Health Care Spending Issues In Advanced Economies

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TECHNICAL NOTES AND MANUALS

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This technical note addresses the following questions:

- What are the recent trends in health care spending in advanced countries?
- What will be the main challenges for advanced countries over the medium term?
- How can the level and composition of health expenditure in a given country be analyzed?
- What policy options exist for containing health care costs?

I. Recent Trends And Challenges

Both public and total health spending have increased substantially in advanced countries. Total health spending increased by more than 6 percentage points of GDP in the OECD between 1970 and 2007.[1] During the same period, average public spending for health care increased by 3½–4 percentage points of GDP (Figure 1 and Appendix I). In per capita terms, real public spending on health care more than quadrupled between 1970 and 2007. In emerging economies, there has been considerably more variation in spending growth over the past two decades, but it is reasonable to expect that some emerging economies will experience similar spending growth to that observed in OECD countries.

Figure 1. Public Health Expenditure in the OECD, 1970–2007
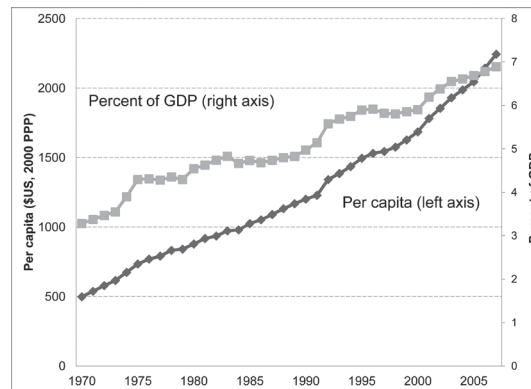
Source: OECD Health Data.

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[1] Average figures in this section for OECD countries are PPP weighted.

Health spending has also grown as a share of total spending during this period. Between 1980 and 2007 in OECD countries, the share of general government outlays spent on health increased from 8.4 percent to 14.8 percent. Globally, this share also increased, on average, between 2000 and 2006 in low-, middle-, and high-income countries.

Health spending per capita is projected to continue to rise at rates that exceed the growth of GDP per capita, leading to higher shares of GDP spent on health (Board of Trustees, 2009; and IMF, 2010). IMF (2010) projects public expenditures on health care to increase by over 3 1/2 percentage points of GDP by 2030 in advanced countries, to 10½ percent of GDP on average (Appendix II).

The key drivers behind the growth in health spending are ageing, rising incomes, and technology. On the demand side, elderly people consume more health services than their younger counterparts, on average. Also, as countries grow richer, health care spending tends to rise proportionately more than income. On the supply side, technological change has expanded the scope of what is medically possible by improving treatments and diagnostics. This has resulted in an increase in the cost of medical services reflecting an improvement in quality (e.g., use of MRIs instead of x-rays). The future evolution of technology and its impact on costs are uncertain. New technologies may substitute for existing treatments, which may decrease or increase spending depending on what service is replaced. Moreover, new technologies may be created to treat currently untreatable conditions, increasing cost.

Institutional factors can influence how these three fundamental drivers affect the overall level of expenditure. Institutional factors are the specific policies and regulations governing the health sector that influence the incentives for patients to demand care, providers to deliver these services, and insurers (both private and public) to pay for them. These include the level of patient cost-sharing, the tax treatment of private health insurance, and provider payment methods. Governments have pursued a range of policies in order to contain spending and to improve outcomes.

In practice, there is diversity in terms of the organization and financing of health care systems around the world. Table 1 presents select country examples, although any simplified categorization is challenging.[2] While there is much debate over the optimal model for health care, of greatest relevance for fiscal policy are the mechanisms for raising and pooling resources and purchasing services (Gottret and Schieber, 2006). The optimal financing and delivery structure will largely depend on individual country circumstances.

Emerging countries face a different set of challenges than industrial countries. In emerging economies, spending is lower and the coverage of the health care system is less extensive—and in some cases insufficient to protect against the risk of illness. In this context,

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[2] For example, delivery is largely mixed in Singapore, with primary care being private and most hospital care being public.

TABLE 1. TYPOLOGY OF HEALTH CARE SYSTEM FINANCING AND ORGANIZATION		
	Public delivery	**Private delivery**
Public financing	United Kingdom, Sweden, Italy, Spain, Turkey, Finland	France, Canada, Germany, Japan, Netherlands, Belgium, Korea
Private financing	Singapore, Mexico	United States, South Africa, Switzerland

the challenge is to expand coverage at a reasonable fiscal cost, and to improve the efficiency of existing spending. For many countries, improving the efficiency of spending will involve a re-allocation of outlays to areas characterized by large externalities and/or public goods, such as the control of infectious diseases. As the incidence of public health spending is often skewed in favor of richer groups (Davoodi, Tiongson, and Sachjapinan, 2010), there may also be a need to reallocate spending toward basic health care programs for the poor.

## II. Analyzing Health Spending

Assessing the adequacy of the level and composition of health expenditures in a given country is inherently complex. However, efficiency frontiers, cross-country comparisons and benchmarking inputs and outcomes can provide a useful starting point for analysis and help identify outliers and potential areas for reform.

The allocative and technical efficiency of health spending is determined by three main factors: (1) the allocation of spending across levels of service provision (primary, secondary, tertiary); (2) the mix of inputs purchased (wages, drugs, infrastructure); and (3) the efficiency with which these inputs are transformed into health services and outcomes (Coady, 2008).

Studies examining the efficiency of spending using a production function approach are a highly useful starting point for analysis. For developing countries, examples include Gupta and Verhoeven (2001) and Gupta and others (2008). For OECD countries, recent examples include Verhoeven, Gunnarsson and Carcillo (2007) and Joumard, Andre and Nicq (2010). However, while part of the variation across countries in the relationship between health outcomes and spending will be due to inefficiencies in the health system, those are sometimes hard to disentangle from unobserved heterogeneity and differences in other determinants of health outcomes (Ravallion, 2005). For example, life expectancy at birth is also determined by education, diet, and lifestyle.

In the absence of a more comprehensive production function, benchmarking of aggregate outcomes, inputs, and spending can be used to explore possible inefficiencies. Such cross-country comparisons using scatter plots or bar charts can identify outliers and signal policies that may be contributing to higher spending (Figure 2). Appendix III provides links to relevant databases and variables of interest. It is important to bear in mind that observing a high level of

Figure 2. Female Life Expectancy at Age 65, 2005
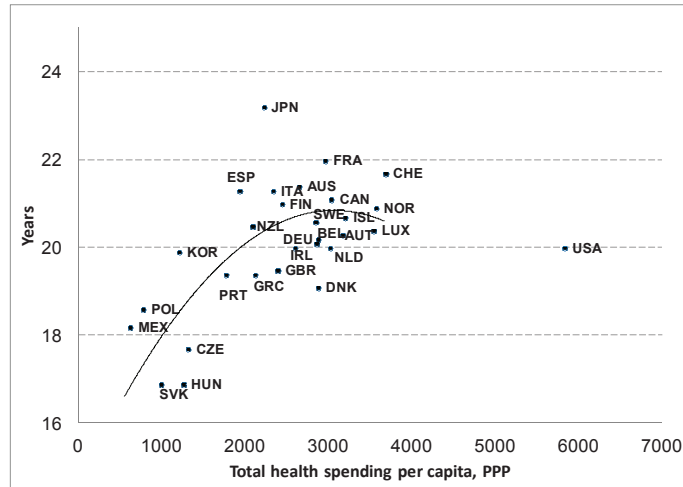
Source: OECD Health Data.

some input (e.g., physicians per capita) relative to other countries may be a symptom of an inefficient policy, rather than the specific cause of the inefficiency. There may also be good reasons for observing a relatively high level of some input due to the particular structure of the health system. In both cases, a closer examination of country-specific institutional factors is required to make statements about efficiency and derive policy recommendations.

A discussion of several key indicators helps illustrate these points:

- **Salaries as a percentage of public health expenditure.** In countries where service delivery is public, health may often make up a relatively large fraction of the government wage bill. If this share is high by international comparisons, looking at the number of physicians and nurses per capita relative to other countries can give some indication whether this is due to employment or salary levels. In judging whether physician payments are excessive, it is important to account for the level of educational training, since physicians have considerably more years of training compared to most other professions. In this regard, Labor Force Surveys or other data sources may be useful to make within-country comparisons by occupation. If salary levels are deemed high, the next step would be to investigate how physicians are paid (e.g., capitation, salary, fee-for-service), since the structure of their reimbursement method may provide incentives to deliver an inefficiently high number of services (see next section).

- **Number and mix of physicians per capita.** If the level of physicians per capita is relatively high, the number of nurses per capita should be examined because these workers may be (imperfect) substitutes in some cases. Such substitutions may not necessarily be inefficient. On the other hand, a high number of physicians may

signal that particular features of the pay structure or the entrance and financing of medical school encourage an oversupply of physicians. If entrance to medical schools is relatively unrestricted, there may be more physicians than in other countries and average quality may suffer. In this case, an appropriate policy might be to revise medical school regulations rather than simply reduce the number of existing physicians. Another indicator to examine is the ratio of general practitioners (GPs) to other physicians. Health care delivered by a primary care GP is often less expensive than care delivered at higher levels. In countries where the number of general practitioners is low, it is worth examining the compensation package.

- **Number of outpatient and inpatient visits per capita.** A high number of outpatient visits may signal that patient cost-sharing for outpatient care is low. On the other hand, it may signal that cost-sharing rates for pharmaceuticals are high since these can be seen as substitutes in many cases. A similar case emerges for inpatient spending. Optimal rates of cost sharing are discussed in the next section.

- **Average length of stay in hospitals.** Average length of stay (ALOS) in hospitals is often used as one indicator of efficiency since facilities that are able to treat and discharge patients faster may use fewer resources to deliver the same output. For example, an ALOS above 10 would be considered relatively high. While this may be a sign of technical inefficiency, it could also result from higher quality per discharge, which leads to a lower readmission rate (which is not easily observed across countries). A high ALOS might also result from differences in the mix of inpatient and outpatient care across countries. Inpatient and outpatient care may be considered (imperfect) substitutes for some services. So a high average length of stay in one country may reflect a greater share of patients treated in an outpatient setting, leaving the relatively harder to treat patients in hospitals. In cases where the difference in ALOS is due to efficiency, one should examine how hospitals are reimbursed since various payment methods provide different incentives to deliver costly effort or to skimp on quality (see next section). It is also important to assess whether ALOS is determined by medical protocols, which may need to be addressed to make progress in this area.

III. Reform Options

Both demand- and supply-side reforms can help to address inefficiencies in health spending and contain overall growth in expenditures. After analyzing the nature of inefficiencies in health care provision, policy recommendations can be tailored to the specific issues that were identified. Appendix IV provides examples of back-of-the-envelope calculations to cost various reform options.

Two important issues on the demand side that can affect expenses are the level of patient cost sharing and the tax treatment of private health insurance. Demand-side policies can have an immediate impact on overall expenditures, but may be more challenging from a political perspective than supply-side policies.

Option 1: Increase patient cost-sharing

Background: Since the costs of illness can be extremely high and uncertain, there is a sound economic rationale for health insurance. But like insurance in general, this gives rise to problems of moral hazard and there is a trade-off between moral hazard and smoothing consumption through risk sharing, providing the rationale for having patients pay a share of the price (Pauly, 1968). However, determining what level of cost sharing balances the marginal costs from moral hazard with the marginal gains from risk sharing is difficult.

Research from the RAND Health Insurance Experiment, which randomized patients into different cost sharing groups, found that patients who had to pay higher coinsurance rates reduced utilization of services and estimated a price elasticity of demand of roughly -0.2 for outpatient and inpatient services (Newhouse, 1993). Health status did not suffer for these patients who reduced utilization, except for those who were either poor or who suffered from chronic conditions.

Any introduction or increase of cost sharing should feature exemptions for groups that may suffer from reduced health status, such as the poor and chronically ill. An optimal cost-sharing design would also account for cross-price elasticities between the different health care services that are insured (Goldman and Philipson, 2007). Some goods in health care are substitutes while others may be complements, especially due to recent innovation and adoption of pharmaceuticals. For example, part of the reduced spending from an increase in drug copayments may be offset if outpatient care utilization increases (Gaynor, Li, and Vogt, 2006).

Country experience: Current levels of cost sharing for most services in most countries are below the optimal level. For example, the United Kingdom, Denmark, and the Netherlands have no cost-sharing for primary care, specialist, or hospital visits (Thomson, Foubister, and Mossialos, 2009). Moreover, private insurance policies sometimes cover cost sharing for publicly financed services, including in the United States, France, Croatia, and most small island countries in the Eastern Caribbean. The premium for such an insurance policy is set to cover the cost sharing requirements that the patients pays, but not the full service cost. This creates a negative financial externality, because a large fraction of the price is paid by the government. Since insurance policies that cover patient charges blunt the incentives for efficient utilization, the government ends up spending more than optimal.

Option 2: Eliminate tax exclusions for private health insurance

Background: Reducing the after-tax price of insurance gives employers incentives to offer more generous coverage and gives employees incentives to purchase these policies, rather than obtain higher wage income.

There is no clear market failure that justifies this favorable tax treatment. The size of foregone revenues (or tax expenditures) can be large and the tax exemption can lead to "overinsurance" (Feldstein, 1973).

Country experience: Some countries exempt contributions to private health insurance from taxation. This distortion is most often discussed in the U.S. context— where it amounts to 1¼ percent of GDP— because of the employment-based, private insurance system. However, subsidies for private insurance also exist in Australia, Denmark, and Greece.

In general, the policies that are likely to have the greatest impact on both quality and expenditure controls are on the supply-side (Newhouse, 2002). This is because once the patient has initiated contact with a medical provider, overall expenditure depends on the mix and intensity of services that the provider delivers. There have been several important changes in service delivery over the past decades. One is that many advanced countries have developed outpatient specialty care, which allows some services that previously involved a hospital stay to be performed in an outpatient setting, which may also be less expensive. A second change has been a move toward case-based payment as a provider reimbursement method, away from fee-for-service.

Option 3: Modify provider payments to impose a harder budget constraint

Background: How providers are reimbursed is one of the most important institutional factors impacting the efficiency of health spending. There are many different ways to pay physicians, hospitals, and other providers, but three general methods include (i) salaries or budgets; (ii) case-based payment like capitation or diagnosis related groups (DRGs), and; (iii) fee-for-service. These three major payment schemes offer different financial incentives for physicians to induce costly effort and adjust referral patterns (Scott, 2000). In practice, payment is hardly ever based only on one method alone (Robinson, 2001).[3]

Salaries give incentives to provide care that does not require costly effort and encourages referrals because income is fixed. For this reason, physicians may be less willing to treat patients who are sicker and more difficult to treat. On the other hand, fee-for-service (FFS) reimbursement encourages providers to deliver more services as long as the service is priced above the incremental cost the provider incurs in supplying it. Capitation, the third major reimbursement method, pays physicians a set amount ex ante for each patient for a given time period

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[3] Newhouse (2002) and Ellis and Miller (2008) provide excellent discussions of provider payment methods in health care.

so income is proportional to the number of registered patients. This encourages low-cost care and referrals, but also competition for patients.

At the level of the hospital, reimbursement may follow predetermined budgets, fee-for-service, or a case-based payment that is based on certain characteristics of the patient (Ellis and Miller, 2008). Budgets produce largely the same incentive effects as salaries. The most widely used form of case-based payment for hospitals is diagnosis-related groups (DRGs). DRGs reimburse the hospital or outpatient facility a fixed amount to provide care based on the patient's diagnosis at admission. This offers the incentive for low-cost treatment and a faster discharge. It also encourages providers to assign patients to a group with a higher reimbursement rate, a process known as up-coding or "DRG creep." Since each payment mechanisms gives different incentives for the quantity and quality of services, an optimal payment mechanism from the perspective of maintaining quality and controlling expenditure would be some mixture of methods (Ellis and McGuire, 1990, 1993; Newhouse, 1996; Ma and McGuire, 1997; Pauly, 2000; Eggleston, 2000; Newhouse, 2002; Eggleston, 2005).

To contain spending, payment methods have often shifted away from traditional fee-for-service methods to case-based payments like DRGs. While case-based payments can be effective at restraining expenditure growth, providers still have the opportunity to affect quantities through increasing admissions. So it is possible that spending may rise with the introduction of DRGs compared to fee-for-service or budgets. The process of implementing and operating DRGs is highly data-intensive and requires periodic updates, which is another factor to consider in judging the efficiency of such a system.

Country experience: The U.K. Fundholding scheme introduced in the 1990s as part of the 'internal market' reforms was another payment mechanism designed to limit incentives for excess referrals or discharges to other providers by 'bundling' payments across settings. Under the scheme, GPs were allocated a budget to treat their registered patients, including the purchase of hospital care. It was the expectation that the GP would thus be more likely to arrange for cost-effective care for patients (according to the GP's evaluation of cost-effectiveness) and would be more economical in his referral decisions. The reform appears to have reduced prices and referrals, but quality may have suffered (see Appendix V). In some European Union countries in the 1980s, governments tried to control spending through budget caps and constraining fee growth. Enforcing budget caps on payments to hospitals or on an entire component of spending like pharmaceuticals will contain spending by construction, but the effect on quality is less clear-cut.

Additionally, government can constrain salaries and fees, but this too can produce adverse consequences. The U.S. government reimburses physicians much less for treating Medicaid patients than for treating Medicare patients and the Medicare rate is still considerably less than private insurance rates. In response, some physicians no longer treat Medicaid patients

(Gruber, 2007). It remains to be seen whether the reduction in Medicare fees under the new U.S. health care reform will lead to similar refusals to treat Medicare patients.

Option 4: Improve the cost-effectiveness of evaluations for new and existing technology

Background: Determining what treatments should be financed from public funds is a critical task for governments. This policy seeks to improve allocative efficiency of health spending by seeking the greatest overall benefit from limited government resources.

Jena and Philipson (2007, 2008) suggest that by establishing a cost-effectiveness threshold, governments are effectively fixing the price level of new treatments. The question of whether this price level is too low to stimulate drug manufacturers and other producers of medical technology to innovate at optimal levels is an empirical one; whether sufficient incentives for innovation exist also depends on the level of government funded research and development. To the extent that drug makers lack sufficient incentives to innovate, this policy trades off the welfare of patients today who can enjoy drugs for low prices against the welfare of patients in the future who may not enjoy the next blockbuster drug because it is never developed. For countries that are small purchasers, though, these issues are less of a concern.

Cost-effectiveness analysis has an important role to play in allocating resources, and the question is more how to use it than whether or not to. Determining what is the optimal threshold for a quality-adjusted life year is an important task. Also, rather than having a discrete decision whether or not to fund a drug, governments can help consumers internalize more of the costs by inversely varying coinsurance rates with the cost-effectiveness of different treatments (Cutler, 2004). For example, patients would pay a larger fraction of the cost of treatments that are less cost effective and a smaller fraction of those that are more cost-effective.

Country experience: Some countries, such as the United States, do not employ formal cost-effectiveness analysis to make public reimbursement decisions. However, many countries (United Kingdom, Australia, Netherlands, Sweden, Finland) have established government bodies that assess the cost-effectiveness of new and existing technologies. Agencies like the U.K. National Institute for Health and Clinical Excellence (NICE) implicitly define a threshold of how much the government is willing to pay for one quality-adjusted life year (QALY). If the incremental benefits (relative to the relevant alternative treatment) are not deemed high enough compared to the incremental costs, that treatment will not be funded by the U.K. National Health Service.

Option 5: Reduce the generosity of the publicly financed benefits package

Background: Since some treatments are too expensive for governments to finance for everyone in need, access is rationed by waiting lists or other regulations.

Some combination of resource allocation through such non-price mechanisms or through prices is necessary because demand for health care far outstrips supply. While services are rarely dropped from publicly financed benefits packages, there may be a rationale for dropping dental care. The reason for not covering this is that there is far less of an insurance element with dental care compared to other forms of health care. The uncertainty and expected spending associated with dental care are both relatively low, on average, so there may be a greater economic rationale for self-insurance and pre-payment rather than government insurance.

Country experience: In most cases, the scope of the publicly financed benefits package expands. The addition of prescription drugs to Medicare in the United States in 2003 is one recent example. In 1965, when Medicare was enacted, prescription drug spending was low because many drugs that have produced tremendous health gains had yet to be invented. For this reason, coverage for prescription drugs was excluded. As new drugs were developed over time, private insurance policies began to cover such items. There is still wide debate over this recent policy's impact on efficiency and it will continue to be evaluated as more data becomes available.

IV. Conclusion

This note has presented a short introduction to health spending issues Fund economists should consider as part of their work and provided a variety of options for analyzing and containing public health expenditures. The challenge for many countries will be to implement policies that allow them to realize the benefits of continued technological improvements without sacrificing fiscal sustainability.

Appendix I

PUBLIC HEALTH EXPENDITURES IN OECD COUNTRIES
(In percent of GDP)

	1960	1970	1980	1990	2000	2007	2008	Change 1960–2007	Change 1970–2007	Change 1980–2007	Change 1990–2008	Change 2000–2007
Australia[1]	1.8	3.0	3.8	4.4	5.4	5.7	...	3.9	2.7	1.9	1.3	0.3
Austria	3.0	3.3	5.1	6.1	7.6	7.9	8.1	4.9	4.6	3.0	2.0	0.3
Belgium[2]	...	...	...	5.7	6.1	7.3	7.4	...	...	...	1.7	1.2
Canada	2.3	4.8	5.3	6.6	6.2	7.1	7.3	4.8	2.3	2.0	0.7	0.9
Czech Republic	...	...	...	4.6	5.9	5.8	5.9	...	...	...	1.3	-0.1
Denmark[3]	...	6.6	7.9	6.9	6.8	8.2	...	...	1.6	0.3	1.3	1.4
Finland	2.1	4.1	5.0	6.3	5.1	6.1	6.2	4.0	2.0	1.2	-0.1	1.0
France	2.4	4.1	5.6	6.4	8.0	8.6	8.7	6.2	4.5	3.1	2.3	0.6
Germany	...	4.4	6.6	6.3	8.2	8.0	8.1	...	3.6	1.5	1.8	-0.2
Greece	...	2.3	3.3	3.5	4.7	5.8	...	...	3.5	2.5	2.3	1.1
Hungary[4]	...	...	...	6.3	5.0	5.2	5.2	...	...	...	-1.1	0.2
Iceland	2.0	3.1	5.5	6.8	7.7	7.5	7.6	5.5	4.4	2.1	0.8	-0.2
Ireland	2.8	4.1	6.8	4.4	4.6	5.8	6.7	3.0	1.7	-0.1	2.3	1.2
Italy	...	...	...	6.1	5.8	6.6	7.0	...	...	...	0.9	0.8
Japan	1.8	3.2	4.7	4.6	6.2	6.6	...	4.8	3.4	1.9	2.0	0.4
Korea	...	...	0.8	1.5	2.2	3.5	3.6	...	...	2.8	2.1	1.3
Luxembourg[5]	...	2.8	4.8	5.0	5.2	6.5	...	...	3.7	1.7	1.5	1.3
Mexico	...	...	...	1.8	2.4	2.6	2.8	...	...	...	1.0	0.2
Netherlands[6]	...	4.1	5.1	5.4	5.0	7.3	7.4	...	3.2	2.3	2.0	2.3
New Zealand	...	4.2	5.2	5.7	6.0	7.2	7.9	...	3.0	2.7	2.2	1.2
Norway	2.2	4.0	5.9	6.3	6.9	7.5	7.2	5.3	3.5	1.3	0.9	0.6
Poland	...	...	...	4.4	3.9	4.6	5.1	...	...	...	0.7	0.7
Portugal[7]	...	1.5	3.4	3.8	6.4	7.1	...	...	5.6	3.7	3.3	0.7
Slovak Republic	...	...	...	...	4.9	5.2	5.4	...	...	...	...	0.3
Spain	0.9	2.3	4.2	5.1	5.2	6.1	6.5	5.2	3.8	2.3	1.4	0.9
Sweden	...	5.8	8.2	7.4	7.0	7.4	7.7	...	1.6	-0.5	0.3	0.4
Switzerland	...	...	...	4.3	5.6	6.3	6.3	...	...	...	2.0	0.7
Turkey	...	...	0.7	1.6	3.1	4.1	...	...	...	3.4	2.5	1.0
United Kingdom	3.3	3.9	5.0	4.9	5.6	6.9	7.2	3.6	3.0	2.2	2.3	1.3
United States	1.2	2.6	3.7	4.8	5.8	7.1	7.4	5.9	4.5	3.7	2.6	1.3
Average (PPP GDP weighted)[8]	1.7	3.3	4.5	5.0	5.8	6.7	7.0	4.6	3.9	2.8	2.0	0.9
Average (unweighted)	2.2	3.7	4.8	5.1	5.6	6.4	6.6	4.8	3.3	2.0	1.5	0.8
Median	2.2	4.0	5.1	5.1	5.7	6.6	7.2	4.9	3.5	2.2	1.7	0.8

Source: OECD Health Database (2010).

[1] 1971 data used as 1970 value.

[2] 1992 data used as 1990 value. Refers to current spending only.

[3] 1971 data used as 1970 value.

[4] 1991 data used as 1990 value.

[5] 2006 data used as 2007 value.

[6] 1972 data used as 1970 value. 2007 and 2008 refer to current spending only.

[7] 2006 data used as 2007 value.

[8] PPP weighted averages for changes calculated in the last five columns are based on a constant sample.

Note: Data reflects structural breaks in some countries. See http://www.ecosante.org/index2.php?base=OCDE&langh=ENG&langs=ENG&sessionid= for additional details.

Appendix II

PUBLIC HEALTH EXPENDITURE PROJECTIONS *(In percent of GDP)*									
	2010	**2015**	**2020**	**2030**	**2040**	**2050**	**Change, 2010 to 2030**		
				Baseline Scenario			**Baseline**	**Optimistic**	**Pessimistic**
Advanced economies:									
Australia	6.5	7.2	8.0	9.6	11.0	11.6	3.1	0.7	4.1
Austria	6.9	7.7	8.5	10.1	11.6	12.6	3.2	1.1	5.8
Belgium	8.1	8.8	9.7	11.4	12.9	13.8	3.3	0.8	4.9
Canada	7.6	8.2	9.0	10.6	12.1	13.4	3.0	1.1	5.5
Cyprus	2.9	3.2	3.4	4.0	4.6	5.1	1.2	0.5	2.2
Czech Republic	6.5	7.1	7.7	9.3	10.7	11.8	2.8	1.1	4.7
Denmark	6.3	7.0	7.8	9.2	10.2	10.9	2.9	1.1	6.8
Finland	5.9	6.5	7.2	8.6	9.7	10.3	2.8	0.9	4.6
France	8.7	9.5	10.4	12.2	13.7	14.6	3.5	0.9	5.9
Germany	7.9	8.8	9.7	11.6	13.3	14.4	3.6	1.0	5.7
Greece	5.2	5.7	6.2	7.3	8.5	9.3	2.1	0.6	4.0
Iceland	8.2	8.9	9.6	11.4	13.3	15.2	3.2	1.1	5.9
Ireland	6.2	6.7	7.4	8.8	10.2	11.4	2.6	0.9	4.6
Italy	6.3	6.9	7.5	8.9	10.2	11.0	2.6	0.9	4.9
Japan	6.9	7.6	8.3	9.8	11.2	12.8	2.8	1.1	5.1
Korea	4.0	4.5	5.0	6.3	7.8	9.2	2.2	1.1	3.7
Luxembourg	6.1	6.5	7.1	8.4	9.6	10.3	2.4	0.5	4.1
Malta	5.2	5.9	6.7	8.6	10.4	11.7	3.4	1.1	4.7
Netherlands	5.1	5.7	6.4	7.6	8.6	9.2	2.5	1.2	5.7
New Zealand	6.7	7.4	8.1	9.9	11.6	12.4	3.2	1.0	5.4
Norw ay	6.0	6.6	7.4	9.0	10.3	11.1	3.0	0.9	5.3
Portugal	7.7	8.5	9.3	10.9	12.4	13.6	3.1	0.8	4.9
Slovakia	5.1	5.5	5.9	7.1	8.4	9.5	2.1	0.9	3.9
Slovenia	6.9	7.6	8.2	9.8	11.3	12.3	2.9	0.9	4.0
Spain	5.9	6.4	7.0	8.3	9.8	10.9	2.4	0.8	4.4
Sw eden	7.6	8.3	9.0	10.4	11.5	12.2	2.8	0.7	4.8
United Kingdom	8.0	8.8	9.5	11.3	13.0	14.2	3.3	0.8	4.9
United States	6.7	7.3	8.7	11.4	13.4	14.9	4.7	0.8	5.0
Emerging market economies:									
Argentina	4.8	5.1	5.5	6.3	7.3	8.5	1.5	0.4	2.9
Brazil	5.1	5.5	6.0	7.2	8.5	10.1	2.1	0.8	3.7
Bulgaria	4.8	5.1	5.4	6.1	6.8	7.4	1.3	0.5	2.9
China	2.2	2.4	2.6	3.1	3.8	4.4	1.0	0.4	1.6
Estonia	5.0	5.4	5.7	6.5	7.4	8.1	1.4	0.6	3.0
Hungary	6.0	6.5	7.0	8.3	9.5	10.4	2.3	0.8	4.1
India	0.9	1.0	1.1	1.3	1.5	1.8	0.3	0.1	0.6
Indonesia	1.3	1.4	1.6	1.9	2.2	2.6	0.5	0.2	0.9
Latvia	3.5	3.7	3.9	4.5	5.1	5.5	1.0	0.5	2.5
Lithuania	6.1	6.5	7.1	8.4	9.6	10.3	2.4	0.7	3.3
Malaysia	2.1	2.2	2.4	2.8	3.3	3.8	0.8	0.2	1.4
Mexico	3.2	3.5	3.8	4.5	5.4	6.4	1.3	0.5	2.3
Pakistan	0.3	0.4	0.4	0.5	0.5	0.7	0.1	0.0	0.2
Philippines	1.4	1.5	1.6	1.8	2.2	2.5	0.5	0.1	0.9
Poland	4.2	4.5	4.9	5.8	6.6	7.3	1.6	0.8	3.3
Romania	3.6	3.8	4.1	4.8	5.6	6.3	1.2	0.5	2.9
Russia	3.6	3.9	4.2	5.0	5.8	6.7	1.3	0.5	2.4
Saudi Arabia	2.9	3.1	3.3	3.9	4.6	5.5	0.9	0.2	1.8
South Africa	3.2	3.5	3.7	4.3	5.0	5.7	1.1	0.3	2.1
Turkey	3.6	3.9	4.2	5.0	6.0	7.2	1.4	0.5	2.6
Ukraine	4.1	4.4	4.7	5.5	6.5	7.6	1.5	0.5	2.7
Average:	5.2	5.7	6.4	7.9	9.2	10.2	2.6	0.7	3.8
Advanced	6.9	7.5	8.5	10.5	12.2	13.5	3.7	0.9	5.0
Emerging	2.7	2.9	3.2	3.8	4.5	5.2	1.1	0.4	1.9
G-20	5.3	5.7	6.5	8.0	9.3	10.4	2.7	0.7	3.8
Advanced G-20	7.0	7.6	8.7	10.8	12.5	13.9	3.8	0.9	5.1
Emerging G-20	2.6	2.9	3.1	3.7	4.4	5.2	1.1	0.4	1.9

Source: IMF (2010).

Appendix III. Data Sources for International Comparisons

OECD Health Data

http://puck.sourceoecd.org/vl=1485462/cl=24/nw=1/rpsv/ij/oecdstats/99991012/v1n1/s1/p1

The OECD Health Database contains information on health spending, resources like hospitals, beds, physicians and nurses per capita, utilization, and health outcomes for OECD countries. Some indicators are available as far back as 1960.

World Health Organization (WHO) Databases

WHO Regional Office for Europe's Health for All Database (HFA-DB)

http://www.euro.who.int/HFADB

The HFA-DB contains similar information for European countries as the OECD Health Database. In some cases, there is greater detailed information on the composition of health spending while in other cases there is less detailed information. The HFA-DB contains extremely detailed information on mortality rates and resources like physicians and hospital capacity.

Global Health Observatory

http://www.who.int/gho/en

The Global Health Observatory contains basic data on health expenditure, physicians, hospitals, and other resources, and some health outcomes. It also contains a large amount of data on coverage of various health services, like vaccinations and antenatal coverage. Health expenditure data is available as far back as 1995 for all countries. It is one of the few sources of comparable information for low and middle income countries.

TABLE OF SELECT VARIABLES FROM INTERNATIONAL HEALTH DATABASES		
Variable	**Source**	**Notes**
Outcomes		
Life expectancy at birth	OECD, HFA-DB, GHO	Broad measure of health status; widely available; determined by many factors; little value in making comparisons between advanced countries
Life expectancy at age 65	OECD, HFA-DB	Broad measure of health status; more revealing of the impact of health care in advanced countries that life expectancy at birth, but still determined by many factors, some of which not related to health care system
Infant mortality	OECD, HFA-DB, GHO	Broad measure of health status; widely available; may be measured differently across countries; useful to compare health status in some developing countries, but less so in advanced countries
Maternal mortality	GHO	Better measure of health system than other mortality data; poor data quality in developing countries makes cross-country comparisons difficult
Hospital readmission rates	Domestic sources	Good indicator of quality of care; difficult to compare across countries because of data limitations
Cancer survival rates	Domestic sources	Useful to measure the impact of screening and treatment on health outcomes for important disease category; cannot generalize findings to rest of health system
Inputs		
Average length of stay in hospitals (days)	OECD, HFA-DB	Rough indicator of hospital efficiency; useful to identify major outliers; depends on other factors in the health system
Bed occupancy rate (%)	HFA-DB	Rough indicator of hospital efficiency; too low may signal underutilization of resources; too high may pose risks of spreading disease within facility
Inpatient admissions per capita	OECD, HFA-DB	Useful to identify major outliers; high number may signify underutilization of less expensive outpatient or primary care
Physicians per capita and/or Nurses per capita	OECD, HFA-DB, GHO	Useful to identify major outliers; may be useful information in conjunction with size of wage bill to determine if employment levels are relatively large
Public expenditure on salaries (% total)	HFA-DB	Useful information to examine size of wage bill; high share may indicate other resources are crowded out by wages

Note: OECD = OECD health database; HFA-DB = WHO Health for All Database; GHO = WHO Global Health Observatory.

Appendix IV. Methodology for Cost Estimates

The back-of-the-envelope cost estimates in some technical assistance reports are admittedly crude. But in the absence of more detailed simulations, they may still serve some use in terms of providing a rough estimate of the magnitude of expenditure savings from various policies.

Patient cost-sharing

As a rough measure of the expenditure savings from higher copayments, consider an increase in the share of the cost of outpatient treatment patients financed by 5 percentage points. It is reasonable to assume there are two effects that impact expenditure: (1) shifting 5 percent of public spending to patients (and reducing provider payments from the public sector by 5 percent); and (2) a reduction in the quantity demanded of outpatient care due to a higher price at the point of service. The best estimates of the price elasticity of demand for medical care are between -0.17 and -0.31 for hospital services and -0.17 to -0.22 for outpatient care (Newhouse and the Insurance Experiment Group, 1993).

   Assume that average public spending is 6½ percent of GDP and that outpatient care makes up 30 percent of this spending. Based on a price elasticity of demand of -0.2, an increase of 5 percentage points in the coinsurance rate for outpatient care would reduce spending by 0.1 percent of GDP. If the bottom income quintile were exempt, and assuming their utilization accounts for 20 percent of the spending, this estimate would be reduced by 0.02 percent of GDP. This calculation does not account for possible substitution effects, which would decrease the savings, or the possibility that other forms of health care may be complementary, which would increase it. It is important to be mindful of these possibilities, however, since the cross-price elasticities are unlikely to be zero in reality.

Provider payment reforms

Since few provider payment systems base reimbursement purely on one method, it is difficult to estimate what switching from one type of system to another would yield in terms of savings. In this regard, any back of the envelope calculations should be interpreted with caution. There is evidence that switching from fee-for-service to prospective payment methods reduce spending between 10 and 20 percent. (Eggleston and Yip, 2004). In one study, managed care reduced spending between 30 and 40 percent for heart attack patients relative to traditional indemnity insurance that paid providers fee-for-service (Cutler, McClellan, and Newhouse, 2000). This reduction in spending occurred through reduced unit prices and there was no evidence that outcomes were adversely affected. If a country were contemplating such policy changes, one might apply these percentage reductions to arrive at a ballpark estimate.

Appendix V. Cost Containment in the European Union, Japan, and the United States in the 1980s and 1990s

European Union

In response to rapid growth of public health spending in the 1970s, many EU countries enacted provider payment reforms to contain spending in the 1980s (Abel-Smith and Mossialos, 1994; and Mossialos and Le Grand, 1999). Those that did not pursue cost containment were driven by the desire to extend coverage from a low base (Greece and Spain), but later confronted the need to contain spending in the 1990s. The slowdown was most pronounced in Denmark, Germany, Ireland, Netherlands, and the United Kingdom. Policies targeted the supply-side by constraining reimbursement for physician fees and salaries, pharmaceuticals, and other technology, as well as limiting the number of providers and hospital capacity.

In the 1990s, demand-side measures, specifically increasing patient copayments and coinsurance, were introduced. These charges applied mostly to pharmaceuticals and dental care, but also to ambulatory and hospital services. Their primary objective was to deter demand. Since charges were relatively low, exemptions widespread, and demand inelastic, their impact was relatively limited.

Competition has also been used as a tool to increase efficiency. Between 1991 and 1997, the United Kingdom attempted to create an "internal market" to increase hospital competition within the publicly financed National Health Service (NHS). The two major public payers that were designed to drive competition were District Health Authorities and General Practice (GP) Fundholders. District Health Authorities were ineffective at increasing competition because of weak financial incentives that did not allow them to fully capture savings. However, GP fundholding for primary care was more successful at increasing competition. Under the system of "fundholding," GPs were allocated a set budget that could be used to purchase hospital services on behalf of their patients (in addition to the money they were allocated for delivering primary care services directly to their patients). The reform produced a number of positive effects, including reduced hospital prices; lower waiting times; decreased referral rates; and a reduction in prescription drug spending (which was a once-and-for-all decrease). There was also no evidence that GPs selected healthier patients. However, there is some evidence that 30-day mortality rates after a heart attack admission— an important measure of quality—suffered (Cookson and Dawson, 2005)

Japan

Reforms in the 1990s brought copayment rates in Japan to one of the highest among OECD countries, to 30 percent in 2002, and separate proportionate copayments were introduced for the elderly in 2000. Medical unit price increases were strictly controlled in the biennial revisions of the fee schedule. Revisions in fee schedule between 1990 and 2006 contributed to a decrease in national medical expenditure by 0.1 percentage point during the period (Jones, 2009). In addition, a new public insurance for long-term care was established in 2000, mandating compulsory premium contribution from those older than forty. The new public insurance scheme aimed to achieve cost savings by shifting long-term care from hospitals.

United States

Managed care was the key contributing force behind the slowdown in the growth of private health spending in the United States in the 1990s, when it grew at the same rate as GDP. Managed care refers to different forms of health insurance organization and management that attempt to control utilization of services and coordinate care in order to lower costs and improve health outcomes. While managed care existed before the 1990s, it became more widespread during this decade. Managed care organizations, if successful in covering a large share of population, can use their bargaining power to negotiate lower prices than traditional private insurance.

Research on how managed care affected health outcomes is mixed, but there is some consensus that managed care has not led to large deleterious impacts on health status (Cutler, 2004). In one sample of heart disease patients, health maintenance organizations (HMOs) reduced expenditure between 30 and 40 percent relative to traditional insurance (Cutler, McClellan, and Newhouse, 2000). These savings were driven by lower unit prices for services rather than lower quantities, and there was little evidence that health outcomes suffered. On the other hand, there is evidence that managed care reduced the adoption of a range of medical technologies (Mas and Seinfeld, 2008). Today managed care remains a key component of the U.S. health system, but it is far less restrictive than in the past, reflecting in part patient resistance to restrictions on choice under managed care (Enthoven and others, 2001). Partly as a result, private health spending has again grown faster than GDP since 2000.

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