Equity in Paying for Health Care Services under a National Insurance System

RACHEL FLOERSHEIM BOAZ

The debate over the future of the health care delivery system evolves around the policy issue of what constitutes a fair distribution of the medical services which are considered essential to prolonging life, curing disease, and relieving pain. A case can be made that a socially equitable distribution implies that consumption of medical services is independent of the consumer's income and payment for them unrelated to utilization. The present paper examines to what extent the provisions for financing a national health insurance system are likely to advance or hinder the fair distribution of health care services. Almost all bills specify a mix of direct (cost-shared) and indirect (prepaid) financing. When cost-sharing is based on the quantity of services or on the level of medical expenditure, it helps divert medical care and health insurance benefits to high-income persons at the expense of their low-or moderate-income counterparts. When indirect payments or premium levels are determined by insurance risks rather than by income, they may be too high for persons with moderate means, and are likely to exclude such persons from the national insurance program. When health insurance is tied to salaried employment, it discriminates against the unemployed and the self-employed. To rectify such inequities, some NHI proposals specify separate insurance plans for the disadvantaged. Such programs, which require income-testing to determine eligibility, are likely to be plagued by administrative complications currently engulfing other means-tested social welfare programs. The present paper makes some recommendations for the purpose of avoiding these difficulties and fostering equity in health care.

The avalanche of national health insurance (NHI) bills, introduced in the Congress reflects voter dissatisfaction with the present payment arrangements and the continuously rising cost of medical care. Three broad areas of concern are the subject of this legislation; they are briefly denoted as: (1) coverage or the extent of benefits; (2) payment or the financing provisions; (3) governance or the implementation of the NHI program and planning its future. Many issues are being raised as the debate continues; their resolution could have a profound impact on the future of the entire health care delivery system. Hence, the implications of a proposed national health insurance law should be viewed in the framework of a long-term rather than a short-term perspective.

The present paper focuses on the financing provisions and their effects on equity in distributing health care services and al-

locating the burden of paying for them. To be equitable, medical care would have to be "income blind." The consumption of medical services would have to be independent of income, and payments would have to be unrelated to utilization. The financing mechanism, which is instrumental to removing the nexus between services and payment, would have to be based on income so that the cost of medical care could be universally and equally shared.

The concern with a fair distribution of medical services stems from their unique and sometimes crucial role in prolonging life, curing disease, and relieving pain. Illness is a universal hazard which strikes across all income classes; but the medical technology essential to accurate diagnosis and effective treatment can only seldom be fitted to income size. Insurance protection is, therefore, sought in an attempt to avoid the financial distress of large medical bills.

The principle of insurance implies that either all or a substantial portion of the funds required to finance covered services are obtained through prepayment. The prepayment amounts can be named "premium" or "tax." When a premium is mandated by the government, it is in effect compulsory; and a compulsory payment by any name is equivalent to a tax whether levied by the government or by a private organization. If part of the covered medical services are directly paid or "cost-shared" by the consumers of the services, then the level of premium or tax levy can be reduced accordingly. A high level of cost sharing by the users of medical facilities can reduce substantially the level of premiums paid by all insured persons; it can make an insurance plan considerably more attractive to a large number of persons who would not expect to use medical facilities immediately.

The major bills before the Congress reflect some minimum common denominator of agreement. They all specify some form of (1) subsidized health insurance for the poor and (2) protection against catastrophic expenses for the entire population. But they differ on (1) what is an adequate level of medical assistance; (2) what constitutes a catastrophic expenditure level; (3) what is the desirable mix of indirect (prepaid) and direct (cost-shared) financing. Without reference to individual bills, this paper discusses the broad characteristics of their financing specifications and examines their implications for sharing the burdens of prepayments and determining the distribution of benefits and services. Section I out-

lines some of the provisions for indirect financing, and Section II describes some of the cost-sharing requirements. Section III examines the merit of these payment arrangements and their policy implications. Finally, a concluding section suggests some policy guidelines and recommendations.

Indirect Financing of Medical Care

Indirect financing of medical services can take the form of a premium or a tax which can be based either on insurance risk or on income. The base determines who shoulders the burden of prepayment for care. The premium levels which are set by private insurance organizations are experience-rated; they are based on insurance risks, and are designed to reflect differences in protection due to these risks. Premiums that are determined by risk can vary widely among persons with equal income; or they can be equal for persons with widely different income levels. For any given risk level, the burden of paying such a premium becomes easier as income increases. Alternatively, premium levels that increase with income distribute the burden in an equitable way. But such income-related payments would require information on individual incomes. By virtue of its authority to collect income taxes, the government is legally entitled to such information, and no one else is. Thus, in effect, only the government can secure an equitable sharing in the burden of paying for medical care.

The issue of equity in indirect financing permeates every bill; and though the bills differ in their specific provisions, they can nevertheless be classified into two groups with respect to the insurance base which they specify. One group of bills stipulates that premium levels should be proportional to income or earnings at least up to a specified ceiling; the size of the premium is determined on a basis which applies equally to the entire population and its amounts will be collected by the federal government. Another mandates that premiums are to be paid to private insurance organizations. The bills in this group specify what share of the premium is directly paid by the policyholders and what share is paid by them indirectly through their employers; the level of the premium is left to negotiation between the policyholders or their employers and the insurance carriers. Enrollment in the private in-

surance plan is usually voluntary for the employee but obligatory for the employer. Individuals who are either self-employed or unemployed are entitled to purchase individual policies for which the premium levels are higher than those paid in group insurance. Thus, such premium levels paid for private insurance protection reflect not only differences in risk but also in employment status.

At present, the coverage of private health insurance, which is based on risk, differs greatly among persons with different incomes. Insurance against the cost of hospital and surgical services, which is the most common form of health insurance, is not universal and varies with income. Table 1 presents the proportion of prime-age persons (under 65) who did not have such insurance in 1968. The proportion of persons aged 25–44 and 45–64 who had no insurance coverage declined rapidly when income increased, and

TABLE 1

Number of Persons with No Health Insurance by Family Income and by Selected Age Groups, 1968

INCOME ($)	TOTAL POPULATION	UNINSURED PERSONS		
		All Such Persons		Persons Who Cannot Afford Insurance
	'000 (1)	'000 (2)	% of Col. (1) (3)	% of Col. (1) (4)
		Ages 25–44		
Under 3,000	2,694	1,814	67.3	37.2
3,000–4,999	4,266	1,749	41.0	19.1
5,000–6,999	8,889	1,598	18.0	6.1
7,000–9,999	12,009	1,017	8.5	2.2
10,000–14,999	10,985	637	5.8	0.8
15,000 and over	4,916	255	5.2	a
TOTAL [b]	44,953	7,521	16.7	6.4
		Ages 45–64		
Under 3,000	4,589	2,522	55.0	28.0
3,000–4,999	4,840	1,523	31.5	13.2
5,000–6,999	7,056	1,085	15.4	4.9
7,000–9,999	7,930	661	8.3	2.3
10,000–14,999	7,640	511	6.7	1.2
15,000 and over	5,269	288	5.5	a
TOTAL [b]	40,153	7,115	17.7	6.8

Source: DHEW (1972: Tables 3 and 17).

[a] Very small
[b] Total exceeds the sum of the components because it includes persons whose family income is not known.

so did the percentage of persons who stated that they could not afford to pay the insurance premium. Results of a similar nature were obtained from a Social Security survey (Kolodrubetz, 1974) of group health insurance coverage among full-time employees; at least 40 percent of persons with wages and salaries under $5,000 but only 10 percent of all individuals earning over $9,000 in 1971 had no group health insurance coverage.

To counteract the effect of fixed premiums that are high relative to income, some bills specify direct and explicit subsidies. However, since the level of such direct subsidies depend on income, "means" or income tests would have to be used to determine eligibility. As such, these subsidies would create "notch" problems similar to those that have plagued so many other social programs.[1] Moreover, though the national health insurance bills propose these subsidies for the poor and near-poor, they also permit an indirect subsidy, through the federal income tax, for the premiums paid under the regular employer-employee and individual plans. And as Table 2 shows, when income levels increase, such subsidies constitute an increasingly larger proportion of the premium level. Thus, while the explicit subsidies for premiums paid by the low- and moderate-income groups are expected to fall off as income increases, the implicit, or tax-shelter, subsidies actually increase with income. By contrast, premiums collected as a social insurance tax do not qualify for such a tax exemption.

The most prevalent form of private insurance is group insurance through employment, where the employer has the responsibility for negotiating the premium levels with the insurance organization and for collecting premiums on its behalf. Premiums are determined according to the insurance risk, which is based on the past experience of the group. Since an employer often pays

[1]The "notch" (or slight) increase in income can result in a "cliff" (or large) decrease in the subsidy. The notch problem (as it is called) results from an abrupt, instead of a smooth, change in the level of benefits at the boundary of each income class that is subsidized. An example, taken from the Nixon administration's proposal in 1974, can serve to illustrate this point. Suppose an individual who earns $5,200 pays $120 as a premium; if his income increases to $5,400, his premium increases to $240. Thus a $200 additional income gives rise to a $120 additional payment; the net income at his disposal is $80. Individuals so affected have an incentive to deliberately keep their income from rising, as they will find it hardly worthwhile to make the effort.

TABLE 2

Subsidy[a] for Health Insurance Premiums by Income Class, 1970

Adjusted Gross Income[b] *(Dollars)*	*Mean Insurance Premium (Dollars)*	*Subsidy as Percentage of the Premium*
Under 1,000	152	0.4
1,000–1,999	192	6.2
2,000–2,999	177	9.5
3,000–3,999	186	9.3
4,000–5,999	184	9.8
6,000–9,999	194–196	9.6–10.7
10,000–14,999	195–198	11.1–13.6
15,000–24,999	204–214	14.7–16.4
25,000–99,999	224–243	20.6–25.6
100,000–999,999	241–253	23.5–24.5
1,000,000 and over	219	23.3

Source: Mitchell and Vogel (1972: 12, Table 4).

[a]The subsidy is defined as the amount of unpaid income taxes due to the exemption of income from the federal income tax (also referred to as "tax expenditure").

[b]This is the definition of income used by the Internal Revenue Service (IRS).

directly a considerable portion of the premium, such an arrangement provides an incentive for both the carrier and the employer to exclude high-risk persons from the insurance plan; and if such an exclusion is forbidden, there is strong incentive to a bar a high-risk person from employment altogether. Most bills specify that an individual who is not an employee can qualify for an individual policy or enroll in a government plan. But individual policyholders would have to pay much higher premium levels than comparable members of a group plan.[2] Thus, depending on insurance risk and employment status, premium levels can be high relative to a nonpoor income. Yet, there is nothing inherent in a national health insurance program that requires it to be tied to employment. It is only a historical accident that health insurance has become a fringe benefit of employment. In periods of unemployment, such nexus creates additional hardships for unemployed persons, removing not only earnings as a source of income, but taking away their health insurance protection as well, or subjecting them to the much higher premiums of an individual policy.

[2]The Department of Health, Education, and Welfare estimated that, in 1975, the average individual policy would amount to $900, compared to a group policy of $600 per family. For an annual income of $10,000, the premium on an individual policy would be 9 percent of income. (See Waldman, 1974.)

Cost-Sharing Requirements and the Distribution of Benefits

Direct participation by consumers of medical services in paying their bills has gained widespread acceptance. It can serve as a substitute source of revenue to defray the cost of medical services, making an insurance plan more attractive to enrollees who do not anticipate heavy utilization of medical facilities. Cost sharing has several forms: initial full payments (deductibles), partial payments (copayments or coinsurance amounts), an upper limit either on the carrier's liability or on the patient's responsibility for medical payments. All bills before the Congress propose some upper limit on the patient's liability, but they differ with respect to the method of determining the ceiling or the level at which it would be set. Yet, in comparison with the present situation, when the patient's liability is open-ended and the carrier's limited, any of the proposed provisions for insurance protection against catastrophic expenses constitutes a relief.

Cost-sharing amounts that are based either on the level of medical bills or on the number of units of service consumed are insensitive to income. These amounts, the same at different income levels, constitute a decreasing portion of income as income increases; their restraining effect gradually disappears as income levels rise. Hence, high-income persons are likely to pass the level of initial deductible and to reach a fixed income limit of catastrophic protection more often than persons who, because of their low or moderate income, are deterred or restricted by the cost-sharing provisions. A proportionally larger share of benefits from the national health insurance program would, therefore, be diverted to high- or middle-income persons at the expense of their low- or moderate-income counterparts.

The experience with Medicare and Medicaid can serve to illustrate this point. As the first federal health insurance program, Medicare specified cost-sharing requirements based on the level of medical bills and on the number of hospital days; these have been applied equally across all income levels without any ceiling on the patient's liability for cost-sharing amounts. Such provisions are highly restrictive to low- and moderate-income enrollees but much less so to their middle- and high-income peers. As Davis and

Reynolds (1973) demonstrate, the level of reimbursed amounts is considerably higher for high-income enrollees than for enrollees with low and moderate incomes. Table 3 shows that in 1968, the reimbursement levels were twice as high for persons with incomes over $15,000 than for persons with incomes under $5,000; and 28 percent more persons at the upper end of the income scale received reimbursable services. The same authors' study of Medicaid in 1969 (in press) shows that removal of financial barriers improves remarkably the access to and the use of medical facilities by the poor. The recipients of public assistance used physician services at the same rate as middle-income persons with comparable health problems, while other low-income persons lagged substantially behind in the use of medical services. Mindful of such findings, all bills that specify positive cost-sharing amounts stipulate reduced and income-based cost sharing for the poor and the elderly. This policy is likely to create an additional "notch" problem.

The proponents of cost sharing as a policy tool see in it not only a source of payment for medical care, but also a rationing device. As such, it is designed to counteract the adverse effects that could be induced by extending greater financial protection to more persons. Yet the bills which stipulate positive cost sharing also permit, or even encourage, private supplementary insurance against the personal outlay for deductibles and copayments. The experience with Medicare (Mueller, 1975) suggests that such supplementary private insurance coverage would indeed be quite widespread; in 1973 about 60 percent of all the elderly (12.4 million

TABLE 3

Medicare Reimbursements for Services Covered Under the SMI[a] Program, 1968

Income (Dollars)	*Reimbursement Levels per Enrollee (Dollars)*	*Number of Persons Receiving Reimbursable Service (per 1,000 Enrollees)*	*Number of Physician Visits per Enrollee[b]*
Under 5,000	79	432	6.44
5,000–9,999	104	475	6.11
10,000–14,999	115	527	6.78
15,000 and over	160	552	9.42
Ratio of Highest to Lowest Income Group	2.03	1.28	1.46

Source: Davis and Reynolds (1973: Tables 1 and 2).

[a]SMI is Supplementary Medical Insurance or Medicare Part B. Services covered by this program are subject to an initial deductible ($50 in 1968) and a 20 percent coinsurance rate on all "allowable charges."

[b]1969 data.

persons) had at least some form of private insurance against the cost of hospital care. And this practice does not encourage restraint behavior. Peel and Scharff's study (1973) of ambulatory patients under Medicare in 1969 shows that proportionally more persons obtained covered services and met the initial deductible amounts if they had complementary out-of-hospital insurance coverage than if they had none and had low or moderate incomes. Moreover, the government, through its tax treatment of private health insurance premiums and out-of-pocket payments for medical care obviates any expected restraining effects; and since it does so by conferring a disparate advantage on the upper- and upper-middle-income taxpayers, it helps direct medical services to these groups at the expense of their moderate-income counterparts.

Policy Implications

National health insurance as a financing policy that is designed to protect the consumers of health care services can be expected to sever or at least weaken the nexus between the distribution of income and the distribution of medical services. It can achieve this goal by using prepayments as the major source of funds to pay for medical care. The prepayment arrangements can be so structured as to distribute the cost of medical care equitably across the entire population by linking prepayment levels to income, keeping amounts proportional to income over the entire scale.[3] Moreover, the prepayment arrangements have to be "employment blind" and "risk blind." If they are linked to employment, then self-employed and unemployed persons pay higher premiums than employees. If they are based on risks, then high-risk individuals pay higher premiums than low-risk individuals. The principle of national health insurance, of pooling the risks and granting equal entitlement to benefits irrespective of employment or risk, would be violated; persons with the "wrong" employment or risk status would be subject to a higher levy before they were entitled to the same benefits as their "right" counterparts.

[3]A progressive scale, namely where the marginal tax rate increases with income, may be more equitable in terms of sharing the burden, but it creates other problems among which is the "notch" or the disincentive to earn higher incomes.

Social insurance is blind to both employment and risk, but private insurance is not. Social insurance can be sensitive to income,[4] and private insurance cannot. Moreover, private insurance organizations are more likely to incur higher collection costs than the government would. The government, as an established tax collector, is well equipped to handle the collection of prepayment amounts at a small marginal cost and without any marketing and advertising costs which are incurred by competing private organizations and passed on to their policyholders. Thus, in the final analysis, only the government can secure an equitable distribution of the burden, and secure it at least cost to the paying public.

A national health insurance program, if financed solely through prepayments, is expected to increase the overall demand for medical services and especially the demand for those services for which there has been very little insurance coverage before the implementation of a national program (Newhouse et al., 1974). Such demand increases may stem from the increase in the number of persons using services as well as from the quantity of services used by each person. The pressures may be felt more strongly in the near term than in the long run, because the catch-up demand can be expected to reach a saturation point after a few years. Yet, since the short-run supply of services may not keep pace with the demand, the equilibrating mechanism could result in rising costs and/or longer queues for appointments. Alternative policies have been suggested to reduce the excess demand. On the demand side they include: (1) a gradual "phase-in" of population groups (possibly by age and services); (2) direct participation by the consumers of services in sharing the cost of their consumption. On the supply side they include direct regulations of the "providers" in order to control the cost of medical care directly or give indirect incentives to achieve the same purpose.

The advocates of direct patient participation in paying medical bills hope to induce a cost-conscious behavior on the part of the consumers and give them a strong incentive to police the market against the rising cost of heatlh care services. Evidence from cross-sectional studies, based on micro-data, suggests that spending on

[4]To base premiums on income would require information on individual incomes. Only the government is legally entitled to such information, which it obtains because all taxpayers are required to file an annual income statement.

such services is not insensitive to differences in the cost-sharing amounts and income levels. For example, Grossman (1972:57) estimated that total medical expenditures increased by about 7 percent when income increased by 10 percent; Andersen and Benham (1970:85) found that a 10 percent increase in permanent income increased expenditure for dental care by 10 percent. Phelps and Newhouse (1972:21) estimated that introducing a coinsurance rate of 25 percent reduced physician visits by 32 percent and expenditure for physician services by 28 percent. Scitovsky and Snyder (1972:10, 16–17) used the same data to show that coinsurance payments reduced the services consumed by nonprofessionals more than the services rendered to professional persons. In other words, coinsurance not only restrains utilization of services across all income levels but has a more restrictive impact on low- or moderate-income groups than on their more affluent counterparts.

These studies suggest that the policy of reducing excess demand through cost-sharing requirements could be successful at least in the near term. However, the long-run consequences are, thus far, unknown. In explaining and justifying their health insurance experiment, Newhouse (1974a; 1974b) and Orr (1974) outlined what knowledge they hope we shall gain from the experiment that will be conducted over three to five years. Among other things, we shall learn: (1) whether longitudinal studies uphold the results on income and price sensitivity obtained from cross-sectional studies; (2) what are the differences in utilization response of different population groups, especially of groups that differ in health status; (3) whether, and to what extent, cost sharing restricts medically necessary utilization or does not restrict paid-for, though medically unjustified, utilization.

Cost-sharing requirements, if used as a rationing device, should be equally restrictive for all income groups. The treatment of medical exemptions under the federal income tax counteracts the restraining effects to be expected from a cost-sharing policy; and because the tax schedule specifies increasing marginal tax rates, the income-tax exemption provides a greater subsidy (or tax expenditure) to the affluent and economically comfortable than to their less well-off peers. Also, as currently structured, cost-sharing requirements are insensitive to income over a considerable range; their amounts are the same for different income levels and are, therefore, becoming gradually less restrictive as income increases.

Under these circumstances, if the cost-sharing policy attains its goal, it does so by inducing an inequitable distribution of medical care; it restricts the consumption of health care services by the moderate- and lower-middle income persons more than that of their high- and upper-middle-income peers. Such a policy diverts program benefits from persons who are in a weak economic position to those who are in strong positions, well off and affluent.

With this problem in mind, a case can be made that cost-sharing amounts should be adjusted to reflect income differences over the entire income scale and not only for the very poor and indigent segments of the population. Yet, such an adjustment would be difficult and costly to implement. However, a modified form of an income-related cost-sharing policy can be adopted. Such a policy would base on income the level of patients' upper expense limit. And, as has often been suggested, the tax apparatus could be used to equalize the burden of direct personal medical expenditure. Specifically, the ceiling on patient liability could be set as a fixed-income share, and not as a fixed dollar amount; tax credits or refunds could be given to offset any payments that would exceed the specified income share.[5] This policy would guarantee that the portion of income allocated to paying medical bills is the same across all income classes; and that no economic unit would spend an inordinate amount of its resources on health care services. Equal relief from cost would prevail at the upper limit of medical expenditure, and the prospect of a heavy financial burden resulting from prolonged illness would be equally averted by everyone, rather than inequitably by only a chosen few.

Such a policy, though it guarantees that the upper limit on patients' payment is set equitably, would still maintain inequitable restrictions below the ceiling; and these, in turn, could discourage medically desirable (preventive) or necessary (early detection) utilization. Considering the nature of medical care, it is at least questionable whether financial restraints are as acceptable a method of rationing as they appear to be for some other consumer goods. Health care services do not yield any gratification similar to

[5]Karen Davis provides the following example: Suppose the upper expense limit is set at 10 percent of income, and a family incurs $4,000 of medical expenses. If annual income is $20,000, the family is entitled to a $2000 tax credit; but if annual income is $40,000, the family is not entitled to any tax credit. (See Fried et al., 1973: 118–119.)

that derived from other consumer services. Also, they are not purchased or obtained in the same manner. The potential customers in the market for health care services are not often knowledgeable in medical matters, and they can find no "consumer reports" to serve as guides through the complexity of medical technology. Thus, even when they are very cost-conscious, the patients are not equipped to serve as cost-controlling agents unless they stay out of the medical-services market altogether. Once a patient enters the health care delivery system, it is the physician who, in effect, determines the quantity and quality of services to be consumed. Hence, a case can be made that physicians, and not their patients, should be given incentives to control the market and prevent wasteful use of scarce resources because only the physicians are well equipped to do so.

Conclusion

Insurance as a payment mechanism is designed to provide relief from large medical bills and remove the specter of economic ruin. But the threshold of hardship differs with income and, therefore, the degree of relief is quite unequal when medical care is financed through risk-based premiums and fixed cost-sharing amounts. A government-mandated national health insurance program could be expected to guarantee equal relief from cost and equal opportunity to receive benefits for all citizens, because illness strikes rich and poor, and the medical technology cannot often be tailored to fit income size. The role of financing arrangements in attaining this goal through shaping the national health insurance system is obviously important. What is called for is a policy which (1) removes the nexus between the use of health care facilities and the ability to pay for them, (2) bases the cost of medical care on income so that they are equitably shared, and (3) achieves this equitable distribution with the least cost to the paying public.

With equity considerations in mind, some of the major bills specify a system of multitier plans that are differentiated either by employment status or by age or by income. However, under such a complicated system, a fair distribution of medical care could be achieved only at a considerable administrative effort. A single plan which is universally applicable to the total population would be less

complicated and less costly to implement. To this end several recommendations are made.

1. Indirect financing through prepayments should provide most (and preferably all) of the funds required to pay for medical care. This arrangement would weaken the tie between the distribution of income and the consumption of medical services.

2. Premium levels should be set in direct proportion to income. Such a system will eliminate the need for multiple financing plans with special provisions for the poor and indigent, will avoid administrative complications, and will not give rise to the notch problem.

3. Efficiency and equity considerations would suggest that the collection of premiums should be entrusted to the federal government. The government is well equipped for this assignment since it possesses the information on individual incomes and can collect the additional funds with only a minimum of additional administrative costs.

4. Cost-sharing requirements, if incorporated into the national insurance law, should be so structured as to minimize their effect on the distribution of benefits. Specifically, the upper limit on out-of-pocket expenses should be set as a portion of income; this policy should be applied equally across all income levels, using tax credits and refunds for its implementation. Such an arrangement would eliminate the need for most of the special provisions for the poor and the indigent and would avoid many costly administrative problems.

5. If tax credits and refunds are used to guarantee a maximum expense limit, then the existing tax exemptions for direct medical payments and for health insurance premiums are redundant and should be abolished.

6. The nature of medical care suggests that serious consideration be given to exempting from any cost-sharing requirements all services essential to the prevention or early detection of diseases that can be either fatal or incapacitating or costly when treatment is delayed. Such services as immunization and screening tests for

population groups that are at risk should not be subject to any financial barrier.

Rachel Floersheim Boaz, PH.D.
Center for Studies in Income Maintenance Policy
New York University
35 Fifth Avenue, Room 310
New York, N.Y. 10003

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