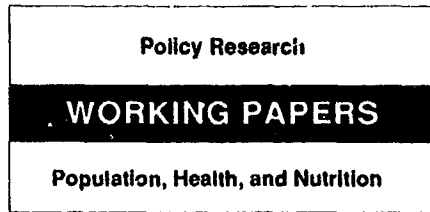


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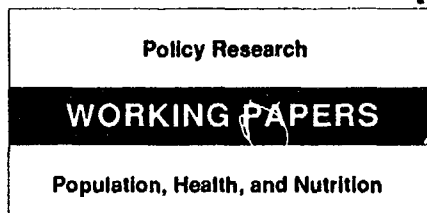


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How Health Insurance Affects the Delivery of Health Care in Developing Countries

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and
Howard Barnum

The goal of delivering health services efficiently and equitably can be more effectively promoted by an insurance institution that actively organizes consumers' entry into the health system and removes the financial incentives that encourage providers to increase the volume and cost of services.



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This paper — a product of the Population, Health, and Nutrition Division, Population and Human Resources Department — is part of a larger effort in the department to develop efficient and equitable health sector pricing and insurance strategies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Otilia Nadora, room S6-065, extension 31091 (20 pages). February 1992.

To alleviate financial crises, many developing countries are considering health insurance as an option for increasing available resources in the health sector. But besides affecting revenues, insurance also affects how efficiently and equitably health services are delivered.

To understand how insurance affects the delivery of health services, Kutzin and Barnum studied systems in Brazil, China, Korea, and Zaire. They looked at the following characteristics of insurance programs: the system for reimbursing providers, the services covered, the insurer's role, the extent to which beneficiaries help cover costs, and the proportion of the population covered by insurance.

Kutzin and Barnum use the following indicators for efficiency and equity in the delivery of health services: cost escalation, resource allocation, the use of specific medical technologies, and equity of access to services.

They conclude that insurers must take an active role in establishing institutional mechanisms (such as contractual obligations) that encourage health service providers to make efficient and equitable decisions about resource

allocation. Incentives to providers are important because they determine the supply of services and can also tremendously affect demand.

As examples from Brazil, China, and Korea show, providers can increase the use of curative services so much that health care costs escalate rapidly, resource allocation in the sector is distorted, medical technologies are inappropriately used, and access to services is inequitable. To correct these distortions, a public insurance institution should create incentives that encourage providers to behave in a manner consistent with social goals. This is achieved most easily with direct insurance, where the goals of the insurer and the provider are identical, but third-party payers can also take an active role.

Problems promoting efficient and equitable delivery of health services are magnified when an insurer serves merely as a financial conduit for reimbursing providers. Goals of efficiency and equity can be more effectively promoted by an insurance institution that actively organizes consumers' entry into the health system and removes the financial incentives that encourage providers to increase the volume and cost of services.

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HOW HEALTH INSURANCE AFFECTS THE DELIVERY OF HEALTH CARE IN DEVELOPING COUNTRIES*

INTRODUCTION

Financial crisis is a common state of affairs in the government health sector of many developing countries, and an increasing number are considering implementing user charges and insurance programs to shift some of the financial burden for health services away from direct budget allocations by a health ministry. Although they are often implemented as ways of mobilizing additional resources, prices and insurance also affect the allocation of health resources by changing the signals sent to producers and consumers of health services. Changes in incentives engendered by these alternative financing programs, therefore, have implications for the efficiency and equity of health services delivery, in addition to their more obvious impact on revenues. This paper examines institutional aspects of insurance programs in four developing countries--Brazil, China, Korea, and Zaire--and assesses the impact of each on the efficiency and equity of the health sector. Much attention is given to insurance reimbursement of hospitals because these represent the largest component of national health expenditures and are the focal point for much of the activity in the sector. The case study countries were selected because their hospitals are financed largely, and in some cases entirely, by sources other than government budget allocations and because excellent descriptions of their health financing systems exist. Understanding how alternative financing programs have distorted the allocation of health resources and how these distortions might be mitigated is important for these countries and others considering changes to their present system of health care financing.

Different forms and combinations of user fees and insurance are associated with different incentives to consumers and providers of health services. These incentives can beneficially or perversely affect the performance of both hospitals and the health sector more generally. For each country case study, the characteristics of the insurance program(s) are described along a number of dimensions, including: 1) reimbursement system; 2) services covered by insurance 3) insurer role; 4) extent of consumer cost-sharing; and 5) extent of population coverage. These features are discussed in more detail in the next section of the paper, and Table 1 summarizes them for each of the case study insurance programs.

The incentives created by these specific characteristics affect the performance of the health sector. "Performance" can be interpreted many ways, so we propose several potential efficiency and equity effects which can be compared across programs. These include: 1) cost escalation; 2) the allocation of sectoral resources between secondary/tertiary and primary care, and the effectiveness of referral; 3) the use of specific medical technologies; and 4) equity of access to health services. Where sufficient information is available, we assess the impacts of insurance programs on each of these dimensions of performance. A discussion of lessons learned concludes each country case study.

* The authors wish to thank Bill McGreevey for helpful comments on an earlier draft.

Table 1. Characteristics of Health Insurance Systems

Country/ Program	Reimbursement System	Covered Services	Insurer Role	Cost Sharing	Population Coverage
Brazil before 1983	Retrospective fee-for-service	Curative	Passive	None	Near universal
Brazil after 1983	Retrospective case-based	Curative; possibility for preventive with SUDS	Gatekeeper requirement should reduce passivity	None	Same as above; SUDS plans move to universal access
China	Retrospective fee-for-service	Predominantly curative	Passive	Not for most of the insured	20-30% of population
Korea	Retrospective fee-for-service	Most curative services; some high-tech excluded	Largely passive	Substantial official cost-sharing; plus unofficial payments	Universal
Zaire's Bwamanda Health Plan	Direct prepaid w/elements of retrospective case-based	Hospital care if beneficiary has been referred	Active; access to hospital is effectively monitored	20% for most services; none for delivering mothers who obtained prenatal care	60% of rural population voluntarily enrolled

The analysis is limited to the extent that insufficient data exist to quantify the impact of a health insurance program on any of these dimensions of performance. However, where observed changes are consistent with the incentives in place, we infer causality as to the direction (and in some cases, the magnitude) of changes in these indicators. Table 2 summarizes the observed or expected effects of the case study insurance programs on the four indicators of health sector efficiency and equity.

OVERVIEW OF INSTITUTIONAL CHARACTERISTICS

The *reimbursement system* refers to the manner by which providers are paid out of an insurance fund. We classify the reimbursement systems of insurance schemes into two major types: third party retrospective reimbursement and prepaid capitation health care organizations. Third party retrospective plans involve remuneration of the provider by a separate insurance fund after services have been delivered, whereas prepaid capitation organizations either serve as both insurer and provider (direct insurance) or pay a separate provider (third party arrangement) a fixed amount out

Table 2. Observed or Expected Effects of Health Insurance Programs

Country/ Program	Cost Escalation	Resource Allocation	Choice of Technology	Access and Equity
Brazil before 1983	Very high	Skewed toward privately provided curative care	Provider induced use of profitable high-tech services and drugs	Very high payments for relatively few patients; supply skewed toward wealthy urban areas
Brazil after 1983	Probably still high, but few data	Case mix shift with AIH; SUDS should yield better mix of curative and preventive	Incentives for particular technologies remain, but to a lesser extent	No noticeable change with AIH; SUDS should provide universal access, but supply constraint likely to remain in rural areas
China	Very high	Skewed toward curative care in higher level facilities	Powerful financial incentives to provide new high- tech services and drugs	Consumption of services heavily skewed toward the insured
Korea	High	Consumers chose high-tech hospitals despite higher cost sharing; legal change requiring referral should help	Unregulated high- tech services pushed as a means of competing for patients	Poor insured at disadvantage due to high copayments and unofficial payments to providers
Zaire's Bwamanda Health Plan	Goal of increasing hospital resources being met	Referral requirements effectively encouraging consumers to first use health centers	No available information	Strong evidence of moral hazard and adverse selection; possibly access problems for the uninsured

of which the provider will serve the health needs of the program's enrollees for a specified period. Retrospective reimbursement plans typically use prospectively determined prices in the form of fee schedules that indicate the units of service which are reimbursable under the program. The most common forms of retrospective reimbursement are fee-for-service payment systems, which involve charging for each individual service consumed by a patient, such as inpatient bed-days, drugs, and x-rays. An alternative to this for hospital inpatient care is case-based reimbursement. With this method, there is one global charge based on the category of patient admission (for example, lung cancer admissions, maternity admissions, etc.) irrespective of the type and quantity of specific services provided during the patient stay. The most well-known example of case-based reimbursement is the Medicare hospital payment system in the United States, where admissions are

grouped into categories, called Diagnosis Related Groups (DRGs), based on their clinical characteristics. However, as is shown below, there are examples of case-based reimbursement in developing countries as well.

Insurance programs vary as to the *covered services* that are reimbursable. Different incentives are likely to be generated if the program covers only curative services rather than both curative and preventive care. Another important aspect of this feature is whether specific curative services are excluded from coverage, or if there are administrative procedures that must be followed (referral requirements, for example) for services to be reimbursed under a program. This characteristic can have implications for resource allocation, technology choice, and the effectiveness of a referral system.

An important feature of insurance programs is whether the insuring institution plays an active or passive *role* with regard to the providers of care. Is the insuring institution merely a financial conduit, or does it attempt to enforce cost discipline on providers? A useful way of analyzing this issue is to assess the extent to which the insurer and the provider have common interests. On a purely financial level, we might assume that the insurer wants to minimize payments to providers, whereas providers want to maximize payments from the insurer's revenues. With direct insurance, the provider and insurer are the same institution, so this system lends itself to a very active insurer role. However, third party arrangements can involve a whole spectrum of roles, from *laissez-faire* to active monitoring and review of provider activities by the insurer.

Cost-sharing refers to the amount that health insurance beneficiaries (consumers) have to pay each time they use services. Forms of cost-sharing include deductibles (a set amount which the beneficiary must pay before receiving insurance benefits) and copayments (the amount of the charges for specific services which insurance does not pay, excluding the deductible). Economists often recommend that cost-sharing be included in insurance programs to discourage overuse of services by insured persons, who would otherwise face a zero price at the point of service. Insurance creates an incentive for behavioral change on the part of the insured, who are protected from severe financial loss and are thus likely to demand more services than the uninsured. This additional demand is called *moral hazard* and is conceptually similar to what is often termed "unnecessary utilization" arising in free care systems. Cost-sharing is intended to limit the effects of moral hazard.

The *extent of population coverage* is the final characteristic of insurance programs to be considered in this paper. As with the other characteristics, this can exhibit a wide range, from universal coverage to only a small percentage of the population with coverage. An important feature to consider is whether insurance is voluntary or is mandated by law for specific groups of the population. Where coverage is voluntary, the viability of insurance can be threatened by *adverse selection*, the tendency for persons likely to consume a higher than average quantity of services to purchase insurance. Where coverage is mandated for specific groups of the population, equity problems may arise because the uninsured face much higher prices than the insured. This equity issue is also a concern in voluntary systems where some people may not be able to afford to purchase insurance and may thus have limited financial access to services as a result.

COUNTRY CASES

Brazil Prior to 1983

Most curative personal health care in Brazil was financed by the National Institute for Medical Care and Social Security (INAMPS), the health insurance component of Brazil's payroll-financed social security system. Preventive care and basic curative services for the poor were provided by the Ministry of Health, which was financed through government budget allocations and administered separately from INAMPS. The social security system has grown rapidly, from coverage of 23 percent of the population in 1963 to over 90 percent in 1982 (McGreevey, 1982). Although insurance coverage has become nearly universal, there is great disparity in the supply of health providers between the relatively well off south and southeastern regions of Brazil and the rest of the country (Briscoe, 1990). Until 1983, INAMPS reimbursed physicians and hospitals on a fee-for-service basis for each service provided to patients according to an official price list which included 2,600 items (the Hospital Guide (GIH) system). INAMPS paid all costs; covered persons were not responsible for any cost sharing. Under this system, INAMPS served largely as a third party payer for services delivered by private providers. In 1981 for example, 85 percent of hospitalizations paid for by INAMPS were in private contract hospitals, while only about 9 percent (including 2 percent in INAMPS' own facilities) were in public sector facilities (McGreevey, 1988). Thus, INAMPS under the GIH system could be characterized as a retrospective fee-for-service reimbursement system covering curative services only. INAMPS served as a passive financial conduit; it did not try to impose cost consciousness on providers, and the absence of cost sharing meant that consumers also had nothing to gain by limiting their utilization of services. The implications of these characteristics are described below.

Cost escalation. Largely as a result of the incentives of the curative care reimbursement system, health expenditures increased by more than 20 percent annually during the 1970s, and public sector health expenditure as a share of GDP rose from 1 percent in 1949 to 3.7 percent in 1975 and 5.6 percent in 1982 (World Bank data). From the late 1960s until the early 1980s, the number of private hospital beds increased by over 40 percent, and the hospital industry grew faster than the rest of the economy (Rodrigues, 1989). The fee-for-service reimbursement system encouraged hospitals to increase both the number of patients and the amount of services provided per patient as a means of generating profits. The private provider network "responded to a set of incentives that paid [providers] whatever they billed to provide virtually unlimited services to patients who bore none of the costs directly" (Briscoe, 1990). The retrospective fee-for-service system coupled with the passive role played by INAMPS with respect to monitoring private providers was probably responsible for the widespread fraud (e.g., billing for non-existent patients and procedures by the private health provider network) discovered in the mid-1980s.

Resource allocation. The curative health subsystem, financed through payroll taxes, developed independently from the Ministry of Health's public health programs, and grew with increased employment and economic expansion in the 1960s and 1970s. The MOH budget's share of GDP declined over this period. Thus, the explosive growth of total health care spending referred to above occurred entirely in the market for curative services. The result of these forces was that the share of government (MOH plus INAMPS) health expenditure devoted to curative (medical and hospital) as opposed to preventive services rose from 36 percent in 1965 to 85 percent in the early

1980s. Hospitals alone accounted for nearly 70 percent of public health expenditures, up from less than 40 percent in the 1960s (Briscoe, 1990).

Medical technology incentives. There were no discernible financial or institutional incentives for private providers financed by INAMPS to limit the provision of certain treatment technologies which were the most profitable. Indeed, McGreevey (1988) suggests that the 1982 INAMPS fee schedule payment rate for a physician consultation was quite low relative to the value of a doctor's time, whereas capitalized medical technology embedded in pharmaceuticals and medical equipment was priced well above cost. Doctors were thus financially encouraged by the system to overuse services, drugs, tests, facilities, and operations in order to enhance their incomes. One service encouraged by the reimbursement system was caesarean deliveries, which in 1981 accounted for 31 percent of all births, giving Brazil the highest rate of any country in the world. Another example is diagnostic services, particularly x-ray, use of which grew at a very rapid annual rate from 1970 to 1981. Reportedly, many of these tests could have been avoided without detracting from treatment. In 1979, the Rio de Janeiro State University Hospital reduced the number of x-rays by 40 percent and found no loss in diagnostic efficiency. These and other types of complementary examinations (the number of which grew at 22 percent per year between 1979 and 1981) could have been eliminated with no effect on the treatment ultimately administered to patients (McGreevey, 1988).

Access and equity. The incentives of the reimbursement system encouraged rapid expansion in the volume of services provided to individual patients. One result was the allocation of a substantial share of total public health expenditures toward costly high technology services, such as renal dialysis, heart bypass operations, and computed tomography (CT) scans, which benefit relatively few people. The magnitude of this effect was such that in 1981, total expenditure on 12,000 high cost patients was greater than the amount spent to provide basic health services and disease control for 41 million people in the poor north and northeast regions of the country (McGreevey, 1988). Thus, the incentives for using expensive high-technology services clearly led to an inequitable pattern of expenditures.

Lessons learned. The experience of Brazil's social security financed health insurance system prior to 1983 sheds light on a number of important issues. Fee-for-service reimbursement of private providers with no beneficiary cost-sharing by a public agency exercising no control over utilization led to provider-induced increases in the volume of medical services beyond what was medically necessary. The use of specific technologies and services with the greatest profit margins grew at particularly rapid rates. This resulted in rapid growth of expenditures on curative services and distortions away from a cost effective mix of preventive and curative care. This distortion was especially pronounced because these services were financed separately (INAMPS financed curative, the MOH financed preventive); therefore, cross-subsidization of preventive care by the rapidly growing curative services was not possible.

Brazil After 1983

The Brazilian government implemented a number of reforms to its hospital reimbursement system during the 1980s in an attempt to control the growth in hospital costs and utilization which had arisen from the fee-for-service insurance system. A pilot program of financing and administering health services was implemented in the relatively prosperous state of Parana. This system, called the Curitiba Plan for the state capital, had two distinguishing features:

- 1) Initial patient contact with health providers (triage) occurred at an INAMPS or other public (state or municipal) facility, where walk-in patients would be examined by a physician-auditor (employed by INAMPS). The physician-auditor either treated the patient or referred him/her for higher level services as needed. Walk-in patients were not authorized to go directly to private facilities.
- 2) The INAMPS physician-auditor assigned the patient to a service group, and case-based reimbursement rates were tied to assignment, regardless of the treatment setting (e.g., public clinic, private hospital, etc.). Facilities and providers are reimbursed a fixed amount per case, and only for the procedures specified by the physician-auditor. If a hospital treated a patient at less cost than the reimbursement amount, it profited. If treatment costs exceeded the case payment rate, the hospital bore the financial loss.

These features, which were implemented more broadly throughout INAMPS in 1983 as part of the Hospital Certification System (AIH), were aimed at many of the problems inherent under the GIH system. Prior to implementation of the Curitiba Plan, many walk-in patients were treated by private hospitals as emergency cases, which received substantially higher fee-for-service reimbursements from INAMPS. The public triage requirement created a structured referral system to address this. In addition, by separating the decision on the course of treatment from the facility which would actually provide (and be reimbursed for) the care, the financial incentive to overprescribe and overuse complementary examinations and services in private facilities was diminished.¹ Under the initial Curitiba project, hospitalizations were reduced to 5 percent of initial consultations, compared to a Brazilian average of 6.5 percent. By mid-1982 (the Curitiba pilot began in 1981), INAMPS declared that the plan had reduced hospital admissions by 30 percent (McGreevey, 1988). Unfortunately, however, we are not aware of any subsequent follow-up studies that would demonstrate the long term effects of these changes.

INAMPS reforms altered some, but not all, of the key characteristics of the health insurance system. The reimbursement system remained retrospective, but on a case basis rather than fee-for-service. There were still no cost-sharing provisions for INAMPS beneficiaries. By requiring entrance to services via public primary care providers (i.e., its own employees), the role of INAMPS in enforcing cost discipline on private providers became more active.² Under the AIH system, the financing and administration of curative and preventive care remained separate, but in 1987 the Unified and Decentralized Health System (SUDS) was announced with the aim of correcting this situation. The objective of SUDS was to unify the functions and resources of INAMPS and the MOH

¹ This would be true to the extent that the INAMPS physician-auditor did not also work in private practice or for a private hospital, or was immune to influence from private providers. One problem of the system prior to 1983 noted by McGreevey (1988) was a conflict of interest arising because most physicians who were employed in public clinics were also holding positions with at least one private health care provider. Indeed, a 1981 survey of physicians in Greater Sao Paulo found that they average 3.5 jobs each. This conflict of interest continues to be an issue for the post-1983 INAMPS physician-auditors, as the reformed system places tremendous resource allocation powers in the hands of these public employees. Private contractors clearly have much to gain by trying to influence the physician-auditors' decisions.

² Other activities undertaken by INAMPS reflective of its more active role vis-a-vis the private provider network included implementation of more systematic and thorough audits of private contractors, establishment of public reference centers for high-technology services, and modification of procedures by which high-cost items were procured by private contractors (Briscoe, 1990).

at the state and municipal level. In this way, curative and preventive services would be financed by the same institution. While the incentives inherent in this reform for redressing resource allocation problems are clear, Brazil has been slow to implement the plan (Briscoe, 1990), and thus its effects have not yet been observed.

Cost escalation. There are few empirical data with which the impact of INAMPS reforms on health care cost escalation since 1983 can be analyzed. A study of Brazilian hospitalization during the 1980s (Rodrigues, 1989) concluded that the change to case-based reimbursement did not appear to be effective in controlling health care costs because it created an incentive for private hospitals to increase certain types of admissions. In addition, although a system of prospectively set reimbursement rates encourages providers to economize on the level of resources allocated to the care of an individual patient, such a system also provides incentives for hospitals to maximize the volume of profitable admissions. However to date there have been no expenditure data available to compare the effects on total hospital costs of the fee-for-service system with the case-based system.³

Resource allocation. The case-based reimbursement system created incentives for private hospitals to adjust their inpatient case mix. With a limited number of case payment groups, there will be patients of varying severity within each category. INAMPS reportedly set payment rates based on average reimbursement within a category (Rodrigues, 1989). One way that hospitals could minimize their resource inputs per case would be to treat the less severe patients within a category and try to shift sicker patients to public hospitals. Rodrigues concluded that private hospitals did, in fact, shift more costly patients to public and university hospitals, leaving themselves with a less severe case mix for which profit margins per patient were greater. Supporting evidence is provided by Briscoe (1990), who examined inpatient mortality data and concluded that patients in public hospitals had significantly more severe conditions, on average, than those in private hospitals.

In terms of resource allocation between curative and preventive care, the trend towards a decreasing preventive share apparently reversed itself, as 78 percent of health expenditures were devoted to curative care in 1986, down from 85 percent in 1982 (World Bank data). This change occurred before the SUDS was announced, and although this approach would seem to allow for a reallocation of health resources toward a more cost effective mix of preventive and curative care services, there are as yet no data upon which an evaluation of this reform can be made.

Medical technology incentives. There is little information available on the utilization of specific medical technologies since 1983. The case-based payment system should have diminished the overuse of complementary diagnostic tests and other services which was prevalent under the earlier system. In addition, some controls over the use of high-technology services were instituted. Nevertheless, Briscoe (1990) reports that INAMPS paid over three percent of its total budget in 1988 on just four outpatient treatment procedures (hemodialysis, hemodynamic studies, endoscopy, and computerized tomography). Thus, further controls or limitations of INAMPS financing of high-technology services may be needed.

³ The World Bank's LAIPH division is proposing to analyze newly accessible data on costs and utilization in private hospitals in Brazil covering the period 1981-1990. Hopefully, this will yield conclusions as to the effects of the change in reimbursement systems on cost escalation.

Lessons learned. Brazil's attempts to address the deficiencies of its pre-1983 health financing system appear to generate better incentives for a more efficient health care delivery system, but there are insufficient data available to clearly evaluate the impact of various reforms (though this may be remedied by the proposed study mentioned in the previous footnote). The Curitiba Plan and later the AIH created an institutional framework for moving consumers through the health care system in an organized manner and for limiting provider-induced demand by requiring that the gatekeepers to the system be employees of the insurer, and that these employees determine the total course of treatment to be provided. Fixed reimbursement on a case basis rather than fee-for-service should reduce the number of unnecessary procedures that are performed. Finally, unifying the resources and administration of the institutions responsible for delivering both curative and preventive services should allow for cross-subsidization and the possibility of a more cost effective health care delivery system.

China⁴

In 1981, China's health facilities were instructed to cover their non-staff recurrent costs through user charges, paid either out-of-pocket or through insurance. Although facilities are all publicly owned, this change induced them to operate in a manner similar to private institutions. By 1988, 82 percent of recurrent health expenditures were estimated to have been made through a combination of patient fee payments and insurance reimbursement. In that year, about 20 percent of the population was covered under government and employer-sponsored (though heavily subsidized through the tax system) health insurance that reimbursed health providers 100 percent of billed charges. Another 10 to 15 percent of the population is estimated to have more limited coverage (i.e., with cost-sharing provisions). Reimbursement under these programs is on a retrospective fee-for-service basis, and insurers are third-party payers separate from providers and playing no role other than financing services. Insurance primarily pays for curative services, but disease prevention activities for which prices are charged are covered as well.

The pricing of health services has created incentives for providers to favor the acquisition and use of particular types of services and technologies. Fees for technologies and services which were in use in the late 1950s (e.g., outpatient consultations, inpatient care, surgical operations) were set below costs (without an accurate idea of what costs were) at that time, and even with attempts to increase prices for this category of services in 1985, fees for most of these "older" medical technologies, procedures, and services remain considerably below cost. Older price guidelines do not exist for new technologies, and a number of these (e.g., CT scans, laboratory services, ultrasound, coronary care, and dialysis) appear to be priced above costs. Therefore, hospitals benefit financially when these newer services are consumed. Another category of prices is for drugs. Hospitals are explicitly allowed to mark up the price of drugs by 10-18 percent over the wholesale price for which they acquire them. The mark-up for traditional medicine drugs averages 20 percent. While the mark-up is intended to cover storage and distribution costs, there are clear incentives to overprescribe.

Cost escalation. Total health expenditures grew at an annual average rate of 17 percent in real terms from 1980 to 1988, increasing from 2.6 percent to 3.2 percent of GDP during these years. Most of this growth has resulted from increases in patient fee payments (average annual growth rate

⁴ A forthcoming World Bank study (Bumgarner, ed.) is the source of information provided on China in this section.

of 23 percent) and insurance reimbursements (15 percent annual growth). Although there are no available time series utilization data, the need for most health institutions to earn revenues sufficient to cover operational costs and some capital costs has almost certainly resulted in provider-encouraged consumption of those health services on which a profit can be earned. The pricing of health (and particularly hospital) services, coupled with the knowledge that for most of the insured population, no monetary cost will be borne for these services, has encouraged health care providers to offer more services, and services with a greater margin between price and marginal cost.

Resource allocation and referral. Another consequence of the incentives of the financial decentralization reforms in China is that government health expenditures, and to a much greater extent total health expenditures, have been increasingly devoted to higher level hospitals, while a decreasing share has been devoted to lower level hospitals. Data on government health expenditures show that the higher level hospitals' share rose from 38 percent in 1980 to 44 percent in 1987, while basic hospitals fell from 23 to 17 percent over the same period. Although anti-epidemic and maternal/child health activities remained around 17 percent of public expenditures, the growth in the percentage of total health expenditures financed by fees and insurance (from 72 percent in 1980 to 81 percent in 1987), and the preponderance of fee/insurance payments devoted to hospital services meant that the share of total health expenditures devoted to basic and preventive services undoubtedly fell over the period.

The insurance programs do not exercise any influence to steer their beneficiaries to appropriate levels of the referral network. The lack of effective referral systems has resulted in fee paying (and especially insured) patients seeking care from higher level facilities when less complex facilities would have been sufficient. To the extent that future investment decisions are based on (distorted) historical utilization trends, too great a share of the public investment budget will be devoted to higher level hospitals. Current distortions, therefore, not only impose short run costs in terms of cost ineffective utilization but also long run inefficiency via investment decisions based on current patterns of facility demand.

Medical technology incentives. Hospitals negotiate fees for new technological services with local health and price bureaus, typically on the basis of the likely "average cost" of the service and assumptions regarding the volume of services likely to be provided. According to the World Bank study, when hospitals are engaged in the price setting negotiations, they have an incentive to project moderate levels of utilization, but after the price is established, they have a powerful incentive to use the service intensively to generate financial profits. Case studies of the service costs and prices charged for specific technologies show there to be strong non-medical incentives to provide several services, including electroencephalography, coronary care, CT scans, ultrasound, and renal dialysis.

Pricing policy for drugs has led to a *de facto* subsidy for the domestic pharmaceutical industry by the health system, and particularly the insurance systems, which merely reimburse providers without any efforts to monitor the cost-effectiveness of utilization patterns. The effects of the incentives to overprescribe are reflected in an average of 2.3 drugs prescribed per patient visit and by the nearly 50 percent of total health expenditures going for drugs. This is not just a financial problem; polypharmacy is clearly contrary to sound medical practice and can have deleterious health effects.

Access and equity. The combination of high user fees and insurance coverage for only part of the population has resulted in an inequitable pattern of health care utilization wherein the provision

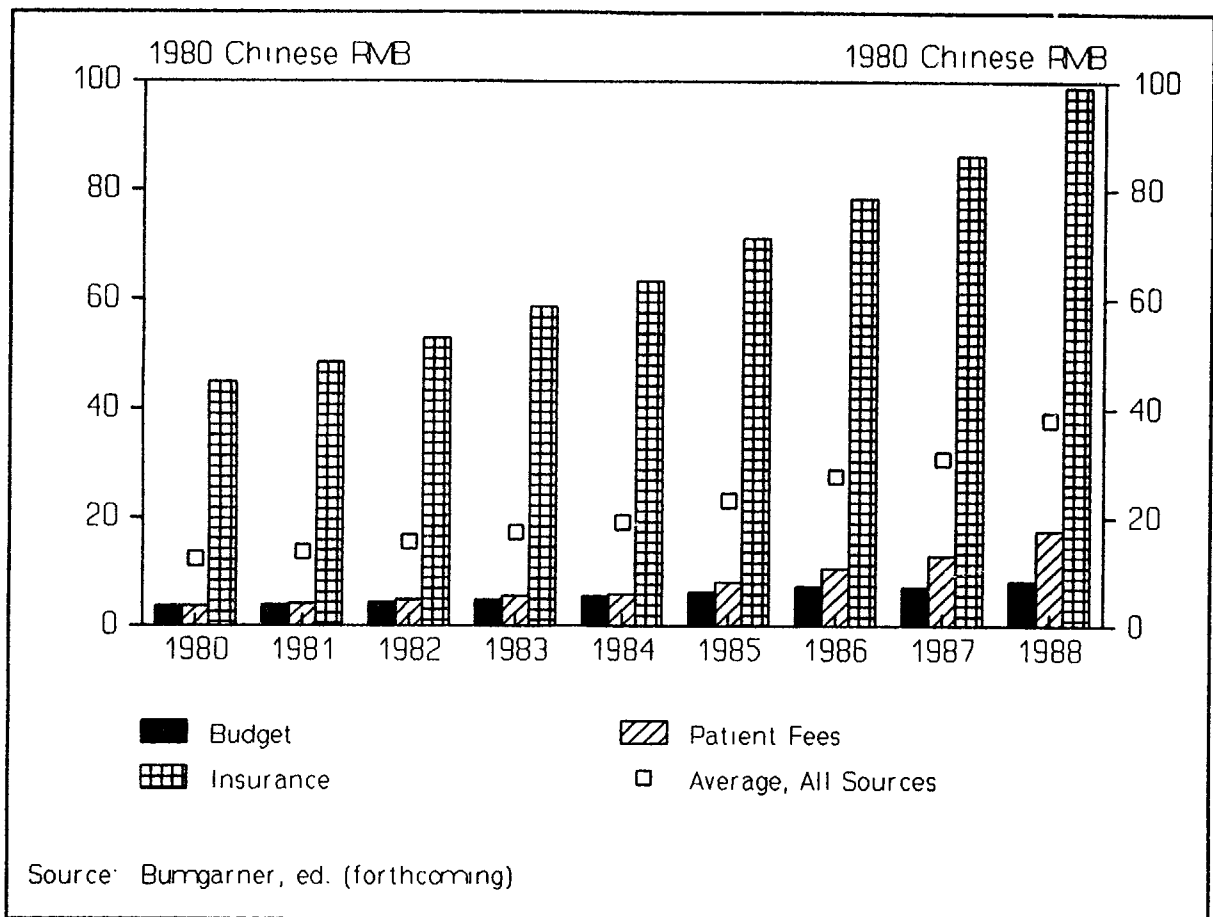


Figure 1. Real Per Capita Recurrent Health Expenditure in China, by Source

of services has been skewed away from the majority of the population. Insurance reimbursements were the source of 44 percent of health finance in 1988, yet only about 20 percent of the population was covered under official insurance programs in that year. Figure 1 shows that, on a per capita basis, consumption of health care by insured persons has been much greater (and is rising) than by uninsured persons, suggesting some moral hazard on the part of the insured and possibly limited access for low income uninsured persons. Uninsured people are receiving less health care, and the rapid growth in fee payments during the 1980s has exacerbated the equity problem because these persons are using a greater share of their incomes for health services than are the insured.

Lessons learned. As in Brazil under the GIH system, China experienced rapid cost escalation resulting from third party fee-for-service reimbursement of 100 percent of health service charges. In a system where only some of the population has insurance coverage, there is clear evidence of differential utilization of services, suggesting moral hazard on the part of the insured and possibly limited access for the uninsured. China's experience also highlights the importance of price incentives for the use of particular medical technologies. The signals sent to providers have resulted in the expansion of profitable high-technology services and drugs. In addition, because investment decisions are based on existing signals, the long run consequences of today's distorted price signals are likely to be an even more inefficient mix of facilities and equipment. In short, although China's decentralized pricing system and insurance programs have been effective in generating revenues for

health facilities, they have done so at the cost of equity in the use of services and inefficiency in their organization and production.

Republic of Korea⁵

The first compulsory social security health insurance scheme covering less than 15 percent of the population was introduced in 1977, and the beneficiary population has been rapidly increased until universal coverage was achieved in 1989. Insurance is provided through a large number of nonprofit, noncompeting societies organized at the firm, firm-group, or county level. There are programs for the unemployed and self-employed, plus public assistance programs which essentially pay the insurance premium for indigent persons (about 10 percent of the population). There are two large administrative agencies which handle claims processing and payment, data collection, and program monitoring for all of the insurance societies. They work closely with the Ministry of Health and occasionally engage in monitoring of claims and utilization review (Yang, 1991).

Services are largely delivered in private facilities, and the insurance agencies and the government (through the MOH) are somewhat more active than are similar agencies in Brazil and China *vis-a-vis* providers. In mid-1989, a law was passed requiring patients to have a referral slip from clinics before they are allowed to use hospital care, changing the prior situation wherein patients could choose the provider level at which they entered the health care system. The MOH also defines the services that are covered by insurance and ultimately determines the prices for covered services. However, a number of high-technology expensive services, such as CT scanners and Extra-corporeal Shock Wave Lithotripsy (ESWL) are not covered, and providers can charge unregulated prices for these (Yang, 1991).

A national schedule of fees is negotiated and then set on a cost-plus basis, and providers are retrospectively reimbursed on a fee-for-service basis according to this schedule. Unlike the programs in Brazil and most health insurance in China, there are significant cost sharing requirements in the Korean program, except for certain categories of the medically indigent. The combination of third party benefit payments and cost sharing serves to finance health care, which is largely provided by private facilities. A combination of deductibles and copayments yield effective coinsurance rates of 62, 65, and 41 percent for outpatient services in general hospitals (highest level), hospitals, and clinics, respectively. The inpatient coinsurance rate is 20 percent at all facilities. However, extra payments to senior physicians and other undocumented expenses mean that actual cost sharing rates are even higher (Yang, 1991).

Cost escalation. Attempts to sort out the effects of the expansion of insurance coverage on total Korean health expenditures are confounded by the effects of the rapid growth in per capita income (about eight percent annually) that Korea has experienced during the last two decades. Nevertheless, it is likely that the expansion of health insurance played an important role in the growth of total health spending from 2.8 percent of GNP in 1976 to 4.2 percent in 1985 and an estimated 7.0 percent in 1989 (Yang, 1991). For example, a study (Kim *et al.*, 1986) of one rural province

⁵ A World Bank Technical Paper (De Geyndt, 1991) has recently been published providing insights into cost escalation and Korea's national health insurance program. The paper assesses alternative strategies for mitigating the rise in health care expenditures. We were not able to incorporate this paper's findings into our analysis because the technical paper was not available at the time this section was completed.

found that insurance coverage effected a 37 percent increase in inpatient admission rates and a 66 percent increase in inpatient days per 100 persons. In addition, the number of visits to outpatient departments at clinics and hospitals increased by 71 percent after the introduction of insurance coverage.

Yang (1991) found that total expenditure growth resulted from a combination of increases in cost per case (a nearly threefold increase for inpatient services and a near doubling of outpatient services from 1980 to 1988, compared to a consumer price index increase of only 60 percent over the same period) and in the volume of services used (outpatient visits per capita nearly doubled and hospital admissions per capita rose by about 40 percent). He suggests that one important cause of the increases in both the average cost and volume of services has been the retrospective fee-for-service reimbursement system using cost-plus pricing. Under this system, cost-increasing behaviors are always rewarded, and this is exacerbated over the long run as higher costs induce higher fees. Despite the presence of significant copayments in the system, hospital utilization data indicate that there has been a growing tendency to increase the volume of services provided; the frequency of repeat visits is rising and lengths of hospital stay are increasing. This suggests that incentives on the demand side (i.e., high copayments) have not been very effective at limiting demand in the face of rapidly rising incomes.

Resource allocation and referral. There has been no clear distinction among the roles of clinics, hospitals, and general hospitals because these have all been competing with each other for patients (Yang, 1991). The insured show a marked tendency to use large general hospitals even for primary care; these hospitals tend to have higher proportions of specialists and advanced medical equipment and are accordingly more costly. Using hospitals is also the most expensive option for a consumer: they are allowed to charge fees which are about 15 percent more expensive than at clinics, and the percentage copayment for outpatient care is 50 percent greater. Despite these higher charges, however, the utilization of general hospitals has risen at almost the same rate as that of clinics in recent years (Anderson, 1989). The pattern of overuse of the more sophisticated general hospitals which is becoming established in Korea may give signals that there is a need for more of these facilities, which could generate still more undesirable cost escalation. The referral requirement introduced in mid-1989 appears to be an appropriate device for steering patients toward lower level providers for entry into the health care system, but it is too early to tell how effective this has been in practice.

Medical technology incentives. Because prices are set by the government, Korean hospitals cannot compete for patients on the basis of price and must do so on some other basis. By and large, this other basis has been the availability of senior medical staff and of sophisticated medical equipment because of the strong societal perception that anything less is not good medical care. Therefore, it is not surprising that hospitals are acquiring large quantities of modern equipment. One example is CT scanners, which are now in nearly every hospital with more than 200 beds. The costs of these devices generally are greater than the revenues collected from their use, but hospitals use them as loss leaders to attract patients. There are 38 hospitals with approved heart transplant facilities, and Korea also has 26 ESWLs. That these figures are high is evidenced by a comparison with Canada, which has 32 heart transplant centers and only four ESWLs (Yang, 1991).

Access and equity. Results from studies undertaken prior to the universalization of health insurance support the conclusion that insurance coverage leads to moral hazard, and coverage of only part of the population results in inequitable access to care. Anderson (1989) reports that two years

after a 1981 demonstration project introduced insurance coverage in three rural provinces, inpatient service use increased by nearly 75 percent and outpatient use by 80 percent. Comparison of utilization and charges amongst insured and uninsured inpatients at one university hospital found that the average volume of services and length of stay for five diagnostic categories were greater for the insured, whereas out-of-pocket charges were greater for the uninsured (Yu, 1983).

Universal coverage under Korea's national health insurance program should theoretically provide for universal access and better equity implications than had previously existed. However, as in Brazil, smaller per capita supply of physicians and facilities in rural areas has led to geographically-based inequity. Another equity concern is the very high coinsurance rates which are charged in this system. With the exception of some categories of the medically indigent, these charges are levied irrespective of patient income and thus are more of a burden for poorer families. Data on per capita health service utilization by income class for insured persons in 1987 shows that utilization by the poorer insured was considerably less than that of higher income insured persons (Yang, 1991). In addition, the capacity to make informal "under the table" payments and to pay for non-covered high-technology services has led to a two-class system of health care. Moreover, according to Yang, many providers are unwilling to serve public assistance program beneficiaries, even though they are legally entitled to care. Another source of inequity in this system of universal coverage derives from the large number of insurance societies. Because each has a relatively small number of beneficiaries and serves a small geographic area, some serve largely healthy, high-income persons, and others have to contend with a less healthy risk pool. With no mechanism in place for premium to be transferred across insurance societies, the higher-risk pools will tend to have higher payments and fewer resources than lower-risk pools.

Lessons learned. Universal coverage should provide universal access, but the heavy official cost-sharing obligations which are not income-related (except for the poorest groups) and the unofficial payments demanded by private providers weigh most heavily on lower-income insured persons. Despite these significant beneficiary cost sharing requirements in Korea's fee-for-service reimbursement system, however, the introduction and expansion of insurance has been associated with rapid growth in health and hospital costs. Demand side approaches to encourage appropriate use of referral facilities have not been very effective. This suggests that the key to encouraging a more efficient service delivery system is on the supply side, by providing strong incentives to providers to limit the volume of services which they provide and to use more cost effective treatment technologies and settings. Clearly, such incentives are not present in Korea's health insurance system, with the exception of the recent requirement for patient referral. Although Korea's insurance program uses its strength as the principle purchaser of services to negotiate a national hospital fee schedule, an unintended consequence of this has been that private hospitals compete for patients on the basis of perceived quality. Because consumers' understanding of hospital and medical practice is usually limited, there may often be great differences between perceived quality and actual quality. As a result, this competition has taken the form of hospitals accumulating technologically advanced equipment to attract patients. This has created a distorted pattern of investment which will lead to an increasingly inefficient mix of services in the future.

Zaire's Bwamanda Health Zone⁶

The focus of this case study is only on one small region of Zaire, not a national system of hospital financing as was the case in the other examples. In many ways, it is not comparable with the other programs discussed in this paper because it is focused around one district reference hospital rather than an array of providers that includes sophisticated tertiary hospitals. Nevertheless, several important lessons can be drawn from the health plan in this region.

In 1975, Zaire developed a plan to organize its health services around a large number of health zones, each serving approximately 100,000 people with a reference hospital and satellite health centers. The health zones were given a considerable degree of autonomy, including responsibility to develop cost recovery programs to meet their operating and maintenance costs (Bitran *et al.*, 1987). The management of one zone, Bwamanda, created an insurance program as a means of generating revenue for its reference hospital and organizing the delivery of services in the zone. The insurance plan is managed by the health zone and is thus a direct insurance program rather than a third party arrangement, and it is administered as a prepaid capitation health care organization. Enrollment in the plan is voluntary, but in an attempt to limit adverse selection, all members of a family are required to join if one member joins. For residents of the zone who are not enrolled in the plan, case-based fees are charged, with 16 case payment rates related to the diagnostic characteristics of the patient. Insured persons who have been referred from a health center pay a copayment equal to 20 percent of the case price charged to uninsured residents of the zone. In addition, the hospital charges non-residents twice the resident rate and salaried employees persons (whose employers are required by Zairian law to pay the full cost of their medical care) 250 percent of this rate. In a sense, there are two insurance plans in the zone; one for the voluntary enrollees (60 percent of the zone's population in 1989) and employer-paid coverage (4.6 percent). Unlike the other insurance programs discussed above, the Bwamanda insurance plan only covers hospital services (plus chronic care treatment in health centers). However, hospitalization benefits are only available to members who can document that they were referred from a satellite health center.

The Bwamanda Health Plan and the requirement for employers to pay the health care costs of salaried employees generate distinct financial incentives to providers and consumers for each of three population groups: the insured, the uninsured, and the employer-paid group. The insured group has paid its premium and thus wishes to maximize its utilization, though this is limited by its 20 percent cost sharing and the requirement to pay for care at health centers. The hospital and the insurance plan (the same organization) wish to minimize the use of services by this group, as it does not want claims payments to exceed premium income (the prepaid capitation incentive). The uninsured try to avoid use of the hospital because they face high prices if they are admitted. The hospital wants this group to use the hospital, but hopes to minimize the level of inputs provided to any person admitted so that treatment costs do not exceed the case payment rate (the retrospective case-based incentive). The employer-paid group does not face any charges, so they will maximize their use of the hospital. The hospital also has incentives to admit employees (but to still minimize resource inputs during their stay), as employers pay at a much higher rate than that paid by other patients.

Cost escalation. The impact of the Bwamanda Health Plan on cost escalation cannot be discussed in the same context as the impacts of the national insurance programs previously described.

⁶ Information on the Bwamanda health zone in Zaire is derived from Shepard *et al.*, 1990.

Data on the real level of the annual premium show that it has increased at an annual rate of 9.5 percent since 1986. This is not indicative of any problem; rather, the insurance program was established in 1986 with the goal of increasing resources for the reference hospital of the zone. Evidence from the first few years under the plan show that this goal has been reached. 100 percent of hospital charges for plan beneficiaries were covered by premium income in 1987 and 1988, with additional resources left over to cover administrative costs. Cost recovery in the hospital increased from about 48 percent of operating costs in 1985 to 79 percent in 1988.

Resource allocation and referral. Even though the insurance plan does not cover charges in health centers (except for care of chronic conditions), it includes strong incentives to discourage self-referral to the hospital. Specifically, the plan will pay for hospital care only if a beneficiary has a referral slip from a health center. Insured patients who self-refer to the hospital must pay the full (non-covered) fee for a private physician visit. The incentive for first using less complex facilities is thus built directly into its reimbursement rules. Another aspect of the plan which encourages appropriate use of primary care facilities is that insured women are entitled to a free hospital delivery only if they have received prenatal care. The health plan takes a very active role in managing the use of facilities in the zone, a task simplified because the provider and insurer are the same entity, thus making referral rules relatively easy to enforce.

Access and equity. The incentives in place for the three groups of the population are borne out by hospital utilization data. The results of a sample of hospital patients by payment category during 1988-1989 are presented in Table 3. The table clearly shows that salaried employees were heavily overrepresented (relative to their population share) in the hospital, and the insured plan members were also overrepresented. The non-insured were very much underrepresented. Based on the hospital register of admissions by payment source, 1989 hospital admission rates were also found to be lower among the uninsured than those insured through the plan (by nearly 700 percent), and much lower (nearly twenty-fold) than those whose fees were paid by their employers. This suggests a combination of limited access for the very poor (as there are apparently no exemptions from payment), moral hazard arising from the financial protection provided by insurance and employer payment, and the hospital's incentive to admit salaried employees to receive the highest payment rate. The enrollment in the plan of individuals who believed they were likely to use the hospital (adverse selection) was also probably a factor in the overrepresentation of plan members in the hospital.

Table 3. Distribution of Payment Categories in the Bwamanda Health Zone Population and Hospital Patients, Dec. 1988 - Oct. 1989 (maternity patients excluded)

Payment Category	Population (%)	Hospital Patients (%)	Ratio of Patients to Population
Employed	4.6	17.3	3.76
Insured	60.2	76.7	1.27
Not insured	35.2	6.1	0.17

Source: Shepard *et al.*, 1990

Lessons learned. The purpose of establishing a health insurance program in Bwamanda was to increase the level of resources available for health services. Increases have been achieved, yet the allocation of resources has been tightly managed and utilization of non-hospital services strongly

encouraged by the program. The direct insurance model wherein the insurer and provider are the same entity offers advantages over third party payment in terms of organizing the health care system efficiently. For example, no specific referral incentives to providers are needed; therefore, referral rules are more easily enforced. The principal drawback of the voluntary insurance approach used in Bwamanda is differential access to care between the uninsured and the insured (including employer-paid). The greater use of services by the insured reflects moral hazard arising from insurance coverage, but may also mean that access for the uninsured is limited by their inability to pay. The latter is of greater concern, but the magnitude of this problem is unknown. Another issue related to the Bwamanda Plan is that it has a monopoly on the provision of hospital services in the region. This may limit the replicability of this model in other regions unless they have the resources and the will to assure maintenance of the quality of service provision. Nevertheless, the success of the Bwamanda Health Plan in organizing and sustaining the services provided in the health zone demonstrate that insurance can be a viable option for financing health services in a rural area with a population primarily composed of self-employed farmers.

CONCLUSIONS AND RECOMMENDATIONS

The principal recommendation for the design of health insurance programs derived from these case studies is that insurers should take a very active role in establishing institutional mechanisms (such as contractual obligations) that encourage providers of health services to make efficient and equitable resource allocation decisions. Incentives to providers are most important because they determine the supply of services and also have tremendous leverage over demand, due to consumers' dependence on providers for assistance in defining their personal health care needs. By controlling supply and strongly influencing demand for services, providers can increase the use of curative care services in a manner that, as the examples of Brazil, China, and Korea show, leads to rapid escalation in health care costs, distortion of resource allocation in the sector, inappropriate use of medical technologies, and inequitable access to the services available. To correct these distortions, a public insurance institution should actively intervene by creating incentives to encourage providers to behave in a manner consistent with social goals. This is most easily achieved with direct insurance because the goals of the insurer and provider are identical, but it is possible for third party payers to take an active role as well. The following paragraphs suggest additional conclusions and recommendations derived from the case studies.

Cost Escalation

In each of these countries, alternative financing mechanisms were introduced as a means of increasing the level of resources available in the health sector and/or reducing government subsidies. Thus, it is not surprising that each has been associated with rapid growth in health and hospital expenditures. Cost escalation is problematic where the incentives of a specific financing program cause expenditures to spiral out of control. Lessons learned from these case studies suggest that a fee-for-service pricing system coupled with third party reimbursement of private providers (or providers who behave as if they were private, i.e., exhibit profit- or revenue-maximizing behavior, as in China) for billed services leads to large and rapid increases in health care costs via provider incentives to increase the volume and sometimes the average cost of services. Theory indicates that

beneficiary cost-sharing should limit this tendency, but the presence of very high copayment requirements in Korea apparently did little to mitigate cost escalation. (An income elastic demand for health care services in Korea explains some but not all of their health cost increases since the late 1970s.) This suggests that providers have a very important impact on the quantity of services ultimately demanded by health consumers (given the ignorance of most consumers of their medical treatment needs and options), and that to achieve greater cost containment, incentives must discourage providers from expanding the volume and cost of services beyond what is cost effective. To the extent possible, insuring institutions acting in the public interest should create incentives so that the financial interests of providers correspond with their own. One possible model for this is the aspect of the Brazilian insurance system after 1983 that gives public primary care providers responsibility for defining the course of a patient's treatment. This component of the program separates the decision on the services to be provided to a patient from the provider who will ultimately be reimbursed for providing the defined services.

Retrospective case-based reimbursement is presumed to result in less cost escalation than a fee-for-service system, but evidence from Brazil to date is inadequate to support the presumption. Case-based reimbursement does not eliminate the incentive to increase costs; the incentive is to maximize profitable admissions and minimize the quantity of services provided per admission. This arrangement is likely to somewhat limit cost increases but may have negative implications for the quality of care and require either competition or regulation to maintain standards. Furthermore, where a mix of private and public providers is financed on this basis, as in Brazil, private hospitals have an incentive to alter their case mix toward less severe, more profitable patients, sending sicker patients to the public hospitals. This can result in an overly strained public system.

Resource Allocation and Referral

Because third party fee-for-service reimbursement by a passive insurer generates rapidly rising curative health care costs, it tends to lead to a decline in the relative share of health resources devoted to preventive services. This does not necessarily imply a decline in resource availability for prevention, but for most countries, the marginal benefit of additional resources in preventive services would be greater than in curative services. This impact can be mitigated if the provision of preventive services can be subsidized out of the revenues generated by the expansion of curative care. Such cross-subsidization is most feasible when there is a unitary authority responsible for all levels of health care, from primary prevention to hospital services. Two models for this are the direct insurance approach used in Bwamanda, where the health zone is responsible for all levels of care but generates revenues through the provision of curative care, and the SUDS in Brazil, which unifies the resources and administration of curative and preventive services. Both approaches should be closely monitored to determine how effectively they allocate resources.

Financing systems can generate incentives for the use of specific types of facilities via price incentives to consumers or by fiat. Evidence from Korea suggests that price incentives may not work very well if perceived quality differences between levels of facilities is great. Making reimbursement contingent upon a patient's use of specified points of entry into the provider network appears to be more effective. In Bwamanda, this functions as a price incentive, with a very large penalty for insured persons who self-refer to the hospital. The post-1983 Brazilian plan to require entry to the health system via a public primary care provider also creates a structured pattern of referral and generates provider incentives similar to that of the direct insurance model (since the provider is employed by the insurer).

Medical Technology Incentives

Incentives that influence the use of a medical technology arise from how these specific services are priced, as is evident from the experience of Brazil and China. Providers have an incentive to maximize utilization of those services for which the margin of reimbursement over costs of provision is greatest, and consumers both rely on the medical judgment of providers and often tend to equate new high-technology procedures and a greater quantity of pharmaceuticals with better health care. When the price or reimbursement rate differ from the marginal cost of the service, the incentive may distort the provision of services away from what is socially optimal and medically appropriate by introducing personal or institutional financial considerations into the choice of technology decision. The long term efficiency consequences of this distortion can be severe, as investment in future capacity is often based on current utilization. The problems can be mitigated to some extent by using case-based rather than retrospective reimbursement, but overprovision incentives may remain, depending on the nature of the case payment categories. Insurers should strive to remove either price distortions through improved understanding of the marginal costs of provision or be conscious of the incentives they would like to create regarding the acquisition and use of specific medical technologies, including pharmaceuticals.

Access and Equity

Insurance coverage is a means of access to medical services which might otherwise be difficult for many persons if prices for services, especially those provided in hospitals, were high enough to recover costs. When coverage is universal, as is practically the case in Brazil and has recently become true for Korea, differences in access arising from insurance status should not occur, although the poor appear to suffer a degree of limited access due to a relative lack of providers in poor rural areas, and, in Korea, a heavier burden of formal and informal cost-sharing obligations. However, when only part of the population has such coverage, as in China and Zaire's Bwamanda health zone, disparities are likely, as the cost of using health services facing the uninsured as compared to the insured population is radically different. Partial insurance typically exacerbates equity problems because the insured also tend to have higher incomes than the uninsured. The disparity in utilization of services does not necessarily imply that access for the uninsured is inadequate, but access for the most vulnerable groups should be examined in detail and measures should be taken, such as exemptions from payment or public assistance for the purchase of insurance (as in Korea), to guarantee a minimum standard of access to care for all citizens.

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