Sweden				
Switzerland			5.5	6.1
Turkey			1.7	
United Kingdom		0.8	1.1	
United States	3.9	3.3	3.6	2.9
OECD point average[d)]	2.5	1.7	2.3	2.6

a) Data refer to 1969 for Australia.
b) Data refer to 1983 for Ireland.
c) Data refer to 1991 for Hungary; 1992 for Turkey.
d) Unweighted average. Includes all available countries at the relevant point in time.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 6. **Life expectancy at birth, 1960-2000**

	Males			Females		
	Years		Percent change	Years		Percent change
	1960[a)]	2000[b)]	1960[a)]-2000[b)]	1960[c)]	2000[d)]	1960[c)]-2000[d)]
Australia	67.9	76.6	12.8	73.9	82.0	11.0
Austria	65.4	75.4	15.3	71.9	81.2	12.9
Belgium	67.7	74.6	10.2	73.5	80.8	9.9
Canada	68.4	76.7	12.1	74.3	82.0	10.4
Czech Republic	67.9	71.7	5.6	73.4	78.4	6.8
Denmark	70.4	74.5	5.8	74.4	79.3	6.6
Finland	65.5	74.2	13.3	72.5	81.0	11.7
France	67.0	75.2	12.2	73.6	82.7	12.4
Germany	66.9	74.7	11.7	72.4	80.7	11.5
Greece	67.3	75.5	12.2	72.4	80.6	11.3
Hungary	65.9	67.2	2.0	70.1	75.7	8.0
Iceland	70.7	78.0	10.3	75.0	81.4	8.5
Ireland	68.1	74.2	9.0	71.9	79.2	10.2
Italy	67.2	76.3	13.5	72.3	82.4	14.0
Japan	65.3	77.7	19.0	70.2	84.6	20.5
Korea	51.1	71.7	40.3	53.7	79.2	47.5
Luxembourg	66.5	74.9	12.6	72.2	81.3	12.6
Mexico	55.8	71.6	28.3	59.2	76.5	29.2
Netherlands	71.5	75.5	5.6	75.4	80.5	6.8
New Zealand	68.7	75.7	10.2	73.9	80.8	9.3
Norway	71.3	76.0	6.6	75.8	81.4	7.4
Poland	64.9	69.7	7.4	70.6	77.9	10.3
Portugal	61.2	72.7	18.8	66.8	79.7	19.3
Slovak Republic	68.4	69.2	1.2	72.7	77.4	6.5
Spain	67.4	75.5	12.0	72.2	82.7	14.5
Sweden	71.2	77.4	8.7	74.9	82.0	9.5
Switzerland	68.7	76.9	11.9	74.5	82.6	10.9
Turkey	46.3	65.8	42.1	50.3	70.4	40.0
United Kingdom	67.9	75.4	11.0	73.7	80.2	8.8
United States	66.6	74.1	11.3	73.1	79.5	8.8
30 comparable countries[e)]						
Average[e)]	66.0	74.2	13.1	71.0	80.1	13.6
Standard deviation	5.6	3.0	9.2	6.0	2.7	9.5

a) Data refer to 1961 for Canada and Italy.
b) Data refer to 1999 for Germany, Greece and Korea.
c) Data refer to 1961 for Canada and Italy.
d) Data refer to 1999 for Germany, Greece and Korea.
e) Unweighted average.

Source: OECD Health Data 2003 3rd ed.

Table 7. **Infant mortality, 1960-2000**

	Deaths per 1 000 live births		*Percent change*
	1960	**2000**[a)]	**1960-2000**[a)]
Australia	20.2	5.2	-74.3
Austria	37.5	4.8	-87.2
Belgium	31.2	4.8	-84.6
Canada	27.3	5.3	-80.6
Czech Republic	20	4.1	-79.5
Denmark	21.5	5.3	-75.3
Finland	21	3.8	-81.9
France	27.5	4.6	-83.3
Germany	35	4.4	-87.4
Greece	40.1	6.1	-84.8
Hungary	47.6	9.2	-80.7
Iceland	13	3	-76.9
Ireland	29.3	6.2	-78.8
Italy	43.9	4.5	-89.7
Japan	30.7	3.2	-89.6
Korea		6.2	
Luxembourg	31.5	5.1	-83.8
Mexico		23.3	
Netherlands	17.9	5.1	-71.5
New Zealand	22.6	5.8	-74.3
Norway	18.9	3.8	-79.9
Poland	56.1	8.1	-85.6
Portugal	77.5	5.5	-92.9
Slovak Republic	28.6	8.6	-69.9
Spain	43.7	3.9	-91.1
Sweden	16.6	3.4	-79.5
Switzerland	21.1	4.9	-76.8
Turkey	189.5	39.7	-79.1
United Kingdom	22.5	5.6	-75.1
United States	26	6.9	-73.5
OECD point average[b)]	36.4	7.0	-81.0
28 comparable countries[c)]			
Average	36.4	6.5	-81.0
Standard deviation	33.0	6.7	6.1

a) Data refer to 1999 for Korea and New Zealand.
b) Unweighted average. Includes all available countries at the relevent point in time.
c) Unweighted average. Figures exclude Korea and Mexico.

Source: OECD Health Data 2003 3rd ed.

Table 8. **Satisfaction with health care systems, 1999**

	Share of population satisfied (%)			Share of population dissatisfied (%)		
	Very satisfied	**Fairly satisfied**	**Total satisfied**	**Fairly dissatisfied**	**Very dissatisfied**	**Total dissatisfied**
Austria	31.4	52.0	83.4	11.9	2.2	14.1
Belgium	15.8	61.2	77.0	16.9	4.0	20.9
Denmark	30.7	45.1	75.8	20.1	3.8	23.9
Finland	18.0	56.3	74.3	22.1	2.6	24.7
France	16.0	62.2	78.2	16.7	4.4	21.1
Germany	7.4	42.5	49.9	35.5	12.2	47.7
Greece	2.9	15.7	18.6	45.7	34.1	79.8
Ireland	11.4	36.3	47.7	26.9	20.3	47.2
Italy	2.1	24.2	26.3	45.6	26.2	71.8
Luxembourg	26.0	45.6	71.6	16.8	5.1	21.9
Netherlands	19.0	54.2	73.2	21.9	4.1	26.0
Portugal	3.1	21.0	24.1	42.4	31.7	74.1
Spain	9.6	38.0	47.6	40.6	9.3	49.9
Sweden	13.5	45.2	58.7	29.6	9.3	38.9
United Kingdom	13.0	42.7	55.7	31.8	10.5	42.3
European Union (15 country) average[a)]	10.6	42.2	52.8	32.5	12.7	45.2
All countries average[b)]	14.7	42.8	57.5	28.3	12.0	40.3
Standard deviation	9.3	14.0	21.4	11.4	10.8	21.4

a) Weighted average.

b) Unweighted average.

Source: European Commission Eurobarometer results listed in Key Figures on Health Pocketbook, 2001.

Table 9. **Total expenditure on health care[a] as a percent of trend GDP, 1970-2000**

	Percent of trend GDP					
	1970[b]	**1980**	**1990[c]**	**1992**	**1997**	**2000[d]**
Australia		7.5	7.7	7.9	8.7	9.2
Austria	4.1	7.7	7.2	7.6	7.5	7.9
Belgium	3.6	6.6	7.6	7.9	8.3	8.7
Canada	6.3		9.0	9.4	8.6	9.2
Czech Republic[e]			5.0	5.4	7.1	7.1
Denmark	8.0	9.1	8.4	8.3	8.3	8.4
Finland		6.4	8.1	8.3	7.1	6.8
France			8.7	9.1	9.1	9.4
Germany	6.4	8.8	8.8	10.1	10.5	10.7
Greece		7.0	7.4	7.9	9.3	9.3
Hungary[e]			7.1	7.7	7.0	6.7
Iceland	3.7	6.5	8.0	7.7	8.2	9.6
Ireland		8.7	6.4	6.9	6.5	6.8
Italy			8.1	8.3	7.7	8.2
Japan	4.6	6.5	6.1	6.3	7.0	7.7
Korea[e]			4.8	4.7	5.0	5.9
Luxembourg[e]	3.6	5.9	6.1	6.2	5.9	5.6
Mexico[e]			4.5	5.4	5.4	5.6
Netherlands	6.9	7.5	8.2	8.5	8.2	8.9
New Zealand		6.1	6.7	7.2	7.5	8.0
Norway	4.7	8.7	8.7	9.3	9.7	10.3
Poland[e]			5.3	6.6	6.1	6.0
Portugal	2.5	5.6	6.4	7.2	8.6	9.2
Slovak Republic[e]					5.9	5.7
Spain		5.1	6.8	7.2	7.2	7.5
Sweden	7.2	8.9	8.5	8.0	8.0	8.6
Switzerland		7.8	8.9	9.5	10.2	10.7
Turkey[e]	2.4	3.3	3.6	3.8	4.2	2.0
United Kingdom	4.5	5.5	6.2	6.6	6.8	7.3
United States	6.8	8.5	11.8	12.6	13.0	13.2
OECD point average[f]	5.1	7.1	7.4	7.8	7.9	8.2
14 comparable countries[g]						
Average	4.9	7.1	7.6	7.9	8.2	8.4
Standard deviation	1.3	1.3	2.3	2.5	2.3	2.3

a) Total expenditure on health care refers to items HC.1-HC.7 and item HC.R.1 according to the International Classification for Health Accounts (ICHA).

b) Data refer to 1971 for Denmark ; 1972 for Netherlands.

c) Data refer to 1991 for Hungary.

d) Data refer to 1998 for Turkey.

e) GDP used as the denominator instead of trend GDP for Czech Republic, Hungary, Korea, Luxembourg, Mexico, Poland, Slovak

f) Unweighted average. Includes all available countries at the relevant point in time.

g) Unweighted average. Figures include Austria, Belgium, Denmark, Germany, Iceland, Japan, Luxembourg, Netherlands, Norway, Portugal, Sweden, Turkey, United Kingdom and United States.

Source: OECD HEALTH DATA 2003 3rd ed., OECD OUTLOOK73A.

Table 9(cont). **Total expenditure on health care[a] as a percent of trend GDP, 1970-2000**

	Change in percentage points			Change in percentage points		
	1970[b] -1980	1980-1990	1990[c] -2000[d]	1990[c] -1992	1992-1997	1997-2000[d]
Australia		0.3	1.4	0.2	0.8	0.5
Austria	3.6	-0.5	0.6	0.4	-0.1	0.3
Belgium	3.0	1.0	1.2	0.4	0.3	0.5
Canada			0.2	0.5	-0.8	0.6
Czech Republic[e]			2.2	0.4	1.7	0.1
Denmark	1.1	-0.6	0.0	-0.2	0.0	0.2
Finland		1.7	-1.2	0.2	-1.2	-0.3
France			0.7	0.4	0.0	0.4
Germany	2.5	-0.1	1.9	1.3	0.5	0.1
Greece		0.4	2.0	0.5	1.4	0.1
Hungary[e]			-0.5	0.5	-0.7	-0.3
Iceland	2.8	1.5	1.7	-0.2	0.4	1.5
Ireland		-2.4	0.4	0.6	-0.4	0.3
Italy			0.0	0.2	-0.7	0.5
Japan	1.9	-0.4	1.5	0.2	0.7	0.7
Korea[e]			1.1	0.0	0.3	0.9
Luxembourg[e]	2.4	0.2	-0.5	0.0	-0.2	-0.3
Mexico[e]			1.0	0.9	0.0	0.2
Netherlands	0.6	0.8	0.6	0.3	-0.3	0.7
New Zealand		0.7	1.3	0.5	0.2	0.5
Norway	4.0	0.1	1.6	0.6	0.4	0.6
Poland[e]			0.7	1.4	-0.5	-0.1
Portugal	3.1	0.8	2.8	0.8	1.4	0.6
Slovak Republic[e]						-0.2
Spain		1.7	0.7	0.4	0.0	0.3
Sweden	1.7	-0.4	0.1	-0.4	-0.1	0.6
Switzerland		1.1	1.8	0.6	0.7	0.5
Turkey[e]	0.9	0.3	-1.6	0.1	0.4	-2.2
United Kingdom	1.0	0.7	1.1	0.5	0.2	0.5
United States	1.7	3.3	1.3	0.8	0.3	0.2
OECD point average[f]	2.1	0.6	0.9	0.4	0.2	0.3
14 comparable countries[g]						
Average	2.2	0.5	0.9	0.3	0.3	0.3
Average standard deviation[h]	1.0	1.5	0.7	0.5	0.5	0.2

a) Total expenditure on health care refers to items HC.1-HC.7 and item HC.R.1 according to the International Classification f or Health Accounts (ICHA).

b) Data refer to 1971 for Denmark ; 1972 for Netherlands.

c) Data refer to 1991 for Hungary.

d) Data refer to 1998 for Turkey.

e) GDP used as the denominator instead of trend GDP for Czech Republic, Hungary, Korea, Luxembourg, Mexico, Poland,

f) Unweighted average. Includes all available countries at the relevant point in time.

g) Unweighted average. Figures include Austria, Belgium, Denmark, Germany, Iceland, Japan, Luxembourg, Netherlands, Norway,Portugal, Sweden, Turkey, United Kingdom and United States.

Source: OECD HEALTH DATA 2003 3rd ed., OECD OUTLOOK73A.

Table 10. **Public share of total expenditure on health care, 1970-2000**

	Percent of total spending				Change in percentage points		
	1970[a]	**1980**	**1990**[b]	**2000**[c]	**1970**[a] **-1980**	**1980-1990**[b]	**1990**[b] **-2000**[c]
Australia	57.2	63.0	67.1	68.9	5.8	4.1	1.8
Austria	63.0	68.8	73.5	69.4	5.8	4.7	-4.1
Belgium				72.1			
Canada	69.9	75.6	74.5	70.9	5.7	-1.1	-3.6
Czech Republic	96.6	96.8	97.4	91.4	0.2	0.6	-6.0
Denmark	83.7	87.8	82.7	82.5	4.1	-5.1	-0.2
Finland	73.8	79.0	80.9	75.1	5.2	1.9	-5.8
France			76.6	75.8			-0.8
Germany	72.8	78.7	76.2	75.0	5.9	-2.5	-1.2
Greece	42.6	55.6	53.7	56.1	13.0	-1.9	2.4
Hungary			89.1	75.5			-13.6
Iceland	66.2	88.2	86.6	83.7	22.0	-1.6	-2.9
Ireland	81.7	81.6	71.9	73.3	-0.1	-9.7	1.4
Italy			79.3	73.4			-5.9
Japan	69.8	71.3	77.6	78.3	1.5	6.3	0.7
Korea			36.6	44.4			7.8
Luxembourg	88.9	92.8	93.1	87.8	3.9	0.3	-5.3
Mexico			43.0	47.9			4.9
Netherlands	60.2	69.4	67.1	63.4	9.2	-2.3	-3.7
New Zealand	80.3	88.0	82.4	78.0	7.7	-5.6	-4.4
Norway	91.6	85.1	82.8	85.2	-6.5	-2.3	2.4
Poland			91.7	70.0			-21.7
Portugal	59.0	64.3	65.5	68.5	5.3	1.2	3.0
Slovak Republic				89.4			
Spain	65.4	79.9	78.7	71.7	14.5	-1.2	-7.0
Sweden	86.0	92.5	89.9	85.0	6.5	-2.6	-4.9
Switzerland[d]			52.4	55.6			3.2
Turkey	37.3	27.3	61.0	71.9	-10.0	33.7	10.9
United Kingdom	87.0	89.4	83.6	80.9	2.4	-5.8	-2.7
United States	36.4	41.5	39.6	44.2	5.1	-1.9	4.6
OECD point average[e]	70.0	75.1	73.4	72.2	5.1	0.4	-1.8
21 comparable countries							
Average	70.0	75.1	75.5	74.3	5.1	0.4	-1.2
Standard deviation	17.2	17.5	14.0	11.4	6.7	8.5	4.4

a) Data refer to 1969 for Australia; 1971 for Denmark; 1972 for Netherlands.
b) Data refer to 1991 for Hungary.
c) Data refer to 1998 for Turkey.
d) Expenditure under mandatory private health insurance (about 30 per cent of total helath expenditure is treated

e) Unweighted average. Includes all available countries at the relevant point in time.
f) Unweighted average. Figures exclude Belgium, France, Hungary, Italy, Korea, Mexico, Poland, Slovak Republic and Switzerland.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 11. **Public expenditure on health as a percent of trend GDP, 1970-2000**

	Percent of trend GDP					
	1970[a]	1980	1990[b]	1992	1997	2000[c]
Australia		4.7	5.2	5.3	5.8	6.3
Austria	2.6	5.3	5.3	5.6	5.3	5.5
Belgium				6.8	5.9	6.3
Canada	4.4		6.7	7.0	6.0	6.5
Czech Republic[d]			4.9	5.2	6.5	6.5
Denmark	6.7	8.0	7.0	6.9	6.8	7.0
Finland		5.1	6.5	6.6	5.4	5.1
France			6.7	7.0	6.9	7.2
Germany	4.6	7.0	6.7	7.8	7.9	8.0
Greece		3.9	4.0	4.3	4.9	5.2
Hungary[d]			6.4	6.8	5.6	5.1
Iceland	2.4	5.7	6.9	6.5	6.8	8.1
Ireland		7.1	4.6	5.0	4.8	5.0
Italy			6.4	6.4	5.5	6.0
Japan	3.2	4.6	4.7	4.9	5.4	6.0
Korea[d]			1.7	1.6	2.1	2.6
Luxembourg[d]	3.2	5.5	5.7	5.7	5.5	4.9
Mexico[d]			2.0	2.4	2.4	2.7
Netherlands	4.1	5.2	5.5	6.2	5.6	5.6
New Zealand		5.3	5.6	5.7	5.8	6.2
Norway	4.3	7.4	7.2	7.9	8.2	8.8
Poland[d]			4.8	5.1	4.4	4.2
Portugal	1.4	3.6	4.2	4.3	5.6	6.3
Slovak Republic[d]					5.4	5.1
Spain		4.1	5.4	5.6	5.2	5.4
Sweden	6.2	8.2	7.6	7.0	6.9	7.3
Switzerland			4.7	5.1	5.6	6.0
Turkey[d]	0.9	0.9	2.2	2.5	3.0	1.5
United Kingdom	3.9	4.9	5.2	5.6	5.5	5.9
United States	2.5	3.5	4.7	5.4	5.9	5.9
OECD point average[e]	3.6	5.3	5.3	5.6	5.6	5.7
13 comparable countries[f]						
Average	3.5	5.4	5.6	5.9	6.0	6.2
Standard deviation	1.7	2.0	1.5	1.5	1.3	1.8

a) Data refer to 1971 for Denmark; 1972 for Netherlands.

b) Data refer to 1991 for Hungary.

c) Data refer to 1998 for Turkey.

d) GDP used as the denominator instead of trend GDP for Czech Republic, Hungary, Korea, Luxembourg, Mexico, and Turkey.

e) Unweighted average. Includes all available countries at the relevant point in time.

f) Unweighted average. Figures include Austria, Denmark, Germany, Iceland, Japan, Luxembourg, Netherlands, Norway, Portugal, Sweden, Turkey, United Kingdom and United States.

Source: OECD HEALTH DATA 2003 3rd ed., OECD OUTLOOK73A.

Table 11 (cont). **Public expenditure on health as a percent of trend GDP, 1970-2000**

	Change in percentage points			Change in percentage points		
	1970[a] -1980	1980-1990	1990[b] -2000[c]	1990[b] -1992	1992-1997	1997-2000[c]
Australia		0.5	1.1	0.1	0.6	0.5
Austria	2.7	0.0	0.1	0.3	-0.4	0.2
Belgium					-0.9	0.4
Canada			-0.2	0.3	-0.9	0.5
Czech Republic[d]			1.7	0.3	1.3	0.0
Denmark	1.3	-1.0	0.0	-0.1	-0.1	0.2
Finland		1.5	-1.4	0.1	-1.2	-0.3
France			0.5	0.3	0.0	0.2
Germany	2.3	-0.3	1.3	1.1	0.2	0.1
Greece		0.1	1.3	0.3	0.6	0.4
Hungary[d]			-1.3	0.4	-1.1	-0.6
Iceland	3.4	1.2	1.2	-0.3	0.2	1.3
Ireland		-2.5	0.4	0.4	-0.1	0.1
Italy			-0.5	0.0	-0.9	0.5
Japan	1.4	0.1	1.3	0.2	0.5	0.6
Korea[d]			0.9	-0.2	0.5	0.5
Luxembourg[d]	2.3	0.2	-0.8	0.0	-0.2	-0.6
Mexico[d]			0.7	0.5	-0.1	0.3
Netherlands	1.1	0.3	0.1	0.7	-0.6	0.1
New Zealand		0.2	0.7	0.1	0.1	0.5
Norway	3.1	-0.1	1.6	0.6	0.3	0.6
Poland[d]			-0.6	0.2	-0.7	-0.2
Portugal	2.2	0.6	2.1	0.1	1.3	0.7
Slovak Republic[d]						-0.3
Spain		1.3	0.0	0.2	-0.3	0.1
Sweden	2.0	-0.6	-0.3	-0.6	-0.2	0.4
Switzerland			1.3	0.4	0.5	0.3
Turkey	0.0	1.3	-0.8	0.3	0.5	-1.6
United Kingdom	1.0	0.3	0.8	0.5	-0.1	0.4
United States	1.1	1.2	1.2	0.7	0.5	0.0
OECD point average[e]	1.8	0.2	0.4	0.2	0.0	0.2
12 comparable countries[f]						
Average	1.8	0.2	0.6	0.3	0.2	0.2
Standard deviation	1.0	0.7	0.9	0.5	0.5	0.7

a) Data refer to 1971 for Denmark; 1972 for Netherlands.

b) Data refer to 1991 for Hungary.

c) Data refer to 1998 for Turkey.

d) GDP used as the denominator instead of trend GDP for Czech Republic, Hungary, Korea, Luxembourg, Mexico, Poland, Slovak Republic and Turkey.

e) Unweighted average. Includes all available countries at the relevant point in time.

f) Unweighted average. Figures include Austria, Denmark, Germany, Iceland, Japan, Luxembourg, Netherlands, Norway, Portugal, Sweden, Turkey, United Kingdom and United States.

g) Figures include Austria, Denmark, Germany, Iceland, Japan, Luxembourg, Netherlands, Norway, Portugal, Sweden, Turkey, United Kingdom

Source: OECD HEALTH DATA 2003 3rd ed., OECD OUTLOOK73A.

Table 12. **Contribution of ambulatory, hospital and pharmaceutical components to total health care costs, 1980-2000**

	Level and change in percentage points of total health expenditure								
	Inpatient care			Outpatient care			Pharmaceuticals		
	2000[a]	1980-1990[b]	1990[b] -2000[a]	2000[c]	1980-1990	1990-2000[c]	2000[d]	1980[e] -1990[f]	1990[f] -2000[d]
Australia	42	-5.1	-4.5	22.5	-0.7	0.3	12.4	1	3.4
Austria	38			31.7	4.7	7.7	14.9		
Belgium	35.4	-0.3	2.6	34.8	0.6	-5	16.5	-1.9	1
Canada	30.5	-4.7	-18.5	29.7	1	3.6	15.7	3	4.2
Czech Republic	34.6			27.6			22		1
Denmark	54.3	-4.9	-2.4	24.8	-0.2	2.7	8.7	1.5	1.2
Finland	39.9	-1.6	-4.8	30.3	6.4	-1.1	15.5	-1.3	6.1
France	42.3		-3.4	22.8		-0.9	20.4		3.5
Germany	36.6	1.5	1.9	20.7	-3	-9.7	13.6	0.9	-0.7
Greece							14.2	-4.5	-0.1
Hungary	28.8		-36.4	16.2			30.7		3.1
Iceland	52.4	-4.3	-2.4	21	6	-1.9	14.5	-0.2	-1.2
Ireland							10.6	1.3	-1.6
Italy	41.2		-1.5	30.2		2.1	22.2		1
Japan	37.9	2.1	4.9	33.7	-0.7	-10.2	15.9	0.2	-5.5
Korea	26.5		4.8	42.1		4.4	15.9		-9.8
Luxembourg	40.7	-4.9	14.3	27.8	-0.2	-21.5	12.1	0.4	-2.8
Mexico	35.7			24.9			19.6		
Netherlands	44.6	-5.4	-4.6	17.7	-2.3	0.4	10.1	1.6	0.5
New Zealand		-11.8					14.4	1.9	0.6
Norway		-2.2			2.5		9.2	-1.5	2
Poland									
Portugal		3.6					22.8	5	-2.1
Slovak Republic	26.4			12.2			34		
Spain	41.8	-10	-2.3	26.3				-3.2	
Sweden							13.9	1.5	5.9
Switzerland	46.8	0.4	-1.1	27.8		1.2	10.7		0.5
Turkey	29.3		-4.1	64.1		-2.5		10.3	
United Kingdom							15.8	0.7	2.3
United States	27.6	-8	-8.5	44.8	7.1	4.9	11.9	0.1	2.7
OECD point average[g]	37.9	-3.5	-3.7	28.8	1.6	-1.5	16.2	0.8	0.6
11 country average[h]	40.2	-3.2	-2.0	28.0	1.3	-3.4	13.4	0.5	0.8
Standard deviation of 11 country average[i]	8.2	3.2	8.3	7.9	3.6	7.8	2.5	1.4	3.3

a) Data refer to 1997 for Belgium; 1998 for Turkey; 1999 for Iceland.
b) Data refer to 1991 for Hungary.
c) Data refer to 1997 for Belgium; 1998 for Turkey; 1999 for Iceland.
d) Data refer to 1997 for Belgium, New Zealand, Norway and United Kingdom; 1998 for Portugal; 1999 for Hungary and Iceland.
e) Data refer to 1981 for Turkey.
f) Data refer to 1991 for Hungary.
g) Unweighted average. Includes all available countries at the relevant point in time.
h) Unweighted average. Figures include only Australia, Belgium, Canada, Denmark, Finland, Germany, Iceland, Japan, Luxembourg, Netherlands and United States.
i) Figures include only Australia, Belgium, Canada, Denmark, Finland, Germany, Iceland, Japan, Luxembourg, Netherlands and United States.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 13. **Medical personnel in OECD countries, 1970-2000**

	Practising physicians						
	Per 1 000 population				Annual per cent growth		
	1970[a)]	1980[b)]	1990[c)]	2000[d)]	1970[a)] -1980[b)]	1980[b)] -1990[c)]	1990[c)] -2000[d)]
Australia	1.2	1.8	2.2	2.4	4.1	2.0	1.3
Austria	1.4	1.6	2.2	3.1	1.3	3.2	3.5
Belgium	1.6	2.3	3.3	3.9	3.4	3.7	1.7
Canada	1.4	1.8	2.1	2.1	2.5	1.6	0.0
Czech Republic	1.8	2.3	2.7	3.4	2.5	1.6	2.3
Denmark	1.4	2.2	3.1	3.4	4.6	3.5	1.0
Finland	0.9	1.7	2.4	3.1	6.6	3.5	2.6
France			3.1	3.3			0.6
Germany			2.8	3.3			1.7
Greece	1.6	2.4	3.4	4.5	4.1	3.5	3.2
Hungary	2	2.3	2.9	3.1	1.4	2.3	0.7
Iceland	1.4	2.1	2.8	3.4	4.1	2.9	2.2
Ireland			2	2.2			1.1
Italy			3.8	4.1			0.8
Japan	1.1	1.3	1.7	1.9	1.7	2.7	1.1
Korea		0.5	0.8	1.3		5.4	5.0
Luxembourg	1.1	1.7	2	2.5	4.4	1.6	2.3
Mexico			0.9	1.4			4.5
Netherlands	1.2	1.9	2.5	3.2	4.7	2.8	2.5
New Zealand	1.1	1.6	1.9	2.2	4.3	1.7	1.5
Norway	1.4	2	2.6	2.9	3.6	2.4	1.2
Poland	1.4	1.8	2.1	2.2	2.5	1.6	0.5
Portugal	0.9	2	2.8	3.2	8.3	3.4	1.3
Slovak Republic				3.7			
Spain				3.3			
Sweden	1.3	2.2	2.9	3	5.4	2.8	0.4
Switzerland	1.5	2.5	3	3.5	5.2	1.8	1.6
Turkey	0.4	0.6	0.9	1.3	4.1	4.1	3.7
United Kingdom	0.9	1.3	1.5	2	3.7	1.4	2.9
United States	1.6	2	2.4	2.7	2.3	1.8	1.3
OECD point average[e)]	1.3	1.8	2.4	2.9	3.9	2.7	1.9
22 comparable countries							
Average[g)]	1.3	1.9	2.4	2.9	3.9	2.6	1.8
Standard deviation[h)]	0.3	0.4	0.6	0.7	1.7	0.8	1.0

a) Data refer to 1969 for Belgium; 1971 for Australia and New Zealand.
b) Data refer to 1981 for Australia and Korea.
c) Data refer to 1991 for Germany and Norway; 1992 for Ireland; 1993 for Italy.
d) Data refer to 1999 for Hungary and United States
e) Unweighted average. Includes all available countries at the relevant point in time.
f) Unweighted average. Figures exclude France, Germany, Ireland, Italy, Korea, Mexico, Slovak Republic and Spain.
g) Figures exclude France, Germany, Ireland, Italy, Korea, Mexico, Slovak Republic and Spain.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 13 (cont). **Medical personnel in OECD countries, 1970-2000**

	Practising nurses						
	Per 1 000 population				Annual per cent growth		
	1970[a)]	1980	1990[b)]	2000[c)]	1970[a)] -1980	1980-1990[b)]	1990[b)] -2000[c)]
Australia	6.7	10.3	11.6	10.7	4.4	1.2	-0.8
Austria	3.4	5.4	7.2	9.2	4.7	2.9	2.5
Belgium		8.5					
Canada	6.9	9.6	11.1	9.9	3.4	1.5	-1.1
Czech Republic		6.8	8.4	8.9		2.1	0.6
Denmark		6.9	8.6	9.5		2.2	1.1
Finland	6	8.3	10.2	14.7	3.3	2.1	3.7
France	3.1	4.7	5.6	6.7	4.7	1.8	1.8
Germany				9.6			
Greece	1.4	1.9	3.4	3.9	3.1	6.0	1.5
Hungary	2.7	3.7	4.5	4.8	3.2	2.0	0.6
Iceland	4.9	9.6	13.3	14	7.0	3.3	0.6
Ireland			11.3	14			2.2
Italy			5	5.2			0.4
Japan	2.6	4.2	6	7.8	4.9	3.6	3.3
Korea				3			
Luxembourg				10.1			
Mexico			1.5	2.2			3.9
Netherlands				13.4			
New Zealand		6.1	9.3	9.6		4.3	0.3
Norway				10.3			
Poland	3	4.4	5.5	4.9	3.9	2.3	-1.1
Portugal	1.8	2.3	2.8	3.7	2.5	2.0	2.8
Slovak Republic				7.5			
Spain				6.6			
Sweden	4.3	7	9.2	8.8	5.0	2.8	-0.5
Switzerland				10.7			
Turkey		1	1.3	1.7		2.7	2.7
United Kingdom			7.8	8.8			1.2
United States	3.7	5.6	7.2	8.1	4.2	2.5	1.3
OECD point average[d)]	3.9	5.9	7.2	8.2	4.2	2.7	1.3
16 comparable countriesi[)]							
Average[1)]	3.9	5.9	7.5	8.2	4.2	2.6	1.1
Standard deviation	1.8	2.8	3.3	3.5	1.2	1.2	1.7

a) Data refer to 1971 for France and Portugal.

b) Data refer to 1993 for Italy.

c) Data refer to 1998 for Japan; 1999 for Greece, Italy and United States.

d) Unweighted average. Includes all available countries at the relevant point in time.

e) Unweighted average. Figures include Australia, Austria, Canada, Finland, France, Greece, Hungary, Iceland, Japan, Poland, Portugal, Sweden and United States.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 14. **Acute-care beds in OECD countries, 1970-2000**

	Acute-care beds							
	Per 1 000 population					Annual per cent growth		
	1960	1970[a]	1980	1990[b]	2000[c]	1970[a] -1980	1980-1990[b]	1990[b] -2000[c]
Australia	6.5	6	6.4	4.8	3.8	0.6	-3.1	-2.3
Austria				7	6.2			-1.2
Belgium		4.7	5.5	4.9	4.6	1.6	-1.1	-0.6
Canada			4.6	4	3.2		-1.4	-2.4
Czech Republic			8.6	8.5	6.6		-0.1	-2.5
Denmark		5.5	5.3	4.1	3.3	-0.5	-2.5	-2.4
Finland	3.9	4.8	4.9	4.3	2.4	0.2	-1.3	-5.7
France			10.4	8.5	6.7		-2.0	-2.4
Germany	7.3	7.5	7.7	7.5	6.4	0.3	-0.3	-1.6
Greece			4.7	4	4		-1.6	0.0
Hungary	4.6	5.6	6.6	7.1	6.3	1.7	0.7	-1.2
Iceland				4.3				
Ireland			4.3	3.3	3		-2.6	-0.9
Italy			7.9	6.2	4.3		-2.4	-4.0
Japan								
Korea				2.7	5.2			6.8
Luxembourg			7.4	7	6.7		-0.6	-0.4
Mexico				1	1			0.0
Netherlands	5.1	5.5	5.2	4.3	3.5	-0.6	-1.9	-2.0
New Zealand				8				
Norway			5.2	3.8	3.1		-3.1	-2.0
Poland	4.6	5.1	5.6	6.3	5.1	0.9	1.2	-2.1
Portugal	3.6	4.2	4.2	3.4	3.3	0.0	-2.1	-0.4
Slovak Republic					5.9			
Spain				3.3	3.2			-0.4
Sweden		5.5	5.1	4.1	2.4	-0.8	-2.2	-5.2
Switzerland	8.2	7.1	7.2	6.5	4.1	0.1	-1.0	-4.5
Turkey		1.3	1.5	2	2.2	1.4	2.9	1.0
United Kingdom					3.9			
United States	3.5	4.1	4.4	3.7	2.9	0.7	-1.7	-2.4
OECD point average[d]	5.3	5.1	5.8	5.0	4.2	0.4	-1.2	-1.6
13 comparable countries[e]								
Average		5.1	5.4	4.8	3.9	0.4	-1.0	-2.3
Standard deviation		1.5	1.6	1.6	1.4	0.8	1.7	1.9

a) Data refer to 1972 for Denmark; 1973 for Sweden.

b) Data refer to 1989 for Australia; 1991 for Mexico.

c) Data refer to 1997 for Belgium; 1998 for Portugal and Spain; 1999 for Denmark and Greece.

d) Unweighted average. Includes all available countries at the relevant point in time.

e) Unweighted average. Figures include only Australia, Belgium, Denmark, Finland, Germany, Hungary, Netherlands, Poland, Portugal, Sweden, Switzerland, Turkey and United States.

Source: OECD HEALTH DATA 2003 3rd ed.

Table 15. **Overall and sectoral arrangements for setting expenditure**

	Budgets
Australia	Capped budgets for public hospitals.
Austria	There is no overall fixed health care budget. Part of sectoral hospital budgets are fixed annually. Expenditure limits for some doctors.
Belgium	Health insurance budget is fixed annually by government. Sectoral target budgets for hospital, pharmaceutical, clinical, biology, dental and primary care expenditure.
Canada	Single payer with budget oversight -- varies by province
Czech Republic	Caps on hospital sector set from 1994 by government via the main insurer. Ambulatory care on a capitation basis.
Denmark	Overall health budget is negotiated annually and fixed by government and local governments (counties). Local governments cannot increase local taxes. Hospital budgets are fixed annually. Target budgets for primary care and pharmaceuticals.
Finland	There is no overall fixed health care budget. Fixed sectoral budgets at municipal level for hospitals and primary care.
France	A target budget is voted by parliament. Fixed budgets for hospitals, expenditure targets for clinical biology, nursing services, office-based doctors, pharmaceuticals and physiotherapy.
Germany[a)]	There is no overall fixed health care budget. Fixed negotiated budgets for ambulatory and dental care at regional level. Target budgets for hospitals and spending regional negotiable ceilings for pharmaceutical expenditures.
Greece	A national budget is established annually but is not generally respected.
Hungary	Budget set by Parliament and with sub-budgets by sector. Cost overruns limited by capitation and German “points” for outpatient care and capped spending by DRG.
Iceland	Budget caps on total expenditure and by sector.
Ireland	Public expenditure is cash-limited and determined by the Department of Finance and the Department of Health. Prospective annual fixed budgets for the eight health boards. Sectoral fixed budgets for community care and special and general hospital programmes.
Italy	A national budget is established annually but is not generally respected. Fixed budget for pharmaceutical expenditure; in some regions fixed budgets for ambulatory care and private hospital expenditure.
Japan	Implicit cap on health care spending in GDP
Korea	None
Luxembourg	Since 1994, prospective fixed budget for health insurance expenditure.
Mexico	Controls spending through budget, contribution rates to the social security and government subsidies to the social security system.
Netherlands	Target budgets decided by government. Expenditure targets for ambulatory, hospital and mental care.
New Zealand	Government sets the budget.

a) During 1997, new systems were introduced: fixed fee-for-service payments and volume targets for ambulatory care; practice-specific soft budgets for pharmaceuticals, individual negotiated target bu for hospitals were abolished.

Source: MOSSIALOS, E., AND J. LE GRAND, "The European Union: Health Care Spending"; various OECD Economic Surveys and country replies

Table 16. **Practising pharmacists in OECD countries, 1970-2000**

	Practising pharmacists						
	Per 1 000 population				Annual per cent growth		
	1970[a)]	1980[b)]	1990[c)]	2000[d)]	1970[a)] -1980[b)]	1980[b)] -1990[c)]	1990[c)] -2000[d)]
Australia	0.7	0.7	0.5	0.8	0.0	-3.3	4.8
Austria	0.3	0.4	0.5	0.6	2.9	2.3	1.8
Belgium	0.7	1	1.2		3.6	1.8	
Canada		0.5	0.6	0.6		1.8	0.0
Czech Republic	0.4	0.4	0.4	0.5	0.0	0.0	2.3
Denmark			0.5	0.5			0.0
Finland		1.4	1.4	1.5		0.0	0.7
France	0.5	0.7	0.9	1	3.4	2.5	1.1
Germany		0.4	0.6	0.6		4.1	0.0
Greece	0.2	0.5	0.7	0.9	9.6	3.4	2.5
Hungary	0.3	0.3	0.3	0.5	0.0	0.0	5.2
Iceland	0.5	0.7	0.9	1.2	3.4	2.5	2.9
Ireland		0.6	0.6	0.8		0.0	2.9
Italy		0.8	1	1.1		2.3	1.0
Japan	0.4	0.5	0.7	1.1	2.3	3.4	4.6
Korea							
Luxembourg	0.5	0.6	0.8	0.7	1.8	2.9	-1.3
Mexico							
Netherlands	0.1	0.1	0.2	0.2	0.0	7.2	0.0
New Zealand		0.7	0.7			0.0	
Norway			0.5				
Poland	0.4	0.4	0.4	0.6	0.0	0.0	4.1
Portugal	0.3	0.5	0.5	0.8	5.2	0.0	4.8
Slovak Republic				0.4			
Spain				0.8			
Sweden	0.4	0.5	0.6	0.6	2.3	1.8	0.0
Switzerland	0.3	0.4	0.5		2.9	2.3	
Turkey	0.1	0.3	0.3	0.3	11.6	0.0	0.0
United Kingdom			0.6				
United States	0.5	0.6	0.7		1.8	1.6	
OECD point average[e)]	0.4	0.6	0.6	0.7	3.0	1.6	1.9
14 comparable countries[f)]							
Average	0.4	0.5	0.6	0.7	3.0	1.6	2.4
Standard deviation	0.2	0.2	0.2	0.3	3.6	2.5	2.2

a) Data refer to 1971 for Australia.
b) Data refer to 1981 for Australia; 1982 for Canada.
c) Data refer to 1989 for Norway; 1992 for Denmark.
d) Data refer to 1999 for Iceland and Sweden.
e) Unweighted average. Includes all available countries at the relevant point in time.
f) Unweighted average. Includes only Australia, Austria, Czech Republic, France, Greece, Hungary, Iceland, Japan, Luxembourg, Netherlands, Poland, Portugal, Sweden and Turkey.

Source: OECD HEALTH DATA 2003 3rd ed.

ANNEX

DETERMINANTS OF HEALTH-CARE SPENDING AND EFFECTS OF COST-SHARING

Introduction

118. This annex briefly reviews the literature on factors affecting the level and growth of health-care spending across OECD countries. The first section examines estimates of the determinants of health-care spending using macroeconomic data, paying particular attention to the role of income and of policy-related variables. The second looks, more narrowly, at evidence concerning the impact of cost-sharing on the demand for care.

Determinates of health care expenditure

Macro-economic studies[113]

119. Estimates of the determinants of the level of health-care spending have been based on two main approaches:

- Cross-section studies with bivariate or multivariate regresssions using a single year (Newhouse, 1977; Leu, 1986; Parkin *et al.*, 1987) or several years (Gerdtham, 1992a,b).

- Pooled cross-section time-series data covering a large number of countries over long time periods. These studies benefit from much larger sample sizes, permitting the inclusion of a wider range of variables.

120. Key results of these studies (Tables 1 and 2) are the following:

- While *income* (generally proxied by GDP *per capita*) is the main driving force in all studies, there is little consensus regarding the elasticity with respect to *per capita* health care expenditure. The estimated elasticity seems to have decreased since the beginning of the 1980s, possibly reflecting cost-containment policies (Herwartz and Theilen, 2003). Earlier studies using cross-section data found elasticities greater than one. More recent studies using pooled time-series cross-section data and a wider range of explanatory variables suggest elasticities near to or less than one. Newer econometric techniques that aim to provide more robust results have been unable to narrow the range of outcomes.[114]

113 This section draws heavily on Gerdtham and Jönsson (2000).

114 In addition, the elasticity of spending with respect to income based on macro economic data sets remain significantly above results found from micro cross-section studies using, for example, household expenditure surveys. See Okunade (1985), Wagstaff (1986) and Manning et al. (1987).

- The effects of population age structure are insignificant in most studies, although Blomqvist and Carter (1997) find the number of persons over 65 to be significant.[115] This may reflect the limited degree of ageing over the period and small variations in variables measuring this effect may have been swamped by other factors.

- Labour market variables such as unemployment or female labour-market participation (used as a proxy for informal care) are also not significant;

- As regards factors affecting health-care risks, there is some evidence that tobacco leads to higher health-care expenditure;

- Because of its trend nature and the absence of appropriate proxy variables, there is little firm evidence concerning the role of technological change. The importance of this variable as the primary driver of health-care spending has been postulated by Manning *et al*. (1987) and Newhouse (1992) who find a large residual after allowing for a range of variables and similar results have been found for other OECD countries (OECD, 1995).[116] More recently, Jones (2002) finds he is able to simulate the rise in health-care spending for the United States in a model where technological change is combined with a Medicare-like transfer programme to pay for the health-care expenses of the elderly. Econometric tests on United States time-series data show a significant and stable long-run relationship among per capita real health care expenditure, per capita real income and broad-based R&D expenditures (Okunade and Murthy, 2002). Blomqvist and Carter (1997), using pooled time-series cross-section data, interpret a significant coefficient on a time trend as the effect of technology.

- A few studies - mainly those using pooled cross-section time-series data - added variables to test the impact of institutional variables, although these estimates should be interpreted with caution given the difficulty in appropriately characterising institutional arrangements in individual countries. The results - largely drawing on Gerdtham *et al*.(1995 and 1998) - suggest that:

  - Contrary to expectations, there is no evidence that *budgetary caps* are associated with lower expenditure;[117]

  - *Public provision of care* (as proxied by the ratio of public beds to total beds) appears associated with lower overall spending on health care, although this conflicts with cross-section estimates by Leu (1986);

  - A high share of *inpatient-care* spending in total expenditure is associated with higher spending.

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115 However, this study only included income, ageing and a time trend that was assumed to proxy technological change.

116 Newhouse (1992) reviews and rejects a range of proposed factors affecting health-care spending increases (including a rise in wages in the health care sector in line with productivity, wider coverage of health insurance, a high income elasticity of demand, and supplier-induced demand) as insufficient to explain the overall increase in health-care spending. He is left with a large residual that he attributes to technological change. See also Weisbrod (1991) who argues that technological change has largely been cost increasing rather than cost decreasing.

117 Gerdtham et al. (1995) argue that countries with high levels of spending may be precisely those that have introduced budget spending caps, thereby leading to an association of caps with high spending.

- The *supply of doctors* also appears to be associated with higher outlays and this also may be the case for countries where doctors are paid on a fee-for-service basis.

- The *organisation of primary care* – normally the first contact point with the health-care system – may have considerable importance for the control of costs. Primary-care gatekeepers (*i.e.* generalists that control access to hospital and specialist care) may reduce spending (although this has not been confirmed by Barros (1998) who used cross-section time-series data transformed into average decade growth rates). Countries with capitation payments for ambulatory-care doctors and those where patients first pay the provider and then obtain reimbursement from the insurer may also have lower spending.

- As regards payment arrangements in the *hospital sector,* countries with public-reimbursement systems appear to have lower expenditure than countries with public contract arrangements, while spending patterns seem to be much the same in public contract and public-integrated systems.[118]

[Table 1. Results from selected studies on factors affecting health expenditure across OECD countries]

[Table 2. Estimated coefficients using the two-way fixed effects model for health expenditure]

Some important caveats

121. These results need to be treated with caution. Estimation equations are highly reduced forms containing a mix of supply- and demand-related variables; many results are sensitive to specification (see for example, Gerdtham and Jonsson (2000), Table 4). Estimation is based on micro theory, potentially giving rise to problems of mis-specification when applied to aggregate-level data. Parkin *et al.*, (1987) found that the elasticities of health care with respect to income were sensitive to whether cross-country data were normalised into a common currency unit by using exchange rates or Purchasing Power Parities (PPPs). Rather strong implicit assumptions are made about the commonality of behaviour across countries and over time. In this context, Herwartz and Theilen (2003) find that the "pooling restrictions" (or hypothesis that all countries have the same behavioural response of income to other variables) for health-care spending with respect to income in OECD countries was not problematic for the period 1960 to 1981 but became so when the study was extended until 1997, perhaps reflecting greater diversity in the timing and degree of government restraint of health-care spending.[119] More recent econometric techniques raised additional doubts about the significance of the results.[120] Some researchers have attempted to

118 Following the classification of OECD (1992), public reimbursement systems reimburse patients for care -- often on an *ex post* basis -- via public insurers. This outcome differed somewhat from expectations in that public-integrated systems are generally considered to provide greater potential for tight control of public spending. However, as noted in the main document, many countries with public-integrated systems have experienced rapid increases in spending.

119 This result is echoed by Blomqvist and Carter (1997), who characterise the hypothesis of the same elasticity across countries as questionable.

120 Subsequent studies have attempted to assess whether standard statistical tests of significance could be relied upon. Results have been conflicting and depend, at least to some degree, on the tests used to establish whether the data is "stationary" or not (see Gerdtham and Jonsson (2000) for a review). Hansen and King (1996) and Bloomqvist and Carter (1997) cannot reject the hypothesis that their set of cross-section time-series data is not stationary. However, McCoskey and Selden (1998) find that stationarity is not a problem in the same data set as Hansen and King (1996).

address these issues by transforming the data into change form, but they have had difficulty in reproducing results found from data in levels (*e.g.* see Gerdtham *et al.,* 1995).

Cost sharing and the impact on the demand for health care[121]

122. For countries with public insurance arrangements, increased cost sharing can have an important effect on public spending as costs are shifted to the users of health care services. In addition, cost sharing can help limit excessive demand for health care because prices play less of a role in patient decisions to seek care as insurance cover has widened. However, policies also need to take into account the role of suppliers - who may strongly influence consumption in certain circumstances - and the impact of cost sharing on equity of access to care.

123. Cost-sharing can take on a number of forms (see Box 1) and these are often combined - for example where co-payments or co-insurance are combined with an annual ceiling, so as to limit the impact of health costs on household budgets. Such combinations make estimation of the effects of cost-sharing more difficult, as the behaviour of households will depend on whether, at the time of a sickness episode, they expect to surpass the ceiling, after which the cost of additional units of care becomes free. Studies of the effect of cost sharing have used changes in policy or changes in private sector insurance policies, although estimates using the latter information are often confronted with problems of self-selection and the inability to control for other confounding effects such as the link between insurance cover and income. Such problems of self-selection are avoided with observational studies. In the United States Health Insurance Experiment (HIE) - which is the main large-scale exercise of this type - individuals were randomly assigned to different types of plan and their behaviour compared.

Box A1. Cost-sharing arrangements

Deductible: the deductible is an all-inclusive amount entirely paid by the patient before insurance cover begins. The remainder of the cost of care can be on either a co-payment or a co-insurance basis - where the expenses are shared - or entirely taken in charge by the insurer. This deductible can be applied to each service or to the overall amount spent during the contract period. The deductible makes the system of cover and refunding non-linear in its impact. A higher deductible generally combines with a lower premium as the cost borne by the insurer is lower.

Co-insurance: this is the percentage of the expenditure beyond the deductible, which the patient must pay.

Co-payment: a co-payment is the amount paid by the patient for a health service and is independent of the total cost of the service. Behaviour is not affected by the total cost of care but by the number of services used.

Maximum out-of-pocket or ceilings: ceilings in cost sharing policies ensure that subscribers do not face “excessive” expenses during the year, thereby reducing uncertainty and risk.

124. Results from a range of studies collated in Table 3 show wide dispersion in the impact of cost sharing. Apart from the difficulties alluded to above, this diversity partly reflects a range of problems with the data and and, in some cases, limitation in statistical techniques, raising concerns about the accuracy and generality of the results.[122] As noted, the most reliable results are probably derived with the United States Health Insurance Experiment (Table 4). The broad results of the associated studies are:

121 This section draws heavily on information contained in Zweifel and Manning (2000).

122 Estimates on the basis of "natural experiments" or cross-section data confront a number of difficulties and this has been reflected in disagreement over the size of the elasticities of health care demand with respect to price. In cross-section data, insurance is endogenous and individuals with higher incomes and those expecting to face large health-care bills are more likely to take more complete insurance coverage. When self-selection effects are allowed for, the elasticities are often small and not significantly different from

- There is a measurable reaction of individuals to price in health care. However, the elasticity of health-care spending with respect to price is generally small. The consensus based on available evidence suggests that it might be in the range of 0.1 to 0.2 for co-insurance under 25 per cent but could be somewhat higher if the rate of co-insurance is raised substantially above this level (Table 4). Larger estimates have been found for individual components of health-care spending in other studies but there is less confidence in these coefficient values (Table 3).[123]

- Nonetheless, these small elasticities are consistent with significant reductions in spending on health care, particularly when the co-payment or co-insurance rate is near to zero to begin with. This can be seen in the results shown in Table 3 and, for the HIE, in Table 5. The latter suggests that the move from a zero co-insurance rate to a 25 per cent rate for all care could lead to an average fall in spending of between 20 and 25 per cent. Subsequent change from 25 to 50 per cent co-insurance leads to a significantly smaller proportionate change (eight to nine per cent). Large changes in the co-insurance rate are needed to get a significant further effect and markedly higher co-insurance rates are likely to negatively affect equity of access. Although there is variability across studies, the most elastic components of care are for ambulatory/outpatient care and for pharmaceutical drugs and the lowest concern specialist visits and hospital treatment.[124] This is consistent with the view that individuals initiate ambulatory-care visits and are, therefore, more sensitive to price while, at the level of the hospital, treatment is dictated to a greater degree by doctors.

- When considering the effects of alternative insurance plans in the HIE, differences in the volume of health care generally take the form of reductions in the number of sickness episodes treated rather than the intensity of treatment once a cycle of care is initiated.

These studies also throw light on other health-care policy dimensions:

- There is mixed evidence from the HIE that prevention suffers more than sickness-related health care from greater cost-sharing, although dental care - where prevention is particularly important - does appear to be more sensitive to price, particularly where cost-sharing is high (Manning *et al*., 1987);[125]

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zero. "Natural experiments" do permit isolation of these self-selection effects to a considerable degree, but there are no control groups so that the effects of other variables that have changed over time are confounded with the insurance change. Samples available in such studies are not necessarily representative of the population as a whole (Manning *et al*., 1987).

123 These estimates appear to be uncompensated for income effects. However, since stop-loss arrangements or deductibles limited the size of health-care spending in households in the HIE, the indirect impact on demand via income is likely to be limited.

124 The lower elasticity of care for hospitals may also reflect the impact of ceilings. Most hospital care pushes patients above the ceiling.

125 Manning *et al.* (1987) report that there were no benefits for the average patient from additional services received under a plan without co-payments under the HIE. However, for poorer patients there was better control of blood pressure and vision problems. They argue that these problems could potentially be resolved more cheaply through targeted programmes. Valdez et al. (1989) find, on the basis of the data from the HIE that children with cost-sharing, fee-for-service plans had fewer medical contacts and received fewer preventive services than those assigned to an HMO. Nonetheless, children with the cost-sharing fee-for-service plans were perceived (by their mothers) to be in better health overall than those assigned to the HMOs. However, Solanki et al. (2000) find that cost sharing reduces significantly the use of a range of preventive services.

- There is also little evidence that care of a low marginal value is reduced by more than "necessary" care. Both components appear to fall by equal amounts (Siu *et al.*, 1986).

- However, cost sharing can influence choice of carers. In many countries, more expensive emergency room care tends to be over used, often because it is provided free. Co-insurance appears to have had a larger effect on less urgent than truly urgent care in this environment in the HIE study. However, as the poor often use these services for non-emergency care, there may be additional social issues to be addressed.[126]

- Measuring health outcomes remains difficult, but most indicators were insensitive to cost-sharing. Dental care and controlling high blood pressure did appear to be a problem for the poor. Indeed those who are poor and sick generally do better under a free than a cost-sharing plan. Mental health was also an area that proved more sensitive in an outpatient environment.

- The demand for hospitalisation of children and emergency care was insensitive to the insurance plan.

[Table 3. Impact of changes in cost-sharing: results of selected studies]

[Table 4. Price elasticities of demand for medical care]

[Table 5. Estimated impact of cost-sharing on demand for health care: the HIE study.

[126] This can reflect, for example, the fact that lower income areas are poorly served by GPs.

Table 1. **Results from selected studies on factors affecting health expenditure across OECD countries**

Study design **Sample year** **Estimation**	**Newhouse**[a)] **Cross-section** **13 countries** **1971** **OLS**		**Leu 1**[b)] **Cross-section** **19 countries** **1974** **OLS**		**Leu 2**[b)]		**Leu 3**[b)]		**GTH 1**[c)] **Cross-section** **19 countries** **1987** **OLS**		**GTH 2**[c)] **Pooled 3-year** **19 countries** **1974, 1980, 1987** **OLS**		**GTH 3**[c)] **Pooled 16-year** **22 countries** **1972-1987** **WLS**		**GTH 4**[c)]
Regressor variable															
GDPpc(i,t)	0.078[d)]	(1.31)	1.18[d)]		1.36[d)]		1.21[d)]		1.33[d)]		1.27[d)]		0.74		--
GDPpc(i,t)GDPpc(i,t - 1)		--		--		--		--		--		--		0.17	
HEXTpc(i,t – 1)/GDPpc(i,t – 1)	--		--		--		--		--		--		--		-0,22[e)]
Inflation (i,t)	--		--		--		--		--		--		-0.16		-0.17[e)]
Inflation (i,t – 1)	--		--		--		--		--		--		--		-0.00
Population <15 year (i,t)		0.56*		1.10[d)]		0.69[d)]		--		--		--		--	
65+/15-64 years (i,t)	--		--		--		--		--		--		-0.11		0.21
65+/15-64 years (i,t - l)	--		--		--		--		--		--		--		-0.16
Urbanisation (i,t)		0.11		0.28[d)]		--		-0.17[e)]		-0.23[e)]		--		--	
Public financing (i,t)		--		0.34[e)]		0.16		-0.52[d)]		-0.48[d)]		-0.12		-0.21[e)]	
Public financing (i,t – 1)	--		--		--		--		--		--		--		0.24[e)]
Public beds (i,t)	--		0.90[d)]		--		0.85[d)]		--		--		--		--

Table 1. **Results from selected studies on factors affecting health expenditure across OECD countries, cont'd.**

Study design Sample year Estimation	**Newhouse[a] Cross-section 13 countries 1971 OLS**		**Leu 1[b] Cross-section 19 countries 1974 OLS**		**Leu 2[b]**		**Leu 3[b]**		**GTH 1[c] Cross-section 19 countries 1987 OLS**		**GTH 2[c] Pooled 3-year 19 countries 1974, 1980, 1987 OLS**		**GTH 3[c] Pooled 16-year 22 countries 1972-1987 WLS**		**GTH 4[c]**	
INP% (i,t)	--		--		--	--	--		0.22f)		0.31d)		--			--
Physicians/pop.(i,t)		--		--		--		--		-0.17f)		--			--	
NHS (I,t)	--		-0.21d)		-0.24e)		-0.23d)		--		--		--			--
Direct democracy (i,t)	--		-0.31d)		-0.20		-0.29d)		--		--		--			--
Fee/service (i,t)	--		--		--	--	--		1.12e)		1.13		--			--
Constant		-12.41d)	-9.65d)		-10.06d)	25.10d)		-4.35d)		-0.03		0.67e)				
Country dummies		--		--		--		--		No		Yes			Yes	
Time dummies	--		--		--		--		--		Yes		Yes			Yes
R^2			0.97		0.96		0.97		0.94		0.92		0.97			0.31

a) Newhouse (1997).
b) Leu (1996).
c) Gerdtham *et al.*, (1992a,b).

[d,e,f] Represent 1%, 5% and 10% levels of significance, respectively.
* Linear regression; elasticity estimated at the mean.

Note: PC = per capita, t = year, i = country.
Source: Gerdtham and Jönsson (2000)

Table 2. **Estimated coefficients using the two-way fixed-effects model for health expenditure**

Coefficients (country and time effects) are not presented

Variables Models	1	2
GDP	0.76[a]	0.74[a]
POP75		
POP04		
FPR		
UNR		
ALCC		
TOBC	0.12[a]	0.13[a]
COPAY	-0.08	
TEXMC	0.05[c]	0.06[b]
PUSH	-0.34[a]	-0.32[a]
COVERO	0.05	
REND	0.01	
PUBREIMB	-0.11[a]	-0.07[b]
PUBINTEG	-0.03	
BUDCEILA	-0.01	
BUDCEILI	0.03	0.04[a]
GATEKEEP	-0.19[a]	-0.18[a]
REIMBMOD	-0.10[c]	-0.08[c]
CAPITA	-0.21[a]	-0.17[a]
WAG&SALA	-0.10	
CAPITA+WAG&SALA		
OVERBILL		
FFSI		
DOCTCA		
DOCTCA*FFSA		
Constant		
R^2	0.985	0.984
Hausman x2(k-1)	29.54[c]	167.07[a]
F-test 2-15 against 1	-	0.49
F-test against 1-FEM,C	6.15[a]	11.43[a]
F-test against 1-FEM,P	47.58[a]	70.78[a]
F-test against 0-FEM	27.03[a]	47.52[a]

[a,b,c], represent 1%, 5% and 10% levels of significance.

Abbreviations: Hausman x2(k-1) = test of the 2-way random effects model against the 2-way fixed effects model.

The test is asymptotically distributed as a chi-squared variable with k-1 degrees of freedom. *F*-test 2-15 against 1 = *F*-test of model 2-15 against model 1; *F*-test against 1-FEM, C = *F*-test of the 1-way fixed country effects model (not presented) against the 2-way fixed effects model. *F*-test against 1-FEM, P = *F*-test of the 1-way fixed period effects model (not presented) against the 2-way fixed effects model. *F*-test against 0-FEM = *F*-test of the 0-way fixed effects model without country and period specific effects (not presented) against the 2-way fixed effects model.

Source: Gerdtham *et al*, 1998

Table 3. **Impact of changes in cost sharing: results from selected studies**

Author	**Study**	**Change in cost sharing (CS)** CP=copayment; CI=coinsurance	**Impact on care consuption**	**Estimated elasticity** (AE=arc price elasticity);	**Comments**
Roddy (1986)	United Mine Workers health plan changes	From no CS to outpatient CI of 40% for outpatient with $250 inpatient deductible and $500 ceiling in 1977 and then to $5 CP for outpatient and drugs with $100 ceiling for care and $50 for drugs in 1978.	Preventive care visits fall by 27 % in CI period and 28 % in CP period compared with no cost sharing		
Lillard (1986)	HIE	Compares different plans	No significant difference in preventive and non-preventive care		
Keeler and Rolphe (1988)	HIE	Compares different plans		comparing 0 and 25% plan for well care = AE of '-0.14 compared with -0.17 for out and inpatient care comparing 25% and 95% plan. For well care = AE of '-0.43 compared with -0.31 for out- and in-patient care	
Cherkin et al (1990)	Group Health Coop	introd. $5 CP	Reduced physical exams by 14% compared with 11 % for regular visits		
Heaney and Riedel (1970)	Connecticut study/Blue Cross	Move from a $15 room and board contrib from insurer in hospitals to full cover in Blue Cross policy. Equivalent to CI change from 31% to 0%	Hospital admissions +12 % and LOS +12%		
Scitovsky and Snyder (1972))	Stanford University Plan	outpatient CI increased from 0 to 25%	24-25% reduction in doctor visits	AE=-0.14	
Beck (1974)	Saskatchewan	Introd. $1.50/$2.00 CP for doctor/home visits	6-7% drop in visits and 18% among poor		
Ricci et al. (1978)	Introduction of Medicare in Quebec	No change in doctor visits but ries of 18% for poor			Evidence of increased queuing and rationing affecting number of visits
Scheffler (1984)	United Mine Workers health plan changes	see above. Compared no CS with CI period	28% reduction in outpatient visits and 38% fall in expenditure. Hospital admissions fall by over 1/3.		Results taken over 5 month period before and after change so may be short-term rather than long-term effect

Table 3. Impact of changes in cost sharing: results from selected studies (continued)

Author	Study	Change in cost sharing (CS) CP=copayment; CI=coinsurance	Impact on care consuption	Estimated elasticity (AE=arc price elasticity);	Comments
Roemer et al. (1975) and Helms et al. (1978)	MediCal Studies (Medicaid in California)	Introduction of CP of $1 for each of first 2 visits and $.50 for prescriptions.	Fall of 8% and 17% in visits and hospitalisations		
Lurie et al. (1984,1986)	MediCal Studies (Medicaid in California)	Termination of cover for needy adults	Outpatients fell by 45% in first 6 months and a further 35% in following 6 months.		Major decline in health status
Cherkin et al (1989)	Group Health Coop of Puget Sound	$5 CP for outpatient visit and $25 for Emergency room visits	8.3% drop in visits with a 10.7% drop in primary visits		
Harris et al. (1990)	Group Health Coop of Puget Sound	CP of $3.00 for prescriptions	21% decline with 12% combined decline of visits and prescriptions		
Selby et al. (1996)	Kaiser Permanente	CP of $25-35 for emergency room visits	Fall of 15% in use but no effect where real emergency		
Cheng and Chiang(1997)	Introduction of universal cover in Taiwan	lowered outpatient CP to $4-8 and inpatient CI to 10%	likelihood of utilisation doubles for formerly uninsured		
Phelps and Newhouse (1974)	Centre for Health Administration studies	Estimated elastcities of use		-0.17 for hospital care;'-0.06for LOS;-0.08 to -0.11 for outpatient care	
O'Brien (1989)	UK prescription charge	Charge increased fro £.125 in 68 to £2 in 1986 equivalent to CI of .21 to .43		AE=-0.31 for drugs	
Hughes and McGuire (1995)	UK prescription charge	Increase in charge to £3.75 in 1992		AE=-0.37	
van Vliet (2001)	Introduction of cost sharing in Netherlands in 1997			AE = -0.079 for all care	Most sensitive for physiotherapy (-0.12)and GP visits and less so for specialists and prescriptions (-0.056)
Manning et al. (1987)	NIE	Comparison of different plans		AE=-0.17 comparing 0 to 25% plans and -0.22 comparing 25 and 95% plans for total medical	

Table 4. **Price elasticities of demand for medical care** [a]

Range	Acute	Chronic	Well	Total outpatient	Hospital	Total medical	Dental
0-25[b]	-0.16	-0.20	-0.14	-0.17	-0.17	-0.17	-0.12
	(0.02)	(0.04)	(0.02)	(0.02)	(0.04)	(0.02)	(0.03)
25-95[c]	-0.32	-0.23	-0.43	-0.31	-0.14	-0.22	-0.39
	(0.05)	(0.07)	(0.05)	(0.04)	(0.10)	(0.06)	(0.06)

a) Standard errors are shown in parentheses.
b) Comparing a 0 coinsurance rate phase with a 25 per cent plan.
c) Comparing a 25 per cent coinsurance rate plan with a 95 per cent plan.

Note: Acute conditions are unforeseen and treatment opportunities are non-deferrable. Chronic episodes comprise foreseen and continuing expenditure; treatment is designed to ameliorate the consequences of the disease rather than cure. Flare- up of chronic conditions that are unforeseen are treated as acute. Well care episodes are medically deferrable without great loss and can occur when the patient is not considered sick.

Source: Manning *et al*., (1987)

Table 5. Predicted annual expenditure on medical services by income group
(in US 1984 dollars)

Cost of care to patient	Mean of lowest third income group	Mean of middle third income group	Mean of highest third income group	Overall average
Free	788	736	809	777 (32.8)
Family pays coinsurance rate of				
25 per cent	680	588	623	630 (29.0)
50 per cent	610	550	590	583 (32.6)
95 per cent	581	494	527	534 (27.4)
Family pays deductible	609	594	670	623 (34.6)

Note: Excludes dental and outpatient psychotherapy. Predictions for enrolment population carried forward for all years of the study.
Figures in brackets in the last column are standard errors

Source: Manning *et al* .(1997)

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