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Xingzhu Liu and Sheila O'Dougherty

September 2004



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Health, Nutrition and Population (HNP) Discussion Paper

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Health, Nutrition and Population (HNP) Discussion Paper

Purchasing Priority Public Health Services

Xingzhu Liu^a Sheila O’Dougherty^b

Paper prepared for the World Bank’s Resource Allocation and Purchasing Project

^a Principal Scientist, Department International Health, Abt Associates Inc., Bethesda, USA

^b Principal Associate, Department International Health, Abt Associates Inc., Bethesda, USA

Abstract: Health care payment reforms undertaken and studied during the past two decades were triggered by problems associated with cost escalation and overutilization of costlier and cost-ineffective curative services. However, public health services faced different problems—insufficient financing and underutilization. If the fundamental problems of medical care are different from those of public health services, can the systems for financing and paying for medical care also apply to public health services?

In an effort to answer this question, in this paper, we: (1) addressed the issue of who should pay for public health services in theory and who, in practice, paid for public health services; (2) reviewed experiences on how providers were paid, and presented countries’ practice of different payment systems, and explored lessons and evidence so far; and (3) recommended better financing and payment systems.

Keywords: resource allocation and purchasing, health care financing, public health program, health system development and reform.

Disclaimer: The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

Correspondence Details: Xingzhu Liu; 4800 Montgomery Lane, Suite 600, Bethesda, MD 20817, USA; Tel: (301) 347-5371; Fax: (301) 652-3618; Email: Xingzhu_liu@Abtassoc.com; Sheila O’Dougherty; 39 Begalina St. Almaty 480100, Kazakhstan; Tel: (7)3272-915775; Fax: (7) 3272-919370; Email: sheila@zplus.kz

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FOREWORD

Great progress has been made in recent years in securing better access and financial protection against the cost of illness through collective financing of health care. This publication – *Purchasing Priority Public Health Services* by Xingzhu Liu and Sheila O' Dougherty – is part of a series of Discussions Papers that review ways to make public spending on health care more efficient and equitable in developing countries through strategic purchasing and contracting services from nongovernmental providers.

Promoting health and confronting disease challenges requires action across a range of activities in the health system. This includes improvements in the policymaking and stewardship role of governments, better access to human resources, drugs, medical equipment, and consumables, and a greater engagement of both public and private providers of services.

Managing scarce resources and health care effectively and efficiently is an important part of this story. Experience has shown that, without strategic policies and focused spending mechanisms, the poor and other ordinary people are likely to get left out. The use of purchasing as a tool to enhance public sector performance is well documented in other sectors of the economy. Extension of this experience to the health sector is more recent and lessons learned are now being successfully applied to developing countries.

The shift from hiring staff in the public sector and producing services “in house” from non governmental providers has been at the center of a lively debate on collective financing of health care during recent years. Its underlying premise is that it is necessary to separate the functions of financing health services from the production process of service delivery to improve public sector accountability and performance.

In this Discussion Paper, Liu and O' Dougherty review the role of resource allocation and purchasing in public health. Population-based health promotion and prevention activities often have a large impact on overall health outcomes and large externalities (communicable diseases and secondary inhalation of smoke). Since the benefits of such services occurs months or sometimes years after they are delivered, there is often little consumer demand for them. Typically such services underutilized and underfinanced compared with spending on curative services that are used to treat acute illness. The authors highlight the various options for payment of public health providers and conclude that whatever payment method is used, the payment system should reflect provider performance and be on par with the income of other health professionals.

Alexander S. Preker

Lead Economist
Editor of HNP Publications

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INTRODUCTION

Health care payment reforms undertaken and studied during the past two decades were triggered by problems associated with cost escalation and overutilization of costlier and cost-ineffective curative services. However, public health services faced different problems—insufficient financing and underutilization. If the fundamental problems of medical care are different from those of public health services, can the systems for financing and paying for medical care also apply to public health services?

In an effort to answer this question, we will discuss financing public health services in both theory and practice, review the implementation of public health services payment mechanisms, and recommend better financing and payment systems.

Following this brief introduction, the second section addresses the issue of who should pay for public health services in theory and who, in practice, paid for public health services. The next section looks at how providers are paid, presents countries' practice of different payment systems, and explores lessons and evidence. The concluding section discusses policy options.

WHO SHOULD PAY FOR PUBLIC HEALTH SERVICES?

Although policymakers are aware that public health services are cost-effective, priority health interventions (Davis, Bialek, Parkinson, Smith and Vellozzi 1990a), these services are continuously underfunded in both industrial and developing countries. To address the problem of underfunding for public health services, two questions must be answered: (1) Who should be responsible for financing public health services? (2) Who has been responsible for paying for public health services? First, we will provide theoretical discussions on payment responsibility and then review payment practice.

PAYMENT RESPONSIBILITY IN THEORY

According to the economic classification of public health services, most community-based and universal public health services are public goods that can be consumed by all regardless of their actual payment. This “free rider” phenomenon constitutes a major problem of public health financing: although public good types of public health services are socially desirable, individuals are not willing to pay for them. The implication is that, theoretically, private payment cannot be relied upon to finance these services and that, to provide these services, government should take an active role in financing them (Hsiao 1995).

The consumption of quasi-public goods is exclusive, so individuals have some willingness to pay for them. However, the benefit valued by the users is less than the benefit that society values, because of positive externalities. For example, the total social benefit of an individual's consumption of immunizations equals the sum of the benefit gained by the immunized individual and by the individuals whose risk of infection can be reduced because other people received immunizations. The policy implication of quasi-public goods is that the people's welfare cannot be maximized if demand is determined only by an individual's willingness to pay. In other words, theoretically, policymakers cannot expect full provision and utilization of quasi-public good types of

public health services unless government takes a role in financing these services in addition to the part that individuals are willing to pay.

Besides the notions of public and quasi-public goods, there are three other reasons for supporting public financing of public health services. One is that, even for purely private good types of public health services (for example, screening for cancer and one-on-one preventive consultations), the actual benefit may not be well perceived by the individual consumer because of either lack of information or uncertainty about their benefit. Second, for individuals who cannot pay, the priority choices for consumption are life-saving goods and services such as food and some curative services rather than services that prevent disease. Third, an argument can be made that all personal preventive services have positive externalities in a society where public financing for health care or health insurance prevails, because the economic benefit of prevention or early detection of diseases will be shared by users, insurers, and the public as a whole (Dowd 1982).

The discussion of payers for public health services has rarely extended to insurers, although they play a widening role in paying for public health services for their beneficiaries and employees. In traditional theory, insurance exists because it can cover the economic loss from uncertain events (Black and Skipper 1999). It applies particularly to events with a small probability of occurrence but significant economic implications (well beyond the insured's affordability). The use of preventive services is neither uncertain nor does it imply significant economic loss; so, in theory, public health services are not something that insurance would generally cover.

However, because public health services can prevent diseases with high treatment costs, and because evidence of the cost-effectiveness of preventive care is accumulating, insurers are increasingly financially motivated to provide coverage for preventive care. In particular, when third parties and providers are integrated (for example, health maintenance organizations [HMOs] in the United States), the motivation for providing preventive care becomes stronger. In addition, economic theory suggests that adding coverage for preventive services could not only stimulate demand for them but could also increase the supply of public health services in the long run (Schauffler and Rodriguez 1993).

In summary, the theory strongly supports pure public financing of public goods and joint public and private financing of quasi-public goods. There is even weak theoretical support for complete private financing of private good types of public health services. Private financing applies only to those private goods (services) whose value consumers can readily perceive and for which they can pay. Insurers are potential payers for public health. Their responsibility for paying for some public health services may be strengthened by using financial incentives and regulatory tools.

PAYMENT IN PRACTICE

The Role of Government

Although public health services are priorities, funding for public health care services in many countries is constrained by the demand for personal/curative health services within the health sector and total funding ceilings for all public sectors. For lack of the right budget policies, or political reasons, or lack of cost-effective information for policymakers, less cost-effective

curative care is often overprovided and more cost-effective public health interventions are often underprovided (Mills 1997).

In industrial countries with publicly financed health systems, the government budget for health promotion and disease prevention is usually less than 2 percent of the total health budget, a percentage that has increased little over the past 20 years (Organisation for Economic Co-operation and Development 1998).

In Australia and New Zealand, where governments have greater power to determine allocation of health resources, funding for public health services as a percentage of the total health funding was between only about 2 to 3 percent and 1.7 percent, respectively (Durham and Kill 1999).

In the United States, a dominant portion of the trillion dollar health budget goes to medical care services, while only 2 to 5 percent is allocated to population-wide approaches to health improvement (McGinnis, Williams-Russo, and Knickman 2002; Wall 1998). Resource allocation in the United States is clearly imbalanced, in light of estimated explanations of reasons for premature death: genetic endowments (30 percent), social circumstances (15 percent), environmental conditions (5 percent), behavioral choices (40 percent), and medical care (10 percent) (McGinnis and Foege 1993).

In developing countries, public hospitals can absorb between 60 and 80 percent of government health expenditure, and the lion's share of this expenditure is often absorbed by secondary and tertiary hospitals in urban areas, leaving primary and preventive care with the smallest share (Mills 1997). The share of government spending for public health might be higher than in industrial countries, for example, 10 percent in China (Liu and Mills 2002) and between 15 and 20 percent in the Lao People's Democratic Republic (Kress, Liu, Lydon and Crouch 2002), but considering the greater need for public health services and limited total government health spending, the current funding for public health in developing countries lags behind.

There is no consensus on how much a country should spend on public health services. The World Bank recommends that about a third of the health budget should be spent on public health services in developing countries (World Bank 1993). Flessa (2000) did an in-depth analysis of the relationship between the share of the budget for public health services and per capita health spending for maximizing health outcomes in developing countries. It was found that to optimize the allocation of resources, the share of the budget for public health services should increase until per capita health expenditure reaches about US\$60 with 75 percent of this amount from public health services. The public health services' share would fall to 25 percent when per capita health expenditure reaches US\$250.

Experience is limited in ways to ensure adequate government funding for public health services. One example is in Canada (Chambers 1997), where the province of Ontario enacted legislation in 1983 for the provision of mandatory and priority public health services by local health authorities. Under the legislation, the provincial government provides 75 percent of the funding for mandatory public health programs (for example, food and water safety, immunization, communicable disease control) to the 42 boards of health and 100 percent of funding for priority programs such as prevention of human immunodeficiency virus/acquired immunodeficiency

syndrome (HIV/AIDS). In Ontario, funding for public health services is prioritized against funding for other activities. As a result, the legislation was considered an improved version of funding for public health services.

Another successful example is in New Zealand (Durham and Kill 1999) where a special budget was provided to ensure funding for public health services. The funding for public health functions was unbundled from the general health budget. This “ring fence” provided a legal mechanism to protect funding for public health services and avoid competition for resources from curative services. This mechanism led to a 10 percent annual increase in public health funding from 1994 to 1999, as compared with only a 6 percent increase in other health funding. Limited experience shows that to ensure adequate government funding for public health services, a separate public health budget unbundled from the general health budget and enforced through legislation is essential.

Insurance Coverage

Insurers or third parties (both public and private) have traditionally provided insurance coverage for curative care. However, third parties are increasingly playing a role in paying providers for public health services for their beneficiaries. This has resulted either from government regulations or from third-party motivation to reduce costs through disease prevention.

Although insurance coverage for preventive services proved to promote use of these services (Faulkner and Schauffler 1997), and there are some incentives for insurers to provide coverage and pay for them to reduce the costs of curative care, most insurers are still unwilling to pay. There are three main reasons for this. First, insurers are ill informed about the cost-effectiveness of preventive services. Second, the cost of covering preventive services is immediate, whereas the expected saving from reduced curative care is long term. A survey of 175 managed care organizations in the United States showed that the strongest barrier to the provision of screening services is their inability to generate short-term savings for the managed care organizations (Amonkar, Madhavan, Rosenbluth and Simon 1999) not only because of the long-term nature of the benefit, but also because of the high disenrollment rate, which means the benefit of one insurer’s investment in preventive care can be harvested by another. Third, for some preventive services such as health education on using seatbelts, the economic benefit from reduced car accidents can be enjoyed by multiple parties—beneficiaries, health insurance companies, and car insurance companies. As a result, none of these parties is willing to pay for these services completely.

The insurers’ unwillingness to pay for preventive services constitutes a major barrier to the utilization of cost-effective preventive services. In recent years, several policy tools were developed and tried out, particularly in the United States. One of these tools is “informing insurers,” by which evidence on the cost-effectiveness of preventive services is gathered; services are recommended for coverage and provision; and guidelines are made to specify the target population, quantity, and provision frequency of each of the recommended services (U.S. Preventive Services Task Force 1989). The second policy tool is government regulation, by which both public and private insurers are required by law to provide insurance coverage for specified public health services, which has been popular in all U.S. states since the early 1990s (Davis, Bialek, Parkinson, Smith and Vellozzi 1990a). The third approach is associated with

economic incentives, by which insurers are rewarded if they provide coverage for defined public health services. One example is the Pacific Business Group on Health in California, a health insurance purchasing alliance representing large private employers (Schauffler and Rodriguez 1996). This alliance negotiates coverage of comprehensive preventive service packages with insurers on the basis of mutually adopted guidelines and makes a percentage of their premiums contingent on their performance in covering preventive services. Reward is given to those who reach the defined performance target. Although no strong evaluation of the effectiveness of these strategies was found, it is well recognized that they have been the key determinants for increasing coverage of preventive services in the past decade.

Incentives For Consumers

Economic incentives come from two directions: one is a negative incentive (cost sharing and user fees) that reduces demand, and the other is a positive incentive (paying consumers for using preventive services).

Cost-sharing mechanisms have been used to cut costs by potential reduction in use. Cost sharing can reduce utilization (Liu 2002), but the reduction is not selective. There is substantial evidence that cost sharing can reduce utilization of both curative and preventive care. Evidence from a study done by RAND suggests that the use of preventive services, as with the use of other health services, is sensitive to cost sharing (Lillard and others 1986; Lohr, Brook, Kamberg, Goldberg, Leibowitz, Keeseey, Reboussin and Newhouse 1986; Lurie, Manning, Peterson, Goldberg, Phelps and Lillard 1987). Specifically, it was found that women and children were less likely to receive certain types of preventive services in a cost-sharing plan (for example, Pap smear and immunization), and that the poor are more affected than the nonpoor.

Another study in the United States (Solanki, Schauffler, and Miller 2000) tested the effects of different forms of cost sharing on the utilization of recommended clinical preventive services on the basis of a stratified random sample of 10,872 health insurance enrollees for four clinical preventive services: mammography screening, cervical cancer screening, blood pressure screening, and preventive counseling. Under all forms of cost sharing, both negative and significant effects were found on all preventive services, except for blood pressure screening. Evidence suggests that eliminating cost sharing for these services may be an important step in increasing utilization to the recommended levels.

User fees raised a great deal of concern over the possibility of drops in utilization of necessary and cost-effective care by those people who have no ability to pay. The studies on the effects of user fees (de Bethune, Alfani, and Lahaye 1989; Huber 1993; Hussein and Mujinja 1997; Waddington and Enyimayew 1989; Yoder 1989) found that the introduction of fees led to a significant decrease in utilization of services including curative and preventive services.

An interesting experimental study was performed in Denmark (Christensen 1995). This study examined how conditions of payment influence attendance at preventive health examinations. A multipractice study of 65 general practitioners was conducted in two areas in the county of Aarhus, Denmark. The general practitioners invited 2,452 men age 40 to 49 years to a preventive health examination for coronary heart disease. The examination was free in one area but cost \$40 in another area. Results showed that the attendance was 37 percent in the area that required

payment and 66 percent in the area where the examination was given for free. It was concluded that where payment was required for health examinations, fewer patients obtained examinations.

Based on research findings that user fees deter utilization of preventive health services in most settings, the World Bank, the World Health Organization, and many other agencies discourage the application of user fees for preventive care. The Global Alliance for Vaccine and Immunization explicitly rejects the use of user fees in financing immunizations (World Bank 2002).

However, there is evidence that in both industrial and developing countries where complete coverage exists and preventive services are free of charge (cost sharing and user fees), these services remain underutilized. In the United States, preventive services continue to be underutilized despite increasing interest in disease prevention and a growing body of evidence demonstrating the effectiveness of preventive services. Surveys have documented that clinical preventive services are less frequently used than recommended by the U.S. Preventive Services Task Force (1989), and that free services provided to users at the point of service can only result in a utilization rate averaging between 30 and 40 percent (Schauffler and Rodriguez 1993). In many developing countries, immunizations are free of charge, but the rate of immunization coverage has been below 60 percent. Among many other factors that may determine the utilization of preventive services, it has been recognized that users incur some costs even when the services themselves are free. For example, the existing health care system produces care for “healthy children” by requiring that parents take their children to health care providers at scheduled intervals. These frequent visits are often inconvenient and time consuming, so for many parents the real cost of the visit is much greater than the out-of-pocket financial burden (Halfon, Inkelas, and Wood 1995).

Positive financial incentives for users have been tried in many countries to promote utilization of public health services given the above rationale. For example, between 1975 and 1978 Austria motivated women to accept antenatal examinations and infant check-ups (Leodolter 1978) using cash rewards. In Germany, a financial incentive of DM100 was provided to women at their first prenatal visit to improve prenatal care (Davis, Bialek, Parkinson, Smith and Vellozzi 1990b). France has provided a modest but positive incentive for prenatal visits (Buekens, Kotelchuck, Blondel, Kristensen, Chen and Masuy-Stroobant 1993) for 40 years. In Finland, mothers receive packages of baby care provisions, including new clothing and a baby bathtub, if they attend the clinic prior to their fifth month of pregnancy (Davis, Bialek, Parkinson, Smith and Vellozzi 1990a).

Publications on the use of positive financial incentives are not rare, but they mostly concern immunizations, with only a few relating to other preventive services. Loevinsohn and Loevinsohn (1987) reported the use of a small material incentive (flour, milk, cooking oil, canned meat) as a strategy for improving primary care in Nicaragua. The proportion of the total population immunized under the age of six was highest for mobile clinics with food (99.2 percent) and stationary clinics with food (94.1 percent), compared with mass immunization campaigns (77.1 percent) and mobile clinics without food (63.3 percent).

Moran, Nelson, Wofford, Velez, and Case (1996) experimented with a lottery-type incentive to encourage lower-income patients in Massachusetts to accept immunization against influenza. Immunization recipients became eligible to win one of three grocery store gift certificates. The modest monetary value helped ensure that the incentive was not viewed as coercive. Compared with individuals who were not offered any incentive, those eligible for the incentive were significantly more likely to be immunized (20 percent of the control group versus 29 percent of the intervention group were immunized).

In California, a school-based immunization effort targeting 4,928 seventh-grade students for hepatitis B vaccine used a variety of incentives (extrascholastic credits, pizza, stationery, and social events) to motivate a timely return of parental consent forms. Seventy-one percent of students received the first dose of the vaccine, and of these 93 percent completed the three-dose series. The use of incentives for the return of consent forms proved to be one of the major determinants of successful immunization (Unti, Coyle, Woodruff, and Boyer-Chuanroong 1997).

Examining the influence of different degrees of promotion on immunization uptake in a city in the United States, Yokley and Glenwick (1984) targeted all children five years of age or younger who were clients of a public health clinic. Three lottery-type monetary incentives (US\$100, US\$50, and US\$25) were offered in combination with a specific prompt (for example, the client's name and overdue immunizations). It was found that the combined monetary and specific prompt incentive was associated with a 17.7 percent increase in immunization coverage compared with groups without interventions, and a 15.3 percent increase compared with groups who only received prompts.

In New York, Birkhead, LeBaron, Parsons, Grabau, Maes, Barr-Gale, Fuhrman, Brooks, Rosenthal, and Hadler (1995) assessed the effectiveness of different interventions on measles' immunization rates among preschool children enrolled in the special Supplemental Food Program for Women, Infants, and Children. In addition to an escort to the clinic and passive referral for immunization, a third intervention required families of children aged 12–59 months to pick up food vouchers on a monthly schedule. Children at voucher incentive sites were 2.9 times more likely to be immunized than children without this incentive.

In a literature review of the financial incentives for the utilization of immunization services, Achat, McIntyre, and Burgess (1999) concluded that with detailed planning and careful organization, financial incentives for users could result in an improvement in immunization coverage.

HOW SHOULD PROVIDERS BE PAID?

To increase the use of preventive services, not only should the consumers' financial barrier be reduced, but the financial incentive for physicians to provide such care should also be improved by using appropriate payment systems (Davis, Bialek, Parkinson, Smith and Vellozzi 1990a; McGinnis, Williams-Russo, and Knickman 2002).

GLOBAL BUDGET

Many countries actually use a global budget to pay for public health services. Notably, in Central Asian countries, governments provide annual global budgets to tuberculosis hospitals. In China, the governments at different levels provide global budgets to disease control centers (Liu and Mills 2002). In Western Europe, global budgets are provided for public health activities. In the United States, state governments provide global budgets to local health departments for the provision of defined public health services (Chapin and Fetter 2002). However, few studies examine whether the global budget can promote public health services delivery.

FEE FOR SERVICE

Although it can be argued that fee-for-service (FFS) payments for preventive services can lead to their overutilization (Schauffler and Rodriguez 1993), excess use of preventive care resulting from FFS payments to physicians has never been documented (Davis, Bialek, Parkinson, Smith and Vellozzi 1990b). It has been argued that unrestricted FFS reimbursement of individual preventive services is expected to achieve the highest level of utilization for preventive care.

Social insurance schemes in many countries use FFS to pay for preventive services, based on the belief that FFS payment can motivate providers to render preventive services and promote their utilization.

In the United Kingdom, where physicians are paid based on capitation, some core preventive services are traditionally outside the capitation payment. These services are paid for on an FFS basis to encourage the provision of these services, which includes Pap smears, prenatal care, immunizations, and family planning (Donner-Banzhoff, Kreienbrock, Katic and Baum 1998; Fry and Stephen 1986; Hughes and Yule 1992).

In Canada, where physicians have been reimbursed on an FFS basis, preventive services are relatively generously reimbursed, and there is no constraint on the provision of preventive services as is the case for curative services (Bass and Elford 1988).

In Germany, physicians are paid based on FFS, but there is a limit to the amount that can be reimbursed. To promote provision and utilization of preventive care, some preventive services such as maternal and child health are excluded from the limitation (Davis, Bialek, Parkinson, Smith and Vellozzi 1990a).

In the United States, the federal government has already used economic incentives to affect the mix of services provided. The Resources-Based Relative Value Scale used by the Medicare program was in part adopted to encourage physicians to provide primary and preventive care, which is relatively generously reimbursed.

The most successful story is reported from Japan, where the government has not only exerted tight control over the price of medical services, but has also been promoting the delivery of certain cost-effective and preventive services by manipulating their prices (Campbell and Ikegami 1998, Ikegami 1992). Primary care is promoted through higher fees, and some costlier services are reduced through lower fees.

CAPITATION

Capitation payment is used to pay mainly for bundled primary care including preventive services. The specific services covered by capitated payment are often not explicitly defined, giving providers flexibility on what to provide. Payment for preventive services only on a per capita basis is called a “periodic health visit fee,” which will be discussed separately.

In theory, capitation payment can motivate physicians to provide preventive services, because the prevention of disease can avoid treatment costs. Early detection and diagnosis of diseases can reduce the costs of treatment due to disease progression, and preventive services can minimize the long-term consumption of health care services (Dowd 1982; Hornbrook 1983).

However, it can also be argued that the level of incentive to provide preventive care to keep patients healthy depends on how frequently enrollees change their providers. Switches between providers increase the expectation that the economic benefit of a provider’s “investment” in prevention can be reaped by other providers, thus it may discourage the provision of preventive care. In addition, preventive services are cost-effective to society, but not necessarily for the third-party payers, depending on the share of the treatment cost they must bear. For example, a screening program would be perceived as cost-effective by a third party only if the savings due to the prevention of diseases were greater than or equal to the expense of the program. Another disadvantage of capitation payment is that it discourages costlier outreach preventive visits.

Studies on the effect of traditional capitation payments to providers on the provision and utilization of preventive services are limited, but generally support the conclusion that providers receiving capitated rates are more likely to provide preventive services than those under FFS reimbursement (Balkrishnan, Hall, Mehrabi, Chen, Feldman, and Fleischer 2002; Barnum, Kutzin, and Saxenian 1995; Lennon and others 1990).

SALARY

Available literature on salary payment is not specifically related to paying for public health services. Gosden, Pedersen, and Torgerson (1999) did a comprehensive literature review of the effect of salary payment on general practitioners’ provision behavior. Twenty-three papers of reasonable quality were included in the literature review. The authors found that payment using salaries was associated with the lowest use of curative referrals and procedures and more preventive care, as compared with FFS payment.

One supporter of salary payment (Pontes 1995) argues that it is desirable because it provides a neutral incentive to doctors’ behavior. As a result, what a doctor recommends and prescribes depends wholly on the need of patients, his/her medical knowledge, and the availability of resources. Doctors’ provision behavior can be improved through education, providing them with scientific evidence, and offering provision guidelines. The disadvantages of low productivity and low morale can be overcome by the proper design and implementation of bonus systems and the use of various nonfinancial motivations.

PREVENTIVE SERVICE ACCOUNT

With a preventive service account, a total fixed annual amount of preventive services for an individual is placed in an account, and providers are allowed to charge this account on an FFS

basis. The amount allocated to each account depends on the need for preventive services and the cost of providing these services. For example, the amount in a newborn baby's account may be equivalent to the costs of providing prenatal and postnatal care, immunizations, growth monitoring, and nutritional consultations; the amount for a man age 21–44 years may be equivalent to the costs of providing behavioral consultation and monitoring blood pressure and cholesterol. Any unused balance could be carried over to subsequent years.

The advantages of this payment method are that it lets patients decide what services they wish to receive (for example, counseling regarding smoking versus repeated cholesterol tests), and to a certain extent it prevents overprovision, because the total amount of annual spending is individually capped. The major disadvantages are that it provides providers with no incentive to recommend the most cost-effective preventive services for the given amount of chargeable budget; it may not ensure effective use of the limited budget for preventive care; and there is still a risk of excessive provision.

This payment method was proposed about 10 years ago by Davis, Bialek, Parkinson, Smith and Vellozzi (1990a). The authors of this report found neither information on practical implementation of this method nor publications on its evaluation.

PERIODIC HEALTH VISIT FEE

With a periodic health visit fee (PHVF), the provider receives a periodic fee (for example, per year) for a defined package (types and volume) of preventive services provided to a patient. PHVF is different from traditional capitation payment in that the types and volume of PHVF services are defined in advance; under traditional capitation, the providers decide which services to provide. The second difference is that PHVF covers preventive services exclusively, and traditional capitation covers both curative and preventive services.

Davis, Bialek, Parkinson, Smith and Vellozzi recommended PHVF as a payment for preventive services because it balances the incentives and the disincentives that different payment methods would generate. It provides adequate incentives for physicians to provide these services that are specified in advance, and it helps to educate physicians about what services are appropriate for patients of different characteristics, through the check-off claim form that specifies which services should be provided to what kinds of people. It promotes efficient use of resources, because the package of preventive services is defined based on the best knowledge of the cost-effectiveness of preventive services. It rewards good performance and provides incentives to complete the service package. In addition, by making the primary care physician responsible for managing the predetermined fee, there is an incentive to use less costly nonphysician personnel to provide the services. At the same time, by not permitting direct reimbursement to nonphysician personnel, insurers retain a greater degree of control over the types of health professionals providing the preventive services.

The difficulties involved in implementing this payment method are first, that the administration cost is high because it requires monitoring and evaluation. Second, if patients request additional preventive services, reimbursements need to be made separately. Finally, providers may be penalized for not providing services simply because patients choose not to receive the included services.

As with preventive service accounts, this payment method was proposed (Davis, Bialek, Parkinson, Smith and Vellozzi 1990a), but neither information about its implementation nor evaluation reports are available.

PERFORMANCE-RELATED PAY

Performance-related pay (PRP) means that payment is directly linked to the performance of health care providers. PRP has a long history, but was not formally introduced into the health sector until the end of the 1980s. Now it is a popular method of paying for general health services. PRP has been increasingly introduced into the public health arena, particularly in the United States and other industrial countries. In the United States, large health care purchasers are seeking to buy “value” for their health care dollars and are beginning to define value in terms of disease prevention and improved health status. One example is the Pacific Business Group on Health in California (see above). The six performance indicators were cesarean sections, childhood immunizations, cervical cancer screening, diabetic retinal exams, mammography screening, and prenatal care, most of which were indicators on preventive services. PRP was generally found effective in promoting performance.

In 2000 in the United States, the Wisconsin Division of Public Health reformed its allocation of federal and state funds by basing contracts on performance to replace the original audited cost-based funding mechanism to local health departments (Chapin and Fetter 2002). The health authority in Wisconsin implemented the following: (1) the total fund allocated to local health departments was determined by considering service levels, the general population, the target population, risk factors, and geographic factors; (2) numerous contractors were consolidated into one large block contract; (3) a quasi market was created, where the buyer (state division of public health) and sellers (local health departments or other nonprofit organizations) negotiated prices and products; and (4) objective performance measures were specified, so that the contract was based on the realization of a set of performance indicators of public health. This reform simplified administration because there was no requirement for a proposal, no requirement for budget submissions, no periodic progress reports, and rewards and penalties were based on evaluation of attainment of the performance indicators.

In the United Kingdom, a performance-based contract was introduced by the National Health Service in 1990 to pay general practitioners for delivering immunization services. Under this contract, general practitioners who achieved a high (90 percent) or low (70 to 89 percent) target level were eligible for payments of £1,800 and £600 respectively. Ritchie, Bisset, Russell, Leslie, and Thomson (1992) examined the change in immunization rates in the first three quarters after the introduction of the new contract in 1990. The number of clinics achieving 95 percent or higher immunization coverage increased from 31 percent to 81 percent for primary immunization, and from 23 percent to 81 percent for preschool boosters.

In 1997 in Australia, a number of Commonwealth Departments of Health and Family Services introduced incentive pay based on performance, which was aimed at improving immunization coverage rates (Leese and Bosanquet 1996). One approach was to pay bonus payment to practitioners according to the percentage of fully immunized children; another approach was an immunization allowance paid when the child reached 19 months and had received all

vaccinations due up to 18 months of age. These two approaches were reported to be effective in increasing immunization coverage.

Payers of health care services in developing countries have not typically required provider institutions to guarantee performance. This lack of accountability has contributed to poor performance of public health programs. Donors usually adopt the practice of country governments, either providing lump-sum grants or reimbursing public providers and nongovernmental organizations for documented expenditure. The result is that most provider organizations devote more energy to securing funds than to improving performance.

A demonstration of PRP was implemented in Haiti, supported by the U.S. Agency for International Development (Eichler, Auxila, and Pollack 2002). In 1999, recognizing the disadvantages (weak incentives for improving performance), the project transferred from a cost-based payment system to a performance-related payment system, by which performance indicators were established and measured by year-end, and a performance-based bonus on top of the monthly payment was distributed according to provider performance.

Results showed improvement in the overall performance. Performance indicators related to preventive services (immunization and use of contraception) had greater increases. However, the number of pilot districts was small (three), and many other factors that might have affected performance indicators were not controlled for and analyzed.

TOWARD BETTER FINANCING AND PAYMENT POLICIES

ENSURE SUFFICIENT FINANCING

There is widespread agreement in both theory and practice on what public good types of public health services should be exclusively publicly financed. They include universal public health services such as policy development and enforcement, public health information systems, treatment of polluted water, prevention of air pollution, health education programs through the media, and vector elimination programs for the prevention of infectious diseases. These services are both publicly financed and provided through publicly owned provision systems, although some of these services are contracted out to the private sector.

There are controversies, however, regarding quasi-public goods. In theory, services such as immunization and treatment of communicable diseases can be jointly financed by both government and consumers. However, there is no knowledge about the proportion of the total financing need that should be covered by government. In practice, the financing of these services should vary with a country's state of economic development, the type of health care system, and the cost of delivering such services.

- For low-cost services of public health significance such as immunizations, public financing has been implemented in almost all countries, except for vaccines not included in the national immunization programs and countries where some immunizations are covered by private insurance. There is little doubt that these services should be financed through government, and all countries are encouraged to do so.

- For services of medium cost such as tuberculosis and malaria treatment, if disease prevalence is low, often the disease may not attract public health attention, and if it is high, pure public financing and free treatments may be beyond the affordability of the government. To ensure adequate provision and utilization of these services, policymakers should first explore the possibility of government financing to ensure that government makes the best effort to finance these services. In countries where social and private insurance prevail, third-party coverage for these services should be regulated (although consumers pay part or all of the premium). In countries where the need for these services is high and whose ability to finance these services is limited, donor support is often a choice. Out-of-pocket payment at the point of services should be prohibited.
- For high-cost services such as antiretroviral treatment for HIV/AIDS, probably only some high-income countries can afford to pay for them. In low-income countries, where prevalence is high (for example, in Sub-Saharan African countries), it might not be feasible for the government to cover the costs of providing free care, or possible for insurers to provide coverage. Hard decisions have to be made to ration these services (drugs), based on ability to pay, except when international financing support is available.

Private good types of public health services (for example, screening, prenatal care, and private consultation for disease prevention) are different from traditional private goods in that the true value of these services is often underestimated. Utilization determined by individual willingness and ability to pay often leads to underutilization of these cost-effective, low-cost, and socially desirable services. Thus, policymakers are encouraged to use policies to ensure that these services are either financed by the government or through a third party. Direct payment for these services should be discouraged.

Improving resource allocation and realizing sufficient financing for public health will need long-term, continuous efforts. Policymakers should be informed on the cost-effectiveness of different public health services, both relative to one another and in comparison with curative services. Health services should be prioritized at the national level according to the cost-effectiveness of various health interventions. Continuous research is needed to check whether the actual resource allocation matches the prioritized health services. Political will and commitment are the major determinants, and regulation and legislation have proved to be effective ways of ensuring financing. Two types of regulations can have a direct effect on the financing of public health services: (1) both public and private insurers should be regulated to cover specified public health services; and (2) government can improve its allocation of resources at the macro level for financing public health services by regulating the proportion of the health budget that should be allocated to public health and setting up a budget that is separated from the overall health budget.

DESIGN APPROPRIATE PAYMENT SYSTEMS FOR EFFICIENT PROVISION

Appropriate payment systems should be able to send the message to providers to deliver the right kind and volume of public health services and to promote socially desirable performance. Regardless of what payment methods are used, public health services providers should be fairly paid. Payment should reflect providers' performance, and the income of public health workers should not be inferior to that of other equivalent professions.

Payment By Performance

Evidence in both industrial and developing countries suggests that the link between performance and payment can result in better performance, so some form of performance-related pay is recommended. While the concept of PRP is simple, there is no uniform and universal method for designing and implementing PRP. It needs innovative efforts suited to a country's socioeconomic context, the goals of the public health program, and the measurability of performance. Generally, in designing PRP schemes, the following points are particularly important. First, PRP can be used to pay government bodies, public health institutions, and individual health workers (working independently or serving as employees of public health institutions). The essence of PRP is that, for any resources transferred from one party to another, there must be monitoring and evaluation of what the payers are supposed to purchase, regardless of who buys from whom.

Second, performance measures may vary depending on the specific objectives of the public health programs, but they generally consist of quantity, quality, and health outcome measures. Because the association between the volume of public health services and health outcomes is closer than that between curative care and health outcomes, the volume of public health services is a better measurement of performance than the volume of curative care.

Third, any performance measures should be socially desirable and consistent with the measurements of health system performance.

Fourth, to provide strong enough incentives for providers to perform in a desirable manner, the share of the payment based on performance should be significant, and PRP should be able to reward good performance and penalize poor performance.

Global Budget Versus Performance-Related Pay

Global budget appears to be the most popular payment method used by higher-level government to pay lower levels of government, and by overall government to pay public health institutions. Government funding often has to be transferred several times from higher to lower levels before it reaches public health providers, especially when public health programs are vertical and centralized. Public health institutions are often publicly owned and financed directly by the government for the provision of public health services. The global budget has been an effective method for paying providers for curative care in terms of cost containment. It is problematic in terms of health system performance, because instead of being performance based, payment is often based on need (the number of individuals served, with or without risk adjustment), the previous year's budget, and cost incurred. In any of these types of budget practice, the payees are seen as either money-transfer machines (lower levels of government) or money-spending machines, with little incentive to maximize their performance.

In recognizing the shortcoming of the global budget and the difficulties of totally switching from a global budget to PRP, the combination of the two may increase feasibility and produce a desirable effect. Actually, most of the PRP schemes cited earlier take this hybrid form. In implementing this combination, a proportion of the global budget can be withheld and used for redistribution according to the performance monitoring results.

Capitation Versus Fee For Service

In view of the up-to-date information that there is little documented evidence on overprovision of public health services as a result of the FFS mechanism, that FFS has been used successfully to promote the delivery of public health services, and that capitation payment alone cannot ensure adequate provision of public health services, capitation payment for general health care with supplemental FFS payment for preventive services is recommended. It is likely that this will control unnecessary provision of curative care and ensure adequate provision of preventive care. In countries where FFS is dominant and capitation payment is nonexistent, the fees for preventive services should be set at a higher fee/cost ratio than for curative services so as to provide enough motivation for provision of preventive services. To prevent overprovision of preventive services, providers should be given delivery guidelines indicating both the types and volume of services for specific sex and age groups. Providers should be monitored against these guidelines.

Salary Versus Performance-Related Pay

Health workers employed by institutions are usually paid by salary. Evidence shows that when health workers provide both curative and preventive care, salary payments provide neutral incentives to avoid overprovision of curative care and underprovision of preventive care. However, this does not mean that salary payments provide enough incentive for the provision of socially desirable preventive services. To promote the delivery of preventive services, health workers should be paid a performance-related bonus on top of their basic salary, depending on how well they have provided preventive services. Institutions may not be willing to pay their employees on the basis of performance indicators associated with provision of preventive services, however, unless the institutions themselves are paid according to such performance indicators.

When salary is used to pay health workers, specifically those providing public health services, the issue is not the allocation of resources between curative and preventive care. Rather, it is an issue of morale and productivity, as measured, for example, by the number of units of preventive services provided per unit of time. To increase morale and improve productivity, some forms of PRP should be designed and implemented on top of basic salary payments.

Promote Adequate Utilization

Adequate utilization needs more than appropriate provider payment systems. Some demand-side measures should also be adopted. First, users' financial responsibility at the point of service should be minimized. Evidence supports the conclusion that, for those preventive services, adequate utilization of which is the policy goal of public health, any form of cost sharing and user fees should be prohibited.

Second, other costs (indirect costs such as time and travel expenses) for the utilization of preventive services should be reduced as much as possible by increasing the availability of providers, improving geographic access to preventive care, and timing service delivery conveniently (for example, services should be made available outside working hours).

Third, positive financial incentives can be offered for using specific priority preventive services. There is both practical and positive evidence for their utilization, especially in the areas of immunization and prenatal care.

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1818 H Street, NW
Washington, DC USA 20433
Telephone: 202 473 1000
Facsimile: 202 477 6391
Internet: www.worldbank.org
E-mail: feedback@worldbank.org