Benefit Package Considerations in a State Health Care Plan

David R. Nerenz
Henry Ford Health System

Barry M Zajac
Henry Ford Health System

Denise P. Repasky
Henry Ford Health System

Patricia D. Williams
Henry Ford Health System

Vinod K. Sahney
Henry Ford Health System

Chapter 6 (pp. 153-181) in:
Improving Access to Health Care: What Can the States Do?
John H. Goddeeris, and Andrew J. Hogan, eds.
Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 1992
DOI: 10.17848/9780880995733.ch6

Copyright ©1992. W.E. Upjohn Institute for Employment Research. All rights reserved.
6
Benefit Package Considerations in a State Health Care Plan
David R. Nerenz
Barry M. Zajac
Denise P. Repasky
Patricia D. Williams
Vinod K. Sahney
Henry Ford Health System

When states consider "universal" health plans or plans serving more limited populations, the definition of covered benefits plays a key role in determining the plan's feasibility. In this chapter, considerations about benefit packages, limitations of coverage, cost-sharing characteristics, and covered services are discussed, and a method for estimating program costs is presented.

Types of Benefit Plans

There have traditionally been three main types of health benefit plans: indemnity plans, service benefit plans, and prepaid or capitated plans (Donabedian 1976). Although all three types of plans can provide coverage for the same range of health care services, there have been significant differences among them in how they function and what they ultimately cover.

An indemnity plan is one in which the insured individual pays a regular premium to an insurance company in return for a promise of cash payments should certain defined, insurable events occur. For instance, the insurance company will agree to pay a certain amount for each day of hospitalization, a certain amount for a given outpatient procedure, or a certain amount for a routine office visit.
The agreement is only between the insured individual and the insurance company. The individual is responsible for making payment to the hospital, physician, or other provider for services rendered, and the insurance company provides reimbursement to the insured individual according to the terms of the contract. The amounts of payment are part of the contract, and the individual is responsible for any bills in excess of the agreed upon amounts.

In a service benefit plan, the arrangement is slightly more complex. In return for the premium, the insured individual is entitled to a defined set of health care services (that is, days of hospitalization, outpatient treatments, or prescription drugs). The range and level of services are spelled out in the insurance contract, but no fixed dollar amount is assigned to each. To meet its obligation, the insurance company must have another set of agreements in place with providers (hospitals, physicians, and other providers) to actually perform the services that represent the policy's benefits. The insurance company reimburses the providers for services rendered. Providers may or may not bill patients for balances of charges over what the insurance company will pay.

In a prepaid or capitated plan, insured individuals pay a fixed premium, or membership fee, in return for access to virtually all necessary health services provided by members of an organized provider network. Depending on the nature of the relationship between insurer and providers, there may be varying degrees of financial risk on the part of providers. At one extreme, all the members' payments go directly to the provider organization, which in turn is obliged to provide all necessary care and absorb any losses due to excess of expenses over revenues. At another extreme, providers continue to receive fee-for-service or per diem payments for services rendered, and the insuring entity takes on the full risk of gain or loss. From the patient perspective, these arrangements are relatively transparent, since patients are not responsible for any payments beyond the premium or membership fee.

These three types of benefit plans have different sets of advantages and disadvantages in terms of administrative overhead, freedom of choice of providers, and sharing of risk among patients/members, insurance companies, and providers. Very broadly speaking, capitation plans usually provide the broadest coverage, most restrictions on choice of
providers, least amount of administrative overhead, and least risk of out-of-pocket expenses for the patient. Indemnity plans typically provide much more freedom of choice among providers, but higher administrative costs, more restricted benefits, and higher risk of out-of-pocket expenses in the event of very serious, expensive illness. Service benefit plans share some of the features of indemnity plans, but may have even higher administrative overhead because of the need to process claims information among three parties—the company, the patient, and the provider.

A state-run health care plan could conceivably be based on either of the three basic benefit models, some combination of the three, or perhaps some new model entirely. Choice of model involves some purely technical decisions about how a set of benefits is to be provided most economically, but also involves more value-laden decisions to be made in the political arena. These decisions include: how much choice of providers beneficiaries will have; how much of the current claims-processing infrastructure of existing insurance companies is to be maintained; and how much financial risk is to be the responsibility of the various parties involved in the benefit program.

### Benefit Limitations

The design of a health care benefit package must include consideration of what type of limits will or will not be imposed. Some examples of limits in a benefit package include total dollar amount limits, limits on the number of inpatient days, and limits on the number of outpatient visits. Limits are typically imposed to deter overuse of the system by both the patient and provider and to put a ceiling on the financial risk of the insurer. However, due to extreme cases and unique individual circumstances, limits do not always control use and costs.

In choosing to impose limits in a state program, policymakers must consider consequences not only in costs, but also in overall utilization patterns and health status. For example, limits on the number of covered outpatient visits could control costs in that area but yield sicker patients upon admission to a hospital. Limits on the number of inpatient days
and/or dollar amount limits could lead to earlier discharges and an increased number of outpatient visits. As Donabedian (1976, p. 379) pointed out, "a long list of services is not a sufficient indication of comprehensiveness; stringent limits on the amount of each benefit can cripple the effectiveness of the whole."

In addition, dollar limits on benefits will affect the willingness of providers to render services. Physicians may refuse to offer any services to those with severely restricted benefits without assurance that the patient will be able to pay for any needed care additional to that included in the plan (Donabedian 1976, p. 386). Medicaid, an example of a very comprehensive benefit program in most states, often imposes a strict dollar limit on the amount paid to physicians and hospitals. This type of limit has been shown to lead to patient access problems (Donabedian 1976, p. 264).

**Cost-Sharing: Copayments and Deductibles**

Health care cost-sharing means patients pay part of the cost of covered services through copayments and/or deductibles. A deductible is an amount of money the beneficiary must spend on health care before eligibility for health insurance benefits begins. Deductibles reduce the claims costs for insurers and may induce patients to avoid seeking care until they have serious symptoms or unless they are confident that they will exceed the deductible amount during the policy period, usually a year. Copayment, or coinsurance, is either a dollar amount or a percentage of a fee that the beneficiary pays at the time of each service. It may create the incentive to avoid prolonged, continuous, or intense care and perhaps to avoid the initiation of care as well (Donabedian 1976).

Cost-sharing helps insurers compensate for "moral hazard," or the tendency for the presence of benefits to change beneficiary behavior in a way that increases use of covered services, by making consumers of care somewhat responsive to its cost. Cost-sharing also reduces the cost of the benefit package and, presumably, the premium. Copayments and deductibles can reduce the administrative costs of claims handling because of fewer claims and because the insurer does not have to pay
for any services until the beneficiary spends the deductible amount. Cost-sharing may increase costs for the provider, who may have to collect fees from two sources—the patient and a third party (Donabedian 1976).

In a prepaid group practice (PPG), cost-sharing has been shown to affect the use of primary care but have less effect on the types and amounts of other types of office visits used (Cherkin, Grothaus, and Wagner 1989). Copays can reduce the inappropriate use of emergency rooms and unnecessary doctor’s office visits. Even very low copayments can effectively prevent unnecessary use (Donabedian 1976; Shapiro, Ware, and Sherbourne 1986). Of course, there is a risk of causing the avoidance of appropriate use among the poor, particularly if copayments are too high, or avoidance of services such as preventive care that are not the result of an acute need. In addition, any delay in seeking care may result in patients being more sick when they do seek care and therefore requiring more intense and expensive treatment (Donabedian 1976).

The effects of cost-sharing measures depend somewhat on the method of provider payment. Since physicians influence the demand for their services and for health care services in general, the incentives they face will also affect utilization. To the extent that physicians consider costs to the patient in determining the appropriate course of treatment, patient cost-sharing may affect physician decisionmaking as well (Donabedian 1976). The effects of cost-sharing in a capitated payment situation outside a PPG are not clear, although one might predict that they would depend on the sum of the incentives present. When physicians have an interest in the financial outcome of the plan, they might behave as PPG physicians. Similarly, under a prospective payment system for hospital inpatient care, patient incentives may be immaterial once the patient is hospitalized.

Cost-sharing has other characteristics. A given deductible or copayment amount will have a greater impact on someone with a lower income than on someone with a higher income in terms of percentage of income spent. Similarly, the burden of copays is obviously greater on the ill. These redistributive effects, to use Donabedian’s term, are the opposite of those we might endorse, if we would endorse any. When deductibles and copayments are substantial and/or when coverage is
not comprehensive, total out-of-pocket expenditures by beneficiaries can be limited to a maximum dollar amount or a percentage of income by a catastrophic coverage provision. This would prevent financial ruin for the families that have a single or series of major medical events, the copayments amounts or uncovered expenses of which they would otherwise be unable to pay (Donabedian 1976).

Any discussion of appropriateness of use presumes that what is appropriate can be satisfactorily defined, which is not necessarily the case. Most studies of the effects of these incentives measure use rates relative to another group. When health risk or health status is the criterion instead, among adults the presence of cost-sharing mechanisms has a negative effect only for the sick and particularly the sick poor (Brook et al. 1983). Children's health has not been found to be affected by the presence of cost-sharing when total out-of-pocket spending is limited to a relatively small amount (Valdez et al. 1985).

The distribution of cost-sharing across a benefit package will influence the mix of services used, particularly in a fee-for-service payment environment. Even very small cost-sharing connected with ambulatory services is associated with lower use of these services and a high rate of hospitalizations among the poor, so that any cost savings on the ambulatory side may be overcome on the inpatient side (Roemer et al. 1975). This type of manipulation of preferences may be helpful if the insurer wishes to encourage certain types of services it feels are relatively economical and/or effective, or to avoid services that may be the opposite. If this were to be done effectively, it would probably require the constant monitoring of the cost and effectiveness of various therapies, settings, and types of providers to assure the most appropriate ones are encouraged, and periodic adjustments to the cost-sharing mechanism. Such a program would probably not be necessary in a PPG, where the most cost-effective therapies are likely to be sought and utilized anyway. Prepaid group practices tend to provide more preventive care and have lower rates of hospitalization (Manning et al. 1984).
Determining Covered Services

The services covered by a benefit package will influence the cost, health benefit, and acceptability to beneficiaries and providers of the health care program. This section will discuss issues surrounding the overall design of the coverage and particular benefits.

There are three main goals in designing a state health care program: to provide adequate access to services for the target population and encourage the appropriate utilization of them; to ensure that the quality of the care received is adequate; and to do so in the most economical way possible. These goals are not independent but interrelated, and the first two may conflict with the last. The resolution of this conflict is not objective or scientific, but political. The determination of what is adequate access and appropriate use is made in the public policy arena, in a context of cost, moderated by the concern with quality.

Access is achieved by having needed services available, in an acceptable way, at an acceptable cost, and within an acceptable distance and time (Penchansky and Thomas 1981). What is “needed” is a matter for debate, but what consumers demand or perceive to be needed must be considered. Acceptability is also a flexible concept that must consider costs (both to society and the consumer), quality, and equity. The criteria by which a particular subpopulation should accept or be found to require a different standard of access from others need to be identified and examined. The payment and participation rates of providers and their geographic distribution will affect access. What benefits are covered and at what cost to the consumer are issues that will affect the consumer’s perception of access, which will in some cases affect care-seeking.

Appropriateness of use of health care services can be measured by health outcomes such as infant mortality rates, life expectancy, disability days, and quality-adjusted life years (QALY). Of course, these outcomes are affected by other factors such as the quality of the services, genetics, lifestyle, age, the environment, socioeconomic status, and public health measures, so their value in evaluating health care itself is limited. We know that insurance coverage increases use of health care services, especially among the poor and the sick poor (Davis and Rowland 1983;
Newachek 1988; Wilensky and Berk 1983), although the determination of an appropriate use rate or set of use rates remains normative.

**Restricting Use**

Plan features restricting use are intended to reduce wasteful or harmful care and control costs. A benefit package can be designed to limit the use of some providers, such as chiropractors or podiatrists, or of some modes of care, such as home care or nursing home care. Insurers may use these restrictions to control their costs, which allows them to maintain competitive prices, market shares, and acceptable margins. This also has the effect of creating and/or maintaining monopoly power and markets for some providers and types of care at the expense of others.

The abhorrence of the idea of rationing health care by ability to pay is one reason for the interest in the financing of health care services for those now uninsured. This interest results from the evolving notion of health care as a right rather than a market good (Callahan 1988; Reinhardt 1986). Credible proposals to make rationing on the basis of age an explicit public policy have been made (Callahan 1987; Aaron and Schwartz 1984) and public debate has begun, but resolution of this issue does not seem near by any means.

The effect of the breadth and depth of the benefit package, or its comprehensiveness, on demand for and use of services is important. If the package is not broad enough (i.e., doesn’t have a wide spectrum of covered benefits), it will not encourage efficiency and the types and amounts of use that will maximize the beneficiary’s health, well-being, and productivity. There will be a tendency, on the part of providers and beneficiaries, to utilize covered services and avoid services not covered, even if the covered services are inefficient or less effective substitutes for the preferred therapies. This issue is probably more important to states than to private insurers because the states are traditionally responsible for supporting the disabled and medically indigent. Also, if the plan does not protect participants and providers from financial ruin in the event of illness or injury, no matter how catastrophic, it will not be doing what health insurance in its most basic form is supposed to do.

One problem with offering a broad benefit package is that, as costs rise, there is financial pressure to reduce the number of people covered.
This is because the total program costs equal the price of the services offered times the number of services delivered. As costs of the Medicaid benefit package have increased, for instance, most states have adjusted eligibility requirements so those benefits are provided to a population small enough not to exceed budget limitations.

Oregon is trying to reverse this process by limiting the benefits they provide to a predetermined population (Beck, Joseph, and Hager 1990). They have attempted to determine an appropriate and acceptable benefit package by prioritizing covered services according to the expressed preferences of state residents. Through a series of 50 meetings held around the state, over 1,000 residents learned about and expressed their preferences with regard to different therapy options for diseases and their outcomes (Crawshaw et al. 1985). The results of these meetings were tabulated by computer to generate a list of services that could be covered, from highest to lowest priority.

Once this list is finalized, the state legislature intends to determine the cost of coverage for the population they will cover and, using budgetary constraints, to draw a line through the list, which will then define the extent of the benefit package (Beck, Joseph, and Hager 1990). While this process has not cleared all of its administrative hurdles—most important, the receipt of a waiver from the Health Care Financing Administration so it can continue to receive federal contributions to its Medicaid program costs—it represents an innovative and important step toward the rationalization of health care benefits package and program design.

Specific Benefits

Vision and Dental Care

Vision and dental care benefits are often omitted from health care plans to cut costs, on the assumption that their absence will have little or no impact on the general health of the patient. The importance and value of these benefits may not be appreciated. "People seldom die for lack of dental care, but the quality of their lives can be compromised by lack of appropriate care" ("Dental Coverage Affects Usage, Expenditures")
Another reason these benefits are absent from most health care benefit packages is that vision and dental care costs are largely foreseeable and can be planned for (Bell 1980).

The results of partial coverage or no coverage of vision care under a universal health plan will not impact the entire population. However, in design of a universal plan, the fact that half of the population in the United States wears corrective prescription lenses must be taken into consideration ("Vision Care Plans" 1981). For those persons who are unable to afford corrective lenses, partial coverage or a lack of coverage may result in going without glasses or postponement of needed exams, and thus the eye condition may worsen. On the other hand, inclusion of vision care in a universal plan can yield important benefits. The Rand Health Insurance Experiment demonstrated that free vision care resulted in improved vision by increasing the frequency of eye examinations and lens purchase. It is probable that the increased visit rate on the free care plan resulted in increased detection of diseases (Lurie et al. 1989).

In the design of a universal health care plan, the question of covering dental care is difficult. "Dental care may be assumed to have maintained its traditional positive relation to income because it has been regarded by individuals and by society as a more discretionary item, more akin to a luxury than a necessity" (Donabedian 1976, p. 24-25).

Dental plans in general are purchased separately from health insurance plans. The need for dental care is usually predictable and ongoing, rather than episodic like acute health care. According to the American Dental Association, dental benefits differ from medical plans in that dental disease is preventable; early intervention is most efficient and least costly; and the need for care is ongoing and universal ("Coalition, ADA Set Standards for Dental Plans" 1989).

Both dental and vision care are benefits that can be excluded from a health insurance plan with little or no impact on an indicator such as mortality, but could have significant impact on health status/quality of life. However, it may be more cost-efficient to include preventive services in both dental and vision care, thus preventing more expensive treatment in the long term. While health benefits result from including these services in a health care benefit package, the relationship
between the benefit and the cost to the state, or any purchaser, is not clear.

**Mental Health and Substance Abuse**

Use of mental health and substance abuse services by employees and dependents is soaring. According to the National Institute of Mental Health, one of every five Americans now needs professional mental health services, where only one in eight needed such professional help in 1960 (Montgomery 1988). The stigma that was once associated with seeing a psychiatrist or psychologist is no longer as apparent today. Thus, an increase in usage of behavioral health services has caused employers and insurers to look more closely at the cost implications of enhancing coverage that presently exists or including such benefits in a current plan.

Along with an increase in usage, there has been a definite increase in health care dollars being spent on these benefits. Mental health and chemical dependency treatment costs are increasing by more than 15 percent each year (George-Perry 1988). Mental health and substance abuse treatment coverage in health insurance plans have typically been for expensive inpatient care. To deter some of these increasing costs, plans are moving towards more and/or better coverage of outpatient treatment in both of these areas (Frabotta 1989). Outpatient care has been shown in some studies to be less expensive in the long term and to have results that are equal if not better than inpatient care. “Rather than spending $6,000 to $8,000 for an inpatient stay, employers may only have to spend $2,000 to $3,000 for a well-structured, medically supervised outpatient program, while keeping the patient on the job” (Frabotta 1989).

Lack of coverage or partial coverage for behavioral health services will not keep people from being seen in the system. Prior to introduction of specific coverage, and even now with insured groups without coverage, alcoholism was sometimes treated under other “surrogate” diagnoses covered by insurance (Morrisey and Jensen 1988). This type of surrogate treatment is seen with both mental health and substance abuse services.
Various studies have shown that benefits such as mental health and substance abuse actually reduce medical care utilization. "The longitudinal pattern of total health care costs illustrates that a marked increase in such costs among individuals with mental health problems can be expected over the 36-month period prior to initiation of treatment. A decrease in total health care can be expected following the start of mental health treatment—even when costs of this treatment are included" (Holder and Blose 1987). A four-year longitudinal analysis of federal employees showed a decline in health care costs after initiation of treatment. After examining the claims of nearly 1,700 treated alcoholics and their families, one study found that, after an increase in costs associated with treatment, cost for many alcoholics eventually declined to a point comparable with the lowest pretreatment levels (Holder and Blose 1986).

The inclusion of such benefits in an insurance plan may decrease total health care costs and be beneficial; however, it may be necessary to implement limits to have some type of control on utilization of these services. The open-ended nature of psychiatric treatment frequency invites continuation of outpatient contact with the therapist far beyond the point of symptom remission (Montgomery 1988).

**Prescription Drugs and Contraceptives**

Prescription drugs are covered under many health insurance plans with little or no copayment. However, prescription coverage, once viewed as a small investment that brought about large returns, is now being reconsidered, and tighter controls are being implemented. The reason is that the cost of coverage is rising. For many companies, the cost of covering prescription drugs has risen faster than any other component of their health benefits package except mental health and substance abuse treatment (Vibbert 1989). Covering prescription drugs without any type of utilization control mechanism can result in high costs under a universal plan. On the other hand, not covering prescription drugs under this plan may have effects on health. The lack of prescription drug coverage could affect some persons more than others—for example, those below a certain income level who just cannot afford such "extras" as prescription drugs.
In many plans, contraceptives fall under the category of prescription drugs; however, they may be viewed as a separate benefit in the design of a health insurance plan. Many insurance plans are beginning to drop coverage of contraceptives due to the cost that this coverage adds to the premium (Muller 1978). Offering coverage of contraceptives as prescription drugs will add to the cost of a plan in the near term, however, in the long term it may decrease utilization of obstetrical and pediatric health care services.

**Experimental Procedures**

Treatments and procedures considered experimental are generally exempted, or not covered, by health care plans (Ham 1989). The determination of whether or not something is experimental is made in several ways, but it is common for insurers to follow the example of the Health Care Financing Administration, which makes this determination for the Medicare and Medicaid programs. If exempted, a procedure may be available to those who have the ability and willingness to pay for it out-of-pocket or to those who can find and are eligible for participation in a funded research project that will pay for it. The rationale for not covering these treatments is that their efficacy and safety have not been proven, and their use is not widely accepted. In addition, they tend to be expensive. Since these therapies are not widely available, states should have little problem exempting them from the benefit package. There is not an equity issue since others do not have access either, and there is a cost and quality interest in not covering care until it is shown to be safe and have a useful place in the medical armamentarium.

**Transplants**

The coverage of organ and tissue transplants has received considerable attention. Both Arizona and Oregon have restricted coverage of transplants for their Medicaid recipients. Considering the high costs and the poor cost-effectiveness of some of these life-saving or sustaining procedures compared to other potential uses of funds, noncoverage may be a rational choice (Durbin 1988). On the other hand, since most private insurance plans cover at least some and usually most of the costs
of such procedures, and some transplants may be more cost-effective
than the alternative therapies for the afflicted individuals, noncoverage
raises equity and discrimination issues (Durbin 1988). In the context
of a universal plan, these issues would be less potent because the same
coverage would apply to everyone. When participants in the plan are
disproportionately of a particular socioeconomic status or racial or ethnic
group, special effort may be needed to avoid the appearance or fact
of discrimination.

New Technology

One of the effects of a “free market” medical system has been the
development of new technologies, especially in the areas of phar-
maceuticals, surgical procedures, biotechnology, and imaging.
Treatments constantly emerge for conditions previously considered un-
treatable, and new and innovative treatments replace old (McGregor
1989). This march of technology is a source of both pride and con-
cern. While these technologies are largely responsible for our health
care system being seen as the best in the world, they also are a central
reason for the tremendous costs and inflation experienced in the health
care sector. They also tend to shift resources away from prevention
and primary care (Somers 1984). That private insurers generally pro-
vide coverage for new technologies only on the basis of efficacy and
availability without regard to costs certainly contributes to this dilem-
ma (Ham 1989). While not all of these technologies are as expensive
as Positron Emission Tomography or AZT, they all contribute to the
health cost spiral (Moloney and Rogers 1979).

When sick, Americans expect access to the latest and most innovative
technology, even when its cost outweighs any incremental benefit that
may be achieved over the technology it replaces. An example is elec-
tronic fetal heart monitoring, which is widely if not routinely used, even
though its benefits are unproven (Shy et al. 1990). For this reason, it
would be difficult to exclude coverage of new technologies in a com-
prehensive state benefit package. There are several strategies for con-
trolling the use of these technologies. One approach would be to re-
quire prior approval for the use of specified procedures on a case-by-
case basis. This could operate similarly to prehospitalization certification
programs whereby the payor must approve any nonemergency hospital admission. Copayments and/or deductibles could also be attached to discourage overuse. Still another strategy would put the provider at financial risk for the use of the procedure or technology through a capitated or case-based payment system (Moloney and Rogers 1979). The use of cost-effectiveness analysis remains an untried and potentially potent basis for such allocative decisionmaking (Emery and Schneiderman 1989).

It would be a mistake, however, to take the view that it is only new or high technology that is responsible for an increase in costs of treatments. Increases in the use of existing technology, such as X-ray examinations and laboratory tests, are as likely to be culprits. Strategies to limit the use of technology are best if they apply to any type. Examples could be capitation of case-based payment or broad-utilization review (Moloney and Rogers 1979).

Rehabilitation

After a disabling injury or illness, such as an auto accident or a stroke, patients may be discharged from the hospital without need of continuing medical care but still unable to resume life as before. Although many of these individuals ultimately will be unable to recover fully, they may still be able to lead personally fulfilling and socially productive lives, provided they receive the rehabilitation services required. There are other sources of financing for rehabilitation services. In some states, the no-fault auto insurance program may include this coverage in the event of an auto accident. Workers' compensation insurance provides this coverage for injuries that occur in the workplace. Still, there are circumstances outside of these environments, such as strokes, and accidents other than motor vehicle, when the services necessary to maximize a patient's potential is not accessible due to lack of financing. This is a particularly important issue for states, which, unlike private insurers, are traditionally responsible for the welfare of their citizens, have a potential tax-generating workforce in need of services, and have to pay a proportion of Title XIX program costs of those who remain disabled. If states already have a rehabilitation program in place, the effect of this coverage on its costs should be considered.
Rehabilitation services can be rationed in several ways. A common method is to set a time limit after which services would no longer be covered or a set number of services or amount of dollars allowed. This can be seen as discriminatory against those who, while significant recovery is expected, have injuries that necessitate longer or more intensive rehabilitation. Another way would be to provide coverage for only a specific set of services based on the prognosis, or to make a determination of coverage based on the prognosis and the expected rehabilitation time or expense. Someone whose rehabilitation would take a shorter time and who is expected to make a more complete recovery would have services covered, while others may not. Prognosis accuracy would be important in both of these situations, which may be a problem. Age and social role could also be considered in such decisions.

The costs associated with transplants, new technology, and rehabilitation may be most appropriately managed in the context of a program for catastrophic health care cost protection. These rather extreme sources of high costs are singled out, perhaps because they affect a very small number of people. Chronic disease treatment and intensive care also involve very high expenses, but there is no suggestion that they be excised from the health care package. On the contrary, they are important reasons for having coverage. Efforts to control costs may be more effective and fair through a systemwide approach to efficiency, utilization management, and prevention than by the narrowing of the benefit package at its margins where those with great need are denied and emotional responses and inflammatory press coverage are likely.

**Home Health Care**

Home health care has become an important low-cost substitute for hospital and nursing home care. Therapies that were once considered strictly inpatient, requiring high levels of nursing skill, have found their way into the realm of home care. Patients can be safely discharged home from the hospital earlier when regular skilled nursing care is available in the home (American Medical Association Council on Scientific Affairs 1990). This can bring considerable cost savings to the payor while improving outcomes (for instance, through the avoidance of nosocomial infections) and patient satisfaction. Additional costs can occur, however,
when home care is sought that is not a substitute for other medical care. This is an example of the effect of "moral hazard," because demand seems to come as a result of the provision of coverage. It is not clear in these circumstances whether this demand represents substitution for family care or for impending medical care. If it is a substitute for future hospital care, it may represent a source of additional savings in the long run, rather than a liability.

The use of home health care can be restricted, for instance, by only covering services provided after a hospitalization, and then for a limited time, as Medicare does, and/or by attaching cost-sharing provisions. Requiring prior approval by the payer would be another strategy. Home health care is such a valuable and efficient model of care that its coverage should probably be considered essential to even a basic health plan, even if restrictions are attached.

Durable Medical Equipment

Like home health care, durable medical equipment (DME) is a valuable service for beneficiaries that can reduce the cost of care but has potential for overuse or abuse. By providing respiratory therapy equipment, wheelchairs, walkers, special beds, and appliances, the well-being and quality of life of patients can be enhanced. In some cases, these services represent less intensive treatment methods than would otherwise be employed, and thereby represent a cost savings. When improved comfort and well-being improves health and avoids the need for other forms of care, additional savings may accrue, although this has not been quantified. The downside is that these services may be used unnecessarily just because they are available, or as substitutes for goods or services that would have otherwise been paid for out-of-pocket. Cost-sharing may also be applied here, as well as utilization management or risk-assumption by the provider.

Estimating Costs of a State Health Care Program

With the above considerations in mind, estimates of costs for a benefit package to be offered under a state-sponsored plan can be generated. Estimates are useful for considering the effects of variations in a benefit package and other elements of a program on its overall costs. As an
example, we estimated the cost of covering Michigan residents under 65 with a comprehensive package for implementation in 1990 or 1991.

**Data Sources**

One way to estimate costs would be to estimate utilization rates based on known averages and apply a per-service cost model to calculate overall costs. This requires realistic estimates of costs, which are difficult to obtain, and assumes that patterns of use will not be affected by a new program. Another way to estimate costs would be to use known per-patient costs and apply them to the target population.

We found data on the latter to be readily available through a state health maintenance organization (HMO) regulating agency. Few non-HMO plans provide a comprehensive set of benefits, particularly for outpatient care and preventive services. HMO plans provide the best and most current data on the costs of this type of package.

While Medicaid also offers a comprehensive benefit package, its unique demographics, the large concentration of elderly and disabled, possible differences in utilization (for example, lower use of services because of access problems), lack of controls on utilization, and unrealistic provider payment make its experience a poor basis for cost projections to the whole population.

We estimate the costs of benefits with data from the 1989 rate filing of Blue Care Network (BCN), Michigan's second largest HMO. This HMO's data were used because:

1. This large HMO has subscribers throughout most of Michigan. Its cost experience may be more typical of what could be expected under a statewide plan than that of HMOs that serve a limited geographic area or have very small enrollments.
2. The division of the plan into geographically defined subunits allows a comparison of costs of care in different areas of the state.
3. Comparisons of BCN and other HMOs showed that it is typical in having neither the highest nor lowest per-member per-month (PMPM) costs.
4. These data reflect managed care delivery as proposed for the Michigan plan. BCN is typical of the sorts of plans offered if consumers are
allowed to choose from among several certified health care plans. As a network-model HMO, Blue Care Network does not have all the cost-containment features of staff- or group-model HMOs, but has some not found in purely fee-for-service plans. Its experience, therefore, is a middle ground between the most and least efficient financing and delivery system models.

5. BCN subscribers are diverse. The plan is not restricted to white- or blue-collar employees, and most age and economic groups are represented.

The benefit package used is summarized in Table 1. Using specific health plan data requires caution. Some caveats and issues we considered are:

1. Projections were based on 1988 data. Utilization rates and costs per unit of service—or the data itself—may have been anomalous for some reason that year. More precise forecasts using these data would consider the relationship of the 1988 data to both 1987 and 1989.

2. We did not usually have information on exactly what costs are reflected in the costs per unit of service that are a part of the monthly cost estimate. These are provider costs that may change in a number of unpredictable ways under a state health plan. There might be reductions in inpatient care costs due to eliminating uncompensated care, reduced billing costs, or lowered malpractice costs.

3. Dental and vision care costs do not come from Blue Care Network. The costs of dental coverage are from 1988 information for Blue Cross-Blue Shield. The costs of vision coverage are from the 1988 rate filing of Comprehensive Health Services of Detroit, a Detroit HMO. In both cases the costs represent an approximation of a median cost estimate—neither the highest nor lowest cost for this benefit.

4. The average cost figure shown for the benefit package is an unweighted average of the costs of these benefits from six BCN regional plans. The average was not weighted for the size of the enrolled population because the largest plan occasionally had specific benefit costs that were unusually high or low when compared to either the other Blue Care Network plans or other HMO rate filing information.
<table>
<thead>
<tr>
<th>Benefit</th>
<th>Copay</th>
<th>1989 costs (PMPM)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inpatient</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital charges (unlimited days,</td>
<td></td>
<td>$23.82</td>
</tr>
<tr>
<td>semi-private room, and specialized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional services</td>
<td></td>
<td>8.30</td>
</tr>
<tr>
<td><strong>Outpatient</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office visits (including preventive</td>
<td>$5.00</td>
<td>16.87</td>
</tr>
<tr>
<td>and urgent and specialist care)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostic services (X-ray and lab</td>
<td></td>
<td>7.52</td>
</tr>
<tr>
<td>work)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatient surgery</td>
<td></td>
<td>4.31</td>
</tr>
<tr>
<td>Allergy testing/serum</td>
<td>50%</td>
<td>0.15</td>
</tr>
<tr>
<td>Other outpatient services</td>
<td>$5.00</td>
<td>1.49</td>
</tr>
<tr>
<td><strong>Reproductive health</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult sterilizations</td>
<td>50%</td>
<td>0.15</td>
</tr>
<tr>
<td>Elective terminations</td>
<td>50%</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>Mental health</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inpatient mental health</td>
<td></td>
<td>1.30</td>
</tr>
<tr>
<td>Inpatient substance abuse</td>
<td>50%</td>
<td>0.80</td>
</tr>
<tr>
<td>Outpatient mental health</td>
<td>50%</td>
<td>1.42</td>
</tr>
<tr>
<td>Outpatient substance abuse</td>
<td>50%</td>
<td>0.53</td>
</tr>
<tr>
<td><strong>Emergency care</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency care</td>
<td>$25.00</td>
<td>2.71</td>
</tr>
<tr>
<td>Ambulance</td>
<td></td>
<td>0.47</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skilled nursing facility (up to 45</td>
<td></td>
<td>0.08</td>
</tr>
<tr>
<td>days)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home health agency</td>
<td>$5.00</td>
<td>0.35</td>
</tr>
<tr>
<td>Durable medical equipment</td>
<td>20%</td>
<td>0.27</td>
</tr>
<tr>
<td>Pharmacy (including needles, syringes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and birth control)</td>
<td>$3.00</td>
<td>9.51</td>
</tr>
<tr>
<td>Other services</td>
<td></td>
<td>1.05</td>
</tr>
<tr>
<td><strong>Dental</strong></td>
<td></td>
<td>10.51</td>
</tr>
<tr>
<td><strong>Vision</strong></td>
<td></td>
<td>1.77</td>
</tr>
<tr>
<td><strong>Benefit total</strong></td>
<td></td>
<td>$93.48</td>
</tr>
<tr>
<td>Reinsurance</td>
<td></td>
<td>1.15</td>
</tr>
<tr>
<td>Administration and retention (16%)</td>
<td></td>
<td>15.14</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>$109.77</td>
</tr>
</tbody>
</table>

*per member per month.
An unweighted average seemed more likely to yield a *conservative* estimate of the future cost of benefits.

5. Not all benefits were offered in all plans—in most cases because services were offered under one of the other benefit categories (for example, urgent care could have been a separate category or included under an office visit category). Most of these differences are resolved by combining the categories into a single benefit, others by leaving zeroes out of average cost calculations. The result is an average that is slightly higher (or more conservative) than the average that would have been calculated from each of the plans’ total costs.

**Adjustment in Estimates to Project Costs for a State Program**

Before data from an existing plan are used to project costs for a state program, it is necessary to determine if there is a selection bias present in the plan membership that would affect cost projections. The membership of the plan used to model costs must match the population to be covered by a new program in factors that predict utilization and costs or be adjusted to compensate for differences. Table 2 summarizes demographic differences between the 1988 BCN enrolled population and the 1990 projections for the entire State of Michigan. There are only minor differences in the age and gender composition of the populations.

Based on the small differences between the BCN and Michigan populations, no adjustment appeared necessary. Variations seem to have effects on health care costs that would balance each other. BCN has more women of childbearing age and adults between 55 and 64 (higher costs), but also more children (lower costs). Therefore, based on the age and sex distributions of its membership, this plan seemed to be a reasonable basis for projecting overall costs for the state of a universal plan.

**Variation in Costs by Region of the State**

An important issue to be worked out during discussion of a state plan is the extent to which the state will wish to adjust its contribution on the basis of geographical variation in costs. Our estimate for all of
<table>
<thead>
<tr>
<th>Age</th>
<th>Michigan* Total</th>
<th>Male (percent)</th>
<th>Female</th>
<th>Blue Care Network Total</th>
<th>Male (percent)</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-19</td>
<td>33.5</td>
<td>17.1</td>
<td>16.4</td>
<td>37.9</td>
<td>19.3</td>
<td>18.6</td>
</tr>
<tr>
<td>20-24</td>
<td>9.1</td>
<td>4.7</td>
<td>4.4</td>
<td>7.2</td>
<td>3.2</td>
<td>4.0</td>
</tr>
<tr>
<td>25-34</td>
<td>19.5</td>
<td>9.6</td>
<td>9.9</td>
<td>19.6</td>
<td>8.9</td>
<td>10.7</td>
</tr>
<tr>
<td>35-44</td>
<td>17.0</td>
<td>8.4</td>
<td>8.6</td>
<td>18.1</td>
<td>8.9</td>
<td>9.2</td>
</tr>
<tr>
<td>45-54</td>
<td>11.3</td>
<td>5.5</td>
<td>5.8</td>
<td>10.1</td>
<td>5.1</td>
<td>5.0</td>
</tr>
<tr>
<td>55-64</td>
<td>9.6</td>
<td>4.6</td>
<td>5.1</td>
<td>6.8</td>
<td>3.3</td>
<td>3.5</td>
</tr>
</tbody>
</table>

*Michigan population data were obtained from the Michigan Department of Management and Budget and represent the entire population of Michigan projected for 1990. This includes individuals who are currently insured through their employers, as well as individuals covered on nongroup plans, public programs such as Medicaid, or without any health insurance.

**Blue Care Network covers primarily small-, medium- and large-group business with perhaps 1 to 3 percent nongroup business in 1988.
Michigan would be reasonable if a single, statewide plan were implemented. If, however, individuals were allowed to choose from among several plans that may serve limited areas, state contributions or allowable premiums may be adjusted for regional variation in costs.

In a previous analysis we found rates for a large commercial insurer varied by area within Michigan as shown in Table 3. There was much less cost variation between BCN regions, and the Southeast region (Detroit and its suburbs) did not have the highest projected costs. Since costs of coverage are a function of several factors, including characteristics of the enrolled population, use rates, costs per unit of service, and costs of plan administration, it is difficult to do further analysis of cost variations within the state for a universal plan until more specific information is available. It may be that the lower costs of benefits in areas such as the Upper Peninsula may be balanced by higher administrative costs there due to low population density.

### Table 3
Regional Variations in Premiums

<table>
<thead>
<tr>
<th>Area</th>
<th>Rate multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Peninsula, some Northern Lower</td>
<td>1.00</td>
</tr>
<tr>
<td>&quot;Outstate&quot; Lower Peninsula</td>
<td>1.07</td>
</tr>
<tr>
<td>Lansing, Kalamazoo, &quot;Downriver&quot; areas</td>
<td>1.14</td>
</tr>
<tr>
<td>Macomb, Oakland, Washtenaw counties (suburban Detroit)</td>
<td>1.25</td>
</tr>
<tr>
<td>Wayne County (includes City of Detroit)</td>
<td>1.38</td>
</tr>
</tbody>
</table>

**Costs of Individual and Family Coverage**

Our best current estimate is that a figure of approximately $110 per month per person would be a reasonable projection of the 1989 costs of a comprehensive health care plan for a large group with demographics like those of the Michigan population (including children, not including individuals over 65). Projected premiums for single adults and families are determined by applying multipliers to the average PMPM cost according to how costs are to be distributed across these groups. An example is shown in Table 4.
Table 4
Determining Premiums for Beneficiary Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Multiplier</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base (Average PMPM)</td>
<td>= Base x 1.25</td>
<td>$109.77</td>
</tr>
<tr>
<td>Single adult</td>
<td>= Base x 1.25</td>
<td>$137.21</td>
</tr>
<tr>
<td>Couple</td>
<td>= Base x 2.88</td>
<td>$316.14</td>
</tr>
<tr>
<td>Family</td>
<td>= Base x 3.26</td>
<td>$357.85</td>
</tr>
</tbody>
</table>

Precision of Cost Estimates

The accuracy of estimates of the costs of coverage for a proposed program depends on several factors for which our data were incomplete:

- health status and utilization patterns of group to be covered
- delivery system(s) in which care is to be provided
- whether payment will be based on premiums charged by insurers, including all administrative expenses, or a reduced premium which does not allow recovery of all insurer costs, or a rate pegged more closely to the costs of providing care
- whether providers will be reimbursed on a charge basis, an "allowable fee" basis, a capitation basis, or some sort of partial recovery basis less than full costs
- additional cost-containment features that may be built into the design of the plan.

There are some clear tradeoffs between costs of coverage, extent of coverage, and the administrative and delivery system structures associated with any plan. In our example, $110 per-person per-month can purchase very extensive coverage in most areas of the state under circumstances exemplified by Blue Care Network. It will purchase much less extensive coverage in a high-cost area of the state and/or under plans with higher administrative costs (for example, individual or small-group coverage).

Finally, it must be considered that implementation of a state plan may itself affect costs. Here are some ways that the plan can distort its own costs.
1. As uninsured individuals become covered, a short increase in demand for services could occur, resulting in higher-than-normal costs due to "pent-up" demand.

2. The burst of demand may meet some serious shortages of health care providers, particularly nurses in acute-care settings and physicians in areas that are currently underserved. Not all individuals seeking care and covered by the state plan will be able to get it quickly. The increase in use will therefore be moderated in the near term, but will last as long as there continues to be a demand backlog.

3. If features of a state plan create a significant restriction on physician incomes, an exodus of physicians may occur if it is not countered by other changes making practice in the state more desirable. Any migration will affect access to care and in turn program costs and the program's ability to meet its objectives.

There are other possible effects of implementation that are impossible to predict with any certainty until the features of a plan are made more specific. As discussion and planning move forward, it will be possible to adjust cost estimates to reflect how plan features relate to utilization and costs per unit of service.

It is difficult to accurately predict how changes in some of these factors will affect costs of providing care. Our estimates of the costs of providing services under managed care conditions in the Blue Care Network environment are based on patterns of use and costs of providing services specific to BCN. If conditions change drastically under a state plan, simple linear projections of past trends to future costs, while they may be the best estimates available, will be subject to more than the usual amount of error. The purpose of these analyses is to roughly estimate the effects of various benefit combinations on the overall program costs to a state. They are not intended to be the basis for budgeting. As plans move closer to implementation, more precise and actuarially sound cost calculations must be performed.
Conclusion

The design of a benefit package will affect every aspect of a program: its success at meeting its health and social objectives, such as financial equity for providers, income redistribution, and improvement in the health status of target populations; its costs and their distribution between payors, patients, and providers; and (therefore and inevitably) its political viability. A well-conceived benefit package can remove ambiguity about the goals of a program and its expected costs and advantages.

Accomplishing this requires that knowledge of the effects of benefit features be injected into a process of values clarification about program goals that is essentially political. Priority-setting with regard to beneficiaries (providers, payors, and patients), and benefits (considering implicit rationing from restricted coverage) can be assisted by the provision of information about the costs and effects of specific benefit changes.
 References


Shapiro, Martin F., John E. Ware, Jr., and Cathy Donald Sherbourne. 1986. "Effects of Cost Sharing on Seeking Care for Serious and Minor Symptoms: Results of a Randomized Trial," Annals of Internal Medicine 104(2): 246-51.


